1997-1998

McMASTER UNIVERSITY
Undergraduate Calendar

This Calendar covers the period from September 1997 to August 1998.

The McMaster University Undergraduate Calendar is available in alternate media format. For copies in a format other than print, contact the Centre for Student Development in Hamilton Hall, Room 409 or ext. 24711. The calendar is also available on the Web at http://www.mcmaster.ca.

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Using the Calendar

Please read carefully all sections in this Calendar which pertain to your residency at McMaster University.

The first sections describe University-wide procedures and regulations. These are Sessional Dates, Degrees and Programmes, Degrees by Programme, Glossary, Admission Requirements, Application Procedures and Academic Regulations, Senate Policy Statements and Financial Information.

The next sections begin with descriptions of the Arts and Science programme, the School of Business, the Engineering, Health Sciences, Humanities, Science and Social Science Faculties, and the Women's Studies programme. The programme section concludes with a description of Theme Schools, Interdisciplinary Minors and Thematic Areas, Part-Time Degree Studies and Certificate and Diploma Programmes. Each programme section describes the undergraduate degree programme requirements by department. The Course Listings section completes the academic part of the Calendar.

When choosing your courses, please be careful to note all prerequisites, corequisites, corequisites and cross-listings; they may have a significant impact on your programme. If you are not sure of the meanings of these terms, please consult the Glossary section of the Calendar.

Information about awards, scholarships, bursaries, loan funding, University services, the libraries, residences, computing facilities, and student activities and organizations are included in the latter sections of this Calendar.
Directory for Correspondence and Enquiries

Mailing Address
McMaster University
Hamilton, Ontario, L8S 4L8
Canada

Telephone: (905) 525-9140
Web Address: http://www.mcmaster.ca

The following is a list of University offices (with the appropriate postal code) and administrative staff members that are most frequently contacted. Other offices and services, with their addresses, telephone numbers, and e-mail or Web addresses (where available) are described throughout the Calendar.

Admission to Undergraduate Studies
Associate Registrar (Admissions): Sam Digiandomenico
Gilmour Hall, Room 108, L8S 4L8, ext. 24796; Fax: (905) 527-1105

Student Liaison
Associate Registrar (Liason): Laurie Deans
Gilmour Hall, Room 102, L8S 4L8, ext. 24786; Fax: (905) 527-1105

Student Financial Aid and Scholarships
Coordinator: Denise Ellis
Hamilton Hall, Room 404, L8S 4K1, ext. 24319, 24789

Transcripts and Records
Gilmour Hall, Room 108, L8S 4L8, ext. 24796; Fax: (905) 527-1105

Examinations, Schedules and Reservations
Assistant Registrar (Schedules and Examinations): Ruth Toth
Gilmour Hall, Room 114, L8S 4L8, ext. 24453; Fax: (905) 527-1105

Office of the Assistant Provost (Student Affairs)
Assistant Provost: Mary Keyes
Gilmour Hall, Room 207, L8S 4L8, ext. 27455

School of Graduate Studies
Dean of Graduate Studies: John L. Weaver
Togo Salmon Hall, Room 111, L8S 4M2, ext. 23679

Centre for Continuing Education
Director: Dale C. Schenk
Commons Building, Room 116, L8S 4K1, ext. 24321

Alumni Association
Alumni Memorial Building, Room 203, L8S 4K1, ext. 24202
Director of Alumni Advancement: Mary Williams
Chester New Hall, Room 111, L8S 4L9, ext. 24878

On-campus Housing (Residence)
Director of Housing Services: Cathie Miller
Manager, Admissions and Conferences: Leanne Piper
Commons Building, Room 101, L8S 4K1, ext. 24223

Off-campus Housing
Wentworth House, Room 116, L8S 4K1, ext. 24066

Hospitality Services
General Manager: Albert Ng
Commons Building, Room B101B, L8S 4K1, ext. 23836

Centre for Student Development
Team Leader: Debbie Nifakis
Hamilton Hall, Room 409, L8S 4K1, ext. 24711

Office for Ability and Access
Manager: William A. Hoch
Coordinator, Student Accommodations: Tim Nolan
Coordinator, Learning Specialist: Caroline Cayuga
Hamilton Hall, Room 409, L8S 4K1, ext. 24711

Career Planning and Employment Centre
Team Leader: David Lawson
Hamilton Hall, Room 302, L8S 4K1, ext. 24253

Advice for Overseas and Exchange Students
International Students Advisor: Cheryl-Ann Jackson
Hamilton Hall, Room 405, L8S 4K1, ext. 24748

Grievances
Secretary of the Senate: Joan Morris
Gilmour Hall, Room 104, L8S 4L8, ext. 24337

Other Publications for McMaster Students

- Undergraduate Studies
- Year I Handbook
- Part-time Degree Studies Calendar
- School of Social Work Booklet
- McMaster Divinity College Calendar

The above publications are available from the Office of the Registrar.

- Graduate Studies
- Calendar of the School of Graduate Studies
  (Available from the School of Graduate Studies.)
- Graduate Studies in Business (MBA and Ph.D programmes)
  (Available from the Michael G. DeGroote School of Business.)

- Post-Graduate Medical Programma Calendar
  (Available from the Post Graduate Medical Education Office in the Health Sciences Complex, Room 187B.)

Teaching departments that offer graduate studies also provide information booklets about their programmes. These may be requested directly from the departments.

- Certificate and Professional Studies
- The Part-time Studies Calendar, which describes professional designations, certificate and correspondence programmes, is available from the Centre for Continuing Education.

- General-Interest, Non-Credit Studies
- Brochures about non-credit programmes and special offerings are available from the Centre for Continuing Education.

Ombuds Office
Ombudsperson: Kerry Burke
Hamilton Hall, Room 212, L8S 4K1, ext. 24151; Fax: (905) 529-3208

The Ombudsperson provides information and advice relating to problems, complaints and appeals involving members of the McMaster community. The Ombuds Office is a service provided by the MSU in conjunction with MUSA, MAPS and MUFA.

For information and advice with respect to University regulations and services, and human rights procedures, see the Academic Facilities, Student Services and Organizations section of the Calendar.
McMaster University, through its continued dedication to innovative education and ground-breaking research, has earned its reputation as one of the leading post-secondary institutions in Canada.

McMaster is a medium-sized, full-service university offering educational programmes through six Faculties. The extensive activity in research, supported by more than $78.7 million in grants and contracts, means there are first-class libraries and sophisticated facilities. Undergraduate teaching is conducted through the School of Business, the Faculties of Engineering, Health Sciences, Humanities, Science, and Social Sciences, and the distinctive Arts and Science programme. The Department of Kinesiology and the School of Social Work are part of the Faculty of Social Sciences.

DISCIPLINES AND DEGREES

The Arts and Science Programme offers B. Arts Sc. and Honours B. Arts Sc. degrees. It is possible to combine the programme leading to the Honours B. Arts Sc. degree with programmes that fulfill the requirements for Honours degrees in a number of different disciplines.

The Michael G. DeGroote School of Business offers the Honours B.Com. and B.Com. degrees in accounting, business policy, finance, management science and information systems, marketing and international business, and human resources and labour relations.

The Faculty of Engineering offers the Bachelor of Engineering programme in Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Physics, Manufacturing Engineering, Materials Engineering and Mechanical Engineering.

Students may register in the Faculty of Engineering to take the five-level Engineering and Management programme, which is offered jointly by the School of Business and Faculty of Engineering, or the five-level Engineering and Society programme.

The Faculty of Engineering also offers a degree completion programme in Manufacturing Engineering Technology leading to the Bachelor of Technology Degree. It is offered in conjunction with Mohawk College.

The Faculty of Health Sciences has gained an international reputation for its innovative educational programming, and offers, through the School of Medicine, the M.D. programme, and through the School of Nursing offers the B.Sc.N. degree programme. The Bachelor of Health Sciences (B.H.Sc.) degree may be earned in Occupational Therapy, Physiotherapy or Midwifery.

The Faculty of Humanities offers programmes in Art, Art History, Classics (Anast History and Archaeology, Classical Languages and Literature) Comparative Literature, Drama, English, French, History, Japanese Studies, Latin American Studies, Modern Languages (German, Hispanic Studies, Italian, Russian), Modern Languages and Linguistics, Music, and Philosophy leading to B.A. degrees, as well as a Bachelor of Music degree and a Diploma in Music. Students pursuing Honours degree programmes may complete and receive credit for the third level of the programme in study abroad at a university in a country approved by the Faculty.

Bachelor of Science programmes are available in the Faculty of Science at the B.Sc. and B.Sc. Honours levels. Programmes are offered in Biochemistry, Biology, Chemistry, Computer Science, Earth Science, Geography, Geography and Environmental Science, Geology, Life Science, Mathematical Science, Mathematics, Materials Science, Medical and Health Physics, Molecular Biology and Biotechnology, Neural Computation, Physical Science, Physics and Astronomy, Psychology, Science, and Statistics.

The Faculty of Social Sciences offers B.A. programmes in Anthropology, Economics, Geography, Geography and Environmental Studies, Gerontology, Labour Studies, Political Science, Psychology, Religious Studies and Sociology. The School of Social Work offers the combined B.A./B.S.W. degree, and the Department of Kinesiology, the B.Kin. degree.

THE UNIVERSITY

Named after Senator William McMaster, who bequeathed funds to endow a Christian school of learning, the University grew out of educational work initiated by Baptists in central Canada as early as the 1830s. After its initial years in Toronto, from 1887 to 1930, the University was moved to Hamilton. It became non-denominational in 1957, although the historic Baptist connection continues through the separately incorporated McMaster Divinity College.

McMaster University, 1,500 of whom are pursuing advanced degrees offered through the School of Graduate Studies. In addition, about 4,000 part-time students are registered in the Fall/Winter session, from September to April, and 3,000 in the Spring/Summer session, from May to August. The University also provides courses in centres located outside Hamilton, for which full credit is granted.

Most of the 1,000 members of the University faculty hold doctoral degrees in their areas of specialization. Faculty members are expected to teach both graduate and undergraduate courses and may be involved in the academic counselling of students.

The University's diverse academic programmes are supported by some fine, and even unique, facilities. The University Library is a member of the Association of Research Libraries and contains over 1.7 million volumes, and has subscriptions to nearly 12,000 periodical titles. The Library has an extensive special collections section which includes the Bertrand Russell Archives, 18th Century materials and major Canadian collections.

Facilities for programmes in the Humanities include modern language laboratories, music rehearsal rooms, art studios, a museum of art and seminar rooms. The work of the Faculties of Science and Engineering is supported by sophisticated facilities, which include a nuclear reactor and Van De Graaff Accelerator. Computing facilities include mainframes, terminal clusters, and microcomputers.

The recreation, fitness and intramural programmes offer more than 50 different sports in which over 6,000 students participate. The Intercollegiate Athletic Programme provides 16 sports for men and 14 for women. The athletic facilities include a 50-metre pool, a 400-metre, all-weather track, eight hard surface all-weather tennis courts, a state-of-the-art strength training facility known as the Pulse, as well as fully equipped laboratories for exercise, physiology and biomechanics.

McMaster's campus, which is restricted to pedestrian traffic, is adjacent to the Royal Botanical Gardens at the western end of Lake Ontario. On-campus men's, women's and co-educational residences are available for about 2,782 students.

The University is minutes from downtown Hamilton, and the activities that a major city has to offer. Students can get there by car or by taking one of the buses from the region's public transit system, which make frequent stops on campus.
**Sessional Dates**

The academic year is divided into sessions, as shown on the chart below.

Most undergraduate students register for the Fall/Winter Session, which runs from September to April.

The Spring/Summer Session starts at the beginning of May and ends in early-August.

**The 1997-98 Academic Year Divided by Session and Term**

The numbers on the left and right of each block are the respective start and end dates for that term. Examination periods (where applicable) are included in this chart.

<table>
<thead>
<tr>
<th>SESSIONS</th>
<th>TERMS</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
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<tr>
<td>FALL/WINTER</td>
<td>Term 1</td>
<td>4</td>
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<tr>
<td></td>
<td>Term 2</td>
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<td>5</td>
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<td>29</td>
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<td></td>
<td>Term 3</td>
<td>4</td>
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<tr>
<td>SPRING/SUMMER</td>
<td>Term 1</td>
<td>4</td>
<td>19</td>
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<td></td>
<td>Term 2</td>
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<tr>
<td></td>
<td>Term 3</td>
<td>4</td>
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<td>7</td>
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</tbody>
</table>

**Release from Liability**

McMaster University reserves the right to change or revise information contained in this Calendar, including the alteration of fee structures, schedules and/or courses. The University reserves the right to limit enrolment in, or admission to, any course or programme at any level.

The University will not be liable for any interruption in, or cancellation of, any academic activities as set forth in this Calendar and related information where such interruption is caused by fire, strike, lock-out, inability to procure materials or trades, restrictive laws or governmental regulations, actions taken by the faculty, staff or students of the University or by others, civil unrest or disobedience, or any other cause of any kind beyond the reasonable control of the University.

**Course Enrolment Limits:** Limited enrolment courses are identified in the calendar; these either require permission or are assigned on a first come basis. In addition, the University reserves the right to limit enrolment in any course which is oversubscribed, even if the course description and registration literature do not indicate an enrolment limit.

**University Policies**

Acceptance of the University's policies, and changes that may be approved from time to time by the Board of Governors and the Senate, is a condition of being accepted in any capacity in any University-controlled laboratory or programme.

**Note:**

- The Fall/Winter timetables and part-time degree studies brochures, which are published periodically by the University, should be used to determine:
  1. if a course is to be offered; and
  2. the term in which a course will be offered.

**Convocations**

Convocations are normally scheduled for the day or evening of the following dates. The exact times will be determined four months prior to the specific convocation date.

**Friday, July 18, 1997**
- Last day to file a Graduation Information Card and declare a minor for Autumn 1997 Convocation.

**Friday, November 7, 1997**
- Autumn 1997 Convocation (all Faculties)

**Friday, February 6, 1998**
- Last day to change Programmes for Spring 1998 Convocations.

**Friday, February 6, 1998**
- Last day to file a Graduation Information Card and declare a minor for Spring 1998 Convocations.

**Friday, May 15, 1998**
- Health Sciences Convocation 1998

**Tuesday, June 2 to Thursday, June 4, 1998**
- Spring Convocations 1998

**Friday, July 17, 1998**
- Last day to file a Graduation Information Card and declare a minor for Autumn 1998 Convocation.

**Friday, November 6, 1998**
- Autumn 1998 Convocation (all Faculties)
### Fall/Winter Session 1997-98

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration (All Levels)</td>
<td>To Be Announced</td>
<td>Thursday, September 4</td>
</tr>
<tr>
<td>Classes begin</td>
<td>Thursday, September 4</td>
<td>Monday, October 13</td>
</tr>
<tr>
<td>Last day for registration and adding classes</td>
<td>Wednesday, September 17</td>
<td>Friday, January 16</td>
</tr>
<tr>
<td>Thanksgiving Day: No classes</td>
<td>Monday, October 13</td>
<td>To Be Announced</td>
</tr>
<tr>
<td>Mid-term recess</td>
<td>Monday, February 16</td>
<td>Monday, October 13</td>
</tr>
<tr>
<td>Last day for withdrawal without failure by default</td>
<td>Friday, November 7</td>
<td>Monday, February 16</td>
</tr>
<tr>
<td>Good Friday: No classes</td>
<td></td>
<td>to Saturday, February 21</td>
</tr>
<tr>
<td>Test and Examination ban:</td>
<td>Thursday, November 27</td>
<td>Thursday, April 10</td>
</tr>
<tr>
<td>No tests or examination may be held</td>
<td>to Thursday, December 4</td>
<td>Friday, April 3</td>
</tr>
<tr>
<td>Classes end</td>
<td>Wednesday, December 3</td>
<td>to Saturday, April 11</td>
</tr>
<tr>
<td>Mid-Session Tests (Level I)</td>
<td></td>
<td>Thursday, April 9</td>
</tr>
<tr>
<td>Final Examinations</td>
<td>Friday, December 5</td>
<td>Monday, April 13</td>
</tr>
<tr>
<td>Last day to confirm intent to write deferred examinations</td>
<td>Friday, December 18</td>
<td>Monday, April 13</td>
</tr>
<tr>
<td>Deferred Examinations</td>
<td>Friday, February 6</td>
<td>to Thursday, December 18</td>
</tr>
<tr>
<td></td>
<td>Monday, April 13</td>
<td>Friday, June 19</td>
</tr>
<tr>
<td></td>
<td>to Wednesday, April 29</td>
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</tbody>
</table>
### Spring/Summer Session 1998

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes begin</td>
<td>Monday, May 4</td>
<td>Monday, May 4</td>
</tr>
<tr>
<td>Last day for registration and changes in registration</td>
<td>Friday, May 8</td>
<td>Monday, May 18</td>
</tr>
<tr>
<td>Victoria Day: No classes</td>
<td>Monday, May 18</td>
<td>Monday, May 18</td>
</tr>
<tr>
<td>Last day for withdrawal from a course without failure by default</td>
<td>Wednesday, June 3</td>
<td>Wednesday, July 22</td>
</tr>
<tr>
<td>Canada Day: No classes</td>
<td>Wednesday, June 3</td>
<td>Friday, July 3</td>
</tr>
<tr>
<td>Civic Holiday: No classes</td>
<td></td>
<td>Wednesday, July 1</td>
</tr>
<tr>
<td>Classes end</td>
<td>Friday, June 19</td>
<td>Monday, August 3</td>
</tr>
<tr>
<td>Examinations</td>
<td></td>
<td>Friday, August 7</td>
</tr>
<tr>
<td>Last day to confirm intent to write deferred examinations</td>
<td>Friday, October 16</td>
<td>Friday, October 16</td>
</tr>
<tr>
<td>Deferred Examinations</td>
<td>December '98 Examination period</td>
<td>December '98 Examination period</td>
</tr>
<tr>
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</tr>
</tbody>
</table>
DEGREES AND PROGRAMMES

McMaster University offers the following undergraduate degrees:

FACULTY AND DEGREE DURATION IN YEARS

ARTS & SCIENCE PROGRAMME

B.Arts Sc. .................................................. 3
B.Arts Sc. (Honours)* ......................... 4
(*With the exception of the Combined Honours degrees in Biology, Chemistry and Physics which require five years of study.)

SCHOOL OF BUSINESS

B.Com .................................................. 4
B.Com. (Honours) ............................. 4

FACULTY OF ENGINEERING

B.Eng .................................................. 4
B.Eng.Mgt. ............................................ 5
B.Eng. Society ...................................... 5
B.Tech *1

FACULTY OF HEALTH SCIENCES

B.H.Sc. (Midwifery).* 3
B.H.Sc. (Occupational Therapy/Physiotherapy) *2
(*Follows completion of prior undergraduate degree)

FACULTY OF HUMANITIES

B.A .................................................. 3
B.A. (Honours) ................................ 4
B.Mus ............................................. 4
B.A./B.S.W. ..................................... 4

FACULTY OF SCIENCE

B.Sc. .................................................. 3
B.Sc. (Honours) .................................. 4
B.Sc. (Honours) *5

FACULTY OF SOCIAL SCIENCES

B.A .................................................. 3
B.A. (Honours) .................................. 4
B.Kin ............................................... 4
B.A./B.S.W. ...................................... 4
B.S.W. *2

Second Undergraduate Degree

Provision exists for a university graduate to take a second bachelor's degree. This programme is normally shortened (except for the B.H.Sc., -Occupational Therapy, Physiotherapy and Midwifery Education programmes). An application for admission is necessary for entry to a second degree programme, and it should be submitted by the application deadlines. (See Application Procedures and General Academic Regulations sections of this Calendar.)

Combined Programmes

There is the opportunity to combine two subjects of study within one Faculty, or between two Faculties. Further information can be obtained by referring to the Faculty sections of this Calendar, or contacting the appropriate Office of the Associate Dean (Studies).

ELECTIVE COURSES AVAILABLE TO LEVEL I STUDENTS

The following is a list of courses available as Electives to Level I students, provided that the students have met any prerequisites, and subject to enrolment limitations. Normally, students may select up to six units in any particular subject (excluding Mathematics, of which up to 12 units may be taken). A brief description of each course can be found under the appropriate Department within the Course Listings section in this Calendar.

ANTHROP ................................. 1A03, 1Z03
ART HIST ........................................ 1A06
★ ASTRON ........................................ 1F03
★ BIOLOGY ................................. 1A03, 1A03, 1J03
CAYUGA ........................................ 1Z06
★ CHEM .......................................... 1A03, 1A03
CLASSICS .................................. 1B06, 1L06
COMP LIT .................................... 1A06
★ COMP SCI ............................... 1MC03, 1MN03, 1S03
DRAMA ........................................ 1A06
ECON ........................................... 1A06, 1N06, 1Z06
ENGLISH ....................................... 1D06
★ ENVIR SC ................................. 1A06, 1B06, 1Z06
FRENCH ......................................... 1A06
GERMAN ........................................ 1B06, 1Z06
GERONTOL .................................... 1A06
GREEK ........................................... 1Z06
HISPANIC ...................................... 1A06, 1Z06
HISTORY ......................................... 1A06, 1L06
INDIG ST ....................................... 1A06
ITALIAN .......................................... 1N06, 1Z06, 1Z06
JAPANESE ....................................... 1Z06
LABR ST ......................................... 1A03, 1Z03
LATIN ............................................ 1Z06
LINGUIST ....................................... 1A06
★ MATH ......................................... 1A03, 1A03, 1B03, +1K03, +1M03
★ MATLS ......................................... 1A03
MOHAWK ....................................... 1Z06
MUSIC .............................................. 1A06
OJIBWA .......................................... 1Z06
PHILOS .......................................... 1B06, 1D06
★ PHYSICS ...................................... 1B03, 1A03, 1B03, 1C03
POLISH .............................................. 1Z06
POL SCI .......................................... 1A06, 1G06
PORTUGUE ..................................... 1Z06
PSYCH ............................................. 1A03, 1A03
RELIG ST ......................................... 1B06, 1D06, 1E06, 1H03, 1I06
RUSSIAN .......................................... 1Z06
★ SCIENCE ....................................... +1C03
SOC WORK ...................................... 1A06
SOCIOI .............................................. 1A06
★ STATS ........................................... +1A03, 1C03, +1L03
WOMEN ST ...................................... 1A06

★ Not acceptable for the six-unit complementary studies elective required in Engineering I.

Note: Engineering I students interested in entering the Engineering and Management programme must take COMMERCE 1S03 and ECON 1B03 as the six-unit complementary studies elective.

+ These courses may not be taken for credit by students in Natural Sciences I.
<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>BACHELOR'S DEGREE</th>
<th>HONOURS DEGREE</th>
<th>COMBINED HONOURS</th>
<th>PROFESSIONAL DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>B.A.*</td>
<td>B.A.*</td>
<td>B.A.*</td>
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<tr>
<td>Applied Chemistry</td>
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<tr>
<td>Applied Mathematics</td>
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<td>Art</td>
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<tr>
<td>Art History</td>
<td>B.A.*</td>
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- The University also offers Thematic Areas of Study and a large number of Minor programmes. Suggested lists of courses, which constitute non-degree Thematic Areas, have been assembled in the section Interdisciplinary Minors and Thematic Areas. Also in that section are four Interdisciplinary Minors which are not connected to a specific department of Faculty. Other Minors are found in the programme sections of most departments.
GLOSSARY

Academic Probation, which may be assigned to students whose CA is at least 3.0 but less than 3.5, will allow a student to continue at the University for one reviewing period.

Advanced Standing may be granted to an applicant who has completed work at another university or college, subject to the applicant having met the minimum requirements prescribed by the University.

Antirequisite is a course which cannot be taken for credit before, after, or at the same time as the course with which it is listed.

Bursaries are granted based upon demonstrated financial need, a minimum expectation of academic accomplishment and, in some cases, other forms of earned merit. They may vary in monetary value, based upon the level of financial need demonstrated.

Continuing Student is a university graduate who is not proceeding to an advanced degree, but wishes to take one or more undergraduate courses.

Corequisite is a course which must be taken together with another course.

Course Numbers (e.g. 1A03) can be interpreted as follows: the initial digit indicates the Level of the course; the letter(s) in the middle identifies the specific courses within the Level; and the final digit(s) defines the number of units of credit associated with the course.

Cross-listed Course is a course which is listed under two or more subjects.

Cumulative Average (CA) is a weighted average based on the grades obtained in all courses taken.

Degree is conferred when a student completes a programme of study (e.g. Bachelor of Arts, Bachelor of Kinesiology, Master of Science, Doctor of Philosophy).

Department is a subdivision of a Faculty, responsible for a particular subject or group of subjects (e.g. Department of Chemistry, Department of Modern Languages).

Elective Courses are those courses taken by a student which are not specifically designated in a student’s programme, but which form part of the total number of units required to complete the programme.

Extra Courses are those courses designated as "Extra", which are not included as units toward completion of a student’s programme. The grades obtained in such courses will not be included in the computation of the Cumulative Average. However, they will be included in the computation of the Sessional Average and the Full-load Average.

Faculty is a major administrative and teaching unit of the University responsible for programmes and courses relating to common fields of study or academic disciplines (e.g. Faculty of Humanities, Faculty of Engineering).

Full Load is the number of units specified in the Calendar for an individual level of a programme (e.g. Honours Biology and Psychology, Level II: 33 units). If the Calendar does not specify the programme requirements by individual levels, divide the total units for all levels by the number of levels, discarding the remainder. Full-time students must carry a full load of McMaster courses to be eligible for Undergraduate In-Course Academic Awards. A full load is not required to be eligible for graduation awards.

Full-load Average (FA) is the weighted average used for Undergraduate In-Course Academic Awards. It is based on the successful completion of a full load of course units (see Full Load definition), and includes only courses taken in the Fall/Winter session. Overload units (those above Full Load) and Extra Courses taken during the Fall/Winter session are included in the FA.

Full-time Student for academic purposes is an undergraduate student who is registered in at least 24 units in the Fall/Winter session, including Extra Courses. Full-time status for students in the Faculty of Science Co-op programmes is granted to those students registered in at least 12 units in Term 1 or Term 2 of the Fall/Winter session.

Letter of Permission is a formal document which allows a McMaster student to take one or more courses at another university for credit towards a McMaster degree.

Level is used to describe a student’s programme starting, graduation and professional qualifications.

Loans are monetary advances granted to students currently registered, based upon a demonstrated need and promise of repayment.

Mature Student is at least 21 years old prior to his or her first day of classes; has not attended secondary school for at least two years; and has not previously attended university.

Minor is an option available to students enrolled in four- or five-level programmes. A Minor consists of at least 24 units — of which no more than six units may be from Level 1 — that meet the requirements set out in the programme description of that Minor.

Part-time Student is an undergraduate student who is registered in fewer than 24 units in the Fall/Winter session, including Extra Courses.

Post-Degree Student is a university graduate or a person with professional qualifications who is not proceeding to an advanced degree, but wishes to take one or more graduate courses.

Prerequisite is a requirement to be fulfilled before registration in a course is permitted. This is usually the successful completion of another course.

Programme is a specific combination of courses that fulfils the requirements for a degree.

Programme Probation which may be assigned to students whose CA falls within the probationary band below the minimum CA required to remain in the programme in good standing, will allow a student to continue in his/her programme for at least one reviewing period. (See the General Academic Regulations section in this Calendar.)

Registration is the process whereby a student enrolls in a programme of study and/or courses and pays, or makes acceptable arrangements to pay, all fees.

Required Courses are those courses which are specifically designated for inclusion in a programme.

Result of Session is the statement of the academic standing of a student at the end of a reviewing period. “May continue in programme”, “May not continue” and “Clear to graduate” are three examples.

Review is an assessment of a student’s performance to determine eligibility to continue in a programme or to graduate.

Reviewing Period is the time between two reviews for a student. Reviews will take place in May and August, provided the student has attended 16 units of work since the last review or is a potential graduand.

Session is a period of study within the academic year. For example, the Fall/Winter session runs from September to April.

Sessional Average (SA) is a weighted average based on the grades attained in a session. Overload courses and Extra courses are included in the Sessional Average.

Term is a period of study within a session. The Fall/Winter session, for example, contains three terms, Term 1 runs from September to December; Term 2, runs from January to April; Term 3 runs from September to April.

Transcript is an official document summarizing the entire academic record of a student at a particular educational institution.

Tuition is fees paid in consideration for enrolment in a programme of study and/or courses.

Units define the number of credits associated with a course. Three-unit courses are usually one term in length. Six-unit courses are usually two terms, or one session.

Weighted Average is calculated by multiplying the grade points achieved in each course by the number of units in each course, totaling these results, and then dividing this result by the total number of course units. (See example under Grading System in the General Academic Regulations section (page 18) in this Calendar.)

Withdrawal is the formal process of discontinuing studies in a particular course or programme.
ADMISSION REQUIREMENTS

ENGLISH LANGUAGE PROFICIENCY

Each student granted admission to McMaster must be proficient in the use of the English language. Students will be expected to speak and write clearly and correctly in English.

If your first language is not English, you must have:

(i) achieved a score of at least 580 on TOEFL, or the equivalent on other recognized tests, or
(ii) attended a Canadian educational institution for at least three years, or
(iii) resided in an English speaking country for at least four years.

It is your responsibility to make all arrangements regarding the writing of the TOEFL test and to have the official score report forwarded to the Admissions Office.

ADMISSION FROM
ONTARIO SECONDARY SCHOOLS

To be considered for admission, you must satisfy the general requirements of the University and the specific subject requirements for the programme to which you applied.

If you are an applicant from an Ontario secondary school you must meet three requirements:

1. An Ontario Secondary School Diploma with acceptable standing; and
2. An overall average (and area average, where applicable) in completed Ontario Academic Credits (OACs), which meets or exceeds the minimum set by the specific programme to which you applied; and
3. Satisfactory completion of the subject requirements for your chosen programme.

OAC Music is acceptable as a credit and the mark obtained can be included in the calculation of your admission average. Alternatively, marks supplied by an acceptable conservatory of music may be used to determine your average for admission. You may submit certificates from a recognized conservatory of music in Grade 4 theory, or in Grade 9 practical and Grade 3 theory.

Early Admission from
Ontario Secondary Schools

Early Admission is granted annually in mid-June on a date agreed upon by all Ontario universities. Early Admission is based on interim marks, or a combination of interim and final marks, which are supplied by secondary schools in April. Early admission may be granted if you expect to acquire final standing later in the year.

If you are granted Early Admission, you must successfully complete six OACs, including all required subjects. The University reserves the right to withdraw its offer of admission if you do not meet the minimum final average prescribed for your chosen programme; if you do not receive an Ontario Secondary School Diploma; or if you do not respond to OUAC within the two-week response period.

Final Admission from
Ontario Secondary Schools

If you fulfill the requirements for your Ontario Secondary School Diploma, including the subject requirements for your chosen programme by the end of May, you may be granted an offer of Final Admission prior to June.

If you do not receive an offer of admission by June 30, you may still be considered for admission in July, once final marks are received, depending on availability of space in your chosen programme.

Deferral of Admission for
Ontario Secondary School Students

McMaster does not normally grant deferral of admission except under exceptional circumstances. Applicants admitted to an undergraduate programme may request to defer their registration for up to one year. Requests should be made in writing to the Admissions Office stating the reason for the request.

Programme Transfer After Admission

If you are admitted to one programme and subsequently wish to transfer to another, you may be able to do so, provided space is available and you have met the subject requirements for the second programme. Contact the Office of the Registrar to request a programme transfer.

Minimum Final Average

All secondary school applicants admitted conditionally on interim grades will be required to achieve overall averages (and area averages, where applicable) on final grades no less than 5% (or its equivalent), lower than the minimum average established for conditional offers in that programme.

Applicants whose final averages fall below this level (or its equivalent) or whose final overall averages fall below 70%, will have their offers of admission and/or registrations rescinded.

The required minimum final average will be stated on the offer of conditional admission.

SUBJECT REQUIREMENTS FOR
SPECIFIC LEVEL I PROGRAMMES

All Level I programmes have enrolment limits and admission is by selection. Possession of the minimum admission requirements does not guarantee admission.


> ARTS AND SCIENCE I

- 0027

You are required to submit a completed supplementary application. The information provided enters into the selection process. Only applicants with a high academic standing are selected.

In recent years successful candidates had an admission average in the upper 80s or higher. The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. OAC Calculus
3. Completion of additional OACs to total six credits. At least three of the additional OACs must be selected from among English, Français, other languages, Algebra and Geometry, Finite Mathematics, Biology, Chemistry, Physics, Geography, History, and Music.

> BUSINESS I

- 0725

The School of Business introduced revisions to its programmes for students entering Business I in September, 1994. While there were no changes in the admission requirements, the specific percentage required for admission to Business I does vary from year to year. The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. One of OAC Calculus, OAC Finite Mathematics or OAC Algebra and Geometry. (OAC Calculus and OAC Finite Mathematics are recommended.)
3. Completion of additional OACs to total six credits, with a minimum overall final average in the six required credits of no more than five percent below the minimum average required for a conditional offer of admission. In recent years, an average in the high-70s has been required for an offer of admission.

Completion of a Supplementary Application is recommended for those students whose average is near the cut-off.

> ENGINEERING I

- 0730

The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. OAC Calculus
3. OAC Algebra and Geometry
4. OAC Chemistry
5. OAC Physics
6. Completion of one additional OAC to total six credits.

A minimum overall and area final average in the high 70s to low 80s has been required for an offer of admission in recent years. Completion of a Supplementary Application is recommended for those students whose average is near the cut-off.
Music for your audition process is competitive. A Midwifery supplementary including a personal questionnaire are required and must be received at McMaster by February 1
The following are the minimum requirements:
1. One of OAC English I, OAC English II or OAC English III
2. OAC Biology or OAC Chemistry
3. An OAC in social science (history, sociology, psychology, geography, law)
4. Completion of additional OACs to total six credits, with a minimum overall final average of 70%

> MIDWIFERY I 6501

As places in the Midwifery programme are very limited, the admission process is competitive. A Midwifery supplementary application including a personal questionnaire are required and must be received at McMaster by February 1
The following are the minimum academic requirements:
1. One of OAC English I, OAC English II or OAC English III
2. OAC Biology or OAC Chemistry
3. An OAC in social science (history, sociology, psychology, geography, law)
4. Completion of additional OACs to total six credits
5. Completion of one additional OAC to total six credits
6. An average acceptable to the Faculty in the four credits specified in points 2, 3, and 4 above
7. An average acceptable to the Faculty in the best six OAC credits (which must include the four OACs specified in points 2, 3 and 4 above)

Although the stated minimum is 75%, in recent years, an average in the low 80s has been required for an offer of admission.

Note: OAC Finite Mathematics is recommended for students interested in the Life Sciences. OAC Algebra and Geometry is recommended for students proceeding to the Mathematical or Physical Sciences.

> NURSING I 6390

The following are minimum requirements:
1. One of OAC English I, OAC English II or OAC English III
2. OAC Chemistry
3. One of OAC Calculus, OAC Algebra and Geometry or OAC Finite Mathematics
4. One of OAC Biology or OAC Physics
5. Completion of two additional OACs to total six credits

Although the stated minimum is 75%, in recent years, an average in the high 70s has been required for an offer of admission.

Note: You must apply to the programme within two years of completion of the OAC requirements.

Health requirements for admission: Before registration, you must file with the University information pertaining to your state of health and immunization. Detailed instructions will be provided upon acceptance into the programme.

> SOCIAL SCIENCES I 0720

The following are minimum requirements:
1. One of OAC English I, OAC English II or OAC English III
2. Completion of additional OACs to total six credits

Although the stated minimum is 70%, in recent years, an average in the mid-high 70s has been required for an offer of admission.

You are strongly advised to complete an OAC in Mathematics, even though it is not a requirement for most Social Science degree programmes. If you are interested in entering any of the Psychology and Economics degree programmes or any Honours Geography programme, you should complete OAC Calculus.

ADMISSION WITH OTHER QUALIFICATIONS

A. Admission from Other Canadian Provinces

McMaster welcomes applications from other provinces and territories. Applicants are required to meet the following minimum requirements:
- Quebec - CEGEP (minimum one year)
- All other Canadian provinces - Grade 12 Diploma

Satisfactory completion of the specified subject requirements for the programme to which you applied is also required. Please refer to the OAC Course Equivalents Chart in this section for more details.

B. Admission from Other Countries

McMaster welcomes applications from international students. See the admission requirements for applicants from selected countries below.

Applicants must arrange for official matriculation certificates to be sent well in advance of the session. The equivalent of first-class standing may be required for some limited enrolment programmes. Clear notarized photocopies of certificates in a language other than English should be accompanied by notarized English translations. Clear photocopies of English language certificates must be notarized.

You are considered for admission on an individual basis. You are strongly advised not to come to the University until you have been informed of your acceptance.

Applicants from the General Certificate of Education system require:
1. Five GCE subjects at least two of which must be at the Advanced Level;
2. Advanced Level subjects appropriate for your chosen programme, (refer to Subject Requirements for Specific Level I Programmes in

KINESIOLOGY I 0308

Students must apply for admission to Level I. The following are the minimum requirements:
1. One of OAC English I, OAC English II or OAC English III
2. One of OAC Algebra and Geometry, OAC Calculus or OAC Finite Mathematics
3. Completion of additional OACs to total six credits

Although the stated minimum is 70%, in recent years, an average in the low 80s has been required for an offer of admission.

Note: It is strongly recommended that you include two of Biology, Chemistry, or Physics in your OACs.

MUSIC I 0370

The academic requirements are the same as for Humanities I. In addition, applicants to Music I or to the B.A. in Music must successfully complete a music audition/examination consisting of:
1. Demonstration of technique (approximately Grade 9 level of the Royal Conservatory of Music, Toronto)
2. Performance (approximately 20 minutes duration) of two or three varied pieces of your choice (approximately Grade 9 level), including at least one from the 20th century
3. Ear test appropriate to the Grade 3 performance level
4. Written examination on rudiments of theory (Grade 2 level)
5. Interview

You must make arrangements with the School of Art, Drama and Music for your audition.

NATURAL SCIENCES I 0710

The following are the minimum requirements:
1. One of OAC English I, OAC English II or OAC English III
2. OAC Calculus
3. One of OAC Algebra and Geometry, or OAC Finite Mathematics
4. Two of OAC Biology, OAC Chemistry, OAC Physics

Note: OAC Finite Mathematics is recommended for students interested in the Life Sciences. OAC Algebra and Geometry is recommended for students proceeding to the Mathematical or Physical Sciences.
## OAC Course Equivalents for Students from Other Canadian Provinces

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<td>Math 31</td>
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<td>Introductory Calculus 305, Math 355 or Calculus 45A</td>
<td>Math 103 or 203</td>
<td>Math 541 or Calculus 441</td>
<td>Calculus 120</td>
<td>Math 611A (previously Math 621) - Locally Developed</td>
</tr>
<tr>
<td><strong>ALGEBRA AND GEOMETRY</strong></td>
<td>Math 12</td>
<td>Math 30</td>
<td>Geom-Trig 30, Algebra 30 or Math 30</td>
<td>Math 300 or 40S</td>
<td>Math 105</td>
<td>Math 441</td>
<td>Math 121 or 122</td>
<td>Math 621A</td>
</tr>
<tr>
<td><strong>FINITE MATH</strong></td>
<td>Survey Math 12</td>
<td>Not available*</td>
<td>Finite Math 30L</td>
<td>Advanced Math 305 (Topics in Math), Stats and Probability 305 or 40S</td>
<td>Not available*</td>
<td>Math 442</td>
<td>Math 121 or 122</td>
<td>Not available*</td>
</tr>
<tr>
<td><strong>CHEMISTRY</strong></td>
<td>Chemistry 12</td>
<td>Chemistry 30</td>
<td>Chemistry 30</td>
<td>Chemistry 300, 405 or 40A</td>
<td>Chemistry 101, 201, or 202</td>
<td>Chemistry 12 or 12 IB (previously Chemistry 441 or 541)</td>
<td>Chemistry 121 or 122</td>
<td>Chemistry 621</td>
</tr>
<tr>
<td><strong>PHYSICS</strong></td>
<td>Physics 12</td>
<td>Physics 30</td>
<td>Physics 30</td>
<td>Physics 300, 405 or 40A</td>
<td>Physics 101 and 201 or 301</td>
<td>Physics 12 or 12 IB (previously Physics 441 or 541)</td>
<td>Physics 121 or 122</td>
<td>Physics 621</td>
</tr>
<tr>
<td><strong>BIOLOGY</strong></td>
<td>Biology 12</td>
<td>Biology 30</td>
<td>Biology 30</td>
<td>Biology 300, 405 or 40A</td>
<td>Biology 301, 401</td>
<td>Biology 441 or 541</td>
<td>Biology 121 or 122</td>
<td>Biology 621</td>
</tr>
</tbody>
</table>

* Topics related to Finite Math are found in several Math courses.
+ Applicants to Engineering I without Calculus at the time of application will be considered conditionally providing an appropriate Calculus course is completed prior to September registration.
++AP Mathematics or International Baccalaureate Calculus are also acceptable.
+++ Six Grade 12 credits numbered 60-65 may be substituted.

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**3. Grades of at least "C" ("B" for Engineering) must be presented in each of the Advanced Level subjects.**

Applicants from Hong Kong must meet the Hong Kong Advanced Level Examinations or the GCE requirements as listed above.

Applicants who have a complete International Baccalaureate Diploma will be considered for admission to Level I, provided the completed diploma includes the subject area requirements of the programme desired. An overall score of 28 and not less than four in any given subject must be achieved in order to be eligible for admission. Advanced credit is determined on an individual basis.

Applicants from the United States of America, must satisfactorily complete a secondary school diploma with an overall average of 80% in the Grade 12 programme of an accredited American high school. Alternatively, applicants may qualify for admission by completing one year of college-level work with standing acceptable to the University.

S.A.T. scores are reviewed on a selective basis only and are generally not required.

### C. General Policy on the Transfer of Course Credits

To facilitate programme completion by undergraduate students seeking to transfer course credit from an accredited university to McMaster, the University has implemented the following principles:
ADMISSION REQUIREMENTS

1. Acceptance of transfer credits from accredited universities shall be based on the recognition that, while learning experiences may differ in a variety of ways, their substance may be essentially equivalent in terms of their content and rigour. Insofar as possible, acceptance of transfer credit shall allow for the maximum recognition of previous learning experience in university-level courses.

2. Subject to degree, grade and programme requirements, any course offered for credit by an accredited university shall be accepted for credit by McMaster when there is an essential equivalency in course content. However, no course for which a grade of less than C-(60%) has been achieved will be considered.

D. Advanced Credit

As noted in sections (E), (F), (G), (L), (M), (N) and (O) below, advanced credit may be granted if you have completed work at another university or college, and you have met the minimum requirements prescribed. Advanced credit may shorten your degree programme at McMaster.

E. Credit in Courses by Special Assessment (Challenge Examinations)

If you have acquired knowledge at another type of institution or in a manner that makes assessment of your qualifications difficult, you may be permitted to seek degree credit through special assessment (Challenge for Credit).

Challenge for credit is not intended to give credit for skills or knowledge gained through high school, college or previous university instruction. The special assessment may include one or more of the following: written examinations, papers, essays, submissions of a substantial body of work, or portfolios, or laboratory tests. Credit can be granted only for those courses listed in the current McMaster calendar. Not all courses in all disciplines are available for challenge. Faculties and departments are free to determine which, if any, of their courses are open for special assessment. Challenges are assessed on a pass/fail basis. The fees for taking a course by special assessment are the same as regular course fees unless otherwise specified. The passing grade for a challenge appears on the transcript as COM (Complete) and is not used in computing averages or evaluating honours or scholarship standing, but is counted as a course attempt. Unsatisfactory attempts will be noted on the transcript.

Special Assessment is not available for a course taken previously and a course may be attempted only once by special assessment. Once you have registered for a course by such means (known as challenge exams) the registration may not be cancelled and you may not withdraw from the course.

Waivers of prerequisites only (ie. no degree credit) will be at the discretion of the department.

F. Transfers from Other Universities

When you transfer to McMaster University, you will normally receive credit for courses in which you have obtained at least a C (third-class standing) standing. Assessment of courses for transfer credit is subject to the guidelines of the individual Faculties. As a transfer student, you must also satisfy the Residence Requirements set out in the General Academic Regulations section of this Calendar. The University will not accord to you privileges which would not be granted by your own university.

Grades obtained in courses taken at another university will not be included in McMaster's Cumulative Average, and, therefore, cannot be used to raise your standing.

If you have been required to withdraw from another university and have fulfilled your period of suspension, you may apply for admission. However, you must present a letter of explanation and clarification concerning your past academic performance. You may also be asked to provide academic documentation for proof of further academic achievement which is both current and relevant.

Applicants presenting an incomplete academic record may be considered for an early conditional offer of admission.

G. Graduates Applying for a Second Bachelor's Degree

Admission is by selection. If you have a first degree, you may apply to take an Honours second degree in the same subject area or a second degree in another discipline. The requirements are set out in the General Academic Regulations section of this Calendar.

If you wish to enter a Second Bachelor's Degree in a subject area from the Faculty of Science, please note the additional regulations for such a programme in the Faculty of Science section, Second Bachelor's Degree Programmes.

H. Continuing Students

If you are a graduate of a McMaster degree programme and wish to become a continuing student, you do not need to apply through Admissions, but need to complete a Registration form.

As a continuing student with a non-McMaster degree, you need only apply formally through Admissions in the first instance. In subsequent sessions, only submission of a Registration form is necessary.

You will be expected to have at least a C (third-class standing) average, with no failures, in your final year’s work (or the equivalent, in the case of a degree taken in part-time studies), and academic records which are satisfactory to the Department and the Office of the Associate Dean (Studies) of the appropriate Faculty.

Acceptance as a Continuing Student carries no implications with respect to acceptance in the School of Graduate Studies. If you plan to proceed to a graduate degree you should apply directly to the specific department of your programme of interest.

I. Post-Degree Students

If you are a university graduate or a person with professional qualifications who wishes to take one or more graduate courses but not proceed to an advanced degree, you may apply to McMaster as a post-degree student. To enrol as a post-degree student, you must apply to the appropriate departments and have your admission and registration approved by the School of Graduate Studies for each session in which you wish to take courses. You will register and pay fees as an undergraduate.

Acceptance as a post-degree student carries no implications with respect to admission to advanced degrees, and even if such admission is granted subsequently, credit toward the advanced degree will not normally be granted for the work previously taken.

J. Readmission

If you are a former McMaster student who voluntarily withdrew from an undergraduate programme more than five years ago and you wish to return to your studies, you must apply for Readmission through the Office of the Registrar. Students from the School of Nursing must apply for Readmission regardless of time elapsed following voluntary withdrawal.

If you were registered within the last five years and you left the university in good academic standing, it is not necessary for you to apply for Readmission. Normally, you will be permitted to register in your previous programme or another programme for which you qualify. However, if you were formerly registered in the Faculty of Science you should see the heading Former Science Students in the Faculty of Science section of the Calendar.

K. Reinstatement

If you are ineligible to continue at the university (i.e. the result of your last grade report was "May Not Continue at University") and you wish to apply for Reinstatement, please contact the Office of the Registrar. You will be required to submit the following information along with your application:

- A summary of the relevant circumstances surrounding your academic situation during the last session attended.
- Reasons for re-instatement at this time.
- Reasons for selection of courses/programme indicated.
- Activities since last registered at the University, including all academic work.

Some Faculties may require a supplementary application form or letters of reference. Consult the appropriate Faculty section in this Calendar.

L. Admission from Ontario Colleges of Applied Arts and Technology

If you apply from an Ontario College of Applied Arts and Technology and have completed at least one year of work in a diploma programme and you have a GPA of 3.2 or better, you are invited to apply for admission to Social Sciences or Humanities. You may be admitted with a lower GPA if you have completed two or more years of a diploma programme.
To be eligible to apply to Business I, you must have completed a two or three year diploma with a GPA of 3.0 or better.

To be eligible to apply to Engineering I, you must have completed a technologist programme with a GPA of 2.5 or better. If you are applying to Engineering and have achieved a first-class honours standing in the last two years of a three-year technology programme in an Ontario College of Applied Arts and Technology, you will be considered for admission to the second level of a relevant Engineering programme.

To be eligible to apply to Natural Sciences I, you must have completed a technologist programme with a GPA of 3.2 or better.

Technician programmes are not recognized for credit toward admission in either Engineering I or Natural Sciences I.

To be eligible to apply to Kiniesiology I:

(i) A two year diploma programme must be completed with a GPA of 3.6 or better (OAC grades will be reviewed); OR
(ii) A three year diploma programme must be completed with a GPA of 3.5 or better.

In order to become eligible to apply for full-time study in Nursing at McMaster, you must achieve a cumulative average of at least 5- in all university degree credit courses taken (minimum of 12 units or equivalent required).

Generally speaking, advanced credit could be up to 30 units if you are a well-qualified graduate of a three-year programme, and at least six units if you have completed two years and performed well, provided the college work is appropriate to your chosen university programme. Credit beyond this may be given on an individual basis where the college and university programmes are in similar areas, and where your academic record warrants special consideration.

In the granting of credit, attention will be given to:

1. your performance in the college programme;
2. the duration of the college programme;
3. the programme taken at the college and the programme to which entry is sought;
4. your secondary school record.

Applicants presenting a strong academic record may be considered for an early conditional offer of admission.

Each case will be considered individually on its own merits for the programme desired.

M. Admission from Redeemer College

Redeemer College applicants must present, with an appropriate average, six Year 1 courses which are appropriate for the McMaster programme. Redeemer College courses in the 110-119 series are treated as equivalent to OACs for purposes of admission. To obtain advanced credit for completed Redeemer College, you are required to write an examination set by McMaster for each course in which credit is sought. (See Section E, Credit in Courses by Special Assessment.)

N. Admission from Grand River Polytechnic

McMaster University, along with four other universities, has entered into a partnership with Grand River Polytechnic Institute to offer university courses in the community of Six Nations. The courses offered are eligible for transfer credit at any of the institutions within the consortium.

O. Graduates of McMaster Certificate Programmes

If you have completed certificate programmes, you may be granted advanced credit up to maxima specified by Undergraduate Council. Faculties will take into account the subject matter of both the certificate and degree programmes. The credit will normally be applied against your elective courses. For more information concerning the amount of advanced credit granted, please refer to the Certificate and Diploma Programmes section of this Calendar.

P. Mature Students (Part-time Admission)

If you do not qualify for consideration under one of the above categories, McMaster will assess your eligibility as a mature student. You may be considered for limited admission to part-time study, provided all of the following conditions are satisfied:

(i) You are at least 21 years old, or will be, prior to the first day of classes for the session to which you apply.
(ii) You have not attended secondary school for at least two years.
(iii) You have not been enrolled in a college diploma programme within the last five years or have completed less than one year of college work.
(iv) You have never attended university.

The Faculty of Engineering does not admit mature students. The Faculty of Science requires satisfactory standing in the four area OAC Mathematics and Science requirements, as described in the Admission from Ontario Secondary Schools in this section. The Faculty of Business requires Grade 12 Advanced Mathematics or its equivalent.

If admitted, you may register as a mature student to take Level I courses, one course at a time. After the first six units, you have achieved a grade of B- or better, you may petition your Faculty to be allowed to take two courses at a time.

If you are taking at least 12 units, your performance will be reviewed as follows:

If you have a Cumulative Average (CA) of at least 3.5 with no failures, you will be allowed to register for full-time study.

If you have a CA of at least 3.0 with no more than six units of failure, you will be allowed to register in six units of study and will be reviewed again after completion of these six units (see Second Review below).

If you have failed more than six units, you may not continue at the University.

If your CA is less than 3.0, you may not continue at the University.

Second Review:

If you have a CA of at least 3.5, you will be allowed to register for full-time study.

If you have a CA of less than 3.5, you may not continue at the University.

Q. Nursing Occasional Category

If you are applying to McMaster University to take degree course work in order to become academically eligible to apply to the B.Sc.N. programme, you may apply to enrol in a maximum of 12 units of academic work per calendar year. You may take courses in any Faculty, subject to prerequisites and enrolment limits.

Once you have achieved academic eligibility for the B.Sc.N. programme, you may apply to that programme and participate in the regular admission process.

R. Enrichment Programme for Secondary School Students

If you are an outstanding secondary school student and wish to complete university level work while in your OAC year, you may apply for the Enrichment Programme. For more information contact the Office of the Registrar.

S. Letter of Permission - For Credit At Another University

If you are a student attending another university, you may apply to take McMaster courses for credit at your own institution. Please note, not all courses are available for credit outside McMaster and some are subject to enrolment limits.

Students must initially apply through OUAC and send their Letter of Permission directly to McMaster. Subsequent requests to take courses on a Letter of Permission do not require an application. An updated Letter of Permission from their home institution is required for each new session.

T. Listener

If you are still uncertain about degree courses, you may register as a listener in a degree course at a reduced rate, but not for credit. You attend all classes, but do not complete any of the essays, tests and other formal requirements. You do not receive a grade for courses that you attend. Some students have eased their way into degree study with this option, subsequently enrolling in further courses for credit. Please note not all courses are available to Listeners.

For more information, please contact the Centre for Continuing Education, Commons Building, Room 116, McMaster University, Hamilton, Ontario, L8S 4K1 (905) 525-5140, ext. 26361. Written permission to attend must be obtained from the instructor delivering the course. An I.D. card cannot be issued until permission has been obtained.
APPLICATION PROCEDURES

1. Determine the appropriate application form to use when applying for admission. (See charts below.)
2. Determine application deadline. (See Deadlines on following page.)
3. Refer to the Admission Requirements and specific Faculty sections of this Calendar for further information.

Use the OUAC 101 Application If:
- You are now taking one or more Ontario Academic Courses (OACs) in day school and wish to enter a Level 1 degree programme as a full-time student.
- Please obtain the OUAC 101 form from your secondary school guidance office and follow the instructions therein. You will receive an acknowledgement mailing from McMaster's Admissions Office once your application has been received.

Use the OUAC 105D Application If:
- You are not currently taking one or more Ontario Academic Courses (OACs) in day school, have not previously attended McMaster and wish to enter Level 1 or above of an undergraduate degree programme as a full-time student.
- You are currently registered at another university and wish to transfer to McMaster for full-time studies.
- You have previously attended McMaster, but you have since registered at another university and/or have completed a college diploma and now wish to enter an undergraduate degree programme as a full-time student.
- You have completed a degree at a university other than McMaster and wish to attend McMaster full-time to take courses as a Continuing student.
- You have completed a degree at a university other than McMaster and wish to pursue a second undergraduate degree on a full-time basis.
- You are currently registered at a university other than McMaster and wish to pursue a second undergraduate degree on a full-time basis.
- Please obtain the OUAC 105D form from the Admissions Office of any Ontario university or from the Ontario Universities' Application Centre, 850 Woodlawn Road West, Guelph, Ontario, Canada, N1H 7P4, and follow the instructions therein.

Note: You must provide McMaster with official transcripts of marks and/or certificates from all secondary schools or post-secondary institutions you have attended.

Use the OUAC 105D Application If:
- You are currently taking one or more Ontario Academic Courses (OACs) in day school and wish to enter a Level 1 degree programme as a full-time student.
- You have previously attended McMaster, but you have since registered at another university or have completed a college diploma and now wish to enter an undergraduate degree programme as a full-time student.
- You have completed a degree at a university other than McMaster and wish to attend McMaster full-time to take courses as a Continuing student.
- You have completed a degree at a university other than McMaster and wish to attend McMaster full-time to take courses on Letter of Permission for Credit at Another University.

Please obtain the OUAC 105D form from the Admissions Office of any Ontario university or from the Ontario Universities' Application Centre, 850 Woodlawn Road West, Guelph, Ontario, Canada, N1H 7P4, and follow the instructions therein.

Note: You must provide McMaster with official transcripts of marks and/or certificates from all secondary schools or post-secondary institutions you have attended.

Use the McMaster University Returning Student Application for the following categories:
- Readmission: You are a former McMaster student who voluntarily withdrew from an undergraduate programme more than 5 years ago. (Former Nursing students must apply regardless of the amount of time that has elapsed.)
- Reinstatement: You are a former McMaster student who was previously ineligible to continue studies at McMaster University.
- You are a McMaster graduate or potential graduate and wish to pursue a second undergraduate degree.
- Providing you have not attended another university nor received a college diploma since last registered at McMaster.

Use the McMaster University Part-time Degree Application If:
- You are currently registered at another university and wish to transfer to McMaster for part-time studies.
- You have not been previously registered at McMaster and wish to pursue an undergraduate degree on a part-time basis.
- You have completed a degree at a university other than McMaster and wish to attend McMaster on a part-time basis to take courses as a Continuing student.
- You are currently registered at a university other than McMaster and wish to attend McMaster on a part-time basis to take courses on Letter of Permission for Credit at Another University.

Use the McMaster University Post-Degree Studies Application If:
- You wish to register as a post-degree student.

Please obtain the Post-Degree Application form from the School of Graduate Studies, Office of the Graduate Studies, Togo Saimon Hall, Room 111, McMaster University, Hamilton, Ontario, L8S 4M2 and then use this form to apply to the appropriate academic department(s).

Note: Your admission and registration must be approved by the School of Graduate Studies for each session in which you wish to take courses. If you are a graduate from a university other than McMaster, you must provide McMaster with official transcripts of marks from all post-secondary institutions you have attended.
DEADLINES

A complete application includes: an application form, relevant transcripts, and all other documentation stipulated in the calendar (Admission Requirements and specific Faculty sections) or in letters from the appropriate Faculty or from the Registrar's Office.

Since the language of instruction at McMaster is English, we would prefer all documentation to be in the English Language. However, documentation in Canada's other official language, French, will be accepted.

All Level I programmes have enrolment limits and may become full prior to published deadlines. The University reserves the right not to accept applications submitted after a programme is filled. You are advised to submit your application well in advance of the deadlines given below.

FALL/WINTER SESSION (SEPTEMBER ENTRY)

Undergraduate programmes which are not specified below: July 15

- Limited Enrolment Programmes
  - Above Level I ................................................. February 1
- International Applications .................................. May 1
- International Documentation ................................... June 1
- Domestic Applications (excluding CEGEP) .................. July 15
- Domestic Documentation (excluding CEGEP) ............... July 15
- CEGEP Applications (unless stated below) ............... March 1
- Arts & Science Applications ................................ February 28
  - Supplementary Applications .................. March 28
- Biochemistry (Co-op) ........................................ February 1
- Biology and Pharmacology (Co-op) .......................... February 1
- Gerontology Applications ................................... March 31
  - Supplementary Applications .................. May 15
- Kinesiology ................................................... May 15
- Labour Studies .............................................. March 31
- Medicine ...................................................... November 1
- Midwifery
  - Applications ................................................. February 1
  - Official Transcripts ........................................ February 1
  - Supplementary Applications* ...................... February 1
- Nursing
  - OAC ....................................................... May 1
  - Nurse Practitioner ........................................ February 1
  - NP Supplementary Application* ...................... February 1
  - Transfers from other university Nursing
    Programmes ............................................... June 30
  - All Other ................................................. February 15
  - Supplementary Applications* ...................... February 15
- Occupational Therapy/Physiotherapy ................... December 1
  - Official Transcripts ...................................... January 10
  - Supplementary Applications** ..................... January 24
- Social Work
  - McMaster Applicants .................................. March 1
  - OUAC ..................................................... December 1
  - Supplementary Applications*** ..................... March 1
- Women's Studies ........................................... April 15

- Only university transfer and Second Degree applicants need to complete the supplementary application forms.
  - Please contact the Ontario Universities’ Application Centre for a Supplementary Application
  - Only non OAC students need to complete the supplementary applications. Please contact the Ontario Universities’ Application Centre for a Supplementary Application.
  - Please contact the Office of the Registrar to obtain an application.
  - Please contact the School of Social Work for supplementary applications.

FALL/WINTER SESSION (JANUARY ENTRY)

- All eligible programmes .................................... November 15
  - Documentation Deadline ................................. December 1

SPRING/SUMMER SESSION (MAY or JUNE ENTRY)

- May Entry (Term 1 or 3) .................................. April 1
  - Documentation Deadline ................................. April 1
- June Entry (Term 2) ....................................... May 15
  - Documentation Deadline ................................. May 15

Deadlines for Reinstatement or Readmission

Application deadlines are as indicated above for the corresponding desired academic session. (Nursing deadline is February 15 for September entry.)

Retention of Documents

All documentation submitted in support of your application for admission becomes the property of the University and is not returnable.

If you are not accepted, or you fail to enrol following acceptance, your documentation will be destroyed at the end of the admissions cycle. If you reapply, you must submit any new academic information in addition to the documentation submitted previously.

Academic Counselling for Those Offered Admission

If you are offered full-time admission to Level I, you will be asked to confirm that you have accepted the offer of admission and will attend the University.

Your admission package will include a Registration Kit with information about the University, academic counselling and registration procedures.

Your Faculty may also arrange a visit to the University so you may meet with a Faculty advisor to set up your programme. Although attendance at the summer counselling and registration sessions is not compulsory, you are strongly advised to participate. If you cannot attend one of these sessions, counselling will be provided at September registration.

If you are offered admission above Level I, you may arrange for academic counselling with the Office of the Associate Dean (Studies) of the Faculty offering the programme, or the Office of the Director of the programme.

Enquiries

Please direct your enquiries about Application Procedures to:

OFFICE OF THE REGISTRAR
Gilmour Hall, Room 108
McMaster University
Hamilton, Ontario, L8S 4L8
Telephone: (905) 525-4600
E-mail: macadmit@mcmaster.ca
GENERAL ACADEMIC REGULATIONS

The regulations which follow are the general regulations of the University. You should read both these general regulations and your Faculty regulations which may be more specific. They appear in the Faculty sections of this Calendar.

1. UNIVERSITY REGULATIONS

Residence Requirements

While most students will complete all their undergraduate work at McMaster University, the minimum requirements set out below apply to students who take part of their work at other institutions. In order to obtain any four- or five-level, first undergraduate degree, you must complete at least two of the levels (approximately 60 units of work) beyond Level I, including the final level, at McMaster.

To obtain a three-level, first undergraduate degree, you may satisfy the residence requirements either:

1. by completing the final level and at least one other level (a minimum of approximately 60 units of work) at McMaster University;

or

2. by completing the final level (approximately 30 units of work) at McMaster University, including at least 18 units of programme-specific courses.

The work used to satisfy the residence requirements must be completed at McMaster University; work taken at another university on a Letter of Permission will not count toward the minimum residence requirements.

All the work for a second bachelor's degree must be completed at McMaster University.

Registration

The purpose of registration is to record officially your selection of programme and courses. This is done before each session, and information on how to register will be sent to eligible students. Counselling is available to assist you in course selections.

- Approval of Programmes: You are responsible to ensure that your registration documents are complete and accurate. Your programme and course selections — and deletions — must be approved by the Office of the Associate Dean (Studies) of your Faculty. If you try to register in a programme or courses from which you are restricted, your registration will not be approved.

- Selection of Courses: Before you select the courses you wish to take, please read the requirements for your programme in the appropriate Faculty sections of this Calendar. If you fail to meet the programme requirements, you will not be eligible to graduate.

Select the courses required for your programme; then select your electives. Ensure that you have completed the courses which are listed as prerequisites and have completed or chosen courses that are listed as corequisites. If you have not passed the prerequisite courses, you will not be able to take the course selected.

- Limit on Level I Courses: In most Faculties, credit may be obtained in no more than 42 units of Level I courses in a three-level programme, and in no more than 48 units in a four-level programme.

- Eligibility for Awards: (See Section 5 in this section and Undergraduate Academic Awards section for more information.)

- Overload Work: If you wish to take more than the normal number of units prescribed for a Level, you may do so only with the permission of the Office of the Associate Dean (Studies) of your Faculty. Normally, a Sessional Average of at least 7.0 in the immediately preceding review period will be required if an overload is to be permitted. Additional academic fees will be assessed for overload work. (See Financial Information section.)

- Repetition of Courses: To repeat a course for which credit has been obtained, you need approval of the Office of the Associate Dean (Studies). There is no limit on the number of repetitions of a failed course. The grades for all attempts appear on the transcript and enter into the computation of the Cumulative Average. However, only one successful attempt will enter into the computation of credit earned towards your degree.

- Auditing Courses: If you do not wish to have credit for a course, you may, with the approval of the Chair of the Department and the Office of the Associate Dean (Studies), audit the course. You must satisfy the prerequisite for the course, but will not complete assignments nor write the final examinations. You will not be permitted to register for credit in the course after the registration deadline for the session has passed.

- Letters of Permission: If you wish to attend another university to take courses which will carry credit towards a McMaster degree, you must obtain permission ahead of time. To do this you must seek a Letter of Permission from the Office of the Associate Dean (Studies) and pay the appropriate fee. Please take note of any conditions that might apply, including the requirement of a grade of at least C- for transfer credit. You should note that the grades obtained in courses taken at another university will not be included in the Cumulative Average. Full-time students taking courses on a Letter of Permission must continue to carry a full load at McMaster during the Fall/Winter session if they wish to be considered for Undergraduate In-course Academic Awards; i.e. courses taken on a Letter of Permission do not count toward your load for purposes of academic awards.

- Changes to Registration: You may change the courses you have selected until approximately the second week of the term. (Please see the tables in the Sessional Dates section for the relevant dates for this academic year.) You may add new courses, or drop courses which you originally selected. After the above-mentioned period, you may drop a class until the last day to withdraw without failure by default. Any course dropped will be shown on your transcript with the notation CAN (Cancelled). After this date, you will remain registered in the course whether or not you attend. Your transcript will show a grade of F for any course not successfully completed.

- Withdrawal from the University: If you wish to withdraw from the University, you must consult the appropriate Office of the Associate Dean (Studies). Your student identity card must be surrendered to the Office of the Associate Dean (Studies). Your record in the courses being taken will be handled as outlined above in Changes to Registration.

- Transfer of Credit between Faculties: Transfer of credit between Faculties is handled by the Office of the Associate Deans (Studies) to which you wish to transfer. It is possible that full credit may not be given at the time of transfer between Faculties and additional courses may need to be taken.
Minimum Requirements to Continue at the University
All students must maintain a CA of at least 3.5 at each review to continue at the University. Under certain circumstances, as described below, students may be allowed to continue on academic probation for one reviewing period with a CA of 3.0 to 3.4. If your CA is less than 3.0, you may not continue at the University.

Level I Registration and Academic Standing Requirements
When you are admitted to McMaster University for a first degree, you will register in one of the following Level I programmes: Arts and Science, Business, Engineering, Humanities, Kinesiology, Midwifery, Music, Natural Sciences, Nursing, or Social Sciences.

If you enter the University without Advanced Standing being granted, you must normally attempt a full load of Level I work before proceeding to the work of higher levels.

If you are interested in part-time study, the Office of the Associate Dean (Studies) has the discretion to permit you to take some of the work in the higher levels prior to having attempted the full load of Level I.

Decisions will be made on an individual basis, according to the special circumstances that apply in the particular case.

At any review during Level I before you complete the Level I work, as in the case of a part-time student, you must attain a CA of at least 3.5 to continue at the University in good standing. If you attain a CA of 3.0 to 3.4 you may remain at the University for one reviewing period, but will be placed on academic probation. You may be on academic probation only once during your University career. If your CA is less than 3.0 you may not continue at the University.

At the review when you complete the Level I work, if you attain a CA of at least 3.0 and have not previously been on academic probation, but fail to meet the admission requirements of any programme, you may continue at the University for one additional reviewing period on academic probation. You will be registered in your original Faculty, and will be classified as a Level I irregular student if your work may only qualify you to be considered for admission to a programme in another Faculty. If, at the end of the next reviewing period, you again do not qualify for admission to a programme, you may not continue at the University. If your CA is less than 3.0 you may not continue at the University.

Students in Arts & Science should refer to the Arts & Science Programme regulations listed below.

Nursing and Midwifery I students should refer to the programme regulations listed in the Faculty of Health Sciences section in this Calendar.

Minimum Requirements for Entering and Continuing in a Programme Beyond Level I
Admission to the programmes beyond Level I is based on performance in Level I. You must meet both the minimum requirements to continue at the University, as described above, and programme-specific requirements of each Faculty, as described in this Calendar.

> ARTS & SCIENCE PROGRAMME

**B. Arts Sc. (Honours) and B. Arts Sc. Programmes:** You must have a CA of at least 6.0 to continue in the programme. If your CA is from 5.5 to 5.9, you may remain in the programme, but will be placed on programme probation for one reviewing period. You may be on programme probation only once.

If your CA is 3.5 to 5.4, you must transfer to another programme for which you qualify, or register in the Arts & Science programme as an irregular student for one reviewing period. During that period you cannot take Arts & Science programme courses. At the end of that period you may apply for readmission to the Arts & Science programme.
If your CA is 3.0 to 3.4, you will be placed on academic probation. You may continue in the programme for one reviewing period as an irregular student but cannot take Arts & Science programme courses. The purpose of this period is to prepare yourself for a programme outside the Arts & Science programme. You may be on academic probation only once. (Potential graduands may not continue at the University.)

If your CA is less than 3.0 you may not continue at the University.

SCHOOL OF BUSINESS

Level II
To be considered for Commerce Level II, you must have a CA of at least 5.0 on your Business I courses with no failures. When calculating your CA and checking for failures, only first attempts at Business I courses are considered. If you are not admitted to Commerce II at the end of Business I, you have the following options available to you:

- If your CA is 3.5 or greater, although you may not continue in Commerce, you are still in good standing at the University. You may continue at the University in a programme outside the School of Business or as an irregular student in Business. To continue in a programme outside the School of Business you must apply for admission to that programme through the Office of the Associate Dean (Studies) appropriate for that programme. You should consult that office for more details. If you are not admitted to another Faculty you may register in the School of Business as an irregular student for one reviewing period. During that period you cannot take Commerce courses and at the end of it you will not be eligible for consideration for admittance to Commerce II or readmittance to Business I. The purpose of your registration as an irregular student is to make yourself eligible for admission to a programme outside the School of Business.

- If you have a CA of at least 3.0 but less than 3.5, you will be on academic probation and may continue at the University for one reviewing period. While on academic probation, you will be registered at the School of Business as an irregular student but cannot take Commerce courses. At the end of your probation period you will not be eligible for consideration for admittance to Commerce II or readmittance to Business I. The purpose of the probation period is to make yourself eligible for a programme outside the School of Business.

- If you have a CA which is less than 3.0 at the end of Business I you may not continue at the University.

Levels III and IV
At the end of Level II, your CA determines in which programme you may continue. In Levels III and IV, Commerce students register in either the Commerce programme or the Honours Commerce programme. A higher CA is required to register in the Honours programme. The School of Business introduced changes to its Commerce programmes in the Fall of 1994. Those changes were applied to Level III beginning in September, 1996 and will be applied to Level IV beginning in September, 1997.

To enter Level III or continue in Level IV of the Honours Commerce programme, you must have a CA of at least 6.0. Those who complete Level III of the Honours programme with a CA of at least 5.5 but less than 6.0 may continue in the Honours programme in Level IV on programme probation. If your CA is less than 5.5, you may transfer to the Commerce programme. You must have a CA of at least 4.0 to continue in the Commerce programme. If your CA is at least 3.5 (with no more than six units of failure), you are permitted to continue in Commerce on programme probation for one reviewing period. If your CA is less than 3.5, you may not continue at the University.

If you did not qualify for the Honours programme at the end of Level II, and your CA is at least 6.0 at the end of Level III (with no more than six units of failures), you may enter Level IV of the Honours programme. Check with the Academic Programmes Office in the School of Business for information.

FACULTY OF ENGINEERING

- B.Eng. Programmes: To be admitted to a Level II Engineering programme, you must have completed all Engineering I programme requirements and have obtained a minimum CA of 4.0.

In Level II and above, you must maintain a CA of at least 4.0, with no failures, to continue in an Engineering programme. If your CA is at least 4.0 and includes a failure since your last review, and you have not previously been placed on probation, you will be placed on programme probation. If you have a CA of 3.0 to 3.9, you may not continue in the Faculty. If your CA is less than 3.0, you may not continue at the University.

FACULTY OF HEALTH SCIENCES

- For specific minimum requirements, please see the descriptions for the individual programmes within the Faculty of Health Sciences section in this Calendar.

FACULTIES OF HUMANITIES and SOCIAL SCIENCES

- Honours Programmes: B.A./B.S.W.; B.S.W.: You must have a CA of at least 6.0 to continue in an Honours programme. If your CA is 5.5 to 5.9, you may remain in the Honours programme, but will be placed on programme probation for one reviewing period. You may be on programme probation only once. If your CA is 3.0 to 5.4, you must transfer to another programme for which you qualify. If your CA is less than 3.0, you may not continue at the University.

- B.A. Major (Psychology); B.Kin. Programmes: You must have a CA of at least 4.0 to continue in a four-level Major (Psychology) or a B.Kin. programme. If your CA is 3.5 to 3.9, you may remain in the programme, but will be placed on programme probation for one reviewing period. You may be on programme probation only once. If your CA is 3.0 to 3.4, you must transfer to another programme for which you qualify. If your CA is less than 3.0, you may not continue at the University.

- B.A. Programmes: You must have a CA of at least 3.5 to continue in, or graduate from, a three-level B.A. programme. If your CA is 3.0 to 3.4, you may remain in the programme, but will be placed on academic probation. You may be on academic probation only once. If your CA is less than 3.0, you may not continue at the University.

FACULTY OF SCIENCE

- Honours B.Sc. Programmes: If you entered an Honours Science programme prior to September 1996, you must have a CA of at least 6.0 to continue in an Honours B.Sc. programme. If your CA is 5.0 to 5.9, you may remain in the Honours B.Sc. programme, but will be placed on programme probation. You may be on programme probation for only two reviewing periods. If your CA is 3.0 to 4.9, you must transfer to another programme for which you qualify. If your CA falls below 3.0 you may not continue at the University.

If you enter an Honours Science programme in September 1996 or later, you must have a CA of at least 6.0 to continue in an Honours B.Sc. programme. If your CA is 5.5 to 5.9, you may remain in the Honours B.Sc. programme, but will be placed on programme probation. You may be on programme probation for only one reviewing period. If your CA is 3.0 to 5.4, you must transfer to another programme for which you qualify. If your CA falls below 3.0 you may not continue at the University.

- B.Sc. Programmes: You must have a CA of at least 3.5 to continue in a three-level B.Sc. programme. If your CA is 3.0 to 3.4, you may continue on academic probation for one reviewing period. You may be on academic probation only once. If your CA is less than 3.0, you may not continue at the University.

Transfer Between Programmes
If you wish to transfer from one programme to another, you should discuss the possibility with the appropriate Office of the Associate Dean (Studies) to which you wish to transfer. It is possible that full credit may not be given at the time of transfer between Faculties and additional courses may need to be taken.
Minors

If you are enrolled in a four- or five-level programme, you are eligible to obtain a Minor in another subject area, provided that the subject area is not integral to the requirements of your degree programme. You should check the calendar requirements statement for your programme in the case of Science programmes, or check with your Faculty in the case of other programmes, for subject areas that are excluded from consideration as a Minor in your programme.

If you wish to receive a Minor, you should check the information under the heading Minor in the appropriate department's listing. McMaster also offers Interdisciplinary Minors in Health and Society, Indigenous Studies, Jewish Studies and Peace Studies, which are not connected to a specific Faculty or Department. (See Interdisciplinary Minors and Thematic Areas section.) The University also has three Theme Schools — International Justice and Human Rights, New Materials and Their Impact on Society and Science, Technology, and Public Policy — which give you, upon successful completion of one of the programmes, a Minor in that area of study. (See Theme Schools section.) You will be responsible for ensuring that you register in the required Minor courses. Normally, you must complete a minimum of 24 units in the Minor subject, of which no more than six can be at Level I. At least 18 units must be completed at McMaster.

In the final year of your programme, when you file your Graduation Information Card, you must indicate your desire to receive a Minor in the chosen subject. The Faculty Reviewing Committee will verify that the requirements have been met. If you are successful, your transcript will contain a designation for Minor in that area. See Sessional Dates section for deadlines.

You may apply for only one Minor. Minors cannot be revoked once approved, nor applied for retroactively. (See Note 4 under Second Bachelor's Degree Programmes.)

Second Bachelor's Degree Programmes

For admission to a second undergraduate degree programme you must hold a first undergraduate degree whether it be a three-level, four-level or five-level degree. The minimum admission requirements and programme of study for the second degree depend on the subject areas of the two degrees.

• Honours Degree following a Three-Level Degree in the Same Subject: For entry, a Cumulative Average of at least 6.0 in the first degree programme is required. If admitted, you must take at least 30 units beyond the first degree, including all Honours requirements specified for the programme. In some Faculties, this includes a minimum number of units of work in the discipline.

• B.A. or B.Sc. in Another Subject: For entry, you must meet the admission requirements for the programme. If admitted, you must complete at least 30 units beyond the first degree, including all programme requirements. In some Faculties, this includes a minimum number of units of work in the discipline.

• Honours B.A. or B.Sc. in Another Subject: For entry, you must meet the admission requirements for the programme and have a Cumulative Average of at least 6.0. If admitted, you must complete at least 60 units beyond the first degree, including all Honours requirements specified for the programme.

• B.Eng.: For entry, you must meet the admission requirements for the programme. If admitted, you must complete at least 60 units beyond the first degree including all programme requirements. (Admission to a second B.Eng. degree is not possible if your first degree is in Engineering.)

Notes

1. All work for the second degree must be completed at McMaster University.

2. Some additional regulations are applied by the Faculty of Science involving cognate disciplines, e.g. Mathematics and Statistics. These are described in the Faculty of Science section of this Calendar.

3. A second degree is not available in all subject areas. See individual Faculty regulations for further information.

4. Minors will not be revoked to permit later registration in a three-level second degree in the same subject. Students may return for a second degree in a subject in which they have obtained a Minor, but only at the Honours level. (See Minors above.)

5. Extra courses taken while you are registered in a first degree programme, or courses completed as a Continuing Student, may, with the approval of the Faculty, be applied to the second degree programme.

6. You must meet the same standards for continuation and graduation as are applied to students registered in a first degree programme.

7. Credit from the first two degrees cannot be applied to a third undergraduate degree. To obtain a third undergraduate degree you must take the complete programme, i.e. approximately 90 units for a three-level degree and approximately 120 units for a four-level degree.

Deans' Honour List

Each year outstanding students with a minimum Sessional Average of 9.5 are named to the Deans' Honour List. Full-time students must have completed a full programme load in a Fall/Winter session. The Associate Deans (Studies) may exercise discretion where the full load for a particular level of a programme is not 30 units. Part-time students will be assessed at the reviewing periods where 30, 60, 90 and 120 units have been completed (based on the units completed since your last assessment).

3. EXAMINATIONS

The Office of the Registrar schedules and conducts most final examinations and December mid-year examinations for full-year Level I courses. See the Sessional Dates section in this Calendar. Examinations organized by the Office of the Registrar during these dates may be scheduled in the morning, afternoon, or evening, Monday through Saturday.

Other instructor-scheduled tests and examinations may be held throughout each session but may not be scheduled during the last five days of the terms of the Fall/Winter session, or between the last day of classes for the term and the first day of the examination schedule, except as approved by the Undergraduate Council.

Assignments worth more than ten percent of a final course grade cannot be assigned during this ban period, and take-home examinations conducted by the Undergraduate Council. Assignments worth more than ten percent of a final course grade cannot be due during the ban period. Tests that are exempt from the ban must:

a) be a part of a process of continuous or periodic assessment through the term; and

b) be held in the normally scheduled class or lab slot; and

c) be worth no more than ten percent of the final course grade.

See the Sessional Dates section of this Calendar.

Examinations Conducted by the Office of the Registrar

McMaster student photo identification cards are required at all examinations. If you arrive at an examination without a proper I.D. card you will be required to have a substitute card made before being seated. There is a fee for this service. No additional time is given to compensate for examination time missed.

You may only use books, papers or instruments during an examination if they are specifically prescribed on the examination paper.

You may leave an examination only after the first 45 minutes have elapsed.

If you become ill during an examination, you may be excused by a presider.
If you miss or leave an examination for medical reasons you must submit a medical certificate from Student Health Services, or a doctor, to the Office of the Associate Dean (Studies) of your Faculty before the end of the examination schedule. The certificate must indicate that you were medically unfit to write the examination.

If you are late for an examination, report immediately to the presider in your examination location or to the Examinations Section of the Office of the Registrar.

If you miss or leave an examination for any other reason, report immediately to the Examinations Section of the Office of the Registrar. You will be advised whether you can write your examination before the end of the examination schedule, or whether you must apply for special consideration by submitting documentation to the Office of the Associate Dean (Studies) of your Faculty.

Special examination arrangements may be made upon application to the Examinations Section of the Office of the Registrar in some circumstances, such as:

- a conflict with religious obligations
- a conflict between two Registrar-scheduled examinations
- a schedule with three examinations in one calendar day or three consecutive examinations

Application must be made at least 10 working days before the scheduled examination date and acceptable documentation must be supplied.

Students with disabilities are required to inform the Office for Ability and Access of accommodation needs for examinations at least one month before the start of the examination schedule. This allows sufficient time to verify and arrange appropriate accommodation. See Academic Facilities, Student Services and Organizations—Office for Ability and Access section of this Calendar.

Examinations are not rescheduled for purposes of travel. You must arrange to be present at the examination between two Registrar-scheduled examinations.

Deferred Examinations

A deferred examination may be granted by your Faculty Reviewing Committee if you fail to write a final examination for certifiable medical or compassionate reasons. Documentation must be submitted to the Associate Dean (Studies) of your Faculty before the end of the examination schedule.

Deferred examinations must be written in the examination session which follows the one for which the privilege is granted (e.g. in the April session for an examination missed in December). The decision to grant you a deferred examination will be reported on your grade report. You must confirm your intent to write by submitting an application, accompanied by applicable fees, to the Examinations Section of the Office of the Registrar.

The deferred examination fee for 1996-97 is $50.00 per examination. An additional fee of $50.00 is payable for each examination written at an off-campus site.

Examination and confirmation deadline dates appear in the Sessional Dates section of this Calendar.

4. GRADING SYSTEM

The method for determining your final grade will be given in the course outline. Unless otherwise specified in a course outline, course results determined on a percentage scale will be converted to an official letter grade, as indicated in the equivalent percentage scale which follows. The results of all courses attempted will appear on your transcript as letter grades.

Before submitting a failing grade, your instructor reassesses whatever examples of your work are available.

To satisfy prerequisite requirements, a grade of at least D- is required, unless otherwise stated.

You retain credit for all courses with grades of D- or better, except in those programmes for which a higher grade is specified in the programme regulations.

Since September 1982, the grading scale has been:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Equivalent Grade Point</th>
<th>Equivalent Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>12</td>
<td>90-100</td>
</tr>
<tr>
<td>A</td>
<td>11</td>
<td>85-89</td>
</tr>
<tr>
<td>A-</td>
<td>10</td>
<td>80-84</td>
</tr>
<tr>
<td>B+</td>
<td>9</td>
<td>77-79</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>73-76</td>
</tr>
<tr>
<td>B-</td>
<td>7</td>
<td>70-72</td>
</tr>
<tr>
<td>B+</td>
<td>6</td>
<td>67-69</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>63-66</td>
</tr>
<tr>
<td>C-</td>
<td>4</td>
<td>60-62</td>
</tr>
<tr>
<td>D+</td>
<td>3</td>
<td>57-59</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>53-56</td>
</tr>
<tr>
<td>D-</td>
<td>1</td>
<td>50-52</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>0-49 — Failure</td>
</tr>
</tbody>
</table>

Example of a Weighted Average Calculation, using the grade points and units for courses completed:

<table>
<thead>
<tr>
<th>Course Grade</th>
<th>Grade Points</th>
<th>Course Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-</td>
<td>10 x 6</td>
<td>= 60</td>
</tr>
<tr>
<td>C+</td>
<td>6 x 3</td>
<td>= 18</td>
</tr>
<tr>
<td>B</td>
<td>8 x 6</td>
<td>= 48</td>
</tr>
<tr>
<td>B+</td>
<td>9 x 3</td>
<td>= 27</td>
</tr>
</tbody>
</table>

Total: 18 / 153 = 8.5

5. UNDERGRADUATE ACADEMIC AWARDS

To retain Entrance Scholarships and to qualify for major In-Course Awards, full-time students must complete, during the Fall/Winter session, a full load of course units, as defined by the programme and level. A Full-load Average will be computed to determine your eligibility for these awards.

Terms and conditions of awards for full-time and part-time studies are defined in the section Undergraduate Academic Awards section.

6. GRADUATION

Graduation "With Distinction" standing may be awarded if a minimum CA of 9.5 is achieved.

The following Cumulative Averages are required to graduate:

- B.A. — 3.5
- B.A. (Honours) — 5.0
- B.A. (Major) — 4.0
- B.A./B.S.W. and B.B.S.W. — 6.0
- B.Arts Sc. and B.Arts Sc., (Honours) — 5.0
- B.Com. — 4.0
- B.Com. (Honours) — 5.0
- B.Kin. — 4.0
- B.Mus. — 5.0
- B.Sc. — 3.5
- B.Sc. (Honours) — 5.0
- B.Tech. — 3.5
Please see the graduation regulations for individual Health Sciences programmes in the Faculty of Health Sciences section. If, at the time of graduation, you fail to meet the requirements for an Honours degree, you may seek to transfer to another programme.

If you are registered in Level III of an Honours or Major programme and wish to transfer to a three-level degree programme to be eligible for graduation at the next Convocation, you must apply to the appropriate Office of the Associate Dean (Studies) by March 1 for Spring Convocation, and by September 1 for Autumn Convocation. If permission is granted, you must go to the Office of the Registrar and complete a Graduation Information Card. During the session in which you expect to complete your graduation requirements, you must file a Graduation Information Card in the Office of the Registrar by mid-February for Spring Convocation and by mid-July for Autumn Convocation. It permission is granted, you must go to the Office of the Registrar and complete a Graduation Information Card.

If you wish to apply to receive a Minor in addition to your major programme of studies, you must indicate this on your Graduation Information Card. You must take the degree at the Convocation immediately following the completion of the appropriate degree work.

7. RECORDS POLICY

Transcripts

Transcripts, which summarize your academic career at McMaster University, are available from the Office of the Registrar.

Transcripts
Office of the Registrar
Room 108, Gilmour Hall
McMaster University
L8S 4L8
Phone: (905) 525-4600
FAX: (905) 527-1105

Requests for transcripts may be made in person, by mail, or by fax. To protect the confidentiality of student records, all requests must be signed by the student whose transcript is being requested.

The transcript fee for 1996-97 is $7.00 per copy. An additional charge of $5.00 applies to transcripts which are faxed from McMaster ($10.00 outside Canada). Fees are due at the time that transcripts are ordered. All mail or fax requests must include either a cheque, money order, or credit card number with the expiry date and name of card owner (Visa and MasterCard only). Requests are filled promptly on receipt of payment. Official transcripts are usually delivered to other Ontario universities by courier and elsewhere by Canada Post. To avoid disappointment, please allow at least five business days for processing and delivery time. Transcripts will not be issued if you have outstanding accounts at the University.

Retention Policy

When you apply for admission to McMaster University and register in programmes at the University, you accept the University's right to collect pertinent personal information. The information is needed to assess your qualifications for entry, establish records of performance in programmes and courses, provide the bases for awards and governmental funding, and to assist the University in the academic and financial administration of its affairs.

All documentation that you submit to the University in support of applications for admission, residence accommodation or financial awards, or any appeals or petitions, becomes the property of the University. You are notified of your academic performance in courses by grade reports provided by the Office of the Registrar. All information needed to produce official transcripts is maintained permanently.

If you are not accepted, or if you fail to enrol following acceptance, your documentation is normally destroyed at the end of each admissions cycle. If you reapply, you must resubmit any previous documentation and any additional academic information. Supporting documentation relevant to your admission to, and performance at, the University will normally be eliminated seven years after the end of your enrolment at the University (regardless of whether you graduate).
SENATE POLICY STATEMENTS

The University has defined its expectations of students in both the academic and non-academic life of the University community, and developed procedures to ensure that all members of the community receive equitable treatment. Each year at registration, you will receive the document Senate Policy Statements which contains the following:

- Statement on Academic Ethics
- The University's Statement on Human Rights
- Sexual Harassment Policy
- Anti-Discrimination Policy
- Code of Conduct
- Student Appeal Procedures
- General Regulations for McMaster University Library
- Policy Statement on Applicants and Students with Disabilities
- Policy on Undergraduate Student Access to Final Examinations

The following provides a brief summary of the major policies contained in the Senate Policy Statements. Complete versions of the policies may be obtained from the Senate Secretariat, Room 104, Gilmour Hall.

Academic Ethics

The Senate Statement on Academic Ethics explains the expectations the University has of its scholars. Some Departments and instructors have also developed more specific rules and regulations designed to maintain scholarly integrity. It is the responsibility of each instructor to make students aware of these expectations.

It is the responsibility of each student to adhere to the Senate Statement on Academic Ethics (and to any additional rules and regulations developed by Departments and Instructors), not only in course work, tests and examinations, but also in other scholarly activities such as laboratory research, and the use of computing and library resources.

Breaches of academic ethics fall into two general categories:
(a) a disregard for the norms of scholarly integrity, without necessarily intending to deceive, and
(b) academic dishonesty, which is an intentional disregard for the norms of scholarly integrity.

Minor breaches of academic ethics that fall into category a) are normally drawn to students' attention by instructors and may result in penalties such as a reduced mark or a zero for the piece of work. Academic dishonesty is not qualitatively different from other types of dishonesty. It consists of misrepresentation by deception or by other fraudulent means.

The Senate Resolutions on Academic Dishonesty define academic dishonesty and specify the procedures to be followed in the event that a student is charged with academic dishonesty. Penalties include expulsion from the University. A copy of the Senate Resolutions may be obtained from the Senate Secretariat, Gilmour Hall, Room 104.

Appeal Procedures

The University has a responsibility to provide fair and equitable procedures for the lodging and hearing of student complaints arising from University regulations, policies and actions that affect them directly. The procedures described in the Student Appeal Procedures are intended to provide a mechanism to remedy injustices and may culminate in a hearing before the Senate Board for Student Appeals.

However, students are strongly encouraged to pursue any complaint or grievance through informal channels, before following the formal procedures. Experience has shown that many complaints can be resolved satisfactorily through informal communication.

Students should seek remedies for their grievances as promptly as possible, and must do so within six months of the end of the academic year in which the grievance has occurred. The end of the academic year is August 31.

Decisions on admission or readmission to the University may not be appealed, except under the conditions described in the next paragraph. However, applicants may ask for a review of a decision on admission or readmission or on the granting of transfer credits. To initiate such a review, the applicant must write to the Registrar within one week of receiving the original decision and state the grounds for seeking the review.

Applicants who have been refused readmission to a degree programme may appeal the decision, using the procedures described in the Student Appeal Procedures, if the following two conditions have been met:
1) the applicant withdrew voluntarily from the University, and
2) the applicant alleges error or injustice on grounds other than academic judgment.

Code of Conduct

McMaster University is a community dedicated to furthering learning, intellectual inquiry, and personal and professional development. Membership in the community implies acceptance of the principle of mutual respect for the rights of others and a readiness to support actively an environment conducive to intellectual growth, both for individuals and for the whole University.

The Code of Conduct contains regulations which outline the limits of conduct considered to be consonant with the goals and the well-being of the University community, and defines the procedures to be followed in cases of violation of the accepted standards.

Statement on Human Rights

McMaster University wishes to ensure the full and fair implementation of the principles of the Ontario Human Rights Code which states:

"Every person has the right to equal treatment with respect to services, goods and facilities, without discrimination because of race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, age, marital status, family status or handicap.

The University Senate has approved Policies on Sexual Harassment and Anti-Discrimination which outline the procedure to be followed in the event that a student has a complaint regarding an alleged violation of human rights.

Sexual Harassment Policy

The University recognizes its legal and moral responsibility to protect all of its members from sexual harassment and to take action if such harassment does occur. To these ends it has developed a policy on, and procedures for, dealing with complaints of sexual harassment, including a range of disciplinary measures up to and including dismissal. Copies of the Policy and Procedures on Sexual Harassment may be obtained from the Senate Secretariat, Room 104, Gilmour Hall.

Anti-Discrimination Policy

McMaster University affirms the right of every member of its constituencies to live, study and work in an environment that is free from discrimination and harassment. Discrimination and harassment are incompatible with standards of professional ethics and with behaviour appropriate to an institution of higher learning.

The intention of this policy and its procedures is to prevent discrimination and harassment from taking place, and where necessary, to act upon complaints of such behaviour promptly, fairly, judiciously and with due regard to confidentiality for all parties concerned. Copies of the Anti-Discrimination Policy may be obtained from the Senate Secretariat, Room 104, Gilmour Hall.

Student Records

The University has developed operating procedures which are designed to protect the confidentiality of undergraduate student records. The full text of the Policy Statement on the Security of Student Data is found in the Senate Policy Statements, available at the Office of the Registrar.

The following have been defined as public information: student name, sex, degrees earned and when, undergraduate awards earned and when, and whether a student is full-time or part-time. Additional information may be used by the various offices and officials of the University where a need to know has been established.

Information about applicants for admission who do not gain admission will be kept for a limited period only. A separate admission file is maintained for those admitted to the Nursing, M.D., Occupational Therapy and Physiotherapy programmes.

While a student may have access to his or her file, documents received from a third party in confidence are not normally placed in the student's file. But, in those cases where they have been, they will not be disclosed.

The operating procedures also define the circumstances under which information may be disclosed to: judicial and law enforcement agencies, the Ontario Universities' Application Centre, Statistics Canada, agencies charged with the recovery of funds provided under OSAP or CSL, and secondary schools.

Transcripts are issued only with the consent of the student. Addresses will not be released except under provisions noted above.
Upon receiving official acceptance from the Registrar's Office and upon submission of registration, you are responsible for the payment of all fees as defined in this Calendar.

Payment of academic fees does not imply your acceptance to the University or approval of your registration. Academic requirements have to be fulfilled before your registration is completed.

If you are a new student, you may not forward academic fees to Financial Services until you have received your Letter of Acceptance.

You should not send residence fees unless you have received notification of acceptance.

You are responsible for the fees for each academic session. No fee credits can be transferred from one academic session to another.

It is the policy of the University not to accept registrations until all previous accounts are paid in full. Any payments received are, therefore, first applied to previous debts and any balances to the most recent debts.

The following fees and regulations were in effect at the time of publication of this Calendar. The University reserves the right to amend the fees and regulations at any time.

**UNDERGRADUATE FEES**

If you are a full-time student, fees cover your portion of the tuition cost, registration, library, diplomas, campus health services, student organizations, and athletics, and are payable by all students.

No caution deposits are required, but students will be assessed for any unwarranted loss or breakage.

The University reserves the right to assess other supplementary fees or charges in some courses or programs to recover — in part or in full — the cost of providing course materials, accommodation and transportation for field trips, and the costs of breakages.

Fees charged by the University are approved annually by the Board of Governors for the academic year beginning September 1.

Fees shown below are for 1996-97. The fee schedules for 1997-98 are enclosed in the Registration Handbook sent to each student during the summer preceding registration.

Tuition fees include a base per unit fee plus mandatory non-tuition related supplementary fees.

### Base Per Unit Tuition

#### CANADIAN CITIZEN AND PERMANENT RESIDENT STATUS

The base unit fees for the Faculty of Engineering (including Engineering and Management Levels III and V) are $96.57 per unit to a maximum of $3,186.81. The base unit fees for all other Faculties (including Engineering and Management Levels II and IV) are $97.82 per unit to a maximum of $2,934.60.

#### VISÀ STATUS

The base unit fees for the Faculty of Engineering (including Engineering and Management Levels III and V) are $484.85 per unit to a maximum of $16,000.05. The base unit fees for Nursing are $546.55 per unit to a maximum of $16,396.50. The base unit fees for all other Faculties (including Engineering and Management Levels II and IV) are $368.90 per unit to a maximum of $11,067.00.

### Supplementary Fees

#### Students Taking 1 to 17 Units Pay (Per Unit):

| McMaster Association of Part-time Students | $3.75 |
| Athletics and Recreation Activity Fee | $4.20 |
| Total Charge per unit | $7.95 |

### Nursing Students Add:

| Learning Resource Fee (per unit) | $5.83 |

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**Financial Information**

Students Taking 18 or More Pay:

Students registered in 18 or more units at ANY time during the session will be responsible for the following fees.

| Athletics & Recreation Activity Fee | $75.60 |
| Student Health Service | $36.00 |
| Canadian Federation of Students | $7.00 |
| Ontario Public Interest Research Group (OIPR) | $5.50 |

Note: If you do not wish to support the work of McMaster OIPR you can claim a full refund by bringing your student card to the OIPR Office within three weeks after the completion of the drop and add period.

**McMaster Student Union Fees:**

| Student Organization Fee | $84.97 |
| Health Plan Premium | $37.00 |
| Student Refugee Fee | $1.09 |
| Ancillary Fee for CFMU-FM | $12.48 |
| Ancillary Fee for MARMOR Yearbook | $6.51 |

Sub Total | $266.15 |

Plus:

- McMaster Student Union's University Student Centre Building fee ($2.31 per unit), to a maximum of $69.30.
- Student Services Fee ($1.25 per unit), to a maximum of $37.50.

**And Student Society Fees According to Faculty:**

| Arts & Science Society | $21.00 |
| Bachelor of Kinesiology Society | $15.00 |
| Commerce Society | $78.00 |
| Engineering Society | $73.00 |
| Humanities Society | $15.00 |
| Nursing Society | $30.50 |
| Nursing Learning Resource Fee | $105.00 |
| Occupational Therapy Learning Resource Fee | $105.00 |
| Physiotherapy Learning Resource Fee | $52.50 |
| Science Society | $10.00 |
| Social Science Society | $15.00 |

**Canadian Citizens and Landed Immigrant Students**

(Examples of fees for full academic load.)

| Arts & Science | 2,934.60 | 393.95 | 3,328.55 |
| Business and Commerce | 2,934.60 | 450.95 | 3,385.55 |
| Engineering and Mgmt. III, V | 3,186.81 | 445.95 | 3,632.76 |
| Engineering and Mgmt. II, IV | 2,934.60 | 445.95 | 3,380.55 |
| Humanities and Social Sciences | 2,934.60 | 387.95 | 3,322.55 |
| Kinesiology | 2,934.60 | 387.95 | 3,322.55 |
| Medicine I, II | 5,601.00 | 341.00 | 5,942.00 |
| Medicine III | 3,754.00 | 341.00 | 4,095.00 |
| Midwifery | 4,401.00 | 111.00 | 4,512.00 |
| Nursing | 2,934.60 | 508.45 | 3,443.05 |
| Occupational Therapy | 2,934.60 | 477.95 | 3,412.55 |
| Physiotherapy | 2,934.60 | 425.45 | 3,360.05 |
| Science | 2,934.60 | 382.95 | 3,317.55 |
**FINANCIAL INFORMATION**

**Visa Students**
(Examples of fees for full academic load.)

<table>
<thead>
<tr>
<th>Tuition Fee</th>
<th>Supplementary Fees</th>
<th>Total Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>$11,067.00</td>
<td>$393.95</td>
<td>$11,460.95</td>
</tr>
<tr>
<td>$11,067.00</td>
<td>$450.95</td>
<td>$11,517.95</td>
</tr>
<tr>
<td>$11,067.00</td>
<td>$445.95</td>
<td>$11,512.95</td>
</tr>
<tr>
<td>$16,000.05</td>
<td>$445.95</td>
<td>$16,446.00</td>
</tr>
<tr>
<td>$11,067.00</td>
<td>$387.95</td>
<td>$11,454.95</td>
</tr>
<tr>
<td>$11,067.00</td>
<td>$387.95</td>
<td>$11,454.95</td>
</tr>
<tr>
<td>$27,054.30</td>
<td>$341.00</td>
<td>$27,395.30</td>
</tr>
<tr>
<td>$18,036.20</td>
<td>$341.00</td>
<td>$18,377.20</td>
</tr>
<tr>
<td>$16,396.50</td>
<td>$508.45</td>
<td>$16,904.95</td>
</tr>
</tbody>
</table>

*You will be assessed extra fees for units taken over your programme maximum load.

**Student Health Services Fees**
The supplementary student health services fee of $36.00 supports the on-campus clinic facilities, which provide the services of doctors and nurses. The McMaster Students Union Health Plan Premium fee of $37.00 includes reimbursement of expenses resulting from an accident incurred during the academic year, where such expenses are not recoverable under the Ontario Health Insurance Plan. These expenses may include X-ray, ambulance, dental treatment, prescribed drugs, wheelchairs or similar appliances. Reimbursement is not made for accident expenses to dental plates, crowns, fillings, glass frames, lenses or similar items. Accidents should be reported to Student Health Services within 10 days.

Prescribed drugs, excluding contraceptives, may be claimed through this plan. For details concerning dollar amounts allowable, contact the McMaster Students Union Office.

**Co-op Fees**
Co-op students attending the full academic term (September-April) should add a $750.00 Co-op Fee to the regular 30 unit Science fee. Co-op students attending one academic term should pay half the 30 unit Science fee plus a $375.00 Co-op Fee.

**Listeners**
As of 1991-92, you are classified as a Listener if you wish to attend classes, but are not seeking academic credit. You may be admitted at one-half of the standard fee upon application to the Centre for Continuing Education.

Listeners withdrawing from a course may do so without penalty up to five working days after the first meeting. After that and before the second class, an administrative fee of $30.00 will be withheld. There is no refund after the second class.

Students may register as Listeners in some degree or certificate courses. A Listener is not seeking credit and may be admitted at one-half of the standard fee upon application to the Centre for Continuing Education.

This category excludes currently registered students, who may audit a course, See General Academic Regulations section in this Calendar for details.

**Persons Aged 65+**
Subject to meeting admission and prerequisite requirements, if you are aged 65 or over, you may register without payment of tuition and supplementary fees.

**RESIDENCE AND MEAL PLAN FEES**

**Regular Session**
If you live on campus, your residence fees cover the period, from Labour Day to 5 p.m. on the day following your last April examination, and excludes the Christmas vacation period.

The fees below are those for 1995-96.

<table>
<thead>
<tr>
<th>Residences</th>
<th>Full Payment</th>
<th>Minimum Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Traditional</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Residences</strong></td>
<td>$2,775.00</td>
<td>$1,900.00</td>
</tr>
<tr>
<td><strong>Apartments</strong></td>
<td>$2,925.00</td>
<td>$2,050.00</td>
</tr>
</tbody>
</table>

**Meal Plans**
If living in a traditional residence you must select one of the following meal plans:

<table>
<thead>
<tr>
<th>Meal Plans</th>
<th>Full Payment</th>
<th>Minimum Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Light</strong></td>
<td>$2,200.00</td>
<td>$1,540.00</td>
</tr>
<tr>
<td><strong>Small</strong></td>
<td>$2,400.00</td>
<td>$1,680.00</td>
</tr>
<tr>
<td><strong>Regular</strong></td>
<td>$2,600.00</td>
<td>$1,820.00</td>
</tr>
<tr>
<td><strong>Large</strong></td>
<td>$2,800.00</td>
<td>$1,960.00</td>
</tr>
</tbody>
</table>

If you wish to change your selection of meal plans, you may do so up to September 15, 1997. Please contact Hospitality Services, ext. 27448, for details on how to change your plan.

A complete and current schedule of residence charges and payment dates may be obtained upon application to the Manager, Residence Admissions, Commons Building, Room 101, telephone (905) 525-9140, ext. 24070.

**Summer Residence**
McMaster University offers residence, with centralized washroom facilities, to men and women of all ages from early May to late August each year.

For further information, contact Conference Services, Commons Building, Room 101, telephone (905) 525-9140, ext. 24781.

**PAYMENT OF FEES**

Tuition fees and residence/meal plan fees are payable in full during the registration period in August/September. Prepayment of fees will significantly simplify the registration process (see Prepayment of Fees). If you are unable to make full payment at the time of registration, you may be registered by paying the minimum first payment at the time of registration. The balance must be paid no later than January 17. Failure to make payment by January 17 will result in a late payment fee. Interest is added monthly to the unpaid balance. (Current rate is 1.2% per month.)

Cheques can be made payable to McMaster University. Any cheque not accepted and returned by the bank will be subject to an additional administrative charge of $28 for the first occurrence and an additional $10 for each subsequent occurrence.

In addition, if you refuse to pay fees, or any part of the fees, you may be refused admission to the University or you may be requested to withdraw with all privileges suspended. Fees to the date of withdrawal will be assessed. If you wish to re-register within the same academic session, you will also be assessed a $75 reinstatement fee.

You are not considered to be registered at McMaster University unless all fees are paid or acceptable arrangements have been made with the Financial Services Office by November 1 of each year. The names of students who are not registered by that date will be removed from all official class lists.

You will not be eligible for any examination results, transcripts, diplomas or the payment of awards of any kind, until fees and any other accounts owed to the University are paid, or until acceptable arrangements are made.
Note: Graduands who have outstanding accounts with the University will be permitted to attend convocation, but will not receive their diplomas until their accounts have been cleared in full.

Prepayment of Fees

All tuition, supplementary, residence and meal plan fees and any debts from prior sessions should be received by Financial Services prior to registration.

For payment deadlines, please refer to the registration handbook. You must complete the Payment Arrangement Form and send it with a cheque, which may be post-dated to the first day of registration. Your student identification number should be written on the back of your cheque. By following this procedure you will significantly reduce the time needed to complete registration.

If you expect to receive financial assistance under the Ontario Student Assistance Programme, or will receive scholarships, bursaries or other awards, you may select the appropriate option on the Payment Arrangement Form. All fees are payable upon receipt of financial assistance. Any difference between the amount of the award, and minimum first payment should accompany the Payment Arrangement Form.

If you are unable to pay your fees at the time of registration, please contact Financial Services, Room 208, Gilmour Hall, Ext. 24478, prior to registration.

Refunds

If you are forced, by illness or other personal reasons, to withdraw from courses, you will be charged a partial fee for courses that are cancelled. The charge is determined by the date on which notices of withdrawal in writing are received at the Office of the Dean of the appropriate Faculty. A full refund will be given for courses dropped until the end of the add period.

MISCELLANEOUS FEES

The following fees were in effect for the 1996-97 academic year, and are over and above assessed academic fees, supplementary fees, and residence fees and meal plan fees.

Academic User Fees

- Transcript Assessment Fee ........................................ 50.00
- Certification of Enrolment Fee .................................... 7.00
- Contribution to Psycho-Educational Assessment ............. 200.00
- Deferred Examination at Another Centre .................... 100.00
- Examination Reread (Refunded if grade is changed) ...... 50.00
- Letter of Permission .............................................. 50.00
- Notarizing Fee (plus 50 cents per page over 10) ........... 10.00
- Photocopying of Examination Script ......................... 10.00
- Replacement of Diploma ........................................ 30.00
- Replacement of Student I.D. Card ............................ 30.00
- Supervision of Examinations at Other Universities ....... 50.00
- Transcript (per copy) ............................................ 7.00

Financial/Administrative User Fees

- Replacement Fee
  - Income Tax Receipt/Education Credit Certificate ........... 6.00
- Meal Plan Withdrawal Fee ....................................... 50.00
- Fine for Meal Card Misuse ...................................... 25.00
- Returned Cheque Charge (NSF, Stopped Payment)
  - First Occurrence ............................................. 28.00
  - Each Subsequent Occurrence (Additional) ............... 10.00
- Late Document Fee .............................................. 50.00
- Late Registration Fee
  - Full-time Students ........................................... 50.00
  - Part-time Students .......................................... 25.00
- Late Payment Fee .............................................. 31.00
- Deferment Fee ................................................... 31.00
- Reinstatement Fee .............................................. 75.00
- Library Charges
  - Overdue Recalled Books (per day) ......................... 2.00
  - Overdue Reserve Material (per hour) ..................... 2.00
  - Replacement Cost, plus Fine: up to ..................... 100.00
  - Returned Books After Billing ................................ 10.00

EXPENSES

Costs Other Than Fees

For Students in Clinical Courses

You must buy uniforms, shoes and uniform accessories, for clinical practice.

If you are a Nursing student, your uniform and accessories are ordered under the direction of the School of Nursing. The approximate cost is $80.00.

Registration Examinations

Graduates of the B.Sc.N. programme can expect to pay fees ($200 in 1996) to write the comprehensive registration examinations administered by the College of Nurses of Ontario.

Insurance of Personal Property on University Premises

The University cannot assume any liability for the personal property of any employees, faculty members, or students, nor does the University carry any insurance that would cover their personal property. In most cases, personal fire insurance policies provide an automatic 10% extension covering property away from home. You should inspect your insurance policies to be certain that this is the case.

Death and Dismemberment Insurance

The University considers that the purchase of insurance coverage for death and dismemberment is the individual responsibility of its students. There are various insurance plans available, and although the University does not specifically endorse any one of these plans, it has no objection to explanatory brochures and literature being posted on bulletin boards or distributed in appropriate places.

If you are involved in laboratory or field work, you are particularly encouraged to investigate such coverage.

For information on student awards and financial aid, please refer to Undergraduate Academic Awards and Student Financial Aid sections of this Calendar.
The Arts & Science Programme has been designed for students who wish to use their university years to further their intellectual growth through study of significant achievements in both arts and sciences and practice of methods of inquiry. The programme also allows for substantial specialization in a discipline or area through the use of electives. The philosophy of the Arts & Science Programme can be expressed by quoting A.N. Whitehead:

"What education has to impart is an intimate sense for the power of ideas, for the beauty of ideas, and for the structure of ideas, together with a particular body of knowledge which has peculiar reference to the life of the being possessing it."

— The Aims of Education and Other Essays, 1929

The core curriculum consists of courses offered by the Council of Instructors of the Arts & Science Programme, together with other courses offered by Departments. The core curriculum is designed to meet three major objectives:

1. to increase understanding of achievements and methods used in selected arts and science disciplines;
2. to increase skills in writing, speaking, and in critical and quantitative reasoning; and
3. to increase skills in the art of scholarly inquiry into issues of public concern.

Meeting the last of these objectives is the aim of inquiry seminars which begin in Level I and continue in upper levels. To investigate with skill and insight a complex public issue, such as world population growth in relation to food supply, requires an understanding of the methods and findings of many disciplines; it calls on a liberal education. Moreover, acquiring skill in such investigations requires practice in formulating questions, searching out evidence, and bringing the insights of academic disciplines to bear on the interpretation of evidence.

The Programme offers preparation for advanced study in many professional schools, including those of business, health administration, journalism, law, medicine, teaching; and for research in many disciplines and interdisciplinary areas.

Students in this programme who wish to prepare for graduate study in an academic discipline should consult with the appropriate department concerning requirements. In general, preparation for graduate study may be accomplished by combining the core Honours Arts & Science curriculum with a concentration of electives in the intended area of graduate study. Combined Honours programmes, which are available in many subjects (see specific programme descriptions below), combine the core curriculum of the Arts & Science Programme with a prescribed set of courses in a subject and can be expected to satisfy course requirements for admission to graduate study in the particular subject.

**ACADEMIC REGULATIONS**

The Arts & Science Programme is governed by the General Academic Regulations of the University, (see the General Academic Regulations section in this Calendar) and the regulations described below.

The Programme begins in Level I and leads to the degree, Bachelor of Arts & Science (Honours) on completion of Level IV. The four-level programme provides an opportunity for specialization through electives and through an individual study or thesis course. Students who decide to conclude their studies in the programme on completion of Level III may qualify to graduate with the degree, Bachelor of Arts & Science (B.Arts Sc.).

Students must have a CA of at least 6.0 to continue in the programme. In the case of some Combined Honours programmes, the average must include specified courses. These courses are indicated in the programme descriptions below.

Registration in Level I of the Arts & Science Programme is limited to approximately 60 students.

**ACADEMIC REGULATIONS**

**PROGRAMME-SPECIFIC QUESTIONS:** ryank@mcmaster.ca
**UNIVERSITY ADMISSION INFORMATION:** macadm@sympatico.ca

**Director**

B.M. Ferrier/B.Sc., Ph.D.

**INQUIRY SEMINAR REQUIREMENTS**

Inquiry seminars are comprised of ARTS&SCI 1C06 and a set of upper-level inquiry seminars on a variety of topics that change from time to time. The upper-level inquiry seminars are designated as "2C" at the beginning of the course code (2CA6, 2CB6, etc.) and are described in the programme listing as "upper-level Inquiry". See the course listing for topic designations. ARTS&SCI 1C06 must be completed in Level I. One upper-level inquiry seminar is required and is normally taken in Level II or III.

**COMBINED HONOURS**

Students in the Arts & Science Programme may undertake Combined Honours programmes in many disciplines within the Faculties of Humanities, Science and Social Sciences. The combined programmes with Biology, Chemistry and Physics need five years for completion. Combined programmes that are already established are described below. Students should consult the Director of the Arts & Science Programme for consideration of other possible combinations.

**APPLICATION FOR ADMISSION TO LEVEL II (mid March) IS REQUIRED FOR ALL COMBINED HONOURS PROGRAMMES.**

**INDIVIDUAL STUDY/THESIS:** Students in the B.Arts Sc. (Honours) programme are required to complete either Individual Study or Thesis (ARTS&SCI 4A06, or 4C06). For students in some Combined Honours programmes, this requirement must be met by a Departmental course.

For further information, please see Academic Standing and Programme Requirements in the General Academic Regulations section in this Calendar.

**INTERNATIONAL STUDY AND EXCHANGE PROGRAMMES**

**One calendar year before study abroad:** Students interested in international study should consult the Director of the Arts & Science Programme.

**Calendar year of planned travel:** No later than the end of January, students must propose a programme of study for approval by the Director. Credit will be confirmed only after transcripts are received and academic achievements are reviewed on the student's return.

To be eligible for study abroad students must have completed 60 units with a CA of at least 7.0. The B.Arts Sc. (three-year) degree is not granted on the basis of international study; the 30 final units of work must be done at McMaster.

The International Students' Advisor (Hamilton Hall, room 405) has information on formal exchange programmes as well as independent study abroad. For further information please see International Study in the General Academic Regulations section in this Calendar. Information concerning Group of Ten Student Exchange Programmes (GOTSEP) can be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Student Exchanges.

**ARTS & SCIENCE PROGRAMME**

**B.Arts Sc. (Honours) [2027] and B.Arts Sc.**

**NOTES**

1. Six units of upper-level Inquiry beyond Level I are required.
2. An additional six units of upper-level Inquiry may be included as an Elective with permission of the Director.

**REQUIREMENTS**

**LEVEL I: 30 UNITS**

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units BIOLOGY 1A03, 1A3 (BIOLOGY requirement must be completed by the end of Level II)

**LEVEL II: 30 UNITS**

- 18 units ARTS&SCI 2A06, 2D06, 2R06
- 6 units Electives or Upper-level Inquiry (Inquiry may be taken in Level III)
- 6 units Electives or BIOLOGY 1A03, 1A3 (if not completed in Level I)

**LEVEL III: 30 UNITS**

- 6 units ARTS&SCI 3B03, 3BB9
- 6 units from ARTS&SCI 3A06, 3L03, 3S03
- 6 units Electives, or Upper-level Inquiry if this requirement has not already been completed.
- 12 Units Electives
LEVEL IV: 30 UNITS
6 units from ARTS & SCI 3A06, 3L03, 3S03 (whichever not completed in Level III)
6-12 units from ARTS & SCI 4A06, 4A12, 4C06, 4C12
12-18 units Electives

Arts & Science and Another Subject
Established Combined Honours programmes are described below. Students are encouraged to consult the Director of the Arts & Science Programme by September of Level II for consideration of other possible combinations.

Honours Arts & Science and Anthropology {2027010}

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 including an average of at least 7.0 in ANTHROP 1A03 and 1Z03.

REQUIREMENTS
LEVEL I: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units ANTHROP 1A03, 1Z03

LEVEL II: 30 UNITS
12 units ARTS & SCI 2A06, 2R06
6 units BIOLOGY 1A03, 1AA3
12 units ANTHROP 2E03, 2F03, 2I03, 2P03

LEVEL III: 30 UNITS
12 units ARTS & SCI 2D06, 3A06
6 units Upper-level Inquiry
3 units from ANTHROP 3A03, 3B03, 3D03, 3F03
9 units Anthropology

LEVEL IV: 30 UNITS
12 units ARTS & SCI 3B03, 3BB3, 3L03, 3S03
6 units ANTHROP 4I03; three units Level IV Anthropology
6 units Anthropology
6 units Electives

Honours Arts & Science and Biochemistry {2027040}

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 and an average of at least 7.0 in ARTS & SCI 1D06 and CHEM 1A06 (or CHEM 1A03, 1AA3).

REQUIREMENTS
LEVEL I: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units CHEM 1A03, 1AA3

LEVEL II: 33 UNITS
12 units ARTS & SCI 2A06, 2R06
6 units BIOCHEM 2A06
6 units BIOLOGY 1A03, 1AA3
9 units CHEM 2006, 2R03

LEVEL III: 33 UNITS
12 units ARTS & SCI 2D06, 3A06
12 units BIOCHEM 3B03, 3BB3, 3L03, 3P03
6 units BIOLOGY 2B03, 2C03
3 units CHEM 3F03

LEVEL IV: 33 UNITS
12 units ARTS & SCI 3B03, 3BB3, 3L03, 3S03
6 units Upper-level Inquiry
3 units BIOCHEM 4E03
6 units BIOCHEM 4B06 or 4A03 and either 4L03 or 4P03
6 units from BIOCHEM 3C03, 4D03, 4I03, 4M03

Honours Arts & Science and Biology {2027050}

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 and a grade of at least B- in one of ARTS & SCI 1D06 or CHEM 1A06 (or an average of at least 7.0 in CHEM 1A03, 1AA3).

NOTES
1. continuation in the programme beyond Level II requires a grade of at least B- in BIOLOGY 1A06 or an average of at least 7.0 in BIOLOGY 1A03, 1AA3.
2. students are advised to note carefully the prerequisites for all Level III and IV courses listed in the programme, particularly BIOCHEM 3A03, 3AA3.

COURSE LIST
All Level III and IV Biology courses except BIOLOGY 4C09, 4L03; BIOCHEM 2E03, 3A03, 3AA3, 3BB3, 3BB3, 3C03, 3G03, 3H03, 3N03, 4D03, 4E03, 4U03; ENGINEER 4X03; GEOG 3P03, 4P03; GEOLOGY 2J03, 3J03, 4D03; MOL BIOL 4F03, 4H03, 4J03; PHARMAC 4B03; PSYCH 2F03, 3FA3, 3FB3, 3R03, 3S03, 3T03, 4F03, 4U03

LEVEL IV: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units CHEM 1A03, 1AA3

LEVEL II: 30 UNITS
18 units ARTS & SCI 2A06, 2D06, 2R06
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 2006

LEVEL III: 30 UNITS
6 units ARTS & SCI 3B03, 3BB3
6 units Upper-level Inquiry
12 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2P03
6 units BIOCHEM 3E03, 3G03

LEVEL IV: 30 UNITS
6 units ARTS & SCI 3A06 or 3L03, 3S03
18-21 units from Course List
3-6 units Electives

LEVEL V: 30 UNITS
6 units ARTS & SCI 3A06 or 3L03, 3S03
6 units CHEM 3F03
9 units from Course List
9 units Electives

Honours Arts & Science and Chemistry {2027070}

ADMISSION
Completion of Arts & Science I with a Cumulative Average of 6.0. and a grade of at least B- in ARTS & SCI 1D06 and in CHEM 1A06 (or an average of at least 7.0 in CHEM 1A03, 1AA3).

NOTES
1. Students who have completed CHEM 2006 may substitute this for CHEM 2B06 and students who have completed ARTS & SCI 2D06 may substitute this for PHYSICS 1A06 or PHYSICS 1B06, 1B03 (or 1C03) and 1B03 (or 1BB3).
2. For those students considering postgraduate studies in Chemistry, it should be noted that 18 units of Level IV Chemistry are required for consideration for admission at McMaster.

COURSE LIST
ARTS & SCI 3A06, 3BB3, 3L03, 3S03

LEVEL I: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units CHEM 1A03, 1AA3

LEVEL II: 33 UNITS
12 units ARTS & SCI 2A06, 2R06
6 units PHYSICS 1B03 (or 1C03), 1B03 (or 1BB3)
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 2B06
3 units MATH 1B03

LEVEL III: 30 UNITS
6 units from Course List
12 units CHEM 2A03, 2C03, 2P03
3 units MATH 2A03
9 units Electives
LEVEL IV: 30 UNITS
6 units from Course List
6 units Upper-level inquiry
18 units CHEM 3A03, 3B06, 3D03 (or 3F03), 3P03, 3Q03

LEVEL V: 30 UNITS
6 units from Course List
6 units CHEM 4G06
6 units Level IV Chemistry
12 units Electives

Honours Arts & Science and Comparative Literature

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 including a grade of at least B- in COMP LIT 1A06.

NOTES
1. Students must successfully complete six units of a language other than English.
2. Upon completion of 60 units of work and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies) and of the Director of the Arts & Science Programme, Level III of this programme may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

REQUIREMENTS

LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units COMP LIT 1A06

LEVEL II: 30 UNITS
18 units ARTS&SCI 2A06, 2B06, BIOLOGY 1A03, 1AA3
6 units COMP LIT 2A03, 2AA3
6 units Language Requirement (See Note 1 above.)

LEVEL III: 30 UNITS
12 units ARTS&SCI 2D06, 3B03, 3BB3
6 units Upper-level Inquiry
9 units COMP LIT 3D03, 3D03, 3QQ3
3 units Comparative Literature or Modern Languages

LEVEL IV: 30 UNITS
6 units ARTS&SCI 3L03, 3S03
6 units from COMP LIT 4AA3, 4B03, 4C03, 4E03
12 units Comparative Literature or Modern Languages
6 units Electives

Honours Arts & Science and Computer Science

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0, including a grade of at least B- in each of ARTS&SCI 1D06, and COMP SCI 1MC3, 1MD3.

NOTE
COMP SCI 1MA3 can be used as a substitute for COMP SCI 1MC3; COMP SCI 1MB3 can be used as a substitute for 1MC3, and COMP SCI 2MC3 can be used as a substitute for COMP SCI 2SC3.

REQUIREMENTS

LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units COMP SCI 1MC3, 1MD3

LEVEL II: 33 UNITS
12 units ARTS&SCI 2A06, 2D06
6 units BIOLOGY 1A03, 1AA3
6 units STATS 2D03, MATH 1B03
3 units COMP SCI 2MD3
6 units from COMP SCI 2ME3, 2MF3, 2SC3

LEVEL III: 33 UNITS
12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
3 units COMP SCI 2M3
9 units COMP SCI 3MG3, 3MH3, 3MI3
3 units from COMP SCI 3CB3, 3EA3, 3IA3

LEVEL IV: 30 UNITS
6 units ARTS&SCI 3L03, 3S03
15 units COMP SCI 4MP6 and nine additional units of Level III or IV Computer Science courses, including COMP SCI 3EA3 if not already taken
9 units Electives

Honours Arts & Science and Economics

(There are two options of study for this combined programme described as Option A or Option B.)

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 including a grade of at least B- in ECON 1A06.

NOTE
One of MAT Finite Math, MATH 1L03, STATS 1L03, or STATS 2D03 is a prerequisite for research methods courses offered by the Department of Economics.

REQUIREMENTS

Option A (2027151)

LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units ECON 1A06

LEVEL II: 30 UNITS
12 units ARTS&SCI 2A06, 2D06
6 units BIOLOGY 1A03, 1AA3
12 units ECON 2G03, 2GG3, 2H03, 2HH3

LEVEL III: 30 UNITS
12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units ECON 2B03 and 3U03 or 3O06 or ARTS&SCI 2R06
3 units from ECON 2K03, 3I03
9 units Electives

LEVEL IV: 30 UNITS
6 units ARTS&SCI 3L03, 3S03
6 units Upper-level Inquiry
18 units ECON 3L3, 4A03 and 12 additional units Economics, of which at least six units must be from Levels III and IV; six of these units must be approved as substitutes for ARTS&SCI 4A06 or 4C06

Option B (2027152)

LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS
18 units ARTS&SCI 2A06, 2D06, 2R06
6 units ECON 1A06
6 units Electives

LEVEL III: 30 UNITS
12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
12 units ECON 2G03, 2GG3, 2H03, 2HH3

LEVEL IV: 30 UNITS
6 units ARTS&SCI 3L03, 3S03
3 units from ECON 2K03, 3I03
6 units ECON 3L3, 4A03
6 units Economics to replace ARTS&SCI 4A06 or 4C06
3 units Economics
6 units Electives

Honours Arts & Science and English (2027200)

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of Arts & Science I with a Cumulative Average of at least 6.0 including a grade of at least B- in ENGLISH 1D06.

NOTES
1. With permission of the English Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in the second term.
2. Most graduate programmes in English require proficiency in a
second language. Students who plan to pursue graduate studi­
es in English are strongly encouraged to include in their pro­
grammes a second language beyond the introductory level.

### COURSE LIST 1 (SIX UNITS REQUIRED)

| ENGLISH 3C06, 3J06, 3K06, 3L06, 3M06, 3V06 |

### COURSE LIST 2 (SIX UNITS REQUIRED)

| ENGLISH 2I06, 3G06, 3M03, 3MM3 |

### COURSE LIST 3 (SIX UNITS REQUIRED)

| ENGLISH 2G06, 2H06, 3F06 |

### COURSE LIST 4 (SIX UNITS REQUIRED)

| ENGLISH 2B06, 2K06, 3J06, 3N06, 3Q03, 3QQ3 |

### COURSE LIST 5 (SIX UNITS REQUIRED)

Courses in Lists 1-4 and: ENGLISH 3B03, 3CC3, 3F03, 3H03, 3I03, 3P03, 3Q03, 3K03, 3Z03

### REQUIREMENTS

#### LEVEL I: 30 UNITS

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units ENGLISH 1D06

#### LEVEL II: 30 UNITS

- 16 units ARTS&SCI 2A06, 2R06; BIOLOGY 1A03, 1AA3
- 12 units Level II or III English

#### LEVEL III: 30 UNITS

- 12 units ARTS&SCI 2D06, 3B03, 3BB3
- 6 units Upper-level Inquiry
- 12 units Level II or III English

#### LEVEL IV: 30 UNITS

- 6 units ARTS&SCI 3L03, 3S03
- 6 units Level II or III English
- 6 units Level IV English seminars
- 12 units Electives

### Honours Arts & Science and French (2027230)

#### ADMISSION

Completion of Arts & Science I with a Cumulative Average of
at least 6.0, including a grade of at least B- in FRENCH 1A06
or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1RN6.

#### NOTES

1. When selecting their courses, students must ensure that the
overall total includes a minimum of 24 units of Level III and IV
French courses.
2. Upon completion of 60 units of work (including at least 12 units
of required Level II French courses), and with the approval of
the Department of French, the Associate Dean of Humanities
 yı (Studies), and the Director of the Arts & Science Programme,
up to 15 units of Level III French may be replaced by courses
of study at a French-language university.

#### COURSE LIST 1 (SIX UNITS REQUIRED)

| FRENCH 4F03, 4I03, 4LL3, 4MM3, 4N03, 4Q03, 4S03, 4W03, 4X03, 4Y03 |

#### COURSE LIST 2 (THREE UNITS REQUIRED)

| FRENCH 2G03, 3CC3, 3F03, 3B03 |

### REQUIREMENTS

#### LEVEL I: 30 UNITS

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units FRENCH 1A06 or 2M06, 1N06 or 1NN6

#### LEVEL II: 30 UNITS

- 12 units ARTS&SCI 2A06, 2R06
- 6 units BIOLOGY 1A03, 1AA3
- 12 units FRENCH 2B03, 2BB3; 2J03 or 2JJ3; 2W03 or 2WW3

#### LEVEL III: 30 UNITS

- 12 units ARTS&SCI 2D06, 3B03, 3BB3
- 6 units Upper-level Inquiry
- 3 units FRENCH 3C03
- 6 units FRENCH 3K03 or 3K33; FRENCH 3Q03 or 3QQ3
- 3 units from FRENCH 3AA3, 3BB3, 4U03

#### LEVEL IV: 30 UNITS

- 6 units ARTS&SCI 3L03, 3S03
- 12 units FRENCH 4A03; three units Level III or IV French
courses (see Course List 2); two three-unit Level IV French
courses from Course List 1
- 3 units from FRENCH 3A03, 3SS3, 4JO3
- 9 units Electives

### Honours Arts & Science and Geography (2027240)

#### ADMISSION

Completion of Arts & Science I with a Cumulative Average of
at least 6.0 including a weighted average of at least 7.0 in six units of
Level I Geography.

#### NOTE

Students with interest in Human Geography should choose
GEOG 1B06 in Level I. Students with interest in Physical Geog­
raphy or Environmental Science, should choose from ENVIR SC
1803, 1G03, 1H03.

### REQUIREMENTS

#### LEVEL I: 30 UNITS

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units GEOG 1B06, ENVIR SC 1B03, 1G03, 1H03

#### LEVEL II: 30 UNITS

- 12 units ARTS&SCI 2A06, 2D06
- 6 units BIOLOGY 1A03, 1AA3
- 6 units from ARTS&SCI 2R06, GEOG 2L3, 2N03
- 6 units Level II Geography, excluding 2C03, 2E03, 2F03

#### LEVEL III: 30 UNITS

- 12 units ARTS&SCI 3A06, 3B03, 3BB3
- 6 units Upper-level Inquiry
- 12 units GEOG 3D03; nine units Level III Geography, excluding
  3JJ3, 3K03

#### LEVEL IV: 30 UNITS

- 6 units ARTS&SCI 3L03, 3S03
- 18 units GEOG 4C03 and 15 units Level III, IV Geography, or
  GEOG 4C06 and 12 units Level III or IV Geography
- 6 units Electives

### Honours Arts & Science and History (2027290)

#### ADMISSION

Enrolment in this programme is limited. Selection is based
on academic achievement, but requires, as a minimum, comple­
tion of Arts & Science I with a Cumulative Average of at least 6.0,
including a grade of at least B- in any Level I History course.

#### NOTES

1. In selecting courses, students must ensure that they take a
minimum of three units in each of three fields of History. For
this purpose the Department has established the following six
fields: European, Ancient, Asian, Canadian, British, and the
Americas (excluding Canada). This requirement must be com­
pared by the end of Level III. All Level II and III History courses
shown in the list of Subfields (see listing in the Faculty of Hu­
manties, Department of History section of this Calendar) may
be used toward this requirement. Students are permitted a
maximum of 18 units of work in any one of the preceding fields.
2. No Level IV seminars may be taken before completion of 12
units of History beyond Level I.

### REQUIREMENTS

#### LEVEL I: 30 UNITS

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units Level I History

#### LEVEL II: 30 UNITS

- 18 units ARTS&SCI 2A06, 2D06, 2R06
- 6 units BIOLOGY 1A03, 1AA3
- 6 units Level II History, HUMAN 2F03

#### LEVEL III: 30 UNITS

- 12 units ARTS&SCI 3A06, 3B03, 3BB3
- 6 units Upper-level Inquiry
- 12 units six units Level II History; six units Level III History
Honours Arts & Science and Mathematics

ADMISSION
Completion of Arts & Science I with an average of at least 6.0 including a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES
1. Students intending to do graduate work in Philosophy are advised to include PHILO 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy, the Associate Dean of Humanities (Studies), and the Director of the Arts & Science Programme, one or both terms of Level III may be replaced by courses of study at a designated university abroad.
4. Arts & Science students may not take PHILO 2R03.

REQUIREMENTS

LEVEL I: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS
18 units ARTS & SCI 2A06, 2D06, 2R06
6 units PHILO 2A06
6 units Level III or IV Philosophy

LEVEL III: 30 UNITS
12 units ARTS & SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
6 units PHILO 3C06
6 units Level III or IV Philosophy

LEVEL IV: 30 UNITS
6 units ARTS & SCI 3L03, 3S03
12 units six units Level III or IV Philosophy; six units Level IV Philosophy
12 units Electives

Honours Arts & Science and Philosophy

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0, including either a grade of at least C+ in ARTS & SCI 1D06 or an average of at least 6.0 in MATH 1A03 and 1AA3.

NOTES
1. Continuation in the programme beyond Level II requires at least an average of 6.0 in 6 units from PHYSICS 1B03, 1B3A (or 1BB3).
2. BIOLOGY 1A03 and 1AA3 may be replaced by BIOLOGY 1A06, PHYSICS 1B03 and 1B3A (or 1BB3) may be replaced by PHYSICS 1A06 or 1B06.
3. BIOLOGY 1A03, 1AA3, PHYSICS 1B03, 1B3A (or 1BB3) must be completed by the end of Level II.
4. Students who do not have some familiarity with a programming language such as Basic C, Fortran or Pascal should elect COMP SCI 1SA3 (Level III elective).

REQUIREMENTS

LEVEL I: 33 UNITS
18 units ARTS & SCI 1A06, 1B06, 1C06
6 units from ARTS & SCI 1D06, MATH 1A03, 1AA3
6 units from BIOLOGY 1A03, 1AA3, PHYSICS 1B03, 1B3A (or 1BB3)
3 units MATH 1B03

LEVEL II: 30 UNITS
6 units ARTS & SCI 2A06
6 units Upper-level Inquiry
6 units from PHYSICS 1A03, 1AA3, PHYSICS 1B03, 1B3A (or 1BB3)
6 units from CHEM 1A06, 1AA3
3 units MATH 2A03
3 units from MATH 2C03, 2D03

LEVEL III: 31 UNITS
12 units ARTS & SCI 3B03, 3BB3, and 3A06 or 3L03, 3S03
16 units PHYSICS 2B06, 2H04, 2K03, 2L03
3 units Electives

LEVEL IV: 32 UNITS
6 units ARTS & SCI 3A06 or 3L03, 3S03 (whichever not completed)
17 units PHYSICS 3H04, 3K04, 3M03, 3M33 and 3N03
6 units MATH 3C03, 3D03
3 units Electives

LEVEL V: 29 UNITS
6 units ARTS & SCI 4C06
11 units PHYSICS 4B04, 4F03, 4J04
9 units Level III or IV Physics, excluding PHYSICS 4Q04
3 units Electives

Honours Arts & Science and Political Science

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0, including a grade of at least B- in six units of Political Science courses.

NOTES
(Also, see notes under Faculty of Social Science, Political Science section):
1. Prerequisites: A number of Level III and IV courses have Level II prerequisites. Students who wish to enter courses but who lack the necessary prerequisites must obtain permission of the instructor.
2. The mathematics requirement for this combined honours programme may be fulfilled by either ARTS & SCI 2R06 (taken in Level II) or POL SCI 3N06 (taken in Level III).

REQUIREMENTS

LEVEL I: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS
18 units ARTS & SCI 2A06, 2D06, 2R06
6 units PHILO 2A06
6 units Level III or IV Philosophy

LEVEL III: 30 UNITS
12 units ARTS & SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
6 units PHILO 3C06
6 units Level III or IV Philosophy

LEVEL IV: 30 UNITS
6 units ARTS & SCI 3L03, 3S03
12 units six units Level III or IV Philosophy; six units Level IV Philosophy
12 units Electives

LEVEL V: 30 UNITS
24 units ARTS & SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3
LEVEL II: 30 UNITS
12 units ARTS&SCI 2A06, 2D06
6 units ARTS&SCI 2R06 (See Note 2 above.)
12 units Level II or III Political Science

LEVEL III: 30 UNITS
12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
6 units Level III Political Science
6 units Electives (or POL SCI 3N06 if ARTS&SCI 2R06 not already completed)

LEVEL IV: 30 UNITS
6 units ARTS&SCI 3L03, 3S03
6 units Level III or IV Political Science
6 units Level IV Political Science approved to replace ARTS&SCI 4A06 or 4C06
12 units Electives

Honours Arts & Science and Psychology

ADMISSION
Enrolment in this programme is limited. An application is required for admission. Selection is based on academic achievement, but requires, as a minimum, completion of Arts & Science I with a Cumulative Average of at least 6.0, including a grade of at least B- in PSYCH 1A06 (or an average of at least 7.0 in PSYCH 1A03, 1AA3) and at least B- in six additional units, and credit in ARTS&SCI 1D06.

NOTES
1. ARTS&SCI 1D06 with a grade of at least C- must be completed before entrance into Level II of the programme.
2. PSYCH 2R03 and STAT 1CC3 must be completed before entrance into Level III.
3. BIOLOGY 1A06, 1A03, 1AA3 is a prerequisite for PSYCH 2F03.
4. At some time during the programme, the student must meet a laboratory requirement by completing one of PSYCH 3E03, 3L03, 3L33, 3GQ3, 3S03, 3V03, 4G03, 4QQ3. Enrolment in Psychology Laboratory courses is limited. Permission of the Department is required by March 1.
5. Students who are planning to do graduate studies in Psychology and who meet the prerequisites should complete PSYCH 4D06 and MATH 1503.

COURSE LIST
PSYCH 3E03, 3L03, 3LL3, 3GQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS
LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units PSYCH 1A03, 1AA3

LEVEL II: 30 UNITS
12 units ARTS&SCI 2A06, 2D06
6 units BIOLOGY 1A03, 1AA3
6 units STAT 1CC3 and PSYCH 2R03 (or ARTS&SCI 2R06)
6 units from PSYCH 2E03, 2F03, 2H03, 2T03

LEVEL III: 30 UNITS
12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
3 units from PSYCH 2E03, 2F03, 2H03, 2T03 (whichever not taken in Level II)
6 units Level III Psychology (See Note 4 above.)
3 units Electives

LEVEL IV: 30 UNITS
6 units ARTS&SCI 3L03, 3S03
9 units Level III or IV Psychology including one course from Course List, if not already completed. (See Note 4 above.)
6 units PSYCH 4D06 or six units Level IV Psychology approved as substitutes for ARTS&SCI 4A06 or 4C06
9 units Electives

Honours Arts & Science and Sociology (2027520)

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOl 1A06.

NOTES
1. A student may take a maximum of six units of level IV Independent Research (SOCIOl 4M03/4N03 or 4MM6).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units SOCIOl 1A06

LEVEL II: 30 UNITS
12 units ARTS&SCI 2A06, 2D06
6 units BIOLOGY 1A03, 1AA3
12 units SOCIOl 2S06, 2203; three units Sociology

LEVEL III: 30 UNITS
6 units ARTS&SCI 3B03, 3BB3
15 units SOCIOl 3H06, nine units Sociology
3 units from SOCIOl 3A03, 3P03, 3PP3
3 units from SOCIOl 3I03, 3P03, 3W03
3 units Electives

LEVEL IV: 30 UNITS
12 units ARTS&SCI 3A06, 3L03, 3S03
6 units Upper-level Inquiry
6 units Level IV Sociology
6 units SOCIOl 4M03 and 4N03 or 4MM6 to replace ARTS&SCI 4A06 or 4C06

Honours Arts & Science and Women's Studies (2027642)

ADMISSION
Completion of Arts & Science I with a Cumulative Average of at least 6.0 including a grade of at least B- in WOMEN ST 1A06.

NOTES
1. Enrolment in the Honours Arts & Science and Women's Studies programme is limited. Application for admission, including a letter explaining the applicant's interest in Women's Studies, should be made to the Director of Women's Studies prior to April 15.
2. Students who have not taken WOMEN ST 1A06 in Level I but who are interested in this combined programme should consult the Director of Women's Studies.
3. Registration in each level of the programme requires written approval of the Director of Arts & Science and the Director of Women's Studies.
4. In Levels II, III, and IV, students must normally take the six-unit Women's Studies course appropriate to their level and six additional units of approved Women's Studies courses as specified under Women's Studies Programme Requirements. (See the Women's Studies Programme section of this Calendar.)

LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units WOMEN ST 1A06

LEVEL II: 30 UNITS
12 units ARTS&SCI 2A06, 2R06
6 units BIOLOGY 1A03, 1AA3
12 units WOMEN ST 2A06; six units from Course List

LEVEL III: 30 UNITS
6 units ARTS&SCI 2D06
6 units from ARTS&SCI 3A06, 3P03 and 3BB3 or 3L03 and 3S03
6 units Upper-Level Inquiry
12 units WOMEN ST 3A06; six units from Course List

LEVEL IV: 30 UNITS
12 units from ARTS&SCI 3A06, 3B03 and 3BB3, 3L03 and 3S03 (whichever not completed)
12 units WOMEN ST 4A06, six units from Course List
6 units Electives
The School of Business offers two programmes, each of which spans four levels of study. The Honours Commerce programme, which leads to the Honours Bachelor of Commerce (H.B.Com.) degree, provides substantial concentration in business subjects beyond the core of required Commerce courses. The Commerce programme, which leads to the Bachelor of Commerce (B.Com.) degree, contains essential grounding in business subjects and promotes the broadening of horizons through studies in Social Sciences, Humanities and Science. These programmes are referred to collectively as the Commerce programmes.

In addition, the School of Business and the Faculty of Engineering offer eight five-level joint programmes for the Bachelor of Engineering and Management (B.Eng.Mgt.) degree. These programmes provide a full course of study in Engineering and include a complete core of business subjects. Details concerning the B.Eng.Mgt. programmes and their academic regulations are given in the Faculty of Engineering section of this Calendar.

Also, the School of Business participates in the Committee of Instruction and offers courses for the B.A. programme in Labour Studies which is described in the Faculty of Social Sciences section of this Calendar.

The Commerce Programmes

In Level I, a student who wishes to pursue either of the Commerce programmes establishes a foundation in business, computer science, economics and mathematics, and also undertakes elective work. While this course of study is prescribed in Business I, a student who establishes a similar background in the Level I programme of another Faculty may be considered for admission to Level II (Commerce II). Such a student should consult with the Academic Programmes Office in the School of Business. A student must gain admission to Commerce II in order to proceed towards the Honours B.Com. or B.Com. degrees. In Level II a wide range of business subjects including accounting, finance, marketing, human resources/labour relations, management information systems and communications are introduced and further coursework in economics is required. Elective work is taken from non-Commerce courses.

While the same core of required Commerce courses is completed in Level II, the Commerce programmes diverge at Level III. In the Honours Commerce programme, about three-quarters of the work is in Commerce courses, with the remainder of the load coming from electives outside the Faculty. In the Commerce programme the work is approximately evenly divided between Commerce and non-Commerce courses.

International/Cross-cultural/Language Menu

In its revised programmes, the School of Business is stressing the importance of breadth of knowledge. Students are required to take courses in a variety of business disciplines, thus giving them a sound understanding of business functions and their relationships. They also obtain exposure to international and cross-cultural issues. This will provide them with the knowledge needed for the world of global organizations. Prior to graduation, students are required to complete successfully two courses from an International/Cross-Cultural/Language menu. The menu for 1997-98 is as follows:

ANTHROP 1A03 Introduction to Anthropology: Culture and Society
ANTHROP 2P03 Peoples of the Pacific
ANTHROP 3CN3 Culture and Nationalism
ANTHROP 3D03 Ethnology: Pacific Islands
ART HIST 3AA3 Contemporary Art
COMP LIT 1A06 The European Literary Tradition
ECON 2C03 Asian-Pacific Economies
ECON 2F03 Globalization and Economic Development
ECON 3H03 International Monetary Economics
ECON 3H23 International Trade
ECON 3T03 Economic Development: Agriculture and Population
ECON 3TT3 Economic Development: Trade, Foreign Investment and International Finance
ENGLISH 1D06 English Literature: Forms and Approaches
ENGLISH 3P03 Modern Drama in English
FRENCH 1A06 Introduction to French Studies: Advanced Level
FRENCH 1N06 Intensive French Grammar
FRENCH 2B03 French Language Practice I
FRENCH 2H03 Introduction to French Linguistics
FRENCH 2M06 Introduction to French Studies: Advanced Level
FRENCH 2N03 Introduction to the Civilization of France
FRENCH 2W03 20th-Century French Literature I
FRENCH 2W13 20th-Century French Literature II
GEOG 1B06 Human Geography
GEOG 2C03 China: People and Land in Transition
GEOG 3J03 Geography of Japan (JAPAN ST 3J3)
GERMAN 1B06 Introduction to German Studies
GERMAN 2A03 Twentieth-Century Literature
GERMAN 2A03 Introduction to German Literature
GERMAN 2A03 Intermediate German
HEBREW 2A03 Introduction to Biblical Hebrew
HEBREW 2B03 Introduction to Biblical Hebrew II
HEBREW 3A03 Intermediate Hebrew I
HEBREW 3B03 Intermediate Hebrew II
HISPANIC 1A06 Intermediate Spanish
HISPANIC 2B03 Introduction to Spanish Literature and Civilization
HISPANIC 2B03 Intermediate Spanish
HISTORY 3A03 Imperial Islam: The Ottomans
HISTORY 3A03 The Modern Middle East
HISTORY 3B03 Modern Japan (RELG ST 3B03)
HISTORY 3B03 The International Relations of the Imperial Powers, 1914-1945
ITALIAN 1A06 Intermediate Italian
JAPANESE 1Z06 Beginner's Intensive Japanese
JAPANESE 2Z06 Intermediate Intensive Japanese
JAPANESE 3B03 Business Japanese
JAPAN ST 2P06 Japanese Civilization (RELG ST 2P06)
JAPAN ST 3E03 Japanese Religion (RELG ST 3E03)
JAPAN ST 3H03 Storytelling in East Asian Religions (RELG ST 3H03)
LINGUIST 1A06 The Study of Language
LINGUIST 2A03 The Origin and Development of the European Language
LINGUIST 2LL3 Languages of the World
LINGUIST 3X03 Sociolinguistics I
MOD LANG 1A03 Introduction to Literary Studies
MOD LANG 2A03 Survey of Italian Literature (in English)
MOD LANG 2B03 Masterworks of German Literature (in English)
MOD LANG 3G03 German Drama (in English)
Further opportunities for meeting educational requirements for professional designations are available to students in all Commerce and Engineering and Management programmes. Additional course work may be taken as Extras (see Extra Courses below) while in the programme. Further units of credit may also be taken after graduation (see Continuing Students above). Information concerning credit towards these professional designations can be obtained from the Academic Programmes Office in the School of Business.

MINOR
A minor is an option available to a student enrolled in a four- or five-level programme. A minor consists of at least 18 units of Level II, III or IV courses beyond the designated Level I course(s) that meet the requirements set out in the programme description of that minor. A student is responsible for ensuring that the courses taken fulfill these requirements. Those who have completed the necessary courses may apply for recognition of that minor when they graduate. If recognition is granted for a minor, a notation to that effect will be recorded on the student’s transcript. For further information, please refer to Minors in the General Academic Regulations section of this Calendar.

ACADEMIC REGULATIONS

A student enrolled in either of the Commerce programmes, in addition to meeting the General Academic Regulations of the University, shall be subject to the following School of Business Regulations:

CHANGE OF PROGRAMME
A student may transfer between Commerce programmes prior to entering Level IV, provided that, after consultation with the Academic Programmes Office of the School of Business, it has been determined that the academic requirements of the new programme have been met, and an acceptable revised programme of study can be established. This revised programme of study must be approved by the Manager, Academic Programmes.

Students in good standing in the Engineering and Management programme may transfer to a Commerce programme with the permission of the Manager, Academic Programmes. The conditions for eligibility for entrance to the Commerce programmes are the same as for students registered in the School of Business.

WORKLOAD
In Business I, a full-time student must complete a 30-unit load in each Fall/Winter session. Advance credit and credit earned during the Spring/Summer session may not be used to reduce this load requirement. Such reductions will be applied as late as possible in a student’s programme. A part-time student in Business I is permitted to take a maximum of 18 units in any Fall/Winter session.

In any Fall/Winter session, a student may not register for more than 30 units (including Extra courses) without the approval of the Manager, Academic Programmes. Such approval will not be given to a student with a Cumulative Average (CA) below 7.0. In any Spring/Summer session, a student may not register for more than 12 units.

REPEATED COURSES
Any failed course must be repeated if it is a required course for the programme, or must be repeated or replaced if it is not required. The grades for both the failed course and its repetition or replacement, as appropriate, will be included in the calculation of a student’s CA. Voluntary repetitions of non-Commerce courses in which passing grades have been previously attained are designated as Extra courses. (See Extra Courses below and in the Glossary section of this Calendar.)

EXTRA COURSES
Courses in addition to those which constitute the student’s programme must be designated Extra at registration. Extra courses may be taken only upon successful completion of Level III of any of the Commerce programmes. No Extra courses may be scheduled in a manner which would delay completion of a student’s programme. Commerce courses previously taken cannot be repeated as Extras. The designation for Extra can be neither added nor removed retroactively. The last day to change the Extra designation is the last day for the Drop and Add period of the term to which it pertains.

FULL-TIME/PART-TIME STUDIES
Students can take Business I and the Commerce programmes on a full-time or part-time basis. Progression to the next level is at the end of the successful completion of the 30 units of work that pertain to the lower level. It should be noted that only a few Commerce courses are offered in the evenings or in the summer sessions.

CONTINUING STUDENTS
Graduates of McMaster’s Commerce programmes or one of the Engineering and Management programmes may take, as part-time students, Level III and IV Commerce courses (not previously taken, to a maximum of 18 units), excluding COMMERCE 4A9G*, 4A9H*, 4A9J*, with the permission of the Manager, Academic Programmes. Such permission will be given only if normal prerequisites are satisfied and if space permits after meeting the requirements of in-course students. Registrations will be approved after classes start. (See the Admission Requirements section of this Calendar under the heading Continuing and Post-Degree Students.)

These courses are available as ACC 500, ACC 501, ACC 502, through the School of Business, subject to sufficient enrolments and availability of qualified instructors.

SECOND UNDERGRADUATE DEGREE
A student with an undergraduate degree will not be admitted or readmitted to either of the Commerce programmes. Such a student may wish to apply for admission to the M.B.A. programme.

CREDIT TOWARDS PROFESSIONAL DESIGNATIONS
Educational requirements toward a variety of professional designations can be met in varying degrees within the Commerce programmes and the Engineering and Management programme. The professional accounting designations C.A., C.M.A. and C.G.A. are awarded by the Institute of Chartered Accountants of Ontario, the Society of Management Accountants of Ontario and the Certified General Accountants Association of Ontario, respectively, while the designation C.H.R.M. is awarded by the Human Resources Professionals Association of Ontario.
LEVEL I COURSES

Students are not permitted to take more than 48 units of Level I courses in their programme.

LEVEL OF REGISTRATION

A student is required to register in the lowest level for which more than six units of work is incomplete. Work of the next higher level may be undertaken only when necessary to fill a programme load. Courses must be taken in the sequence specified by the School of Business.

READMISSION

A student in Level II, III or IV of a Commerce programme who becomes ineligible to continue in the School of Business, may apply for readmission to the Commerce programme in a subsequent calendar year up to a maximum of five years following the year in which the student becomes ineligible to continue. Readmission is not guaranteed.

Application for readmission must be made in writing to the Associate Dean (Academic) by July 15 for entry in September. This application should explain why the applicant would expect to succeed in the programme if readmitted. Forms for this purpose may be obtained from the Academic Programmes Office in the M.G. DeGroote Building, Room 104.

A student who is readmitted after having become ineligible to continue in a Commerce programme must repeat all the courses of the level at which he/she became ineligible to continue unless specific course exemptions are granted. The earliest possible session for readmission is the session starting in September of the year following the year in which the student became ineligible to continue.

Former Commerce students who have not been registered in a Commerce programme within the past five years, including those who were in good standing at the time of their most recent registration, must apply for readmission through the Office of the Registrar. Applicants must complete a Returning Student Application form together with a supplementary information form. Both forms may be obtained from the Academic Programmes Office. The completed forms and the $50 application fee must be submitted to the Office of the Registrar by July 15 for entry in September.

REINSTATEMENT

A student who may not continue at the University may apply for reinstatement.

If the applicant has been registered in Business I or a Commerce programme within the past five years, he or she may apply in writing to the Associate Dean (Academic) by July 15 for entry in September. This application should explain why the applicant would expect to succeed in the programme if reinstated. Forms for this purpose may be obtained from the Academic Programmes Office.

Other applicants seeking reinstatement may apply through the Office of the Registrar. Such applicants must complete a Returning Student Application form together with a supplementary information form. Both forms may be obtained from the Academic Programmes Office in the M.G. DeGroote School of Business, Room 104. The completed forms and the $50 application fee must be submitted to the Office of the Registrar by July 15 for entry in September.

In all cases, the earliest possible session for reinstatement is the session starting in September of the year following the year in which the student becomes ineligible to continue at the University. Reinstatement is not guaranteed.

COMMERCE INTERNSHIP PROGRAMME

The School of Business offers students the opportunity to participate in an optional career-oriented work placement. Work terms are eight, twelve or sixteen months in duration and begin following the successful completion of Level III. Students compete for placements with participating companies and other organizations through an interview and application process. Upon completion of the internship they return to complete their degree programme. For further information, please contact the Business Career Services Office in the M.G. DeGroote Building, Room 112.

EXCHANGE PROGRAMMES

There are a number of official exchange programmes offered to undergraduate students registered in the School of Business. The countries involved are: England, Norway, Mexico, France and Singapore. Official exchange programmes offer students the most inexpensive means of studying abroad as students participating in these exchanges avoid the foreign student fees by paying fees to McMaster. All students must be in good standing to be eligible to participate in an exchange. In most cases, students who participated in exchange programmes go abroad for Level III of their programme. Information is available from the Academic Programmes Office, in the M.G. DeGroote Building, Room 104.

Additional information may be found under International Study in the General Academic Regulations section of this Calendar.

Information concerning GOTSPEX (The Group of Ten Student Exchange Programme) can be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Student Exchanges. Acceptance to the Ontario and University-wide Exchange Programmes is by recommendation. Application forms can be obtained from:

Student Exchanges
Hamilton Hall, Room 405
Telephone: (905) 525-9140, extension 24748

FORMER COMMERCE STUDENTS

If a student was previously registered in a McMaster Commerce programme and was in good standing but did not attend in the preceding year, the student must write to the Manager, Academic Programmes, to seek readmission. The letter should describe the student's activities (academic and otherwise) since he/she was last registered.

If five years have passed since the student was last registered at McMaster, he/she should consult the Application Procedures-Readmission section of this calendar.

Grades of McMaster's Commerce or Engineering and Management programmes should refer to Continuing Students above.

INQUIRIES RE: ACADEMIC REGULATIONS

A student seeking relief from the School of Business regulations must apply in writing, to the Associate Dean (Academic) with appropriate documentation attached. Guidelines for such requests may be obtained from the Academic Programmes Office, in the M.G. DeGroote Building, Room 104.

PROGRAMMES

THE SCHOOL OF BUSINESS HAS INTRODUCED REVISIONS TO THE HONOURS COMMERCE AND COMMERCE PROGRAMMES. THE REVISED PROGRAMMES ARE SET OUT BELOW. STUDENTS WHO ENTERED LEVEL II COMMERCE PRIOR TO SEPTEMBER 1995 SHOULD CONSULT THE ACADEMIC PROGRAMMES OFFICE FOR INFORMATION ABOUT THEIR PROGRAMME REQUIREMENTS.

Business I {0725}

LEVEL I: 30 UNITS

| 15 units | COMMERCE 1S03; COMP SCI 1BA3; ECON 1A06; MATH 1M03 |
| 15 units | Elective. Students who do not have OAC Calculus must take MATH 1KC3 as an elective before taking MATH 1M03. Students who do not have OAC Finite Mathematics must take STATS 1L03 as an elective. See also the International/Cross-Cultural/Language Menu in this section of the Calendar. |

Commerce {2140}

ADMISSION TO COMMERCE II

Admission to either of the Commerce programmes beyond Commerce Level II is not possible.
Business Level I Students

To be considered for Commerce Level II a student must have a CA of at least 5.0 on Business I courses with no failures. When calculating the CA and checking for failures only first attempts at Business I courses are considered.

Transfer Students

Transfer students may be admitted to Commerce II from other universities or from other Faculties within McMaster University. A maximum of 50 spaces in Commerce Level II may be given to transfer students. Academic requirements for admission of transfer students may be more demanding than those for Business I students. Contact the Academic Programmes Office in the M.G. DeGroote Building, Room 104, for information.

REQUIREMENTS

LEVEL II: 30 UNITS
24 units Commerce 2AA3, 2AB3, 2BA3, 2FA3, 2MA3, 2QA3, 2QB3, 2S03
3 units ECON 2X03
3 units Electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Honours Commerce (Honours B.Com.) {2141}

Requirements for continuation in the Honours B.Com. programme are specified in the General Academic Regulations section of this Calendar.

REQUIREMENTS

LEVEL III: 30 UNITS
15 units Commerce 3BC3, 3FA3, 3MC3, 3QA3, 3QC3
15 units Electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

LEVEL IV: 30 UNITS
6 units Commerce 4PA3, 4SA3
9 units Level III or IV Commerce
9 units Level III or IV Commerce courses or electives from non-Commerce courses
9 units Electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Commercial (B.Com.) {2140}

Requirements for continuation in the B.Com. programme are specified in the General Academic Regulations section of this Calendar.

REQUIREMENTS

LEVEL III: 30 UNITS
15 units Commerce 3BC3, 3FA3, 3MC3, 3QA3, 3QC3
15 units Electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

LEVEL IV: 30 UNITS
6 units Commerce 4PA3, 4SA3
24 units Electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Minor in Business

REQUIREMENTS

6 units ECON 1A03
18 units Commerce 2AA3, 2AB3, 2BA3, 2FA3, 2MA3, 2QA3, 2QB3, 3BC3, 3FA3, 3MC3

NOTE:

Enrolment is limited to 40 students, who are Level II or above, from programmes other than Commerce, Engineering Management, and Labour Studies in each of the Commerce courses comprising the minor. Places in these courses will be allocated to students on a first-come, first-served basis.
McMaster baccalaureate degree programmes in Engineering are accredited by the Canadian Engineering Accreditation Board (CEAB) of the Canadian Council of Professional Engineers. Provincial Engineering Associations accept the accreditation as a major requirement for admission to the qualification Professional Engineer.

At McMaster, B.Eng. students take a common Level I programme comprising Mathematics, Physics, Chemistry, Engineering Design, Computation and a complementary studies elective. The specialized programmes are entered at Level II. Students interested in one of the Engineering and Management programmes must take COMMERCE 1503 and ECON 1503 as their electives in Level I. Students interested in one of the Engineering and Society programmes are advised to choose the six units complementary studies in Level I to be consistent with their chosen focus of the programme.

Programmes offered by the Faculty of Engineering include four types of elective courses, which are governed by regulations, as follows:

**Complementary Studies Electives** are broadening courses which are not in subjects that are an integral part of B.Eng. programmes. In addition to ENGINEER 4A03 or equivalent and 2B03 or 4B03, 15 units of complementary studies electives is required in all B.Eng. programmes. Of these, three units must be selected from courses that are designated as being above Level I.

The Associate Dean of Engineering must authorize each student’s complementary studies elective courses. An approved list is published each spring and is available from the Associate Dean’s office. Engineering I students should refer to the Degrees and Programmes section of this Calendar to determine which Level I Complementary Studies electives are possible.

**Technical Electives** are Engineering or Applied Science courses in subjects relevant to the particular B.Eng. programme.

**Commerce Electives** are required in Level V of Engineering and Management programmes.

**Engineering and Society Focus Electives** are courses offered by various departments throughout the University. These courses are selected in consultation with the Director of the Engineering and Society programme, such that they form a proper sequence of the focus electives. With permission of the Director of the Engineering and Society Programme, students registered in a Theme School may use Theme School courses as focus electives.

Both the appropriate Department Chair and the Associate Dean of Engineering must approve each student’s Technical, Commerce, and Engineering and Society Focus Elective Courses.

**THEME SCHOOL PARTICIPATION**

Students in B.Eng. programmes, other than Engineering and Management, may participate in a Theme School. Admission to a particular Theme School is governed by the regulations of that Theme School. In general, Theme School courses are taken in addition to the course requirements of the Department. Some Theme School courses may be considered as complementary studies electives, technical electives, or Engineering and Society focus electives.

**INDUSTRIAL INTERNSHIPS**

The Faculty of Engineering offers 12 to 16-month full-time paid work placements in industry to provide B.Eng. students with the technical work experience based on their course work. Students who qualify complete for placements with participating companies through an application and interview process. Students must be in their second or third level of a four-year programme, or third or fourth level of a five-level programme and be eligible to return to complete their undergraduate engineering degree in order to accept an Internship Placement. An administrative fee is assessed following the start of the Placement. Industrial Internships are open to all discipline and B.Eng. programmes within the Faculty of Engineering.

**EXCHANGE PROGRAMMES**

Formal exchange programmes with a number of universities in other countries are available for B.Eng. students wishing to attend a foreign university and receive credit at McMaster. For further information please see International Study in the General Academic Regulations section in this Calendar. For information on the Group of Ten Student Exchange Programme, please refer to the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Student Exchanges.
ACADEMIC REGULATIONS FOR B.ENG. PROGRAMMES

Students enrolled in Engineering programmes, in addition to meeting the General Academic Regulations of the University, shall be subject to the following Faculty Regulations:

ENGINEERING I

To be eligible for Level II a student must successfully complete all Level I courses with an overall Cumulative Average (CA) of 4.0 or greater. To help students who may have had academic difficulty during the year, the Faculty of Engineering has a remedial studies plan (called the M-Opportunity) that provides the opportunity to replace failed courses in second term and/or in the summer. The results of these M-Opportunity courses are used to calculate a new CA. (Failed courses are still counted in the CA.)

A student in Engineering I whose Cumulative Average (CA) is less than 4.0 can no longer continue in Engineering.

SEQUENCE OF COURSES

Courses must be taken in the sequence specified in the Calendar for the programme. Students must register for all outstanding work of one level before attempting work for a higher level.

REPEATED COURSES

All failed courses may be repeated if they are required courses for the Engineering programme or may be replaced if the courses are not explicitly required. Courses may be repeated only following failure or inability to achieve prerequisite standing for a required course or approved technical elective course.

LEVEL OF REGISTRATION

A student is required to register in the lowest level for which more than six units of work is incomplete. Work of a higher level may be undertaken only with the permission of the Associate Dean of Engineering.

FALL/WINTER SESSION WORKLOAD

The Faculty of Engineering has set a minimum Fall/Winter session workload of 34 units for Engineering I students. The work load for other students must be approved by the appropriate Department Chair and the Associate Dean of Engineering. In order to qualify for most scholarships and be eligible for Dean's Honour List, students should register in the full load of work prescribed by programme and level. No more than 21 units in one term will be approved.

REINSTATEMENT TO ENGINEERING

A student who is ineligible to continue in the Faculty of Engineering or who May Not Continue At The University may normally apply for reinstatement for one full academic year. Exceptions may be made when there are extenuating circumstances which are supported by documentation. Students seeking reinstatement must complete the Returning Student Application available at the Office of the Registrar or the Office of the Associate Dean of Engineering. The completed application and the $50 application fee must be submitted to the Office of the Registrar by July 15. Applications must be accompanied by a written explanation of the reason for the student's previous unsatisfactory academic performance; reasons for reinstatement at this time (including documentation of what has been done to correct previous problems), reasons why the student would expect to succeed in the desired programme if reinstated (i.e., what was the previous problem and what has been done to correct it), and activities since last registered at McMaster including all academic work. Reinstatement is not guaranteed.

PROGRAMME CHANGES

All programme changes must be made through the Office of the Associate Dean of Engineering and will be subject to the deadline dates established by the University (see Sessional Dates section of this Calendar).

LEVEL I PROGRAMME

ENGINEERING I: 34 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
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<tbody>
<tr>
<td>3</td>
<td>CHEM 1A04, 1C04, 1D04</td>
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<tr>
<td>6</td>
<td>ENGINER 1A00, 1C04, 1D04</td>
</tr>
<tr>
<td>11</td>
<td>MATH 1H05, 1N05, 1N03</td>
</tr>
<tr>
<td>6</td>
<td>PHYSICS 1D03, 1E03</td>
</tr>
<tr>
<td>6</td>
<td>approved complementary studies electives</td>
</tr>
</tbody>
</table>

PROGRAMMES FOR THE B.ENG., B.ENG.MGT., AND B.ENG. SOCIETY DEGREES

Admission to Level II Engineering Programmes

Admission to Level II Engineering programmes requires completion of Engineering I with a minimum CA of 4.0. A programme selection form must be submitted to the Office of the Associate Dean of Engineering by April 9, 1998. All programmes have limited enrolment; should there be more applicants than the limiting number in any programme, admission to that programme will be based on a full load using the Level I CA. Admission to a Level II programme for students registered in a reduced load will be by selection and/or an interview.

In addition, admission to a B.Eng.Mgt. programme requires the completion of COMMERCE 1503 and ECON 1503 with an average of 5.0 in these two courses; an interview may also be required. Students admitted to a B.Eng. Society programme are required to submit a statement indicating the educational objectives for the focus electives.

Students seeking admission to the Engineering and Management programme or the Engineering and Society programme must first be admitted to the relevant department. Thereafter, they will be considered for admission to either of these two programmes.

Chemical Engineering (B.Eng.)

ADMISSION

See Admission to Level II Engineering Programmes.

LEVEL II: 36 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>CHEM 2A04, 2C02, 2D04, 2F04, 2G02</td>
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<tr>
<td>8</td>
<td>CHEM 2D03, 2M05</td>
</tr>
<tr>
<td>6</td>
<td>MATH 2M06</td>
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<tr>
<td>6</td>
<td>approved complementary studies electives</td>
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LEVEL III: 36 UNITS

<table>
<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>27</td>
<td>CHEM 3D03, 3E04, 3G03, 3K04, 3L02, 3M04, 3O04, 3P03</td>
</tr>
<tr>
<td>3</td>
<td>STATS 3N03</td>
</tr>
<tr>
<td>6</td>
<td>from BIOCHEM 2EE3, CHEM ENG 3Q03, ENGINEER 2003</td>
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LEVEL IV: 34 UNITS

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<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>13</td>
<td>CHEM ENG 4L02, 4M03, 4N04, either 4W04 or 4Y04</td>
</tr>
<tr>
<td>6</td>
<td>ENGINEER 2MM3, and ENGINEER 4A03 or 4H03 or equivalent</td>
</tr>
<tr>
<td>9</td>
<td>from CHEM ENG 4B03, 4C03, 4E03, 4K03, 4T03, 4X03, 4Z03, ELEC ENG 4CB3, ENGINEER 4U03, one course must be CHEM ENG 4B03 or 4K03</td>
</tr>
<tr>
<td>3</td>
<td>complementary studies electives (above Level I)</td>
</tr>
<tr>
<td>3</td>
<td>approved Level III or IV technical electives</td>
</tr>
</tbody>
</table>

Chemical Engineering and Management (B.Eng.Mgt.)

ADMISSION

See Admission to Level II Engineering Programmes.

LEVEL II: 34 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02</td>
</tr>
<tr>
<td>3</td>
<td>CHEM 2D03</td>
</tr>
<tr>
<td>3</td>
<td>COMMERCE 2MA3</td>
</tr>
<tr>
<td>6</td>
<td>ECON 1BB3, 2X03</td>
</tr>
<tr>
<td>6</td>
<td>MATH 2M06</td>
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LEVEL III: 36 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
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<tr>
<td>21</td>
<td>CHEM ENG 3D03, 3E04, 3K04, 3L02, 3M04, 3O04</td>
</tr>
<tr>
<td>12</td>
<td>COMMERCE 2BA3, 2BA3, 2FA3, 3MC3</td>
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<tr>
<td>3</td>
<td>ENGINEER 2MM3</td>
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</table>

LEVEL IV: 37-39 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
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<tr>
<td>11</td>
<td>CHEM ENG 3G03, 3P03, 4L02, 4M03</td>
</tr>
<tr>
<td>12</td>
<td>COMMERCE 2BA3, 2QA3, 3FA3, 3QC3</td>
</tr>
<tr>
<td>2</td>
<td>ENGN MGT 3AA1, 4A01</td>
</tr>
</tbody>
</table>
3 units Commerce electives selected from Level III or IV Commerce courses or COMMERCE 2QB3
3 units approved complementary studies electives (above Level I)
6-8 units from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 2M05, ENGINEER 2003

LEVEL V: 35 UNITS
8 units CHEM ENG 4N04; one of CHEM ENG 4W04 or 4Y04
3 units COMMERCE 4PA3
3 units ENGN MGT 5B03
9 units from CHEM ENG 4B03, 4C03, 4E03, 4K03, 4T03, 4X03, 4Z03, ELEC ENG 4CB3, ENGINEER 4U03, one course must be CHEM ENG 4B03 or 4K03
3 units ENGINEER 4A03 or 4H03 or equivalent
6 units Commerce electives selected from Level III or IV Commerce courses or COMMERCE 2QB3
3 units approved Level III or IV technical electives

Chemical Engineering and Society (B.Eng. Society) \{4080535\}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
A minimum of 18 units of focus elective courses is required for the programme.

LEVEL II: 34-37 UNITS
16 units CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02
3 units CHEM 2D03
6 units ENGSOCTY 2X03, 2Y03
6 units MATH 2M06
3-6 units Engineering and Society focus electives

LEVEL III: 31-34 UNITS
17 units CHEM ENG 3D03, 3E04, 3L02, 3M04, 3O04
5 units CHEM 2M05
3 units ENGINEER 2MM3
3 units ENGSOCTY 3Y03
3-6 units Engineering and Society focus electives

LEVEL IV: 33-36 UNITS
15 units CHEM ENG 3G03, 3K04, 3P03, 4L02, 4M03
6 units ENGSOCTY 3X03, 3Z03
3 units STATS 3N03
6 units from BIOCHEM 2EE3, CHEM ENG 3Q03, ENGINEER 2003
3-6 units Engineering and Society focus electives

LEVEL V: 32 UNITS
8 units CHEM ENG 4N04; one of CHEM ENG 4W04 or 4Y04
9 units from CHEM ENG 4B03, 4C03, 4E03, 4K03, 4T03, 4X03, 4Z03, ELEC ENG 4CB3, ENGINEER 4U03, one course must be CHEM ENG 4B03 or 4K03
6 units ENGSOCTY 4X03, 4Z03
3 units approved Level III or IV technical electives
6 units Engineering and Society focus electives

Civil Engineering (B.Eng.) \{4120\}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
Level IV Civil Engineering courses must be selected in accordance with regulations which require a specified minimum content of engineering design and synthesis. Before the end of Level III, students must complete a Civil Engineering electives form, and ensure that it has been approved by the Department before completing a Level V Registration Form.

LEVEL II: 36 UNITS
21 units CIV ENG 2A02, 2C04, 2D03, 2E03, 2I03, 2J03, 2K03, 2N03
11 units ENGINEER 2C03, 2P04, 2Q04
6 units MATH 2M06

LEVEL III: 36 UNITS
25 units CIV ENG 3A03, 3B03, 3G03, 3J04, 3K03, 3M04, 3Q03, 3S03
3 units ENGINEER 3P03
4 units MATH 3J04
3 units approved complementary studies electives

LEVEL IV: 34-36 UNITS
3 units CIV ENG 4B03
6 units ENGINEER 4B03; and ENGINEER 4A03, 4H03 or equivalent
22-24 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
3 units approved complementary studies electives (above Level I)

Civil Engineering and Society (B.Eng. Society) \{4120325\}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
Level V Civil Engineering courses must be selected in accordance with regulations which require a specified minimum content of engineering design and synthesis. Before the end of Level IV, students must complete a Civil Engineering electives form, and ensure that it has been approved by the Department before completing a Level V Registration Form.

LEVEL II: 37 UNITS
15 units CIV ENG 2A02, 2C04, 2D03, 2J03, 2K03
6 units COMMERCE 2AA3, 2MA3
6 units ECON 1BB3, 2X03
4 units ENGINEER 2P04
3 units MATH 2M06

LEVEL III: 39 UNITS
13 units CIV ENG 2D03, 2E03, 3M04, 3Q03
9 units COMMERCE 2AB3, 2BA3, 2FA3
7 units ENGINEER 2C03, 2Q04
4 units MATH 3J04
3 units STATS 3Y03
3 units approved complementary studies electives (above Level I)

LEVEL IV: 38 UNITS
19 units CIV ENG 3A03, 3B03, 3G03, 3J04, 3K03, 3S03
12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
3 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
3 units ENGINEER 3P03
1 unit ENGN MGT 3A01

LEVEL V: 37-38 UNITS
3 units CIV ENG 4B03
21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
3 units COMMERCE 4PA3
4 units ENGN MGT 4A01, 5B03
3 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
3 units ENGINEER 4A03, 4H03 or equivalent

Civil Engineering and Society (B.Eng. Society) \{4120535\}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTES
1. Level V Civil Engineering courses must be selected in accordance with regulations which require a specified minimum content of engineering design and synthesis. Before the end of Level IV, students must complete a Civil Engineering electives form, and ensure that it has been approved by the Department before completing a Level V Registration Form.
2. A minimum of 18 units of focus elective courses is required for the programme.
LEVEL II: 34-37 UNITS
15 units CIV ENG 2A02, 2C04, 2I03, 2J03, 2003
4 units ENGINEER 2P04
6 units MATH 2M06
6 units ENGSOCT 2X03, 2Y03
3-6 units Engineering and Society focus electives

LEVEL III: 30-33 UNITS
13 units CIV ENG 2D03, 2E03, 3M04, 3Q03
7 units ENGINEER 2C03, 2Q04
4 units MATH 3J04
3 units ENGSOCT 3Y03
3-6 units Engineering and Society focus electives

LEVEL IV: 34-37 UNITS
19 units CIV ENG 3A03, 3B03, 3C03, 3J04, 3K03, 3S03
3 units ENGINEER 3P03
6 units ENGSOCT 3X03, 3Z03
6-9 units Engineering and Society focus electives

LEVEL V: 38-40 UNITS
3 units CIV ENG 4B03
3 units ENGINEER 4B03
6 units ENGSOCT 4X03, 4Z03
3-6 units Engineering and Society focus electives
21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03

Computer Engineering (B.Eng.) {4144535}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
Notice of Revised Course Structure: Beginning in September 1997 those students entering any Computer Engineering programme will follow a revised course structure. The Level III, IV and V (where applicable) requirements for these revised programmes will appear in the 1998-99 Calendar.

LEVEL II: 38 UNITS
8 units COMP ENG 2D14, 2S14
12 units ELEC ENG 2C14, 2C4, 2E14
7 units ENGINEER 2B03, 2Q04
8 units MATH 2P04, 2Q04
3 units approved complementary studies electives

LEVEL III: 36 UNITS (1997-98 ONLY)
12 units COMP ENG 3HB3, 3HC3, 3KB3, 3V03
18 units ELEC ENG 3AA3, 3BB3, 3CA3, 3DB3, 3FB3, 3FC3
3 units MATH 3K03
3 units STATS 3X03

LEVEL IV: 34 UNITS (1997-98 ONLY)
16 units COMP ENG 4HD3, 4HE3, 4JA4, 4MA3, 4WA3
3 units ELEC ENG 4QA3
6 units ENGINEER 4B03 and 4A03 or 4H03 or equivalent
9 units from COMP SCI 3S03, 4CB3, Level II or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering

Computer Engineering and Management (B.Eng.Mgt.) {4144325}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
See Notice of Revised Course Structure above.

LEVEL II: 37 UNITS
6 units COMMERCE 2AA3, 2BA3
4 units COMP ENG 2D14
6 units ECON 1B03, 2X03
8 units ELEC ENG 2C14, 2C4
2 units ENGINEER 2A03
8 units MATH 2P04, 2Q04
3 units Science technical elective approved by the department

LEVEL III: 37 UNITS (1997-98 ONLY)
9 units COMP ENG 2B03, 2BA3, 2FA3
9 units COMP ENG 3HB3, 3HC3, 3VA3
3 units COMP SCI 2S03

Computer Engineering and Society (B.Eng. Society)

ADMISSION
See Admission to Level II Engineering Programmes.

NOTES
1. See Notice of Revised Course Structure above.
2. A minimum of 18 units of focus elective courses is required for the programme.

LEVEL II: 36-39 UNITS
4 units COMP ENG 2D14
8 units ELEC ENG 2C14, 2C4
7 units ENGINEER 2B03, 2Q04
6 units ENGSOCTY 2X03, 2Y03
8 units MATH 2P04, 2Q04
3-6 units Engineering and Society focus electives

LEVEL III: 30-33 UNITS (1997-98 ONLY)
9 units COMP ENG 3HB3, 3HC3, 3VA3
3 units COMP SCI 2S03
3 units ELEC ENG 3B03
3 units ENGSOCTY 3Y03
3 units ENGINEER 2003
3 units MATH 3K03
3 units STATS 3X03
3-6 units Engineering and Society focus electives

LEVEL IV: 33-36 UNITS (1997-99 ONLY)
9 units COMP ENG 3KB3, 4H03, 4WA3
15 units ELEC ENG 3AA3, 3CA3, 3DB3, 3FB3, 3FC3
6 units ENGSOCTY 3X03, 3Z03
3-6 units Engineering and Society focus electives

LEVEL V: 34 UNITS (1997-99 ONLY)
10 units COMP ENG 4HE3, 4J04, 4MA3
6 units ENGSOCTY 4X03, 4Z03
3 units ENGINEER 4B03
6 units Engineering and Society focus electives
9 units from COMP SCI 3S03, 4CB3, Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering

Electrical Engineering (B.Eng.) {4170}

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
Notice of Revised Course Structure: Beginning in September 1997 those students entering any Electrical Engineering programme will follow a revised course structure leading to two options in the final level: communications and power. The Level III, IV and V (where applicable) requirements for these revised programmes will appear in the 1998-99 Calendar.
LEVEL II: 38 UNITS
8 units COMP ENG 2C14, 2D14
12 units ELECT ENG 2C14, 2CJ4, 2E14
7 units ENGINEER 2B03, 2D04
8 units MATH 2P04, 2Q04
3 units approved complementary studies electives

LEVEL III: 36 UNITS (1997-98 ONLY)
6 units COMP ENG 3HBB, 3KB3
24 units ELECT ENG 3AA3, 3BB3, 3CA3, 3DB3, 3FB3, 3FC3, 3NA3, 3SA3
3 units MATH 3K03
3 units ENGN MGT 3AA1
LEVEL IV: 34 UNITS (1997-99 ONLY)
7 units ELECT ENG 4A01, 4J04
6 units ENGINEER 4A03 and 4A04 or 4H03 or equivalent
12 units Electrical Engineering Level IV or Computer Engineering Level III or IV courses
9 units Level III or IV approved technical electives

Electrical Engineering and Management (B.Eng. Mgt.) [4170325]

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
See Notice of Revised Course Structure above.

LEVEL II: 37 UNITS
6 units COMMERCE 2AA3, 2BA3
4 units COMP ENG 2D14
6 units ECON 1BB3, 2X03
8 units ELECT ENG 2C14, 2CJ4
2 units ENGN MGT 2AA2
2 units MATH 2P04, 2Q04
3 units Science technical elective approved by the department

LEVEL III: 37 UNITS (1997-98 ONLY)
9 units COMMERCE 2BB3, 2BA3, 2FA3
3 units COMP ENG 3HBB3
12 units ELECT ENG 3CA3, 3DB3, 3FB3, 3FC3
3 units ENGINEER 2D03
1 unit ENGN MGT 3AA1
3 units MATH 3K03
3 units PHYSICS 2D03
3 units STATS 3X03

LEVEL IV: 34 UNITS (1997-99 ONLY)
9 units COMMERCE 3BC3, 3FA3, 3MC3 (Term 2)
3 units COMP ENG 3KB3
12 units ELECT ENG 3AA3, 3BB3, 3CA3, 3NB3
3 units ENGINEER 4A03 or 4H03 or equivalent
1 unit ENGN MGT 4A01
3 units STATS 3Y03
3 units approved complementary studies electives (above Level I)

LEVEL V: 34 UNITS (1997-99 ONLY)
6 units COMMERCE 3QC3, 4PA3
4 units ELECT ENG 4J04
3 units ENGN MGT 5B03
6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
15 units Level III or IV approved technical electives, of which at least nine units must be selected from Electrical Engineering Level IV or Computer Engineering Level III or IV courses

Electrical Engineering and Society (B.Eng. Society) [4170535]

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
1. See Notice of Revised Course Structure above.
2. A minimum of 18 units of focus elective courses is required for the programme.

LEVEL II: 38 UNITS
6 units COMMERCE 2AA3, 2MA3
4 units COMP ENG 2D14
2 units ENGN MGT 2AA2
7 units ENGINEER 2003, 2P04
11 units ELECT ENG 2A03, 2E04, 2H04
8 units MATH 2P04, 2Q04

LEVEL III: 30-33 UNITS (1997-98 ONLY)
12 units ELECT ENG 3CA3, 3DB3, 3FB3, 3FC3
3 units ENGSOCTY 3Y03
3 units ENGINEER 2P03
3 units MATH 3K03
3 units PHYSICS 2D03
3 units STATS 3X03
3-6 units Engineering and Society focus electives

LEVEL IV: 36-39 UNITS (1997-99 ONLY)
6 units COMP ENG 3HBB, 3KB3
12 units ELECT ENG 3AA3, 3BB3, 3NA3, 3SA3
6 units ENGSOCTY 3X03, 3Z03
3-6 units Engineering and Society focus electives
9 units approved Level III or IV technical electives

LEVEL V: 31 UNITS (1997-99 ONLY)
4 units ELECT ENG 4A01
6 units ENGSOCTY 4X03, 4Z03
3 units ENGINEER 4B03
6 units Engineering and Society focus electives
12 units Electrical Engineering Level IV or Computer Engineering Level III or IV courses

Engineering Physics (B.Eng.) [4190]

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
The following areas and courses are suggested as technical electives for Level IV:
- Computer Systems
- Lasers and Electro-Optics
- Nuclear Engineering
- Solid State Electronics

LEVEL II: 39 UNITS
4 units COMP ENG 2D14
7 units ENGINEER 2003, 2P04
11 units ENGINEER 2A03, 2E04, 2H04
8 units MATH 2P04, 2Q04
3 units PHYSICS 2D03
6 units approved English literature

LEVEL III: 37 UNITS
16 units PHYSICS 3D03, 3E03, 3F03, 3G03, 3H04
9 units MATH 3C03, 3D03, 3Q03
9 units PHYSICS 3B06, 3M03
3 units Complementary studies electives (above Level I)

LEVEL IV: 38-40 UNITS
3 units ENGINEER 4B03
11-13 units PHYSICS 4A03, 4D04 and 4A04 or 4H06
4 units PHYSICS 4B04
18-20 units approved Level III or IV technical electives, of which 10 units must be selected from the following courses: ENG PHYS 4B03, 4E03, 4F03, 4G03, 4H03, 4I03, 4J03, PHYSICS 4D06

Engineering Physics and Management (B.Eng. Mgt.) [4190325]

ADMISSION
See Admission to Level II Engineering Programmes.

LEVEL II: 38 UNITS
6 units COMMERCE 2AA3, 2MA3
4 units COMP ENG 2D14
2 units ENGN MGT 2AA2
7 units ENGINEER 2003, 2P04
11 units PHYSICS 2A03, 2E04, 2H04
8 units MATH 2P04, 2Q04
LEVEL II: 38 UNITS (1997-98 ONLY)
9 units COMMERC 2AB3, 2BA3, 2FA3
3 units ECON 1BB3
2 units ENGN MGT 2A2
10 units ENG PHYS 3E03, 3F03, 3W04
6 units MATH 3C03, 3D03
9 units PHYSICS 2D03, 3B06

LEVEL III: 40 UNITS (EFFECTIVE 1998-99)
9 units COMMERC 2AB3, 2BA3, 2FA3
6 units ECON 1BB3, 2X03
10 units ENG PHYS 3E03, 3F03, 3W04
6 units MATH 3C03, 3D03
9 units PHYSICS 2D03, 3B06

LEVEL IV: 38 UNITS (1997-98 ONLY)
12 units COMMERC 3BC3, 3FA3, 3MC3, 3QC3
2 units ENGN MGT 3AA1, 4A01
14 units ENG PHYS 3D03, 3O03, 3W04, 4U04
3 units MATH 4Q03
7 units PHYSICS 3M03, 4B04

LEVEL IV: 39 UNITS (EFFECTIVE 1998-99)
12 units COMMERC 3BC3, 3FA3, 3MC3, 3QC3
1 unit ENGN MGT 3AA1
13 units ENG PHYS 3D03, 3O03, 4C03, 4U04
3 units MATH 4Q03
7 units PHYSICS 3M03, 4B04
3 units approved complementary studies elective (above Level I)

3 units COMMERC 4PA3
3 units ENGN MGT 5B03
7 units ENG PHYS 4A04, 4C03
16-18 units approved Level III or IV technical electives, 10 units of which must be selected from the following courses: ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
6 units Commerce electives selected from Level III and IV Commerce courses or COMMERC 2OB3
3 units approved complementary studies electives (above Level I)

LEVEL V: 35-37 UNITS (EFFECTIVE 1999-2000)
3 units COMMERC 4PA3
4 units ENGN MGT 4A01, 5B03
4 units ENG PHYS 4A04
18-20 units approved Level III or IV technical electives, 10 units of which must be selected from the following courses: ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
6 units Commerce electives selected from Level III and IV Commerce courses or COMMERC 2OB3

Engineering Physics and Society (B.Eng. Society) [4190535]

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
A minimum of 18 units of focus elective courses is required for the programme.

LEVEL II: 35-38 UNITS
7 units ENGINEER 2C03, 2P04
11 units ENG PHYS 2A03, 2E04, 2H04
6 units ENGSOCTY 2X03, 2Y03
8 units MATH 2P04, 2Q04
3-6 units Engineering and Society focus electives

LEVEL III: 31-34 UNITS
4 units COMPE 2014
6 units ENG PHYS 3E03, 3F03
3 units ENGSOCTY 3Y03
6 units MATH 3C03, 3D03
9 units PHYSICS 2D03, 3B06
3-6 units Engineering and Society focus electives

LEVEL IV: 36-39 UNITS
14 units ENG PHYS 3D03, 3O03, 3W04, 4U04
6 units ENGSOCTY 3X03, 3Z03
3 units MATH 4Q03
7 units PHYSICS 3M03, 4B04
6-9 units Engineering and Society focus electives

LEVEL V: 35-40 UNITS
3 units ENGINEER 4B03
7 units ENG PHYS 4A04, 4C03
6 units ENGSOCTY 4X03, 4Z03
13-15 units approved Level III or IV technical electives, 10 units of which must be selected from the following courses: ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
6-9 units Engineering and Society focus electives

Manufacturing Engineering (B.Eng.) [4314]

ADMISSION
See Admission to Level II Engineering Programmes.

LEVEL II: 36 UNITS
14 units ENGINEER 2MM3, 2O03, 2P04, 2Q04
3 units MANUFACT 2C03
6 units MATH 2M06
10 units MECH ENG 2A03, 2W04, 3C03
3 units approved English literature

LEVEL III: 38 UNITS
3 units ENGINEER 3N03
2 units MANUFACT 3M02
3 units MATLS 3P03
24 units MECH ENG 2A03, 3C03, 3E04, 4C03, 4M04, 4P02
3 units STATIS 3Y03
3 units approved Level III or IV technical electives (above Level I)

LEVEL IV: 39 UNITS
12 units ENGINEER 4A03 or 4H03 or equivalent, and 4B03, 4C03, 4P02
9 units MANUFACT 4D03, 4S04, 4P02
15 units MECH ENG 4C03, 4D03, 4Q03, 4R03, 4Z03
3 units approved technical electives (See Level IV Mechanical Engineering)

Manufacturing Engineering and Management (B.Eng.Mgt.) [4314325]

ADMISSION
See Admission to Level II Engineering Programmes.

LEVEL II: 37 UNITS
9 units COMMERC 2AA3, 2BA3, 2MA3
6 units ECON 1BB3, 2X03
4 units ENGINEER 2P04
2 units ENGN MGT 2AA2
3 units MANUFACT 2C03
6 units MATH 2M06
7 units MECH ENG 2A03, 2W04

LEVEL III: 38 UNITS
6 units COMMERC 2AB3, 2FA3
13 units ENGINEER 2O03, 2MM3 (Term 1), 2Q04, 3N03
2 units MANUFACT 3M02
14 units MECH ENG 3C03, 3F04, 3O04, 3R03
3 units STATIS 3Y03

LEVEL IV: 36 UNITS
9 units COMMERC 3BC3, 3FA3, 3MC3
3 units ENGINEER 4C03
2 units ENGN MGT 3AA1, 4A01
5 units MANUFACT 4A03, 4P02
3 units MATLS 3P03
11 units MECH ENG 3E04, 3F04, 4D03
3 units approved Level III or IV technical electives (above Level I)

LEVEL V: 37 UNITS
3 units COMMERC 4PA3
6 units ENGINEER 4A03 or 4H03 or equivalent, and ENGINEER 4J03
3 units ENGN MGT 5B03
Manufacturing Engineering and Society (B.Eng. Society)

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
A minimum of 18 units focus elective courses is required for the programme.

LEVEL II: 32-35 UNITS
7 units ENGINEER 2003, 2P04
6 units ENGSOCTY 2X03, 2Y03
3 units MANUFACT 2C03
6 units MATH 2M06
7 units MECH ENG 2A03, 2W04
3-6 units Engineering and Society focus electives

LEVEL III: 35-38 UNITS
10 units ENGINEER 2MM3 (Term 1), 2Q04, 3N03
3 units ENGSOCTY 3Y03
2 units MANUFACT 3M02
14 units MECH ENG 3C03, 3E04, 3O04, 3R03
3 units STATS 3Y03
3-6 units Engineering and Society focus electives

LEVEL IV: 33-36 UNITS
6 units ENGINEER 4C03, 4J03
6 units ENGSOCTY 3X03, 3Z03
2 units MANUFACT 4P02
3 units MATH 3P03
13 units MECH ENG 4A03, 3F04, 4D03, 4R03
3-6 units Engineering and Society focus electives

LEVEL V: 34-37 UNITS
3 units ENGINEER 4B03
6 units ENGSOCTY 4X03, 4Z03
7 units MANUFACT 4A03, 4M04
12 units MECH ENG 4A03, 4K03, 4Q03, 4Z03
3-6 units Engineering and Society focus electives
3 units approved Level III or Level IV technical electives (See Level IV Mechanical Engineering.)

Materials Engineering (B.Eng.)

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
This programme is designed to permit choices of electives in Levels III and IV which will allow in-depth study of various types of modern engineering materials (e.g. electronic materials, plastics, amorphous solids, high performance alloys, composites and ceramics.)

LEVEL II: 37 UNITS
4 units CHEM 2WW4
10 units ENGINEER 2MM3, 2O03, 2P04
11 units MATLS 2B03, 2D03, 2H03, 2X02
6 units MATH 2M06
6 units approved complementary studies electives

LEVEL III: 35-37 UNITS
4 units CHEM ENG 2A04
19 units MATLS 3B03, 3E04, 3I05, 3P03, 3T04
3 units MATH 3I03
3 units STATS 3N03 or 3Y03
6-8 units from CHEM ENG 3O04, 3Q03, GEOLOGY 2B04; ENG PHYS 3F03, MATLS 4P03, 4R04, 4S04, MECH ENG 3O04

LEVEL IV (MATERIALS ENGINEERING STREAM): 34-37 UNITS
9 units ENGINEER 4A03 or 4H03 or equivalent, and ENGINEER 4B03, 4J03
12 units MATLS 4A02, 4B04, 4L02; and one of MATLS 4K04 or 4Z04
3 units approved complementary studies electives (above Level I)
12-13 units approved Level III or IV technical electives, which must include ENG PHYS 3F03 and either CHEM ENG 3O04 or MECH ENG 3O04, if not completed

LEVEL IV (CERAMIC ENGINEERING STREAM): 34-36 UNITS
This programme may be entered at Level IV by completion of Materials Engineering Level III, including GEOLOGY 2B04 and one of MATLS 4R04, 4S04.
9 units ENGINEER 4A03 or 4H03 or equivalent, and ENGINEER 4B03, 4J03
16 units MATLS 4A02, 4B04, 4L02; one of MATLS 4K04 or 4Z04 and one of MATLS 4R04 or 4S04
3 units approved complementary studies electives (above Level I)
6-7 units approved Level III or IV technical electives, which must include ENG PHYS 3F03 and either CHEM ENG 3O04 or MECH ENG 3O04, if not completed

Materials Engineering and Management (B.Eng.Mgt.)

ADMISSION
See Admission to Level II Engineering Programmes.

LEVEL II: 36 UNITS
4 units CHEM 2WW4
3 units COMMERCE 2M03
6 units ECON 1B83, 2X03
2 units ENGN MGT 2A02
6 units ENGINEER 2MM3, 2O03
6 units MATH 2M06
9 units MATLS 2B03, 2D03, 2H03

LEVEL III: 37 UNITS (1997-98 ONLY)
4 units CHEM ENG 2A04
6 units ENGINEER 2A02, 2F03
3 units ENGN MGT 2A02, 2A01
4 units ENGINEER 2P04
3 units ENG PHYS 3F03
11 units MATLS 2X02, 2E04, 2I05
3 units MATH 3I03
3 units STATS 3N03 or 3Y03

LEVEL IV: 33-34 UNITS
4 units CHEM ENG 3O04 or MECH ENG 3O04
12 units COMMERCE 2AB3, 3B03, 3F03, 3M03
1 unit ENGN MGT 4A04
10 units MATLS 3B03, 3P03, 3T04
3 units approved complementary studies electives (above Level I)
3-4 units approved technical electives

LEVEL V: 36-37 UNITS
6 units COMMERCE 3Q03, 4F03
3 units ENGINEER 4A03 or 4H03 or equivalent
3 units ENGN MGT 5B03
12 units MATLS 4A02, 4B04, 4L02; one of MATLS 4K04 or 4Z04
6 units Commerce selected from Level III and IV Commerce courses or COMMERCE 2QB3
6-7 units approved technical electives

Materials Engineering and Society (B.Eng. Society)

ADMISSION
See Admission to Level II Engineering Programmes.

NOTE
A minimum of 18 units of focus elective courses is required for the programme.

LEVEL II: 34-37 UNITS
4 units CHEM 2WW4
6 units ENGINEER 2MM3, 2O03
6 units ENGSOCTY 2X03, 2Y03
9 units MATLS 2B03, 2D03, 2H03
6 units MATH 2M06
3-6 units Engineering and Society focus electives
**LEVEL III: 34-37 UNITS**
- 4 units CHEM ENG 2A04
- 4 units ENGINEER 2P04
- 3 units ENG PHYS 3F03
- 3 units ENGSOCTY 3Y03
- 11 units MATLS 2X02, 3E04, 3I05
- 3 units MATH 3I03
- 3 units STATS 3N03 or 3Y03
- 3-6 units approved technical electives

**LEVEL IV: 35-38 UNITS**
- 4 units CHEM ENG 3O04 or MECH ENG 3O04
- 6 units ENGSOCTY 3X03, 3Z03
- 10 units MATLS 3B03, 3P03, 3T04
- 6 units approved technical electives
- 9-10 units approved technical electives

**LEVEL V: 30-34 UNITS**
- 6 units ENGINEER 4B03, 4J03
- 6 units ENGSOCTY 4X03, 4Z03
- 12 units MATLS 4A02, 4B04, 4L02; one of MATLS 4K04 or 4R04
- 3-4 units approved technical electives
- 3-6 units approved technical electives

**Mechanical Engineering (B.Eng.)**

**ADMISSION**
See Admission to Level II Engineering Programmes.

**LEVEL II: 36 UNITS**
- 11 units ENGINEER 2O03, 2P04, 2Q04
- 6 units MATH 2M06
- 16 units MECH ENG 2A03, 2B03, 2C03, 2W04, 3C03
- 3 units approved English literature

**LEVEL III: 38 UNITS**
- 6 units ENGINEER 2MM3 (Term 1), 3N03
- 3 units MATH 3I03
- 3 units approved technical electives
- 23 units MECH ENG 3A03, 3C03, 3E04, 3F04, 3M02, 3O04, 3R03
- 3 units STATS 3Y03

**LEVEL IV: 33 UNITS**
- 18 units MECH ENG 3D03, 4M04, 4P02, 4Q03, 4R03, 4S03
- 6 units approved technical electives
- 3 units approved technical electives (above Level I)
- 6 units from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG 3SA3, ENGINEER 4J03, 4X03, ENG PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4C03, 4D03, 4H03, 4K03, 4L03, 4T03, 4V03, 4X03, 4Z03 (MARCH 4A03 may be selected, with the permission of the Department.)

Electives must be chosen so that no more than 21 units are taken in any one term.

**Mechanical Engineering and Management (B.Eng.Mgt.)**

**ADMISSION**
See Admission to Level II Engineering Programmes.

**LEVEL II: 37 UNITS**
- 9 units COMMERCE 2AA3, 2BA3, 2MA3
- 6 units ECON 1B03, 2X03
- 7 units ENGINEER 2MM3, 2P04
- 6 units MATH 2M06
- 7 units MECH ENG 2A03, 2W04
- 2 units ENGN MGT 2AA2

**LEVEL III: 38 UNITS**
- 3 units COMMERCE 2FA3
- 7 units ENGINEER 2O03, 2Q04
- 1 unit ENGN MGT 3AA1
- 3 units MATH 3I03
- 19 units MECH ENG 2C03, 3A03, 3C03, 3F04, 3M02, 3O04
- 3 units STATS 3Y03

**LEVEL IV: 37 UNITS**
- 12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3
- 1 unit ENGN MGT 4A01
- 15 units MECH ENG 3E04, 3F03, 4P02, 4R03, 4S03
- 6 units Level III or IV approved technical electives
- 3 units approved technical electives

**LEVEL V: 34 UNITS**
- 3 units COMMERCE 4PA3
- 3 units ENGN MGT 5B03
- 13 units MECH ENG 3C03, 4C03, 4M04, 4Q03
- 3 units ENGINEER 4A03 or 4H03 or equivalent
- 6 units approved technical electives
- 6 units approved technical electives

**Mechanical Engineering and Society (B.Eng. Society)**

**ADMISSION**
See Admission to Level II Engineering Programmes.

**NOTE**
A minimum of 18 units of focus elective courses is required for the programme.

**LEVEL II: 32-35 UNITS**
- 7 units ENGINEER 2O03, 2P04
- 6 units ENGSOCTY 2X03, 2Y03
- 6 units MATH 2M06
- 7 units MECH ENG 2A03, 2W04
- 6-9 units approved technical electives

**LEVEL III: 34-37 UNITS**
- 7 units ENGINEER 2MM3, 2Q04
- 6 units ENGSOCTY 3Y03
- 3 units MATH 3I03
- 15 units MECH ENG 2C03, 3A03, 3M02, 3O04, 3R03
- 3 units STATS 3Y03
- 3 units approved technical electives

**LEVEL IV: 34-37 UNITS**
- 6 units ENGSOCTY 3X03, 3Z03
- 19 units MECH ENG 3C03, 3E04, 3F04, 3P02, 4R03, 4S03
- 6 units approved technical electives
- 3 units approved technical electives

**LEVEL V: 31-34 UNITS**
- 6 units ENGINEER 2MM3, 4B03
- 6 units ENGSOCTY 4X03, 4Z03
- 13 units MECH ENG 3D03, 4C03, 4M04, 4Q03
- 3-6 units approved technical electives

**PROGRAMME FOR THE B.TECH. DEGREE**
The Manufacturing Engineering Technology Programme is offered jointly by Mohawk College of Applied Arts and Technology and McMaster University. The objectives of the programme are to upgrade the knowledge and skills of existing technologists/technical specialists and to allow them to perform with a broad technical and academic background along with solid hands-on experience. The programme is designed to complement and enhance the student's background in basic engineering sciences, mathematics and advanced manufacturing technologies. An attempt has been made to grade the knowledge and skills of existing technologists/technical specialists and to perform with a broad technical and academic background along with solid hands-on experience.

**ADMISSION**
Students enrolled in a programme for the B.Tech. degree, in addition to meeting the General Academic Regulations of the University, shall be subject to the following regulations.
MINIMUM REQUIREMENTS TO CONTINUE IN THE PROGRAMME

All students must maintain a CA of at least 3.5 at each academic review to continue at the University. Students may be allowed to continue on academic probation for one reviewing period with a CA of 3.0 to 3.4. If your CA is less than 3.0, you may not continue at the University.

REINSTATEMENT

A student who is ineligible to continue may apply for reinstatement to the programme. Application for reinstatement must be made in writing to the Committee of Instruction and should include a recommendation from the current employer. Reinstatement is not guaranteed.

A student who is reinstated after being ineligible to continue at a given level must repeat all the courses of that level, unless specific course exemptions are granted explicitly in the letter of reinstatement. Students who are reinstated will be placed on academic probation.

Manufacturing Engineering Technology (B.Tech.)

ADMISSION

Enrolment in this programme is limited. Admission requires satisfactory completion of a three-year Mechanical Engineering Technologist Diploma (or equivalent). Applicants who meet the academic requirements will be interviewed, and some applicants may be required to write specific entrance examinations.

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NOTES

1. Advance credit can be considered at the time of admission. However, a minimum of 33 units of work must be completed at McMaster in order to obtain the degree.
2. The Sessional Dates in this Calendar do not apply to this programme. Further information with regard to course offering dates and academic deadlines will be made available upon request to the Office of the Associate Dean of Engineering.
The Faculty of Health Sciences collaborates with the Division of Health Sciences at Mohawk College in educational programmes for other health professions based at the College.

Research programmes encompassing the broad spectrum of health have been established, including basic and applied research and various aspects of health-care delivery. The graduate programmes in medical science are related to the various areas of health research.

The Health Sciences Centre at McMaster provides educational and research facilities for medicine, nursing and other health professions. It includes a teaching hospital (the McMaster Division of Chedoke-McMaster Hospitals) with extensive ambulatory clinics for primary and specialized aspects of patient care. The building has been designed to bring into close proximity the programmes for the various health professions and to integrate the facilities for education, research and patient care in the Faculty of Health Sciences.

In addition to the Health Sciences Centre, education, research and clinical programmes are based at Hamilton General Hospital, Henderson General Hospital, Hamilton Psychiatric Hospital, St. Joseph's Hospital, Chedoke Division of Chedoke-McMaster Hospitals, St. Peter's Hospital, Hamilton Regional Cancer Centre and the Health Sciences Education Centre, Mohawk College. A satellite programme has been developed with institutions in Northwestern Ontario. In accordance with the plan to coordinate the development of specialized health services among the Hamilton and District hospitals, the Postgraduate Education programmes in medicine have been developed on a regional basis.

**ADMISSION AND REGISTRATION**

Application to any programme in the Faculty of Health Sciences implies acceptance on the part of the applicant of the admission policies and procedures, and the methods by which applicants are chosen for the Health Sciences programmes.

Registration in any programme in the Faculty of Health Sciences implies acceptance on the part of the student of the objectives of that programme and the methods by which progress toward the achievement of those objectives is evaluated.

The following describes the regulations governing admission and registration in the Health Sciences programmes, and should be considered in conjunction with specific admission requirements described on the following pages for the School of Medicine (M.D.), the Midwifery programme (B.H.Sc.), the School of Nursing (B.Sc.N.) and the School of Rehabilitation Science (B.H.Sc.).

The following application deadlines are strictly enforced. Deadline dates are for consideration of admission to a programme in the following September.

**Programme** | **Deadline**
---|---
Medicine (M.D.) | November 1
Midwifery (B.H.Sc.) | February 1
Nursing (B.Sc.N.)
Applicants directly from Ontario Secondary Schools | May 1
Diploma Registered Nurses | February 15
Applicants with Other Qualifications | February 15
Transfers from other degree programmes | June 30
Occupational Therapy and Physiotherapy: (Second Degree Programme) (B.H.Sc.) | December 1

The University reserves the right to grant admission at any time without notice.

As places in the degree programmes of the Faculty of Health Sciences are limited, admission is by selection of applicants, and possession of published minimum requirements does not guarantee admission. The University, therefore, reserves the right to grant admission to a limited number of students, and to refuse admission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the programme for a period in excess of one academic year.

An evaluation of Unsatisfactory in the School of Medicine signifies that the student has failed to meet these objectives and the University may require the student to withdraw from the School at any time.

The University reserves the right to require the withdrawal of a student should his or her conduct so warrant.
FALSIFICATION OF ADMISSION INFORMATION
An applicant supplying documentation or evidence which, at the time, or subsequently, is found to be falsified will be withdrawn from consideration. Any student admitted to the programme having submitted false evidence will be withdrawn.

HEALTH REGULATIONS FOR ADMISSION
Before registration, students must file with the University evidence of a recent health examination, immunization screening and chest X-ray. More detailed medical information will be required upon acceptance into the programme.

CLINICAL COURSE REQUIREMENTS
Where, in the opinion of the Faculty, the performance of the student in clinical practice may jeopardize or endanger the welfare of the patient or the patient’s family, the student may be removed from clinical experience at any time during the academic year, until continuation in the course is reviewed.

INFORMATION AND ACADEMIC COUNSELLING
In certain programmes, a faculty member is selected for each student in the September of entry to a degree programme and provides each student with advice on evaluations, electives and other educational needs throughout the programme. In the M.D. programme, the advisor is also responsible for the collation of all evaluations and completion of the final transcript. Changes in advisors may be entertained as each student becomes acquainted with Faculty well enough to confer with his or her own advisor. The academic advisor role for B.Sc.N. students is fulfilled by the Coordinator of Studies (Nursing). Students are also encouraged to consult individual faculty members regarding career planning.

TRANSPORTATION
Students are responsible for expenses involved in transporting themselves to community agencies, making home visits, or in connection with clinical study.

LICENCE TO PRACTISE
All graduates who wish to engage in clinical practice in any of medicine, midwifery, nursing, occupational therapy and physiotherapy are subject to any qualifying examinations and other requirements by the licensing bodies for each of these professions. In addition students should be aware that a licence may be denied if they have been convicted of a criminal offence for which a pardon has not been granted. A student in such a position should consult the respective licensing body about such a situation.

POST-PROFESSIONAL HEALTH SCIENCES EDUCATION PROGRAMMES

DIPLOMA PROGRAMME IN CHILD LIFE STUDIES
The programme is offered through Continuing Health Sciences Education in the Faculty of Health Sciences. The programme is of eight months duration, admitting approximately eight students per academic year.

This applied professional programme is designed to enhance the knowledge and skills of individuals working with children, adolescents and families in health care settings. Courses examine a range of issues related to Child Life practice through case studies, small group and self-directed learning. Two eight-week placements in children’s hospitals and community settings are a requirement of this programme.

A relevant university degree or diploma is required, with an overall “B” average. Relevant experience is strongly recommended. Admission is based on the assessed strengths of each applicant as determined by the application package and interview format, as well as the availability of space in the programme.

Applications must be submitted by mid-April for the study period beginning in September of the same year. A letter of intent, resume, official academic transcript, two written references and identification of a referee are required components of the application process. A select number of applicants will be invited for personal and group interviews in May, based upon the strength of the written information identified above. Application information outlining specific dates and application requirements can be obtained by contacting the Child Life Studies programme office at (905) 525-9140, Ext. 22962.

DIPLOMA PROGRAMME IN CLINICAL BEHAVIOURAL SCIENCES
The Clinical Behavioural Sciences (CBS) Post-Baccalaureate Diploma and Selected Studies Programme is offered through Continuing Health Sciences Education. This part-time programme is designed to expand the knowledge and skills of allied health professionals by demonstrating a variety of approaches to understanding clinical problems. The aim is to enable health workers to more effectively carry out the mandate of their professional designations. Single courses vary from 10 to 20 weeks in length and a diploma should be completed within five years. A small group learning format is used.

Applications must have basic professional qualifications (degree, certificate or mandate in current job); employment (possibly including volunteer positions); leave from employer to attend classes; and approval to use course-related material from the work setting (with signing of University legal waiver). Courses must be applicable to job responsibilities. Applications must be submitted to the CBS Office (HSC 3G49) by April for September courses and by October for January courses. Personal interviews will be arranged. Applications can be obtained by contacting the CBS Office at (905) 521-2100 ext. 6427.

DIPLOMA PROGRAMME IN ENVIRONMENTAL HEALTH
The diploma programme is offered through the Environmental Health Programme. The programme is of eight months duration, admitting up to 15 students per academic year. It is designed to provide new and/or upgraded skills and knowledge in the principles and practice of environmental health, suitable for public health unit professionals, physicians, community health nurses, environmental industrial professionals, and those in labour and non-governmental organizations dealing with environmental health issues. Participants must be sufficiently motivated to undertake self-directed learning.

Students will be selected to give the class a multidisciplinary character. A relevant university degree or equivalent will normally be required. Admission is based on the number of places available and on the experience of applicants. Those without environmental health experience may also be considered.

Applications must be submitted by the end of March for the study period starting in September 1997. Applications can be obtained by contacting the Environmental Health Programme at (905) 525-9140, ext. 27559. Applications received after the deadline date will be notified of admission decisions by the beginning of June.

DIPLOMA PROGRAMME IN OCCUPATIONAL HEALTH AND SAFETY
The Programme in Occupational Health and Environmental Medicine offers two programmes each year for this Diploma. A full-time programme starts in September catering to those who wish to complete the course in three months. A part-time programme is designed so that students within commuting distance from Hamilton can continue their normal employment. This programme also starts in September and continues through the end of April, one day per week, but includes two extended periods of full-time study each lasting two weeks.

While special consideration will be given to those already in the occupational health field, interested individuals without such experience may also be considered. Physicians, nurses, hygienists, related professionals and others are invited to apply. A relevant university degree or equivalent is generally required.

Applications must be submitted by February 1 each year for the course beginning in September. Applications can be submitted by contacting the Programme in Occupational Health and Environmental Medicine at (905) 525-9140, ext. 22352.

THE SCHOOL OF MEDICINE
The School of Medicine, established in 1965, offers major programmes in undergraduate, postgraduate and graduate medical education. The clinical programmes use not only the teaching hospital and extensive ambulatory care and research facilities at the McMaster University Medical Centre division of Chedoke-McMaster Hospitals, but also the clinical teaching units at each of the major Hamilton hospitals and community health-care centres.
The Undergraduate Medical Programme for the M.D. degree was initiated in 1969, graduating its first students in May 1972. At present, 100 students are admitted to the programme each year. The academic programme operates on an 11 months-a-year basis and students qualify for the M.D. degree at the end of the third academic year. The curriculum has been designed to involve medical students in a broad range of human health problems throughout their education and to prepare them for effective working relationships with patients, colleagues, and society.

Postgraduate training programmes currently include: Anesthesia, Community Medicine, Critical Care, Emergency Medicine, Family Medicine, Internal Medicine (and subspecialties), Laboratory Medicine (and subspecialties), Obstetrics and Gynecology, Pediatrics (and subspecialties), Psychiatry, Radiology, and Surgery (and subspecialties).

More details on these postgraduate programmes are available from the Postgraduate Medical Education Office.

The Northern Ontario Medical Programme (NOMP) has been developed in cooperation with the Thunder Bay Medical Society and physicians in towns in Northwestern Ontario. Clinical training opportunities exist in community hospitals adjacent to Hamilton. Excellent clinical experience in these settings is part of both the undergraduate and postgraduate medical programmes.

Graduate programmes leading to the M.Sc. and Ph.D. degrees are offered in Biochemistry and in Medical Sciences. An M.H.Sc. (Health Care Practice) programme is interprofessional in nature and is for experienced health professionals who wish advanced preparation as clinicians.

### The Undergraduate Medical Programme \(7880\)

The three-year programme in Medicine uses a problem-based approach to learning that should apply throughout the physician's career. The components have been organized in sequential units with early exposure to patients and case management. Flexibility is ensured to allow for the variety of student backgrounds and career goals.

#### GENERAL OBJECTIVES

The aim of the Undergraduate Medical Programme is to provide students with a general professional education as physicians. The programme enables students to build on previous education and experience, using available learning resources and opportunities. The competencies achieved by graduates will qualify them to provide care to, and to contribute to productive communication and cooperation among colleagues engaged in learning, research or health care.

1. **toward oneself**: to recognize and acknowledge personal assets, emotional reactions and limitations in one's own knowledge, skills and attitudes, to build on one's assets and to overcome areas of limitation;
2. **toward patients and their families**: to be able, under appropriate supervision, to take responsibility for the assessment and care of patients and their families;
3. **toward colleagues**: to contribute to productive communication and cooperation among colleagues engaged in learning, research or health care;
4. **toward the community**: to contribute to the maintenance and improvement of the health of the general population.

#### LEARNING METHODS

To achieve the objectives of the Undergraduate Medical Programme, students are introduced to patients within the first unit of the curriculum. In this way, students understand the relevance of what they are learning, maintain a high degree of motivation and begin to understand the importance of responsible professional attitudes.

The students are presented with a series of health-care problems, requiring for their solution the understanding of underlying physical, biological, population and behavioural principles, the appropriate collection of data and the critical appraisal of evidence. In each problem area, the student may select the most appropriate issues for assurance of the learning objectives of each problem. The problems are classified in two ways: they are ordered from the beginning of the programme to the end of the third year.

The central focus of the programme is the tutorial. The class is divided into small groups, each with a tutor. In the tutorial session students develop a series of learning objectives from each health-care problem and negotiate how they will approach their learning tasks. They then acquire the knowledge and skills to meet the objectives of the unit in which they are working. They also learn to work as a team, helping and learning from peers. The study habits and sense of responsibility to self and others provides a basis for life long working and learning habits. Attendance at tutorials is mandatory.

Students admitted to the Undergraduate Medical Programme have the responsibility and privilege of taking an active role in the planning and evaluation of the education programme. Through representation on most policy-making and implementing committees, students can influence decisions in such areas as education, philosophy, faculty recruitment, and curriculum design. It is expected that all students will participate in the continuing reappraisal and improvement of the programme. Such participation is a hallmark of the Programme.

#### STUDENT EVALUATION METHODS

The evaluation format has been designed to complement learning in the Undergraduate Medical Programme. Evaluation methods have developed to measure how well the student achieves the stated educational objectives in the various units of the programme. Continual evaluation of the student occurs within the tutorial setting with input from their peers, faculty preceptors, and the tutor. Two problem-solving exercises are required in each unit. At the completion of the unit, the tutor is responsible for the final summary statement of student learning progress. The tutor prepares a written summary of the student's performance in the tutorials and all associated activities during that unit. A copy of the evaluation summary is given to the student and to the student advisor while the original is kept in the student's evaluation file.

In addition to the tutorial-based evaluation, the accumulation of medical knowledge is assessed at regular intervals by means of the Personal Progress Index. This is a multiple-choice format. Results are given to the students for self-evaluation and, in summary form, to the student advisor. Progress testing is in addition to, and does not replace, tutorial- and performance-based evaluation. The Programme monitors student progress, and responds to students showing persistently low progress.
The Curriculum Plan

The curriculum of the Undergraduate Medical Programme comprises six units, an elective programme and revision time. There is less of a division between the preclinical parts and the clinical parts of the M.D. Programme than in more traditional schools. Patient contact and clinical skills development start in Unit 1 and increase throughout the programme. The scientific background for understanding patients' problems, while more intensively studied in earlier units, continues to be applied as it is relevant to the care of patients in clinical situations.

PROGRAMME OUTLINE FOR UNIT 1
The goal of Unit 1 is to provide an introduction to the Undergraduate Medical Programme, emphasizing the determinants of health and illness. Factors from the molecular to the global environment will be considered. Concepts and information from three knowledge perspectives will be studied: the population perspective, the behavioural perspective and the biological perspective. Students will begin to acquire basic skills of critical appraisal, clinical skills and, in particular, learning skills. During this unit, students will become familiar with the health care system in the Hamilton region and the opportunities for learning which it offers. The three subunits are: Hurting and Healing; Growing, Gene; and Keeping an Even Keel.

This unit is the foundation for all the following units.

PROGRAMME OUTLINE FOR UNITS 2-4
These units are concerned with the systematic study of human structure, function and behaviour and are organized around systems of the body, as follows:
1. Unit 2 Cardiovascular, Respiratory and Renal Systems
2. Unit 3 Hematologic, Gastroenterologic and Endocrine Systems
3. Unit 4 Neurologic, Locomotor and Behavioural Systems

Throughout these body-systems oriented units, students are expected to become self-directed learners capable of critically evaluating newly acquired information.

PROGRAMME OUTLINE FOR UNIT 5
Unit 5 has an emphasis on three major areas: reproduction, development and aging. Health care problems are used as a basis for learning. There is also a strong community focus and students are encouraged to have clinical encounters around these three areas of the life cycle. Clinical preceptors are assigned to aid in obtaining clinical encounters and also in fulfilling the professional skills objectives. Tutorial evaluation is still the mainstay, however clinical reasoning exercises and a written McCope exercise are also included. Elements of critical appraisal are also objectives.

PROGRAMME OUTLINE FOR UNIT 6 - THE CLERKSHIP
In this component of the programme students participate in the direct care of patients as they learn about the management of health and illness. All prior objectives apply, but the health-care problems are now real patients or populations. Students become self-sufficient in contemporary medicine, but are able to sense when today’s medicine becomes out-of-date by adopting good habits of learning and assessment.

The Clerkship programme consists of rotations in Medicine, Surgery, Family Medicine, Psychiatry, Pediatrics, Obstetrics and Gynecology, and in elective time of which one-half must be spent in clinical medicine. The compulsory components of the clerkship are carried out in teaching practices and in all the teaching hospitals in the Hamilton region. The elective experience can be spent in various activities utilizing local, regional or distant resources.

ELECTIVES
Elective studies form an integral part of the Curriculum Plan. They may be considered the epitome of self-directed learning, since students must define goals for electives which are appropriate for their own learning objectives. These objectives represent specific areas of educational need or interest. The responsibility for planning electives rests with each student in collaboration with the student advisor. The three types of electives in the Undergraduate Medical Programme are:

1. Block Electives: These are blocks of the curriculum time dedicated to full-time elective activities. Their satisfactory completion is a mandatory component of the Undergraduate Medical Programme. Block Electives occur after Unit 3 (seven weeks), after Unit 4 (four weeks), and during the Clerkship (sixteen weeks).

2. Horizontal Electives: These are undertaken concurrently with other parts of the curriculum. Horizontal electives are entirely voluntary, not being required for completion of the programme. It is particularly important that the student's advisor be involved in all decisions concerning the selection and carrying out of horizontal electives.

3. Enrichment Electives: There are arrangements in place for a small number of students from each class to devote longer periods of time (from six to 12 months) to the pursuit of special academic experiences. The intent is to encourage students to explore possible careers in special "frontier" areas of medicine and health care. Examples include: research training and experience; community health projects; international health opportunities. These experiences are often undertaken following Unit 5 or during the first half of Unit 6. Some expectations may potentially have partial funding (e.g. by student research fellowships).

REGULATIONS FOR LICENCE TO PRACTISE
A degree in medicine does not in itself confer the right to practise medicine in any part of Canada. To acquire this right, university graduates in medicine must hold a certificate of the College of Physicians and Surgeons of the province in which they elect to engage in practice. Students in Ontario medical schools are not required to register as students prior to the College of Physicians and Surgeons of Ontario. Students intending to practice outside Ontario are urged to consult the licensing body of that province regarding registration. Licensing requirements vary somewhat among the provinces. The current Ontario requirements for issuance of a Certificate of Registration Authorizing Independent Practice are:

1. Certification by the Royal College of Physicians and Surgeons of Canada. To obtain the post-M.D. programme of their choice, and to help programme directors obtain the students of their choice, it provides an orderly method for students to decide where to train and for programme directors to decide which applicants they wish to enrol. For both students and directors, it removes the factors that generate unfair pressures and premature decisions.

Further information is available from Deborah Martin, M.D., Program Administrator, (905) 529-9140, ext. 22141.

BASIC CARDIAC LIFE SUPPORT TRAINING
All students are required to have obtained a current certificate in Basic Cardiac Life Support (Adult and Child CPR) prior to registration in the medical programme. Courses are readily available in most communities. Information will be sent to successful applicants prior to registration.

Specific questions can be directed to Deborah Martin, M.D., Program Administrator, (905) 529-9140, ext. 22141.
IMMUNIZATION

The Ontario Public Hospitals Act requires that all persons working in a hospital setting must meet certain criteria regarding surveillance for infectious diseases. In order for the requirement of the legislation to be met, once students have been enrolled in the M.D. Programme, they must complete Pre-Clinical Communicable Disease Screening through the Student Health Services. More information will be sent to specific applicants prior to registration. Specific questions can be directed to Deborah Martin, M.D. Programme Administrator, (905) 525-9140, ext. 22141.

Admission Policy for the Medical Programme

The official admission policy and deadlines for the Undergraduate Medical Programme for September 1998 shall be as published in the 1998 Ontario Medical School Application Booklet. This booklet is available through:

Ontario Medical School Application Service (OMSAS)
PO Box 1328
650 Woodlawn Road West
Guelph, Ontario, N1H 7P4
(519) 823-1940
email: omsas@netserv.ouac.on.ca

Please note that the admission policy is reviewed annually, and the admission requirements from the previous year may not apply. Because of the nature of the selection procedures, deadlines are enforced strictly. All relevant documentation must be provided by the specified deadlines. Applicants must follow the instructions precisely.

SELECTION PROCEDURE

The intention of the McMaster Undergraduate Medical Programme is to prepare students to become physicians who have the capacity and flexibility to select any area in the broad field of medicine. The applicant is selected with this goal in mind. Faculty, medical students and members of the community are normally involved in the review of applications.

Application to the medical programme implies acceptance by the applicant of the admission policies and procedures, and the methods by which candidates are chosen for the programme.

Applications received in the fall of 1997 are for the academic year commencing in the fall of 1998. Applicants who will not be ready or able to begin studies in the fall may withdraw their applications without prejudice. Application fees cannot be refunded.

Applications must be submitted by November 3, 1997, 4:30 pm EST. Approximately 400 applicants will be invited for interviews in Hamilton in March or April. Invitations for interview are determined on the basis of applicants' academic performance, and an assessment of their preparedness for a career in medicine and suitability for the McMaster Undergraduate Medical Programme. From this group a class of 100 is selected.

TRANSCRIPT REQUIREMENTS

It is expected that applicants will request all transcript materials in a timely fashion, to allow adequate time for processing requests and for receipt at OMSAS by the prescribed deadline. For this reason, applicants are strongly urged to request two sets of transcripts. One must be sent by the institution directly to OMSAS and received at OMSAS by December 1, 1997; the second copy should be sent to the applicant to ensure that the request has been fulfilled. Applicants should retain all receipts and correspondence related to their transcript request. Evidence to show that applicants have requested transcripts in a timely fashion may be requested by McMaster University.

It is not normally possible to notify applicants of any outstanding transcripts before December 1, 1997. Therefore, it is totally the applicant's responsibility to ensure that all transcripts and Registrar statements are received at OMSAS by December 1, 1997. Failure to meet this requirement will result in the disqualification of the application.

All transcripts must be submitted directly to OMSAS by the post-secondary institutions attended. McMaster requires that applicants provide transcripts of all courses/programmes attended at any post-secondary institution. This includes community colleges, CEGEPs, junior colleges, pre-university programmes, etc.

Failure by the applicant to comply with the instructions or to meet the deadlines will result in disqualification of the application.

ACADEMIC ELIGIBILITY

Applicants must report on the Academic Record Form all grades received in the degree credit courses in which they have ever registered. Failure to report courses, programmes or grades on the Academic Record Form will result in the disqualification of the application. All grades are converted by the applicant on the Academic Record Form to a 4.0 scale according to the OMSAS Undergraduate Graduating System Conversion Table. (The Conversion Table is provided with the OMSAS Application.)

All applicants must fulfill the requirements described below in both (a) and (b).

a) By September 1, 1998, applicants must have completed a minimum of three years undergraduate work. Only degree credit courses taken at an accredited post-secondary institution will be considered.

Two of the three years must be above Level I/Year I. A "year" is the full block of work specified for a year or level of the programme as indicated on the university transcript and in the appropriate university calendar. If requested, applicants must provide evidence that this requirement has been met.

An applicant who has completed a diploma at a CEGEP must have completed by September 1, 1998, at least two additional years of degree credit work at an accredited post-secondary institution. One of those years must be a full programme of courses above Level I/Year I.

Applicants who have satisfactorily completed the requirements for a baccalaureate degree in less than three years by November 3, 1997 are also eligible.

b) By November 3, 1997, applicants must have achieved an overall simple average of at least second-class "B" standing in their academic work to date. A "B" average is considered to be an OMSAS overall converted average of at least 3.0 on the 4.0 scale.

If an applicant has not achieved the overall "B" standing in the OMSAS converted average, but has completed a graduate degree, the graduate degree will be taken into account to assess eligibility.

Academic Assessment will be as outlined in the Ontario Medical School Application Booklet.

AUTOBIOGRAPHICAL SUBMISSION

Applicants must provide an Autobiographical Submission which is a description about their preparedness for medicine and suitability for the McMaster Undergraduate Medical Programme.

The Autobiographical Submission Booklet is included in the application kit provided by OMSAS.

The Autobiographical Submission Booklet includes detailed instructions with regard to the length and format of responses. Those instructions are considered to be part of the Admission Policy and Procedures for the McMaster Undergraduate Medical Programme.

Failure to comply with the instructions for the Autobiographical Submission Package will result in disqualification of the application.

GEOGRAPHICAL CONSIDERATION

The geographical status is determined from the Autobiographic Sketch. Applicants may be asked to provide evidence of geographical status. In selecting applicants for interview, the bona fide place of residence will be used in the following order of priority:

1. Hamilton Health Region and Northwestern Ontario (defined as west of Wawa to the Manitoba Boundary);
2. the rest of Ontario;
3. the rest of Canada; and
4. other countries.

To qualify for 1 or 2 above, an applicant must:

a) be a Canadian citizen or permanent resident by November 3, 1997, and
b) have resided for at least three years in the area since the age of 14. Attendance at a university in the area for at least three years by the date of possible entry to the programme satisfies the second requirement.

Any other applicant who is a Canadian citizen or permanent resident qualifies for 3.

All other applicants qualify for 4. While all applicants from this Geographic Category are considered, they may be selected for interview only if they are judged on each criterion to be clearly superior to other applicants.
INTERVIEWS
Approximately 400 applicants will be invited to Hamilton for an interview. The selection of these applicants is based on the composite score which weights equally the grade point average from the Academic Assessment and the scores from the Autobiographical Submission. Geographical consideration is applied to determine the composition of the pool of applicants that are selected for interview.

Because the interviews involve many other people, applicants must attend on the date and time specified. Applicants are responsible for their own travel expenses.

Each applicant participates in the two components of the interview: the Simulated Tutorial and the Personal Interview. In the Simulated Tutorial, a group of applicants discuss a health problem/situation. The applicant's group skills and problem-exploration skills are assessed.

In the Personal Interview, the applicant is interviewed by a team which is not involved in the assessment of the Simulated Tutorial. Before an applicant meets the interview team, the interviewers are given the candidate's Autobiographic Sketch.

This Autobiographic Sketch is not assessed but serves as a background for the interviewers. In making the overall assessment of the applicant, the Personal Interview team considers the following areas: problem-exploration skills, self-appraisal skills, interpersonal skills, career choice, and suitability for the McMaster programme.

SELECTION
All the information resulting from the process described above, as well as the Confidential Assessments from referees, is reviewed and used in the final selection.

Successful applicants will be notified the last working day in May 1998.

UNSUCCESSFUL APPLICANTS
Applications from one year are not held over to another year. If an unsuccessful applicant wishes to reapply, a new application package, including supporting documentation must be submitted, using the OMSAS Application, the OMSAS Instruction Booklet, and the McMaster Autobiographical Submission for the new admission selection cycle.

Unsuccessful applicants may enquire about their application for the current year. Percentile ranking on the application instruments is the only feedback that is available. The applicant must make the request in writing to the Chair of the Admissions Committee, McMaster Undergraduate Medical Programme, HSC Room 1B7, by June 30 of the year of application.

APPLICATION FOR DEFERRAL OF REGISTRATION
Deferred registration may be granted only under exceptional circumstances. Deferred registration applications may be requested only by those candidates offered a place in the class on the last working day in May and by those who have accepted that offer. The application must be submitted by deadlines, determined from year-to-year (normally within two weeks of the offer of admission).

SPECIAL APPLICANTS
Candidates who wish to apply as Special Applicants must first be assessed for eligibility. Those who believe they are eligible for this category, must contact, in writing, the Chair of the Admissions Committee, McMaster Undergraduate Medical Programme, HSC Room 1B7, before making a formal application. All relevant information and documentation, including transcripts, must be provided by October 1 to be considered for eligibility for that year's selection and admission cycle.

This category is designed to provide opportunities only to those who meet all of the following:
1. have not attended any post-secondary institution, including those offering diploma or certificate programmes, as a full-time student;
2. have completed, at the time of application, at least four but not more than ten full degree credit courses, obtaining an overall average of at least "B" on the McMaster grading scale. A current university transcript must accompany the request for consideration;
3. have been employed or active in the community for at least seven years since leaving high school;
4. must be a resident of Ontario.

First Nation applicants who do not meet the criteria for application through the regular stream must meet all but the first requirement.

Only those who meet the above criteria and are assessed as having made an exceptional contribution to society will be eligible to apply to the programme. In this, candidates must have shown creativity, initiative and leadership. A letter from the candidate, outlining any activities and the contribution to society must accompany the request for assessment.

ADVANCED STANDING/TRANSFER
The structure of the McMaster programme requires that all students begin in Unit 1. There is no provision for advanced standing or transfer into the programme.

FINANCIAL INFORMATION
Financial difficulties are among the most frequent problems experienced by students in undergraduate medical schools. At McMaster, these are intensified by the lack of opportunity for summer employment as well as by the relative scarcity of financial assistance funds.

In this situation, it is incumbent on students admitted to the M.D. programme to clarify immediately their personal financial situation and to secure or identify sufficient support to meet their financial obligations over the subsequent three years. The Undergraduate M.D. Programme cannot assume this responsibility.

In 1996-97, the academic fees (tuition and student supplementary fees) for a student in the McMaster Undergraduate Medical Programme were:

**CANADIAN CITIZENS AND LANDED IMMIGRANTS**
Year I and II .......................................................... $5,942
Year III ........................................................................ $4,075

**VISA STUDENTS**
Year I and II ................................................................ $27,395.90
Year III ......................................................................... $18,377.20

In addition, the cost of books and diagnostic equipment for a Year I student was approximately $1,900. It is strongly recommended that students purchase the full complement of medical equipment necessary for clinical skills. Equipment lists and special prices will be offered to medical students within the first few months of medical school. Students are also responsible for their transportation costs related to clinical study.

Financial assistance is available to Ontario residents from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). To be eligible a student must be a Canadian Citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario. Students who are legal residents of other provinces need to check with their respective provincial financial aid programmes about eligibility for support. In addition, the following sources of funding are available to undergraduate medical students:

**ABBOTT MEMORIAL SCHOLARSHIP LOAN FUND**
This fund was established by the Federation of Medical Women of Canada. Small loans are available to any female medical student or first-year intern. In special cases, a loan up to $1,000 may be made to a student for recognized postgraduate training. Loans are payable within five years of date of issue, after which time interest will be charged at a rate of 6% compounded annually.

Information regarding these loans may be obtained from the Federation of Medical Women of Canada, Box 8244, Ottawa, Ontario, K1G 3H7.

**MEDICAL OFFICER TRAINING PLAN**
The Department of National Defence administers a programme for medical students known as the Canadian Forces Medical Officer Training Plan. Under this plan, students may be subsidized (tuition, plus pay) throughout their undergraduate medical studies and internship. To qualify for enrolment a student must be acceptable without condition in a course in medicine in a Canadian university or in an accredited internship.

Further information on this programme and the career opportunities in medicine in the Canadian Armed Forces may be obtained from the Canadian Forces Medical Officer Training Programme, 100 Main Street East. Telephone (905) 527-2751.

**OTHER FUNDS**
The Undergraduate Medical Programme administers a small loans and bursaries programme to assist medical students with demonstrable need. Unfortunately, these funds are limited and cannot be
Programme Overview

The baccalaureate programme in midwifery was announced by the Ontario Government in December 1882. The first class was admitted in August 1893. The programme is jointly offered by McMaster University, Laurentian University and Ryerson Polytechnic University and leads to the degree Bachelor of Health Sciences (B.H.Sc.) in Midwifery. In addition to meeting all requirements of the joint programme, students must satisfy the academic regulations of the institution in which they are enrolled.

The curriculum includes courses from basic sciences, social sciences, health sciences, women's studies and electives, in addition to clinical courses. A variety of course formats are used, with a mix of large and small group sessions. Distance learning formats, such as teleconferencing, and print-based courses, will be used extensively. Full-time students will complete the programme in four years.

Students should note that due to the shortage of clinical placements/preceptors, students must be prepared for the possibility that they may not complete the programme in four years.

In 1997, applicants wishing to complete the programme in four years (full-time), should apply to McMaster University. Part-time applicants should apply to Ryerson Polytechnic University. The part-time programme can be completed in five to seven years depending on the student's preference, course availability and on the amount, if any, of transfer credits awarded. The suitability of part-time study for meeting clinical requirements is being carefully assessed. Periods of full-time participation will be necessary in order to participate in intensive courses and clinical placements.

Each student is assigned to a midwifery practice for an extended period of clinical practice. This ensures that students will provide continuity of care to clients and obtain continuity of supervision from a midwife preceptor. Clinical experience is obtained in hospital settings and in conjunction with a family physician, an obstetrician and in elective placements. Students will be brought together for several days five times during the four-year programme as a means of fostering professional identity and group support.

The programme reflects the philosophy of midwifery in Ontario and its focus on women's participation in their health care. The importance of public involvement in the evolution of the profession is evident in the ongoing participation of health-care users in programme advisory and evaluation activities and in the applicant admission process. The programme works closely with practising midwives and other maternity-care providers to ensure a high-quality clinical environment for students.

Curriculum Plan

Students who enter the programme as of September 1997 will follow the four-year timetable. Students who are currently enrolled in the programme will follow the three-year timetable. The two full-time sequences, below, outline both the four-year and the three-year programmes. The term of reference for such awards should neither dilute the univer­­­si­ties that student the univer­­­si­­ties undertake understanding IV there are­ completing the wedge of a e students in clinical prac­­i­­tice in order to be supervision, rotaiton and remunera­­tion in­­o­­(3) locations and beginning of the year of sessions and to live in residence. The exact dates and locations of these opportunities are arranged on a year to year basis.

Curriculum Plan For Students Entering in September 1997

LEVEL I: 30 UNITS

<table>
<thead>
<tr>
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<tr>
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<tr>
<td>6</td>
<td>HTH SCI 1C06¹</td>
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<tr>
<td>6</td>
<td>WOMEN ST 1A06¹</td>
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<td>HTH SCI 3A03¹ (Term II)</td>
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<tr>
<td>6</td>
<td>MIDWIF 1A03²</td>
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<tr>
<td>3</td>
<td>MIDWIF 1C03²</td>
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LEVEL II: 30 UNITS

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<td>from HTH SCI 3B03, 3L03, MIDWIF 3D03</td>
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<tr>
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LEVEL IV: 30 UNITS

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<td>MIDWIF 3C12³</td>
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Curriculum Plan For Students Who Entered Prior to September 1997

LEVEL II: 39 UNITS

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<tr>
<td>3</td>
<td>Social Sciences or Women's Studies courses¹</td>
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<tr>
<td>3</td>
<td>HTH SCI 3B03</td>
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<td>3</td>
<td>Electives¹</td>
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<td>12</td>
<td>MIDWIF 2C12²</td>
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</tbody>
</table>

¹ Students are required to attend this session and to live in residence. The exact dates and locations of these opportunities are arranged on a year to year basis.
Admission Process and Criteria

The following are the requirements for admission in the academic year 1997/98. Please note that the admission policy is reviewed annually and the admission requirements from previous years may not apply.

As places in the Midwifery Programme are limited, the admission process is competitive. Possession of the published minimum requirements does not guarantee admission.

ADMISSION CRITERIA

Applicants to the Midwifery Education Programme come from a wide variety of educational backgrounds; however, all applicants must meet or be in the process of completing the following basic admission requirements by the date of application (i.e. February 1 of the year in which the applicant is seeking admission).

A. OSSD with 6 OAC (Ontario Academic Credit) courses including the following three prerequisites:
1. One of OAC English I or OAC anglais I or OAC anglais II
2. One of OAC Biology or OAC Chemistry
3. An OAC in social science (i.e. history, sociology, psychology, geography, law)

AND

B. Students must obtain a minimum overall final average of 70% in six OAC courses including the three prerequisite subjects

OR

The equivalent of OAC courses from other provinces/countries with a 70% average.

For those currently registered in required subjects, interim grades must be submitted. Courses must be completed by June 30, 1997 and final grades made available immediately thereafter.

Prior/Current Community College (C.A.A.T.) Applicants

Applicants with studies completed at an Ontario Community College (C.A.A.T.) or equivalent, must have full courses that are equivalent to the OACs in the three subject areas specified. The average from at least two years of college work must be a minimum of 70% or better. In addition, students must also have 70% in each of the three prerequisite subjects. Applicants with CEGEP background should consult the OAC equivalency chart found in the Admission Requirements section of this Calendar.

Prior/Current University Applicants

Applicants with at least two full-time years at an accredited university at the time of application must have completed OACs or equivalent university courses in at least two of the three subject areas noted. The applicant's overall average from the best 10 full courses equivalent to two years of university work, must be a minimum of 70%. Students must also have a minimum of 70% in two of the prerequisite subjects.

Mature Applicants

1. Mature students are required to possess the three prerequisite subjects as described in the basic requirements.
2. Mature candidates lacking the academic background described below will be advised to upgrade by either taking OACs or introductory university level courses. Those who take OAC upgrading may have the two year absence from formal studies guideline waived.
3. Mature candidates are expected to have a 70% overall average or better in the required courses or subject areas.

4. Other specific requirements are:
   i) must be at least 21 years of age, or will be, prior to the first day of classes for the session to which application is made;  
   ii) have not attended secondary school for at least two years;  
   iii) have never attended university;  
   iv) have not been enrolled in a college diploma programme within the last five years.

Transfer or Challenge Credit

Applicants with previous university courses may be eligible for credit for electives or other non-clinical courses in Level 1 and 2. Transfer/challenge credit will not generally reduce the time span required to complete the programme.

Successful applicants are able to challenge the following courses: Social and Cultural Dimensions of Health (HTH SCI 1C06), Topics in Biological Science (HTH SCI 1D06), and Critical Appraisal of Research Literature (HTH SCI 3A03). Further details about the availability of challenge exams or other means of obtaining credit for programme requirements will be available at a later time in the admissions process.

Deferral of Registration

Those students offered admission will not be granted a deferral and will be asked to reapply.

SELECTION PROCEDURE

The intention of the Midwifery Education Programme is to prepare students to become midwives who have the ability to give the necessary supervision, care and advice to women during pregnancy, labour and the postpartum period, to conduct deliveries on her/his own responsibility and to care for the newborn infant. In order to fulfill this criteria, midwives must have a thorough and rigorous academic preparation.

Midwives, as primary health care providers within our society, are expected to have well-developed interpersonal skills. They must be highly competent in areas of health education, counselling and interprofessional collaboration. Applicants to this programme should expect to be thoroughly assessed for their ability to exhibit and further develop these important personal/professional qualities.

The admission process is detailed in three parts:

1. Assessment of Academic Eligibility: Review of applications for completeness and evidence of academic eligibility according to the criteria listed above.
2. Review of Personal Questionnaire: Each applicant is asked to answer five (5) questions in a typed submission not exceeding five double-spaced pages. The personal questionnaire is the opportunity for applicants to show how their background experiences and personal attributes are well-suited to being a midwife. The personal questionnaire will be scored by teams of two evaluators who have no information about the academic background of the applicant.
3. Personal Interviews: Selected candidates will be invited for a personal interview. Interviews will be conducted by teams of three, consisting of a consumer, faculty member, midwife or midwifery student who have no previous information about the applicant. Interviewers will assess applicants in areas such as their motivation to become a midwife and their awareness of midwifery in Ontario and career goals. Candidates may be asked to participate in a test of writing skill on site. A total review of each applicant's file will help determine offers of admission at the conclusion of this three part process. A waiting list will be formed for any places that become available.

UNSUCCESSFUL APPLICANTS

Applications are not held over from one year to another. If an unsuccessful applicant wishes to reapply to the Midwifery Education Programme, a new application, including transcripts and supplementary materials must be submitted. Unsuccessful applicants may request feedback about their application for the current year. Applicants must make their requests in writing to the programme no later than June 30th of the year of application. Depending on the volume of requests it may take several months for the programme to reply.
APPLICATION DEADLINE
Submission of completed application forms to the Ontario Universities' Application Centre and all supporting documents/transcripts, must be received by the University no later than February 1 of the year in which registration is expected.

Financial Information
In 1996-97 the tuition fees for a student in the Midwifery Education Programme were $4,512.00. Supplementary fees are estimated at $400.00 per year.

A confirmation fee may be required at the time of acceptance of an offer of admission.

Financial assistance is available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). Students intending to apply for OSAP may begin their application process to OSAP once they are notified about receiving an interview. The final status of your application can be confirmed with OSAP at a later date.

Additional costs include books, supplies, and other learning resources estimated at $500.00-$1000.00.

Students should expect to cover their own travel and accommodation costs for the clinical components of the programme. Students are expected to cover a portion of costs for accommodation and meals when students meet together at one site three different times during the programme.

Academic Regulations
CONTINUATION IN THE PROGRAMME
Students are reviewed at the end of each term and academic year (August). Students must achieve a CA of at least 4.0 (C) in all graded courses and achieve a pass/satisfactory performance in all clinical courses at each review to continue in the programme. A CA of 3.5 or lower will result in the student being required to withdraw from the programme.

PROBATION
A student will be placed on probation if he/she:
1. obtains a CA less than 4.0 but not lower than 3.5; overall in all graded courses or
2. does not achieve a pass/satisfactory performance in all clinical (midwifery) courses.

If students fail to meet the minimum grade requirements in the required courses or a pass/satisfactory designation in the clinical courses, they may, at the discretion of the Programme Chair in consultation with a reviewing committee, be allowed to repeat the course on programme probation. A student must obtain a minimum grade of 4.0 or pass/satisfactory (in clinical courses) at the completion of the programme probation.

A student will be granted programme probation for one reviewing period if his/her CA is less than 4.0, but no lower than 3.5, and if he/she has not been on probation before. If the CA fails below 3.5, he/she will not be allowed to continue (i.e. will be required to withdraw from the programme).

GRADUATION REQUIREMENTS
To graduate with a Bachelor of Health Science in Midwifery a student must:
1. complete the overall programme including electives, with a CA of at least 4.0 on all graded courses.
2. satisfy and complete all requirements for clinical performance throughout the programme.
3. complete all courses for the degree within five years of the first midwifery course.

DEAN'S HONOUR LIST
Students will be evaluated for standing on the Dean's Honour List only upon completion of the programme. Students will be named to the Dean's Honour List if they receive no failing, provisional or unsatisfactory grades in any courses throughout the programme and achieve a minimum average of 9.5, calculated using the grades on all courses taken throughout the programme.

Professional Membership
The programme requires that all students become members of the College of Midwives and the Association of Ontario Midwives when they enter the programme. The total cost for these memberships is approximately $200.00 annually. Please note that the College of Midwives requires all applicants to disclose any past criminal or professional proceedings.

Qualifying for Registration by the College of Midwives
The practice of midwifery is regulated by the College of Midwives under the Midwifery Act, 1991 and the Regulated Health Professions Act, 1991. The College of Midwives has approved a set of core competencies for entry to practice which guide the Midwifery programme's curriculum.

Regulations under the Midwifery Act set out the following for registration: attendance at a minimum of 60 births, of which the student must be involved as a primary caregiver for 40; 30 births must include care throughout pregnancy, labour and the puerperium.

Graduation from the Midwifery Education Programme does not guarantee registration with the College of Midwives. All applicants to the College must meet additional registration requirements.

Regulatory requirement are subject to change from time to time. The programme will maintain a close working relationship with the regulatory body so that students obtain the required clinical experiences to be eligible for registration.

THE SCHOOL OF NURSING
In 1942, McMaster University began its first programme in Nursing, a cooperative effort between the University and the Hamilton General Hospital. Since the establishment of McMaster University's School of Nursing in 1946, students have received a Bachelor of Science in Nursing degree upon graduation. The programme has functioned completely under the supervision of the University, while students participate in the full cooperation of community hospitals and agencies in the operation of its clinical courses. In July 1974, the Schools of Nursing and Medicine became the Faculty of Health Sciences.

In 1982, the Post Diploma Stream of the B.Sc.N. Programme was introduced. This second category of admission was created to provide Diploma Registered Nurses with the opportunity to work towards a B.Sc.N. degree.

McMaster University is one of ten Ontario universities collaborating with the Council of Ontario Universities for Program in Nursing to offer a Primary Health Care Nurse Practitioner Programme. The programme commenced in September 1995 and is currently funded for a five year period by the Ontario Ministry of Health.

In 1994, the first Ph.D. candidates entered the Clinical Health Sciences (Nursing) graduate programme which is offered by the School of Graduate Studies through the Faculty of Health Sciences. M.Sc. candidates entered in the fall term of 1995. All enquiries about the Clinical Health Sciences (Nursing) graduate programme should be directed to the Graduate Programme Office, HSC-3N10, (905) 525-9140, ext. 22982.

To find out more information about McMaster and the B.Sc.N. Programme, Information Sessions for high school students are hosted by the Student Liaison Office during the school year. For more details about these sessions or to register for a visit, please call the University Registrar at (905) 525-4600. Applicants not applying directly from high school who require an application package should call (905) 525-4600.

The B.Sc.N. Programme
The B.Sc.N. programme promotes the development of nursing as a caring, client-centred, scientifically based profession. With an emphasis on problem-based learning, small group, self-directed learning, the programme provides a general baccalaureate education in nursing for the preparation of professional nurses who will practise in a variety of health-care settings. Central to our mission is the preparation of nurses who will work to enhance the quality of health of individuals, families, communities and society. In fulfilling its mission, the B.Sc.N. programme promotes skills in its graduates to prepare them for life-long, self-directed learning, critical thinking, advocacy and collective action.
As students progress in the B.Sc.N. programme, they will find an increasing emphasis on interpersonal skills, independent learning, and leadership qualities. Applicants should evaluate their own potential for developing abilities to interact with others and to assume leadership roles. Learning is a process of inquiry, a skill to develop as well as a lifestyle activity in an environment conducive to openness and sharing among faculty and students. Emphasis on small group tutorials and self-directed learning promotes the development of self-evaluation skills and critical thinking abilities. Extensive multimedia, laboratory and library resources support a belief in the importance of independent study. Students apply concepts from Nursing and related disciplines to their experiences in classroom and clinical settings (opportunities exist for international clinical practice experiences).

Community nursing is part of an ongoing assessment process of the achievement of clinical, course, and programme objectives.

BELIEFS AND GOALS
We believe that nursing is a scientific activity which seeks to describe, understand and accept reality as human beings experience it, and to provide professional care in this context.

The scientific activity of nursing involves critical appraisal, the ability to selectively utilize research findings and the use of a problem-solving process.

We believe that all human beings are unique, self-interpreting individuals with potential and with freedom of choice in determining the quality of life. Both the nurse and the client (individual, group or community) are accountable for their decisions and actions.

The unique contribution of nursing is in professional caring, which has both scientific and humanistic components.

At McMaster, we believe that health care is a team responsibility and that nursing education can be offered most beneficially in an interprofessional setting.

We believe that we can contribute to the development of nursing as a profession by producing graduates who:

1. Demonstrate personal characteristics that reflect a developing professional meaning; that is:
   a) recognize the intrinsic dignity, worth and uniqueness of persons
   b) demonstrate sensitivity and awareness of personal assets and limitations
   c) demonstrate advocacy, empathy, tolerance, accountability
   d) maintain ethical standards
   e) think rigorously and critically
   f) foster independent and collaborative practice
   g) provide leadership for change.

2. Accept responsibility for life-long learning and professional growth.

3. Identify and understand internal and external influences on human health.

4. Utilize knowledge of biological, physical, verbal, emotional and spiritual factors in nurse/client situations.

5. Demonstrate knowledge of the impact of interprofessional interchange on nursing, other health disciplines and the health-care system.

6. Demonstrate nursing practice that reflects knowledge of the processes of change, caring, coping, valuing, learning and critical appraisal.

7. Demonstrate a comprehensive approach to nursing practice in a variety of settings.

8. Support and promote a humanistic and scientific approach to the care of nursing clients.

Admission Policy and Procedure

ADMISSION POLICY
Application to the B.Sc.N. programme in the Faculty of Health Sciences implies acceptance of admission policies, procedures and the methods by which applicants are chosen for the programme.

As places in the B.Sc.N. programme are limited, admission is by selection. Possession of the published minimum requirements does not guarantee admission.

There are three streams of study leading to the completion of the B.Sc.N degree. The Basic (A) Stream requires four years of study, and is available to those applying directly from an Ontario secondary school; to those who have qualifications equivalent to OACs; to university students who wish to transfer into nursing; and to applicants with other qualifications who meet the admission requirements. The Post Diploma (B) Stream is available to Diploma Registered Nurses only. Graduates of an approved diploma nursing programme who are admitted to the B.Sc.N. programme are granted advanced credit and may complete the programme in two calendar years of full-time study.

The Ontario Primary Health Care Nurse Practitioner Programme (C) Stream is a post diploma/post degree programme. Diploma prepared nurses require 24 months of full-time study, while Degree prepared nurses require 12 months on a full-time basis or 24 months on a part-time basis to complete the programme.

The requirements and application deadlines vary depending on the applicant's background. An applicant supplying documentation or evidence which, at the time, or subsequently, is found to be falsified will be withdrawn from consideration. Any student admitted to the programme having submitted false documentation will be withdrawn.

Detailed medical information will be required upon acceptance into the programme including a record of completion of required immunizations.

Applicants Directly from Ontario Secondary Schools
Approximately three quarters of the places in Level I are offered to students with OACs or equivalent. The selection method is by academic qualifications. Offers of admission are made in early June and may be based on interim and final grades at that time. Offers based on interim grades will be conditional upon maintaining satisfactory performance on final grades.

Applicants With Other Qualifications
For applicants not applying directly from Secondary School or without the necessary OAC equivalents, the selection method is based on academic qualifications, a rating obtained on an autobiographical questionnaire and a personal interview. The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni, and the community. Applicants may be invited to a personal interview at McMaster in early May. Applicants are responsible for their travel expenses. Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

Applicants will be informed of the admission decision by mid-June. Where courses are in progress at the time of admission, the offer of admission will be conditional upon the applicant achieving a final cumulative average of B- in the required course work.

Post Diploma Applicants
The selection method is based on academic qualifications, a rating obtained on an autobiographical questionnaire and a personal interview. The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni, and the community. Applicants may be invited to a personal interview at McMaster in early May.

Applicants are responsible for their travel expenses. Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

Applicants will be informed of the admission decision by mid-June. Where courses are in progress at the time of admission, the offer of admission will be conditional upon the applicant achieving a final cumulative average of B- in the required course work. Applicants enrolled in diploma nursing programmes at the time of application must be eligible to write the nursing registration examination no later than June of the year of application to the B.Sc.N. Programme in order to assure possession of a current annual registration payment card from the College of Nurses of Ontario.
Applicants With Qualifications Equivalent to OAC (A Stream)
Applicants should contact the Ontario Universities' Application Centre (OUAC) for an application package and return it to them by May 1, to be considered for admission. (See address below.) Applicants must also have their official transcripts forwarded to the McMaster B.Sc.N. Programme from their secondary school by May 1st.

Return to:
Ontario Universities' Application Centre (OUAC)
650 Woodlawn Road West,
P.O. Box 1328
Guelph, Ontario, N1H 7P4

Applicants with Other Qualifications and Post Diploma
Applicants (A and B Stream)
Such applicants should write to the Admissions Coordinator (Nursing) for an application package at the following address.

B.Sc.N. Programme
McMaster University, Room HSC-2E10
1200 Main Street West
Hamilton, Ontario, L8N 3Z5

Attention: Ms. V. Lewis,
Admissions Coordinator (Nursing)

Applicants to the Ontario Primary Health Care Nurse Practitioner Programme (C Stream)
Applicants must contact the Ontario Universities' Application Centre (OUAC) to obtain the Primary Health Care Nurse Practitioner Education Programme Application Package. (Please see address above.) Applicants for all studies beginning in September must be received by OUAC no later than February 1.

ADMISSION REQUIREMENTS
A student who plans to enter the Undergraduate Nursing Programme may qualify under one of the categories described below.

I. BASIC (A STREAM)
Applicants directly from Ontario Secondary Schools
Requirements
1. One of OAC English I, OAC English II or OAC English 30;
2. OAC Chemistry;
3. One of OAC Calculus, OAC Algebra and Geometry, OAC Finite Mathematics;
4. One of OAC Biology, or OAC Physics;
5. Two additional OACs to total six credits.

NOTE: Application to the programme must be made within two years of completion of the OAC requirements. The admission average will be calculated on the best six OAC subjects, including the four required subjects.

Applicants with Qualifications Equivalent to OAC
Applicants from other provinces and countries must achieve the equivalent to the qualifications listed above in their secondary school graduation year.

Applicants with Other Qualifications
Applicants should contact the Ontario Universities' Application Centre (OUAC) for an application and normally should:
1. a) be currently enrolled in first year of a University programme and have achieved a university admission average of at least 75% or
b) achieve a cumulative average of at least B- in all university degree credit courses taken. A minimum of 12 units or equivalent is required. (These courses may be taken as a full-time or part-time student, university correspondence degree courses are acceptable.)

Note: University degree credit courses completed prior to admission will be assessed for advanced credit, by the Office of the Coordinator of Studies following admission to the programme.
2. submit Form 105D to OUAC along with the $75 fee by February 15;
3. submit a completed original and three copies of the response to the questionnaire provided in the application package along with the $50 fee to McMaster by February 15.

Applicants From Other Degree Nursing Programmes
Applicants who are currently enrolled in a Nursing degree programme at another university may apply to transfer into the B.Sc.N. programme at McMaster. Availability of space and placement in the programme will be determined by the Level Chair. Even if space is not available, the applicant may choose to complete the admission process and be placed on a waiting list.

The applicant may be invited to a personal interview at McMaster. Applicants are responsible for their own travel expenses. Failure to attend the interview will result in cancellation of the application. Applications for transfer into the B.Sc.N. programme to commence studies in September must be received by the Admissions Coordinator (Nursing) no later than June 30.

Applicants must:
1. contact the Admissions Coordinator (Nursing) to discuss placement in the programme;
2. submit Form 105D to OUAC along with the $75 fee by June 30;
3. submit a completed original and three copies of their response to the questionnaire provided in the application package, an official letter from the Dean/Director of the programme in which the applicant is currently enrolled stating that the applicant is in "good standing" in that programme (good standing is interpreted as at least a B- average in nursing courses); course descriptions/outline for assessment of advanced credit; and a current transcript.

II. POST DIPLOMA (B STREAM)
Applicants should contact the Ontario Universities' Application Centre (OUAC) for an application package and normally must:
1. possess a current College of Nurses of Ontario annual registration payment card or be eligible for reciprocity, or be eligible to write and subsequently pass the Registration examinations.
2. achieve a cumulative average of at least B- in all university degree credit courses taken. A minimum of 6 units or equivalent is required, University correspondence degree courses are acceptable.
3. submit Form 105D to OUAC along with the $75 fee no later than February 15;
4. submit a completed original and three copies of the response to the questionnaire provided in the application package, a photocopy of the current College of Nurses of Ontario annual registration payment card, transcripts, and the $50 fee to McMaster by February 15.

NOTE: University degree credit courses completed prior to admission will be assessed for advanced credit by the Office of the Coordinator of Studies following admission to the programme.

III. ONTARIO PRIMARY HEALTH CARE NURSE PRACTITIONER PROGRAMME (C STREAM)
Selection is based on academic qualifications, professional experience, clinical references, and personal questionnaire scores. The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni and the community. The scores awarded by the assessors are final. Applicants will be informed of the admission decision by May.

Applicants with a Diploma in Nursing must:
1. have an Ontario Diploma in nursing or the equivalent with a minimum overall average of 70% and provide evidence (transcript) of a minimum grade of B- in at least six units (or equivalent) of university credit work;
2. hold a current College of Nurses of Ontario annual registration payment card;
3. have the equivalent of two years full-time nursing practice within the past five years as evidenced by the employer-completed "Verification of Employment" form(s);
4. submit Form 105D to OUAC along with the $75 fee by February 15;
5. submit a copy of the current College of Nurses of Ontario annual registration payment card, the relevant professional experience form, verification of employment form(s), two clinical reference forms, a personal questionnaire response, official transcripts from a diploma nursing programme, copies of any additional professional registrations, memberships or certificates listed on the relevant professional experience form (i.e. RACOC, CPR) and official transcripts of complete university degree course work to McMaster by February 15.
Applicants with a Baccalaureate Degree in Nursing must:
1. possess an Ontario baccalaureate in nursing or the equivalent with a minimum overall average of 70%. In cases where the minimum grade is not achieved, upon Senate approval, consideration may be given to university credit work completed following graduation which demonstrates equivalent academic ability;
2. hold a current Certificate of Nurses of Ontario annual registration payment card;
3. have the equivalent of two years full-time nursing practice within the past five years as evidenced by the employer-completed “Verification of Employment” form(s);
4. submit Form 105D to OUAC along with the $75 fee by February 1;
5. submit a copy of the current Certificate of Nurses annual registration payment card, the relevant professional experience form, verification of employment form(s), two clinical reference forms, a personal questionnaire response, official transcripts from a degree nursing programme, copies of any additional professional registrations, memberships or certificates listed on the relevant professional experience form (i.e. RNAO, CPR) to McMaster by February 1.

Overall preference will be given to Ontario residents whose work experience in nursing has been continuous and who have practical experience in one or more of the following areas: primary health care, ambulatory care, public health, community health, long term care, emergency care or outpost nursing.

IV. ALL OTHER APPLICANTS
Certain provisions are available for applicants who wish to pursue a Nursing Degree at McMaster but do not qualify under any of the above three categories. For information on how to qualify, applicants should contact the Office of the Registrar (Admissions), Gilmour Hall, Room 108, McMaster University, Hamilton, ON L8S 4L8.

UNSUCCESSFUL APPLICANTS
Applications are not held over from one year to another. If an unsuccessful applicant wishes to reapply to the B.Sc.N. programme, a new application, including supporting documentation, must be submitted.

Unsuccessful applicants may inquire about their application for the current year. Applicants must make their requests in writing to the Chair of the Undergraduate Nursing Admissions Committee. No inquiries will be considered after August 31 of the year of application.

APPLICATION FOR DEFERRAL OF REGISTRATION
Deferred registration is granted only under exceptional circumstances to those candidates who have been admitted and have accepted the offer. Deferred registration, if granted, may be deferred for one year only. The request for deferral, outlining the reasons for the request, must be postmarked no later than July 31 of the year for which deferral is requested.

Academic Regulations
In addition to meeting the General Academic Regulations of the University, students enrolled in the B.Sc.N. programme shall be subject to the following programme regulations:

Registration in the B.Sc.N. programme implies acceptance on the part of the student of the objectives of that programme and the method by which progress toward the achievement of those objectives is evaluated.

Since the academic regulations are continually reviewed, the University reserves the right to change the regulations.

The University also reserves the right to cancel the academic privileges of a student at any time should the student's scholastic record or conduct warrant so doing. Where, in the opinion of faculty, the performance of the student in clinical nursing practice may jeopardize or endanger the welfare of the patient, or the patient's family, the student must be removed from clinical experience at any time during the academic year until continuation in the course is reviewed. The clinical activities associated with any clinical course must be successfully achieved for attainment of a passing grade in the course.

PART-TIME STUDENTS
It is possible to complete the B.Sc.N. programme on a part-time basis. University and programme regulations governing full-time undergraduate students will govern part-time students although there are additional guidelines for part-time study.

As enrolment is limited, places reserved for part-time students at each level will be restricted. Normally, nursing courses are available only during the day. Electives may be taken either in the day or evening. Counselling sessions will be available for part-time students after admission.

B.SCN. PROGRAMME ACADEMIC REGULATIONS
Basic (A) and Post Diploma (B) Stream
A student must:
1. achieve a Cumulative Average (CA) of at least 3.5;
2. achieve a grade of at least C- in the graded Nursing and required Health Sciences courses with the exception that a grade of D-, D or D+ is permissible in one Level I Health Sciences course and in only one required Health Sciences course beyond Level I; and
3. achieve a Pass designation in all clinical courses and the clinical component of NURSPRAC 1F04 and 1G04.

The following courses are designated clinical courses:
- Basic (A) Stream: NURSPRAC 2L03, 2P03, 3X04, 3Y04, 4J07, 4K07
- Diploma Registered Nurses (B) Stream: NURSPRAC 3L05, 3M05, 4S06, 4T06

All clinical courses above Level I are evaluated on a Pass/Fail basis. Areas of excellence in practice are noted in a detailed evaluation summary for each course. (A course for which credit has not been granted may be repeated only when approval is granted by the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee.)

Nurse Practitioner (C) Stream
A student must:
1. achieve a Cumulative Average (CA) of at least 3.5;
2. achieve a grade of at least C- in the graded Nursing and required Health Sciences courses with the exception that a grade of D-, D or D+ is permissible in one Level I Health Sciences course and only once in required Health Sciences courses beyond Level I;
3. achieve a Pass designation in NURSPRAC 4C10;
4. achieve a Pass designation in the clinical component as well as a grade of B- in the theoretical component in each of NURSPRAC 4A05, 4AA5, 4C10, 4T05, 4TT5;
5. achieve a grade of B- in NURSPRAC 4P03, 4R03, 4S03.

The following courses are designated clinical courses:
- NURSPRAC 4A05, 4AA5, 4C10, 4T05, 4TT5

Under existing funding, all Nurse Practitioner courses must be successfully completed by August, 1999.

CONTINUATION IN THE PROGRAMME
To continue in the B.Sc.N. programme a student must obtain a CA of at least 3.5. A student whose CA is at least 3.0, at the discretion of the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee, may proceed in the programme and will be placed on programme probation. A student may be placed on programme probation only once during the total programme.

FAIL URE
A student whose CA is less than 3.5, and who has not been granted programme probation, may not continue at the University.
A student who fails to obtain a CA of 3.5 at the completion of the programme probation may not continue at the University.
A student may normally repeat a level of work only once.
If a student fails to meet the minimum grade requirements in the required graded Nursing and required Health Sciences courses or a Pass designation in the clinical nursing courses, the student may, at the discretion of the Programme Chair in consultation with the programme Reviewing Committee, be allowed to repeat the course in which the minimum grade or Pass requirement has not been met. If a student fails to meet the minimum grade or Pass requirements after repeating the course, he or she may not continue in the Faculty.
A student may normally be allowed to repeat only one clinical and one non-clinical Nursing or Health Sciences course during the programme.

Only one Nurse Practitioner course may be repeated. If a grade of less than B- or unsatisfactory is obtained in the Nurse Practitioner course on the second attempt, the student will be removed from the programme.
Curriculum for the B.Sc.N. Programme

BASIC (A) STREAM

The Faculty has planned the curriculum so that the study of nursing, the physiological, psychological and social sciences, and the humanities are interrelated and span the entire programme. In Level I, the amount of nursing experience is relatively small; the major proportion of study is in the behavioural and natural sciences. The nursing component increases progressively through Levels II, III, and IV, as the study of natural sciences is completed. Normally, because of timetabled constraints, courses must be taken in the level indicated in the curriculum.

ELECTIVES

Thirty units of electives are to be selected from disciplines of the student’s choice, of which a minimum of 12 units are to be chosen from courses designated as Level II or above. For some courses, the amount of duplication of required content will preclude their being used for elective credit in the B.Sc.N. programme.

LEVEL I: 33 UNITS

(Units graded: 33)
13 units HTH SCI 1A06, 1B07
8 units NURSING 1F04, 1G04
6 units PSYCH 1A03 and 1AA3 (or 1A06)
6 units Electives

LEVEL II: 31 UNITS

(Units graded: 25; Units pass/fail: 8)
8 units HTH SCI 2B08
14 units NURSING 2L03, 2M03, 2N03, 2P03, 2Q02
9 units Electives

LEVEL III: 33 UNITS

(Units graded: 25; Units pass/fail: 8)
8 units HTH SCI 3A03, 3B03, 3L02
16 units NURSING 3S03, 3T03, 3U02, 3X04, 3Y04
9 units Electives

LEVEL IV: 30 UNITS

(Units graded: 16; Units pass/fail: 14)
2 units HTH SCI 4L02
22 units NURSING 4A02, 4E03, 4F03, 4J07, 4K07
6 units Electives

TOTAL UNITS: 127

REGISTRATION TO PRACTISE NURSING

On receiving the B.Sc.N. degree after successful completion of the (A) Stream of the B.Sc.N. programme, graduates are eligible to write the RN Licensing Examinations which are administered by the College of Nurses of Ontario. Application to write the RN Licensing Examinations is made through the Faculty of Health Sciences.

DIPLOMA RN (B) STREAM

This programme is offered to Registered Nurses located throughout Canada and internationally by means of distance education. It is also offered locally through individual self-directed study and tutorial.

ADVANCED CREDIT: 33 UNITS

LEVEL III: 46 UNITS

(Units graded: 41; Units pass/fail: 5)

TERMS 1 AND 2: 34 UNITS
18 units HTH SCI 1A06, 12Z4, 3A03, 3B03, 3L02
16 units NURSING 3L05, 3M05, 3S03, 3T03

SPRING TERM: 6 UNITS
6 units Electives

SUMMER TERM: 6 UNITS
6 units Electives

LEVEL IV: 48 UNITS

(Units graded: 34; Units pass/fail: 14)

TERMS 1 AND 2: 30 UNITS
10 units HTH SCI 2B08, 4L02
20 units NURSING 4A02, 4E03, 4F03, 4S06, 4T06

SPRING TERM: 6 UNITS
6 units Electives

SUMMER TERM: 6 UNITS
6 units Electives

ADDITIONAL ELECTIVES (ANY TERM): 6 UNITS
6 units Electives

TOTAL UNITS: 127

ADVANCED CREDIT: 29 UNITS

LEVEL III: 51 UNITS

(Units graded: 51)

TERMS 1 AND 2: 36 UNITS
22 units HTH SCI 1CC7, 2C07, 3A03, 3B03, 3L02
8 units NURSING 3S03, 3T03, 4A02
6 units Electives

SUMMER TERM: 15 UNITS
15 units Electives

LEVEL IV: 47 UNITS

(Units graded: 47)

TERMS 1 AND 2: 34 UNITS
2 units HTH SCI 4L02
26 units NURSPRAC 4A05, 4A55, 4F03, 4R03, 4T05, 4TT5
6 units Electives

SUMMER TERM: 13 UNITS

(Units graded: 3; Units pass/fail: 10)
13 units NURSPRAC 4C10, 4S03

TOTAL UNITS: 127

Management Programme

The Nursing Leadership/Management Programme, which was previously administered and is currently endorsed by the Canadian Nurses Association, was transferred to McMaster in 1993. The Programme is offered to Registered Nurses located throughout Canada and internationally by means of distance education. It is also offered locally through individual self-directed study and tutorial.

Nursing Leadership/
The course work is designed to familiarize Registered Nurses with the theory and clinical application necessary to function effectively in a formal or informal leadership position. Content includes theory and techniques of management, leadership, organizational development and change, motivation, labour relations, legal implications, ethics, finance and the Canadian Health Care System. Separate modules are available in budgeting and total quality management. Entry is by approval of the Coordinator. Further Information may be obtained through the Programme Office.

**CURRICULUM**

(Units graded: 6; Units pass/fail: 2)
- 6 units NURSING 4B06
- 1 unit NURSING 4C01
- 1 unit NURSING 4D01

**TOTAL UNITS: 8**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for the equivalent courses in the B.Sc.N. programme.

The Northern Nursing Programmes

Offered by McMaster University, School of Nursing in conjunction with Health Canada, Medical Services Branch, the Northern Clinical Programme and the Northern Community Nursing Programme are designed to meet the educational needs of nurses who provide primary health care services within Aboriginal communities in Canada.

**ADMISSION POLICY**

Nurses for the Northern Nursing Programmes will be selected by Health Canada, Medical Services Branch and McMaster University based on the criteria of experience, education, initiative and personal suitability. Geographic diversity among participants is actively sought. All candidates must be currently registered as a registered nurse (RN) in a province or territory in Canada and be employed by Health Canada, Medical Services Branch or a Band Council.

**ACADEMIC REGULATIONS**

Students in the Northern Nursing Programmes shall be subject to the General Academic Regulations of the University and the regulations of the B.Sc.N. programme.

Northern Clinical Programme

(6393)

The Northern Clinical Programme has been designed as a thirteen week programme to provide educational opportunities for the integration of advanced clinical assessment skills and decision-making skills and relevant knowledge in the physical, biological and behavioural sciences necessary for delivery of nursing care in Aboriginal communities in Northern Canada. These skills not only include the advanced physical assessment necessary to intervene in acute, chronic and emergency situations, but also the decision-making and problem-solving skills necessary in rapidly changing situations.

**CURRICULUM**

(Units graded: 7; Units pass/fail: 10)
- 8 units NURSING 3A01, 3B07 (taken concurrently)
- 3 units NURSING 3C03
- 6 units NURSING 3D06

**TOTAL UNITS: 17**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for the equivalent courses in the B.Sc.N. programme.

Northern Community Nursing Programme (6392)

The programme focuses on the principles and practice of Primary Care Nursing. Students develop strategies designed to prevent disease and to promote health within the Aboriginal and Northern communities.

Over two terms, students come to McMaster to participate in four courses each of which comprises sixty hours of intensive classroom and group work focused on relevant community health issues. Each course is followed by a work-study practicum conducted in the student's home community. The work study practicums are linked to the course content and to each other as they build on progressively more challenging skills and concepts.

**CURRICULUM**

(Units graded: 20)
- 3 units NURSING 3E03
- 3 units NURSING 3F03
- 3 units NURSING 3G03
- 3 units NURSING 3H03
- 8 units NURSING 3K0B

**TOTAL UNITS: 20**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for the equivalent courses in the B.Sc.N. programme.

Oncology Programmes

**ADMISSION POLICY**

All candidates must reside in Ontario and be registered to practice nursing by the College of Nurses of Ontario. Selection criteria for admission to the Adult Oncology programme are based on recent, relevant oncology nursing experience and demonstrated commitment to oncology nursing practice. Selection criteria for admission to the Pediatric Oncology programme are based on relevant, recent pediatric oncology nursing experience and demonstrated commitment to pediatric oncology nursing practice.

**ACADEMIC REGULATIONS**

Students in the Oncology programmes shall be subject to the General Academic Regulations of the University and the regulations of the B.Sc.N. programme.

Adult Oncology Programme (6398)

This programme has been established to provide registered nurses working with adult cancer patients the opportunity to develop enhanced knowledge and skills required for the evolving challenges of their roles across the cancer consortium.

The programme has been developed within the context of the existing post diploma stream. The McMaster model of Nursing and philosophy of student-centered and problem-based learning are maintained and provide the foundation for curriculum design. Key aspects of the programme include professional role development, evidence-based practice, and development of assessment, communication, supportive care and collaborative practice skills.

The Adult Oncology programme is offered to nurses within the province of Ontario and will be made accessible through a distance education format.

**CURRICULUM**

(Units graded: 11; Units pass/fail: 10)
- 3 units NURSING 3C03
- 3 units NURSING 3D03
- 5 units NURSING 3G05
- 5 units NURSING 3H05
- 3 units HTH SCI 3A03
- 2 units HTH SCI 3L02

**TOTAL UNITS: 21**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for these courses (or their equivalent) in the B.Sc.N. programme.

Pediatric Oncology Programme (6394)

In order to accommodate the educational needs of registered nurses working in pediatric oncology, a programme has been developed within the context of the existing post-diploma stream. This program affirms the McMaster curriculum model of student-centred, problem-based or problem-focused teaching and learning; respect for the adult learner; a curriculum cognizant of and responsive to evolving nursing practice; a commitment to interprofessional approaches and a commitment to a strong scientific component. Students enrolled in the programme will be actively linked with one of the provincial tertiary pediatric haematology-oncology sites and maintain their clinical practice at that institution. The courses themselves will emphasize the existing literature and practice modalities in pediatric haematology-oncology and incorporate these into some of the present post-diploma baccalaureate courses. Some courses are available using a distance education modality.
CURRICULUM
(Units graded: 11; Units pass/fail: 10)

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<thead>
<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>3</td>
<td>NURSING 3P03</td>
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<td>3</td>
<td>NURSING 3Q03</td>
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<td>3</td>
<td>HTH SCI 3A03</td>
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<tr>
<td>2</td>
<td>HTH SCI 3L02</td>
</tr>
</tbody>
</table>

TOTAL UNITS: 21

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for these courses (or their equivalent) in the B.Sc.N. programme.

SCHOOL OF REHABILITATION SCIENCE

McMaster University offers two Bachelor of Health Science (B.H.Sc.) second-degree programmes in Occupational Therapy and Physiotherapy. McMaster will no longer offer the B.H.Sc. degree completion programme for those who currently hold a diploma from Mohawk College in Occupational Therapy or Physiotherapy.

B.H.Sc. (OT/PT) Second Degree Programmes

The two second degree programmes, offered in collaboration with Lakehead University, have been designed to graduate therapists in two calendar years. These graduates will possess the knowledge, skills, and professional behaviour to practice in a complete range of settings in either urban or rural locations. The collaboration with Lakehead University will add a further dimension, that of understanding the specific health issues unique to northern Ontario, as well as an awareness of the career opportunities available in these regions.

The content of the curricula is in accordance with accreditation guidelines and the scope of practice as described by each of the professions. Students are expected to achieve a sense of the influence of family, society, and culture as they explore the mechanics of health, disease, disability, prevention and treatment.

The aim of the Bachelor of Health Sciences programmes in Occupational Therapy and Physiotherapy is to provide students with the opportunity to build on their first degree and to acquire a professional education. Upon graduation they will be able to function as competent basic-level clinicians in a variety of hospital and/or community health settings. Competence entails the integration of knowledge, skills, and professional behaviour in order to analyze and manage health problems.

PROGRAMME GOALS

The B.H.Sc. programmes in Occupational Therapy and Physiotherapy allow graduates to practise their disciplines with the following skills:

KNOWLEDGE

1. understand and apply the theoretical and scientific bases of Occupational Therapy or Physiotherapy;
2. understand the biological, social, cultural and environmental determinants of health, and their relationship with one another;
3. understand the basic principles and methods of scientific inquiry and critical appraisal;
4. understand the importance of disease prevention, health maintenance, health promotion and treatment;
5. understand the factors which affect health policy and the delivery of health care;
6. understand change.

SKILLS

1. demonstrate clinical reasoning while managing health-care problems;
2. demonstrate competence in assessment and treatment techniques in Occupational Therapy or Physiotherapy;
3. demonstrate effective oral and written communication skills;
4. function as members of an Interdisciplinary health-care team;
5. implement programmes for prevention, health maintenance and health promotion;
6. function in advocacy roles in order to enhance quality of life;
7. demonstrate teaching and supervisory skills in professional practice;
8. demonstrate critical thinking and critical appraisal skills;
9. assess effectiveness of professional practice;
10. adapt to and initiate change.

PERSONAL QUALITIES

1. recognize, develop and maintain the personal qualities that are required for professional life:
   a) respect for each person's individuality;
   b) empathy in client relationships;
   c) ethical and professional behaviour;
   d) self-appraisal of personal attributes in order to build on strengths and overcome weaknesses.
2. function as self-directed, life-long learners and leaders in the profession.

Curriculum Design

<table>
<thead>
<tr>
<th>UNIT</th>
<th>OCCUPATIONAL THERAPY</th>
<th>PHYSIOTHERAPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>INTRO TO HEALTH CARE AND PROFESSIONAL PRACTICE</td>
<td>MUSCULOSKELETAL I</td>
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<tr>
<td>II</td>
<td>CHILD HEALTH</td>
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<td>III</td>
<td>ADULT PHYSICAL HEALTH</td>
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<td>IV</td>
<td>ADULT MENTAL HEALTH</td>
<td>CARDIOPULMONARY</td>
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<td>V</td>
<td>AGING AND HEALTH</td>
<td>NEUROLOGY</td>
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<tr>
<td>VI</td>
<td>ADVANCED INTEGRATION OF SKILLS AND KNOWLEDGE IN PREPARATION FOR ENTRY INTO PRACTICE</td>
<td></td>
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<tr>
<td>VII</td>
<td>SIX-WEEK FULL-TIME CLINICAL ELECTIVE</td>
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</tbody>
</table>

Curriculum

The time is divided into seven units of full-time study over a period of 24 months. The content of each unit is profession specific; however, there are occasions when Occupational Therapy and Physiotherapy students study together. The total programme consists of 100 units of credit; 70 units of academic study and 30 units (30 weeks) of clinical practice. One of the unique features of the programmes is the integration of clinical education/fieldwork experiences with academic study. Within each of the specialty units, a six-week clinical placement follows eight weeks of academic study.

NORTHERN STUDIES STREAM

Both programmes, Occupational Therapy and Physiotherapy, offer a Northern Studies Stream option. The goal of the NSS is for students to develop an awareness and appreciation of Northern health issues. Half of the students in each programme will participate. Interested students apply for this option during the first term of the programme. Final selection of students for the Northern Studies Stream remains with the University.
The Northern Studies Stream encompasses either one 14-week specialty unit or one six-week clinical fieldwork placement. The eight weeks of academic study occurs at Health Sciences North on the Lakehead University Campus in Thunder Bay and the clinical fieldwork placements occur in various Northwestern Ontario communities.

Currently, the 14-week units offered in the NSS are Units II and III (Physiotherapy) and Unit IV (Occupational Therapy). Limited numbers of the other six-week clinical fieldwork placements are also offered in the Northern Studies Stream.

Funded by the Ministry of Health, travel to and from McMaster and accommodation in Northwestern Ontario is provided for the Northern Studies Stream students.

**TEACHING/LEARNING METHODS**

The curricula of both programmes emphasize that the process of learning is equal in importance to the content. The learning methods are, therefore, based on the philosophies of self-directed and problem-based learning:

**Problem-Based Tutorials**

Problem-based learning takes place in small groups in which a tutor acts as a facilitator of student learning. Students are presented with health-care problems that have been carefully designed and selected for each unit. These problems promote the exploration of the underlying biological, psychological, and behavioral determinants of health as well as the principles of therapy. Large group interactive resource sessions may be offered to enhance access to content experts and other resources.

Students learn and practice group skills, share knowledge, become comfortable with changing leadership positions, and give and receive feedback.

The size of tutorial groups may vary from five to seven students. Tutorial group membership is changed for each unit in the programme in order to maximize interaction among students and faculty.

Tutors are usually occupational therapists or physiotherapists who are knowledgeable in the content area of the unit, and expert in tutoring in a problem-based format. The same tutor meets regularly with the group throughout the unit. Tutors also serve as role models in the professional socialization process.

**Clinical Skills Laboratories**

Clinical skills laboratories use a variety of formats to help students learn the clinical skills of assessment, treatment and other aspects of clinical practice. Laboratory sessions are designed to complement the health-care problems used in problem-based tutorials. The clinical skills learned in the laboratory section of each unit are applied and integrated into the clinical education component of the specialty units.

The focus of clinical skills laboratories changes through the units. Unit I stresses basic clinical skills. Units II through V focus on specialty areas of practice, and Unit VI is designed to develop skills in consultation, administration, and other advanced clinical skills.

**Inquiry Seminars**

These seminars are designed to provide opportunities to explore and discuss major topic areas and theoretical concepts which are central to the development and practice of the professions. Presentations by content experts, small-group problem-solving, and large-group discussion are utilized to provide the means and impetus for these investigations.

Topics chosen for inquiry seminars are used to complement the major themes in each programme unit and may vary from year to year. The seminar leaders include faculty members and experts from the community.

**Clinical Education**

Students spend a total of 30 weeks in full-time clinical practice. Clinical education is organized in a variety of health-care facilities including teaching hospitals, community hospitals, health-care agencies, specialized centres, private clinics, and other community facilities throughout Ontario. Students integrate academic learning into practice under the supervision of qualified therapists.

The University Coordinator of Clinical Education (PT) or University Fieldwork Coordinator (OT) is responsible for arranging all clinical placements. No student may make her/his own arrangements with any clinical facility.

Placements are limited and subject to availability. Therefore, students will be required to complete some clinical education units in Northwestern Ontario or elsewhere outside of the Hamilton area.

The students are expected to provide their own means of transportation to each clinical facility and to cover costs of travel and parking. Travel to and from the cities where clinical placements will be offered in Northwestern Ontario will be arranged by the Northern Studies Stream, through funding made available through the Ontario Ministry of Health.

Students will be assessed an additional fee for the use of the computerized clinical placement service of the Canadian Association of Occupational Therapists.

**Independent Study**

An independent study is completed during Unit VI. It may consist of an extensive literature review on a selected topic, a simple research design/proposal, or participation in an ongoing research study or clinical project. Evaluation of the independent study is based on a learning contract which is negotiated by the student with a faculty member during Unit V.

**Student Evaluation Methods**

A variety of methods are used to assess student performance throughout the programmes, including written and oral evaluations, presentations, and tests of clinical skills.

**Admission Policy and Procedure**

Enrolment in the second-degree programmes in Occupational Therapy or Physiotherapy is limited to 60 in each programme. Final selection of applicants for admission is made by McMaster University. The admission process considers academic achievement, personal qualities and experience. Personal qualities and experience are assessed on the basis of an autobiographical submission and a personal interview. Assessors are drawn from the faculty, the community, and students.

**Eligibility**

Applicants must:

1. At the time of application, have achieved a minimum grade point average of B- or 70% (2.7 on the 4 point grade scale) over the last two years of full-time academic study or the equivalent.

2. By June 30 in the year of admission, have completed an undergraduate baccalaureate degree at a recognized university, and have achieved/maintained a minimum overall grade point average of B- or 70% over the last two years of full-time academic study or the equivalent.

For those who have pursued their undergraduate degree on a part-time basis, eligibility assessment will be made using the courses equivalent to the last two years.

No preference will be given for any specific subject area in which the degree has been obtained.

**APPLICATION PROCEDURE**

Application packages with detailed instructions are available from:

Office of the Registrar
McMaster University
Gilmour Hall, Room 108
Hamilton, Ontario, L8S 4L8

or

Registrar’s Office, Lakehead University

The procedures outlined below must be followed:

(a) The OUAC 1050 application form and $75 application fee must be submitted to the Ontario Universities’ Application Centre on or before December 1. A supplementary application form, consisting of the items in b) and c) below, will be mailed upon receipt of the OUAC application.

(b) The autobiographical submission, the academic record form, and the $50 assessment fee must be submitted directly to Admissions, OT/PT Building, McMaster University on or before the date in January specified in the application package.

(c) Transcripts for all university degree credit courses and programmes in which the applicant has been enrolled must be submitted directly to Admissions, OT/PT Building, McMaster University on or before the date in January specified in the application package.

NOTE: The deadline dates are under review, and may be changed for the 1998 admissions cycle.
Academically eligible applicants are ranked on the basis of their grade point average over the last 2 years of full-time university study or the equivalent, and the score on their autobiographical submission. Those ranked among the top applicants to each of the Occupational Therapy and Physiotherapy programmes are invited for a personal interview.

Interviews are conducted between April 1 and May 15 in either Hamilton or Thunder Bay, according to the applicant’s preference. Applicants invited to an interview are notified approximately three weeks in advance of their interview. All applicants are responsible for their own travel costs to and from the interview.

All applicants will be notified of the admission decision by June 1.

DEFERRAL OF REGISTRATION
All applications received by the deadline are considered only for admission in the fall of the same calendar year. Applicants who cannot enter the programme as planned in September of that year may withdraw their application or decline their offer of admission at any time without penalty. Application fees cannot be refunded. Subsequent applications to the programmes will be accepted without prejudice.

Deferred registration is normally not granted. Under exceptional circumstances, candidates who have been offered admission may write a letter to the Programme Chair requesting deferral and stating their reasons. If deferral is granted, the individual must register in the following academic year i.e. the approval to defer registration is limited to one year.

FINANCIAL INFORMATION
In 1996-97 the academic fees (tuition and supplementary fees) for a student in the McMaster Undergraduate Occupational Therapy or Physiotherapy Second-Degree programmes were approximately $5,100 for three terms, September to August. It is estimated that books and supplies cost an additional $1,000 annually.

Financial difficulties are frequently experienced by second degree students. For these programmes difficulties are intensified by the lack of opportunity for summer employment as well as the relative scarcity of financial assistance available to second degree students.

Financial assistance may be available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). To be eligible a student must be a Canadian citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario.

Academic Regulations
Students in the B.H.Sc.(OT) and B.H.Sc.(PT) programmes, in addition to meeting the general University academic regulations, must follow these specific programme requirements.

Registration in the B.H.Sc.(OT) and B.H.Sc.(PT) programmes implies acceptance on the part of the student of the objectives of that programme and the method by which progress towards those objectives is measured. The University reserves the right to cancel the academic privileges of any student at any time that the student's scholastic record or conduct warrants doing so. Where the performance of a student in a clinical setting may jeopardize or endanger the welfare or safety of a patient or a patient's family, the student may be removed from the clinical setting any time during the academic year, until continuation in the course is reviewed.

COURSE LOAD
All courses are required. No exemptions or substitutions will be granted. All course work toward the B.H.Sc.(PT) and B.H.Sc.(OT) must be completed as McMaster University courses. A student may not take a course load consisting of a partial unit. All courses within each unit must be taken concurrently.

DEANS’ HONOUR LIST
Students will be evaluated for standing on the Deans’ Honour List only upon completion of the programme. Students will be named to the Deans’ Honour List if they receive no failing or remedial course grades throughout the programme, and achieve a minimum average of 9.5, calculated using the grades on all courses taken throughout the programme.

CONTINUATION IN THE PROGRAMME
Students are reviewed at the end of each unit, and at the end of the academic component in each of the specialty units (Units II to V). Students must achieve a grade of at least C- in every course at each review to continue in the programme. A grade of F in any course results in a student being required to withdraw from the programme.

A student who obtains a credit for a course, but achieves a grade below C-, is required to successfully complete remedial work in order to continue in the programme. Upon successful completion of the remedial work, the new grade assigned for the course is C- in all cases. The remedial work must be completed prior to the beginning of the next unit unless otherwise specified by the Programme Academic Review Committee. If the remedial work is not successfully completed, the original grade will stand, and the student will be required to withdraw from the programme.

A student is allowed to do remedial work only twice during the programme. Upon the third time that credit is obtained in a course but the grade is below C-, the student is not allowed to perform remedial work, and is required to withdraw from the programme.

The first time a student becomes ineligible for continuation in the programme or voluntarily withdraws from the programme, he/she is permitted to apply for readmission in writing to the Programme Chair. The request must be made at least three months prior to the beginning of the unit in which the student is requesting readmission. Normally, a student who is readmitted to the programme must repeat all courses of the unit in which he/she became ineligible to continue. A student who voluntarily withdraws from the programme is normally required to complete Unit I before permission to re-enter the programme is given.

A student who either becomes ineligible for continuation in the programme or who voluntarily withdraws from the programme a second time, may reapply only through the regular admissions process.

The latest possible date for readmission is two years from the beginning of the unit from which the student withdrew.

Programmes

B.H.Sc.(OT) {6405}
YEAR I: 47 UNITS
Unit I OCCUP TH 1T15, 1L17, 1S13
Unit II OCCUP TH 1T23, 1L24, 1S23, 1C26
Unit III OCCUP TH 1T33, 1L34, 1S33, 1C36
YEAR II: 53 UNITS
Unit IV OCCUP TH 2T43, 2L44, 2S43, 2C46
Unit V OCCUP TH 2T53, 2L54, 2S53, 2C56
Unit VI OCCUP TH 2T64, 2L63, 2S65, 2S63, 2C66
B.H.Sc.(PT) {6444}
YEAR I: 47 UNITS
Unit I PHYSIOTH 1T15, 1L17, 1S13
Unit II PHYSIOTH 1T23, 1L24, 1S23, 1C26
Unit III PHYSIOTH 1T33, 1L34, 1S33, 1C36
YEAR II: 53 UNITS
Unit IV PHYSIOTH 2T43, 2L44, 2S43, 2C46
Unit V PHYSIOTH 2T53, 2L54, 2S53, 2C56
Unit VI PHYSIOTH 2T65, 2L63, 2P62, 2A63, 2G62, 2C66
Honours Biology
and Pharmacology Programme (Co-op)
This is a joint programme between the Faculty of Health Sciences and the Faculty of Science (Department of Biology). The pharmacology courses, which are run in a small group, problem-based format, are the responsibility of the Faculty of Health Sciences, drawn from the following departments: Biomedical Sciences, Medicine, Obstetrics and Gynaecology, and Pathology.

Please see the Faculty of Science, Department of Biology section for admission requirements.
3. Humanities I students are restricted to taking no more than 12 units of introductory (1Z06) language courses.

4. **Portfolio Required:** ART 1F06: The prerequisite for ART 1F06 requires permission of the School of Art, Drama and Music based on a required portfolio interview. If you intend to take ART 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the School for a portfolio interview in March of the calendar year in which you wish to register for the programme. The portfolio should contain a variety of original work in different media, including work derived from both firsthand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. Acceptance into ART 1F06 is contingent upon receiving a written confirmation from the School of Art, Drama and Music.

5. Students wishing to take Music courses other than MUSIC 1A06 must make arrangements with the School of Art, Drama and Music for qualifying tests.

**REQUIREMENTS:**

Students admitted to Humanities I (0700) must complete 30 units as follows:

18 units from
- ART 1F06, ART HIST 1A06, CAYUGA 1Z06, CLASSICS 1B06, 1L06, COMP LIT 1A06, DRAMA 1A06, ENGLISH 1D06, FRENCH 1A06, 1N06, 1Z06, GERMAN 1B06, 1Z06, GREEK 1Z06, HISPANIC 1A06, 1Z06, HISTORY 1A06, 1L06, ITALIAN 1A06, 1Z06, 1Z26, JAPANESE 1Z06, LATIN 1Z06, LINGUIST 1A06, MOHAWK 1Z06, MUSIC 1A06, 1B06, 1C03, 1D03, (See Note 5 above.) OJIBWA 1Z06, PHILOS 1B06, 1D06, POLISH 1Z06, PORTUGUESE 1Z06, RUSSIAN 1Z06

12 units Electives, which may include Humanities courses

**MUSIC I**

**REQUIREMENTS**

Students admitted to Music I (0370) must complete 33 units of work as follows:

21 units MUSIC 1B06, 1C03, 1D03, 1E06, 1G03.

12 units Electives

**B. Degree Programmes**

Upon successful completion of Humanities I, a student may be admitted to a programme of study leading toward a Bachelor of Arts degree. (Completion of Music I may lead to a Bachelor of Music or Bachelor of Arts degree.) There are three ways to complete a Bachelor’s degree in the Faculty of Humanities.

**SINGLE HONOURS PROGRAMME**

Three years of study, beyond Level I, concentrated in the work of a single discipline (e.g. History). After three years of Music study beyond Music I, students receive a B.Mus. degree.

**COMBINED HONOURS PROGRAMME**

Three years of study, beyond Level I, concentrated in the work of two disciplines (e.g. English and Philosophy). In fact, a student can combine study in any two Humanities disciplines, or one Humanities discipline and a subject from another Faculty where appropriate (e.g. History and Political Science) or one Humanities discipline with Women’s Studies or Japanese Studies.

**MINOR**

A minor is an option available to a student enrolled in a four-level programme. A minor consists of at least 18 units of Level II, III, or IV courses beyond the designated Level I course(s), using elective units only, that meet the requirements set out in the programme description of that minor. A student is responsible for ensuring that the courses taken meet these requirements. When registering for courses to be applied towards a minor, in the case of cross-listed courses, students must ensure that they register in the appropriate subject for the minor designation. Those who have the necessary requirements may apply for recognition of that minor when they...
graduates. If recognition for a minor is granted, this recognition will be recorded on the student's transcript. Minors cannot be revoked once approved, nor applied for retroactively. Students may return for a second degree in the subject in which they have obtained a minor, but only at the Honours level. For further information please refer to Minors in the General Academic Regulations section in this Calendar.

**B.A. PROGRAMME**

Two years of study, beyond Level I, concentrated in the work of a single discipline.

The content and the requirements of single Honours, Combined Honours and other B.A. programmes are found after the Academic Regulations below.

There are a number of Humanities courses which may be taken as electives without prerequisites. Individual course descriptions, by Department, are given under the section entitled Course Listings.

Not only are students from other Faculties able to take individual courses which have no prerequisites, but they are also able to transfer into any of the degree programmes offered by the Faculty of Humanities. For the majority of programmes in the Faculty, admission may be gained after the successful completion of any Level I programme at the university, providing this includes the necessary programme requisites as outlined in the admission statement for each degree programme as described under Programmes for the B.A., B.A. (Honours) and B.Mus. Degrees.

**SECOND LANGUAGE PROFICIENCY**

Students embarking on Humanities programmes should be aware that most graduate schools require, for admission, proficiency in at least one, and frequently two, languages other than English. In this Faculty, proficiency in at least one language other than English is regarded as an essential tool for students interested in Comparative Literature and Linguistics. Generally, proficiency in more than one language is a hallmark of most highly-qualified Humanities' graduates seeking the widest range of post-graduation academic and employment opportunities.

**PART-TIME STUDY**

Students wishing to enter any programme offered by the Faculty of Humanities and pursue a programme on a part-time basis should consult the appropriate Departmental Counsellor(s) before making their plans.

It is anticipated that at least the following Honours programmes in the Humanities will be available to those part-time students who are able to take their work only in the evening during the Fall/Winter session: Art History; Drama; English; History; Philosophy.

For part-time students who are able to attend evening classes only during the Fall/Winter session, the following B.A. programmes are available: Art History; Classics; Drama; English; French; History; Philosophy.

**ACADEMIC REGULATIONS**

**Students enrolled in Humanities programmes, in addition to meeting the general Academic Regulations of the University, shall be subject to the following Faculty Regulations and Policies.**

**ADMISSION AND TRANSFER TO THE FACULTY OF HUMANITIES**

Because of resource limitations, the University and Faculty of Humanities reserve the right to limit enrolment in any programme or course to the number which can be taught effectively. Enrolment will be by selection based on academic achievement.

Admission as a Second Bachelor's Degree student or as a Continuing Student is by selection and may be limited. Admission is not guaranteed.

Students from other Faculties are able to transfer to degree programmes offered by the Faculty of Humanities provided that they have obtained a Cumulative Average of at least 3.5 and have completed the necessary requirements for admission to a programme. Students who do not meet these requirements must submit a Request for Special Consideration to the Associate Dean of Humanities (Studies). Such requests for transfer are not automatic or guaranteed and will be considered at the same time as applications for reinstatement (see below).

**REINSTATEMENT TO THE FACULTY OF HUMANITIES**

Students seeking reinstatement must complete the Returning Student Application form available at the Office of the Registrar (Gilmore Hall, Room 108) and the Faculty of Humanities (Chester New Hall, Room 112). The completed application and the $50.00 fee must be submitted to the Office of the Registrar by July 15 for September entry and by November 30 for January entry.

Applications should explain the reasons for the student's inadequate performance and should include relevant documentary evidence, for example a letter from a physician outlining any medical condition that might have affected the student's academic performance or final grades. Reinstatement cases will be carefully screened and the evidence considered will include the student's academic performance before and after admission to McMaster, as well as the nature of the reasons cited in the application letter and the accompanying documentation. Reinstatement is not guaranteed.

For further information about averages, etc., please refer to the General Academic Regulations section of this Calendar.

**REGISTRATION AND COURSE CHANGES**

It is the responsibility of the student to ensure that the programme of work undertaken meets the requirements for the degree. When registering or making changes to course selection, students must seek the written approval of the Associate Dean (Studies). Dates for final registration and course changes appear in the Sessional Dates section of this Calendar and are rigidly adhered to.

**SUMMER IMMERSION PROGRAMMES IN FRENCH**

Students must obtain approval from the Associate Dean (Studies) prior to participating in any language immersion programme.

The government-sponsored summer language bursary programme offers university students the opportunity to take French courses at a large number of accredited institutions. Students wishing to attend another university in order to participate in a language immersion programme must: (a) petition the Associate Dean (Studies), (b) submit detailed course descriptions for assessment, and (c) obtain a Letter of Permission.

Students registered in a programme in French may take a maximum of six units of credit in this manner as elective work only. Students not registered in a programme in French may take up to 12 units of credit.

**ACADEMIC REGULATIONS PERTAINING TO MUSIC PROGRAMMES**

Normally, students with an undergraduate degree in Music will not be admitted to a B.Mus. degree programme as a second undergraduate degree.

**EXCHANGE PROGRAMMES WITHIN CANADA**

For information on the Group of Ten Student Exchange Programme (GOTEPE), please refer to the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Student Exchanges.

**THIRD YEAR STUDY ELSEWHERE/HUMANITIES STUDY ABROAD**

**HUMANITIES STUDY ABROAD DURING LEVEL III OF HONOURS PROGRAMMES**

There are two ways to undertake international studies during Level III of an Honours programme: (i) a Formal Exchange Programme or (ii) a Third Year Study Elsewhere Programme.

(i) **Formal Exchange Programme During Level III of Honours Programmes**

Formal Exchange Programmes are those in which McMaster University has an agreement with another institution involving a temporary exchange of students. Exchange students register and pay tuition fees and supplementary fees at McMaster. No tuition is paid at the other institution. See the General Academic Regulations section in this Calendar and the sections on Eligibility and Application below.

(ii) **Third Year Study Elsewhere Honours Programme**

Qualified Level III students may undertake studies at a university abroad for one or two terms in the Third Year Study Elsewhere Programme. This programme is not available at universities with which McMaster University has a Formal Exchange Agreement.
Students register at McMaster but do not pay tuition to McMaster University. In addition to paying tuition fees at the other institution, students must pay all associated travel, study and living expenses. See the General Academic Regulations section in this Calendar and the sections on Eligibility and Application below.

Eligibility
Students registered in any Honours or Combined Honours programme in the Faculty of Humanities may apply to replace all or part of the work of their third year with an acceptable programme of study taken at a university or equivalent institution approved by the Faculty of Humanities.

To be eligible to take part in this programme, students must have completed at least 60 units of work with a Cumulative Average of at least 7.0. Individual programmes may have additional requirements. All requirements must be satisfied by the end of the Fall/Winter session (September-April) preceding the commencement of study elsewhere. Students taking part in this programme do not have the option of graduating with a three-year B.A. degree on the basis of work completed in this programme, but must return to McMaster University to complete their final 30 units of work.

Students may receive up to 30 units of credit for a full year of study at another institution. The awarding of all credit for work completed elsewhere may be confirmed only after departments have received transcripts and reviewed students' academic achievements following their return and after they have officially registered for Level IV. In certain cases, students may be recommended for the Deans' Honour List on the basis of work completed elsewhere.

Application
Students interested in applying for this programme should consult the Coordinator, Humanities Study Abroad, Togo Salmon Hall, Room 607, and the students' department(s) or School approximately one year before planning to begin their study abroad (i.e. during the Fall term of the year in which they enter Level II). No later than the end of February, a plan for the completion of the academic programme, approved by the programme counsellor(s), must be submitted together with the application to the Coordinator.

SPRING COUNSELLING
During the Spring Counselling period:
1. Information sessions are held by departments in the Faculty of Humanities to discuss undergraduate programmes, course offerings for the next academic session, etc.
2. Students seeking admission to a Level II programme for the following Fall/Winter session must complete an Application for Admission to Level II available in the Humanities Faculty Office in Chester New Hall, Room 112.
3. Students in Levels I or II who wish to transfer into Level III or IV programmes in Honours English or Honours History must complete an Application for Transfer to Level III or IV available in Chester New Hall, Room 112.
4. Students in Levels II, III, or IV obtain a copy of the new Undergraduate Calendar from the Office of the Registrar and updated Degree Audit Reports from the department offering the programme in which they are registered.

The dates for the Spring Counselling period may vary somewhat from year to year; however, the specific dates and information will be posted on campus, outlined in the campus newspaper and will be announced in some classes. It is the student's responsibility to participate in these counselling activities.

SCHOOL OF ART, DRAMA AND MUSIC

Programmes in Art and Art History

NOTE
Students intending to do graduate work in the field of Art History should note that most universities offering such programmes require undergraduate work in French, German or Italian for admission. These students are strongly encouraged to include one of these language courses as early as possible in their programme.

Honours Art

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Enrolment in Honours Art is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and: (a) a Cumulative Average of at least 6.0, (b) an average of at least 7.0 in ART 1F06 and ART HIST 1A06, and (c) a grade of at least B- in ART 1F06.

NOTES
1. Students in Honours Art must complete ART 2A06, 2B06, 2C03, and 2F06 before registering in Level III or IV Art courses.
2. Students must achieve a minimum grade of B- in ART 3G06 before registering in ART 4B12.
3. A Minor in Art History is not permitted in the Honours Art programme.
4. When selecting courses from Course List I, students are advised to take note of prerequisites for upper level offerings.
5. Students should note the availability of SADM 3A03 and SADM 4A03 which may be taken for programme credit.

Course List I

ART HIST 2B03, 2E03, 2G03, 2H03, 2M03, 2N03, 2X06, ANTHROP 2H03, HUMAN 2C03, 2E03, SADM 3A03

Course List 2

ART HIST 3B03, 3CC3, 3E03, 3F03, 3FF3, 3G03, 3H03, 3L03, 3N03, 3T03, 3TT3, 3V03, 4AA3, 4BB3, 4C03, 4CC3, 4D03, 4F03, 4M03, 4Q03, 4R03, 4V03, 4X03, ENGLISH 3F03, HUMAN 3G03

Requirements
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
27 units ART 2A06, 2B06, 2C03, 2F06, 3G06
12 units ART 4B12
12 units Level III or IV Art courses or SADM 4A03
9 units from Course List 1
6 units ART HIST 2D03, 3A03
6 units from Course List 2
18 units Electives

Combined Honours in Art and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and: (a) a Cumulative Average of at least 6.0, (b) a grade of at least B- in ART 1F06; and (c) the successful completion of ART HIST 1A06.

NOTES
1. Students in Combined Honours Art must complete ART 2A06, 2B06, 2C03 and 2F06 before registering in Level III or IV Art courses.
2. Students are advised of the availability of SADM 4A03 which may be taken for programme credit.
3. A Minor in Art History is not permitted in the Combined Honours Art programme.
4. Students must achieve a grade of at least B- in ART 3G06 before registering in ART 4C06.

Requirements
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
33 units ART 2A06, 2B06, 2C03, 2F06, 3G06, 4C06
9 units Level III or IV Art, which may include SADM 4A03
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
12 units Electives to total 120 units
Honours Art History {2029}

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ART HIST 1A06.

NOTE
Students who wish to take film courses are advised to take ART HIST 2X06 as an elective since it is the prerequisite for upper-level film courses.

COURSE LIST 1
ART HIST 3AA3, 3BB3, 3CC3, 3DD3, 3EE3, 3FF3, 3GG3, 3HH3, 3II3, 3JJ3, 3KK3, 3LL3, 3MM3, 3NN3, 3OO3, 3PP3, 3QQ3, 3RR3, 3SS3, 3TT3, 3UU3, 3VV3, 3WW3, 3XX3, 3YY3, 3ZZ3, 4AA3, 4BB3, 4CC3, 4DD3, 4EE3, 4FF3, 4GG3, 4HH3, 4II3, 4JJ3, 4KK3, 4LL3, 4MM3, 4NN3, 4OO3, 4PP3, 4QQ3, 4RR3, 4SS3, 4TT3, 4UU3, 4VV3, 4WW3, 4XX3, 4YY3, 4ZZ3

COURSE LIST 2
ART HIST 4AA3, 4BB3, 4CC3, 4DD3, 4EE3, 4FF3, 4GG3, 4HH3, 4II3, 4JJ3, 4KK3, 4LL3, 4MM3, 4NN3, 4OO3, 4PP3, 4QQ3, 4RR3, 4SS3, 4TT3, 4UU3, 4VV3, 4WW3, 4XX3, 4YY3, 4ZZ3

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
15 units from ART HIST 2B03, 2C03, 2D03, 2E03, 2G03, 2M03, 2N03
6 units Level III or IV Art History
24 units from Course List 1
6 units from Course List 2
36 units Electives

Combined Honours in Art History and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in ART HIST 1A06.

ART

NOTE
Art History and Another Subject
36 units Courses specified for the other subject.
6 units Film courses. (ART HIST 2X06 as an elective since it is the prerequisite for upper-level film courses.)

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in ART HIST 1A06.

REQUIREMENTS
90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
18 units from ART HIST 2B03, 2C03, 2D03, 2E03, 2G03, 2M03, 2N03
12 units Level III or IV Art History
30 units Electives

Minor in Art History
24 units of Art History, of which no more than six units may be from Level I.

Programmes in Drama

NOTES
1. The School of Art, Drama and Music offers a broadly based programme of study in the history, theory, and critical understanding of the dramatic text in performance. Programme requirements at Level II are designed to expose students to the breadth of the study. Level III courses offer more specific approaches to the study of performance. A limited amount of student specialization within the programme is possible at this level. The Honours Seminars at Level IV focus on independent research and are restricted to Level IV Honours Drama students. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
2. Students registered in Honours Drama are strongly urged to complete six units of non-introductory work in a language other than English. Students in Combined Honours are strongly urged to complete an introductory course in a language other than English (OAC level or equivalent).

Honours Drama {2148}

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in DRAMA 1A06.

NOTE
1. A Minor in Film is not permitted in the Honours Drama programme.
2. A number of courses that directly pertain to the study of Drama are offered by other departments: Classics, English, French, Modern Languages, Kinesiology, and Women’s Studies. These are recommended as electives listed at the end of the Drama course descriptions. Up to nine units from the list may be made available as substitutes for Drama courses, and counted toward the fulfillment of a programme in Drama. Students are advised that there may be restrictions on enrollment in these courses.

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units Level II Drama
27 units Level III or IV Drama
6 units Level IV Drama including at least three units from DRAMA 4C03, 4CC3, 4EE3, 4FF3
45 units Electives

Combined Honours in Drama and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in DRAMA 1A06.

NOTES
1. A Minor in Film is not permitted in the Honours Drama programme.
2. A number of courses that directly pertain to the study of Drama are offered by other departments: Classics, English, French, Modern Languages, Kinesiology, and Women's Studies. These are recommended as electives listed at the end of the Drama course descriptions. Up to nine units from the list may be made available as substitutes for Drama courses, and counted toward the fulfillment of a programme in Drama. Students are advised that there may be restrictions on enrolment in these courses.

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units Level II Drama
18 units Level III or IV Drama
6 units Level IV Drama including at least three units from DRAMA 4C03, 4CC3, 4E03, 4EE3, 4FF3
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units Electives to total 120 units

B.A. in Drama

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in DRAMA 1A06.

REQUIREMENTS
90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
12 units Level II Drama
12 units Level III or IV Drama
36 units Electives

Minor in Drama
24 units of Drama, of which no more than six units may be from Level I.

Minor in Film
24 units of DRAMA 2X06, 3H03, 3J03, 3R03, 3R03, 3T03, 3T03

PROGRAMMES IN MUSIC

Completion of a Music degree requires considerable daytime attendance.

MUSIC I

REQUIREMENTS
Students admitted to Music I must complete 33 units of work as follows:
21 units MUSIC 1B06, 1CC3, 1D03, 1E06, 1G03
12 units Electives

PROGRAMMES FOR STUDENTS ENTERING IN SEPTEMBER 1997

Honours B.Mus. Degree

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of Music I and a Cumulative Average of at least 6.0.

REQUIREMENTS
90 units total (Levels I-IV)
33 units Music I programme
24 units MUSIC 2B06, 2C03, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2H03
12 units from Course List 1
6 units from Course List 1 and 2
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
9 units Electives

B.A. IN MUSIC

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of Music I and a Cumulative Average of at least 3.5.

NOTE
Students from another Level I programme may be admitted with a Cumulative average of at least 3.5, a grade of at least C- in MUSIC 1A06, and a successful audition.

REQUIREMENTS
90 units total (Levels I-III)
33 units Music I programme
15 units MUSIC 2B03, 2B06, 2BB3, 2CC3, 2D03, 2H03
12 units from Course List 1
30 units Electives

Minor in Music

24 units of Music, of which no more than six units may be from Level I, subject to the prerequisites and qualifying tests specified in this Calendar.
Diploma in Music Performance

The Diploma is intended to recognize a concentration in the area of music performance and is available to two distinct groups of people:

1. Students who are enrolled in an Honours Music degree programme at McMaster; and
2. Students enrolled in other McMaster degree programmes, as well as musicians in the community, such as graduates from the Royal Conservatory of Music, Mohawk College, etc., who wish to receive formal recognition for their musical achievements.

GROUP 1 - McMaster B.Mus. Students

The Diploma will require completion of 30 units as follows:

- 18 units MUSIC 1E06, 1G03, 2E06, 2G03
- 12 units from MUSIC 3E06, 3G03, 4E06, 4G03

- Students who wish to receive a Diploma in Music Performance should request consideration, in writing, from the School of Drama and Music at the end of their second year in the program, or for transfer students, at the time of enrolment in the Honours Music program.

- The 12 units of Levels III and IV courses must be taken over and above the total number of units required for their degree.

- Upon completion of the course work, students will be required to complete a one-hour recital presentation.

GROUP 2 - Others

ADMISSION:

Completion of a music audition/examination consisting of:

1. Demonstration of technique (approximately Grade 9 level of the Royal Conservatory of Music, Toronto);
2. Performance (approximately 20 minutes duration) of two or three varied pieces of your choice (approximately Grade 9 level), including at least one from the 20th century;
3. Ear test appropriate to the Grade 9 performance level;
4. Written examination of rudiments of theory (Grade 2 level); and
5. Interview.

Applicants must contact the School of Drama and Music in April to arrange for an audition. Advanced credit, up to a maximum of 18 units, may be determined on an individual basis.

The Diploma will require completion of 30 units as follows:

- 18 units MUSIC 1E06, 1G03, 2E06, 2G03
- 12 units from MUSIC 3E06, 3G03, 4E06, 4G03

Upon completion of the course work, students will be required to complete a one-hour recital presentation.

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1997

Honours Programmes for the B.Mus. Degree

Programme A, Alternative 1:

Music Education

(Admission only to students who entered this programme before September 1997)

COURSE LIST 1

- MUSIC 3A03, 3K03, 3L03, 3M03, 3N03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4Q03, 4P03, 4U03

Programme B, Alternative 1:

Music History and Theory

(Admission only to students who entered this programme before September 1997)

COURSE LIST 1

- MUSIC 4C03, 4H03, 4I03, 4U03

Programme B, Alternative 2:

Music History and Theory/Performance

(Admission only to students who entered this programme before September 1997)

COURSE LIST 1

- MUSIC 4C03, 4H03, 4I03, 4U03

Combined Honours B.A. in Music and Another Subject

(Admission only to students who entered this programme before September 1997)

COURSE LIST 1

- All Level III and IV Music courses except MUSIC 3G03, 3T03, 3U03, 4E03, 4G03, 4U03

Programme A, Alternative 2:

Music Education/Performance

(Admission only to students who entered this programme before September 1997)
Application for Admission

PROGRAMME B: LANGUAGES AND LITERATURE

be considered for admission.

Requirements

90 units total (Levels I-III)
30 units Music I programme
18 units MUSIC 2B06, 2C03, 2H03, 3Y03
12 units from Course List 1
30 units Electives

Notes

1. Students in a Classics programme may choose courses from the following subfields: Ancient History and Society, Ancient Philosophy, Classical Archaeology and Art History, Classical Literature in Translation, Greek Language and Literature, Latin Language and Literature.
2. With the approval of the Department of Classics and the Associate Dean of Humanities (Studies), students who have completed 60 units of work of any Honours programme in Classics may replace all or part of their Level III work by courses of study at a university or equivalent institution abroad. Consult the Department for further details.
3. Students may receive up to six units of credit for archaeological field work at an approved Classical site. Consult the Department for further details.
4. Students intending to do graduate work in the field of Classics should note that most universities offering such programmes require undergraduate work in Greek and Latin for admission. These students are strongly encouraged to include Greek and Latin courses as early as possible in their programme.
5. Students intending to do graduate work in the field of Classics are strongly encouraged to include a thesis course (CLASSICS 4T06) in the final level of their programme.

Honours Classics

PROGRAMME A: ANCIENT HISTORY AND ARCHAEOLOGY

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in one of: CLASSICS 1B06, 1L06, GREEK 1Z06, or LATIN 1Z06. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

Requirements

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
9 units from CLASSICS 2D03, 2H06, 3I03, 3I13
24 units Greek (including GREEK 1Z06, if not completed in the Level I programme)
24 units Latin (including LATIN 1Z06, if not completed in the Level I programme)
9 units Levels II, III and IV Classics, Greek, Latin
24 units Electives

Combined Honours in Classics and Another Subject

PROGRAMME B: CLASSICAL LANGUAGES AND LITERATURE

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in one of: GREEK 1Z06 or LATIN 1Z06. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

Requirements

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
9 units from CLASSICS 2D03, 2H06, 3I03, 3I13
24 units Greek or Latin
6 units Levels II, III and IV Classics, Greek, Latin
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units Electives to total 120 units

Honours Classics

PROGRAMME B: CLASSICAL LANGUAGES AND LITERATURE

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.
B.A. in Classics

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 and a grade of at least C- in one of: CLASSICS 1806, 1L06, GREEK 1206, or LATIN 1206. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

NOTES
1. Students entering the programme with six units of Greek or Latin who have not also completed a Level I Classics course are strongly encouraged to include CLASSICS 2L03, 2L13 in their Level II programme.
2. Students are encouraged to include at least six units of Greek or Latin in their programme. GREEK 1206 and LATIN 1206, if not completed in the Level I programme, may be taken as elective courses.

REQUIREMENTS
90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
24 units Classics, Greek, Latin, including at least nine units of Levels III and IV courses
36 units Electives

Minor in Classics

24 units of Classics, of which no more than six units may be from Level I.

Minor in Greek

24 units of Greek, of which no more than six units may be from Level I.

Minor in Latin

24 units of Latin, of which no more than six units may be from Level I.

DEPARTMENT OF ENGLISH

Honours Arts & Science and English

(B.Arts Sc.; See Arts & Science Programme)

PROGRAMMES FOR STUDENTS ENTERING IN SEPTEMBER 1997

AREAS OF STUDY

The Department has defined four areas of study. Students should consult the Programme Notes for their specific programme to determine their requirements regarding these areas. Level II and III courses are allocated to the areas as follows:

<table>
<thead>
<tr>
<th>AREA</th>
<th>COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA 1</td>
<td>British Literature to 1660</td>
</tr>
<tr>
<td></td>
<td>3C06, 3I06, 3K06, 3L06, 3V06</td>
</tr>
<tr>
<td>AREA 2</td>
<td>British Literature 1660 to Present</td>
</tr>
<tr>
<td></td>
<td>2L06, 3G06, 3M03, 3MM3</td>
</tr>
<tr>
<td>AREA 3</td>
<td>Canadian, American and Post-Colonial</td>
</tr>
<tr>
<td></td>
<td>2G06, 2H06, 3R06</td>
</tr>
<tr>
<td>AREA 4</td>
<td>Theory and Genre</td>
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<tr>
<td></td>
<td>2B06, 2K06, 3J06, 3Q03, 3Q05, 3N06</td>
</tr>
</tbody>
</table>

Honours English

(For those entering in 1997)

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ENGLISH 1D06.

NOTES
1. When registering, students should distribute their required English courses (see Requirements below) as follows:
   - Level II: 18 units of Levels II and/or III English
   - Level III: 18 units of Levels II and/or III English
   - Level IV: six units of Levels II and/or III English; 12 units of Level IV English seminars (No student may take more than 12 units of Level IV seminars.)
2. With permission of the Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in second term. Students who are interested in taking 4X03 should contact the faculty member chairing the 4X03 committee early in the first term.
3. Most graduate programmes in English require proficiency in a second language. Students who plan to pursue graduate studies in English are strongly encouraged to include in their programme a second language beyond the introductory level.

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units from Area 1 English courses
6 units from Area 2 English courses
6 units from Area 3 English courses
12 units from Area 4 English courses
6 units from Areas 1-4 and ENGLISH 3B03, 3C03, 3F03, 3H03, 3J03, 3P03, 3S03, 3X03, 3Z03
12 units Level IV English seminars
36 units Electives

Combined Honours in English and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ENGLISH 1D06.

NOTES
1. When registering, students should distribute their required English courses (see Requirements below) as follows:
   - Level II: 12 units of Levels II and/or III English
   - Level III: 12 units of Levels II and/or III English
   - Level IV: six units of Levels II and/or III English; six units of Level IV English seminars (No student may take more than six units of Level IV seminars.)
2. With permission of the Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in second term. Students who are interested in taking 4X03 should contact the faculty member chairing the 4X03 committee early in the first term.
3. Most graduate programmes in English require proficiency in a second language. Students who plan to pursue graduate studies in English are strongly encouraged to include in their programme a second language beyond the introductory level.
FACULTY OF HUMANITIES

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
6 units from Area 1 English courses
6 units from Area 2 English courses
6 units from Area 3 English courses
6 units from Area 4 English courses
6 units from Areas 1-4 and ENGLISH 3B03, 3CC3, 3F03, 3HH3, 3J03, 3P03, 3S03, 3XX3, 3Z03
6 units Level IV English seminars
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units)
18 units Electives to total 120 units

B.A. in English (1200)

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in ENGLISH 1D06.

NOTE
When registering, students should distribute their required English courses (see Requirements below) as follows:
- Level II 12 units of Levels II and/or III English
- Level III 18 units of Levels II and/or III English

REQUIREMENTS
90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
6 units from Area 1 English courses
6 units from Area 2 English courses
6 units from Area 3 English courses
6 units from Area 4 English courses
6 units from Areas 1-4 and ENGLISH 3B03, 3CC3, 3F03, 3HH3, 3J03, 3P03, 3S03, 3XX3, 3Z03
30 units Electives

Minor in English
ENGLISH 1D06 and 18 units of Levels II and III English.

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1997

Honours English (2200)

(Available only to students who entered this programme before September 1997.)

NOTES
1. When registering, students should distribute their English courses (see Requirements below) as follows:
- Level II ENGLISH 2A06; 12 additional units of Level II English
- Level III 18 units of Level III English
- Level IV Six units of Level III English; 12 units of Level IV seminars (No student may take more than 12 units of Level IV seminars.)
2. Most graduate programmes in English require proficiency in a second language. Students who plan to pursue graduate studies in English are strongly encouraged to include in their programme a second language beyond the introductory level.
3. With special permission, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in the second term.

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
6 units ENGLISH 2A06
6 units from ENGLISH 2B06, 2G06, 2H06, 2I06
6 units ENGLISH 3K06
6 units from ENGLISH 3C06, 3D03, 3DD3, 3J03, 3P03, 3Q03, 3QQ3
6 units Level IV English seminars
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units Electives to total 120 units (See Note 2 above.)

B.A. in English (1200)

(Available only to students who entered this programme before September 1997.)

REQUIREMENTS
90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
6 units ENGLISH 2A06
6 units from ENGLISH 2B06, 2G06, 2H06, 2I06
6 units ENGLISH 3K06
6 units from ENGLISH 3C06, 3D03, 3DD3, 3J03, 3P03, 3Q03, 3QQ3
6 units Level IV English seminars
36 units Electives

DEPARTMENT OF FRENCH

Honours Arts & Science and French

(B.Arts Sc.; See Arts & Science Programme)

Honours French

PROGRAMME A: LANGUAGE AND LITERATURE (2231)

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.
ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B+ in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6.

NOTE
Upon completion of 60 units of work (including 18 units of required Level II French courses), and with the approval of the Department of French and the Associate Dean of Humanities (Studies), Level III of Honours French may be replaced by courses of study at a French-language university.

COURSE LIST 1
FRENCH 4F03, 4I03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4X03, 4Y03

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units FRENCH 2B03, 2BB3, 3C03, 4A03
6 units from FRENCH 2G03, 3CC3, 3F03, 4B03, 4BB3
3 units from FRENCH 2J03, 2JJ3
3 units from FRENCH 2W03, 2WW3
3 units from FRENCH 2D03, 2E03, 3AA3, 3BB3, 4U03
3 units from FRENCH 3K03, 3KK3
3 units from FRENCH 3Q03, 3QQ3
3 units from FRENCH 3A03, 3SS3, 4J03
9 units from Course List 1
12 units Level III and IV French
33 units Electives

Honours French

PROGRAMME B: LANGUAGE, LINGUISTICS AND (2232)

TRANSLATION
Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B+ in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6. Students who are interested in entering this programme are advised to take LINGUIST 1A06.

NOTE
Upon completion of 60 units of work (including 18 units of required Level II French courses), and with the approval of the Department of French and the Associate Dean of Humanities (Studies), Level III of Honours French may be replaced by courses of study at a French-language university.

COURSE LIST 1
FRENCH 3A03, 3AA3, 3BB3, 3K03, 3KK3, 3Q03, 3QQ3, 3SS3, 3Z03, 4F03, 4I03, 4JJ3, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4Y03

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units FRENCH 2B03, 2BB3, 3C03, 4A03
6 units from FRENCH 2G03, 3CC3, 3F03, 4B03, 4BB3
3 units from FRENCH 2J03, 2JJ3
3 units from FRENCH 2W03, 2WW3
3 units from FRENCH 3K03, 3KK3
3 units from FRENCH 3Q03, 3QQ3
3 units from FRENCH 3A03, 3SS3, 4J03
9 units from Course List 1
12 units Levels III and IV French
33 units Electives

Combined Honours in
French and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B+ in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6.

NOTE
Upon completion of 60 units of work (including at least 12 units of required Level II French courses), and with the approval of the Department of French and the Associate Dean of Humanities (Studies), up to 15 units of Level III French may be replaced by courses of study at a French-language university.

COURSE LIST 1
FRENCH 4F03, 4I03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4X03, 4Y03

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units FRENCH 2B03, 2BB3, 3C03, 4A03
3 units from FRENCH 2G03, 3CC3, 3F03, 4B03
3 units from FRENCH 2J03, 2JJ3
3 units from FRENCH 2W03, 2WW3
3 units from FRENCH 3K03, 3KK3
3 units from FRENCH 3Q03, 3QQ3
3 units from FRENCH 3A03, 3BB3, 4U03
9 units from Course List 1
3 units from FRENCH 3A03, 3SS3, 4J03
36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
15 units Electives to total 120 units

B.A. in French

{1230}

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C+ in FRENCH 1A06 or 2M06 or a grade of at least C+ in FRENCH 1N06 or 1NN6.

REQUIREMENTS
90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
9 units FRENCH 2B03, 2BB3, 3C03
6 units from FRENCH 2G03, 3CC3, 3F03
3 units from FRENCH 2J03, 2JJ3
3 units from FRENCH 2W03, 2WW3
3 units from FRENCH 3K03, 3KK3, 3Q03, 3QQ3
3 units from FRENCH 3A03, 3SS3, 4J03
9 units Levels II, III or IV French
24 units Electives

Minor in Francophonie Studies

FRENCH 1A06/2M06, 2B03, 2BB3, 3C03, and nine additional units of Level II or III French other than FRENCH 2J03, 2JJ3, 2W03, 2WW3, 2Z06.

DEPARTMENT OF HISTORY

SUBFIELDS
The Department has defined six fields of study. Students should consult the Programme Notes for their specific programme to determine the requirements regarding these fields. Level II and III courses are allocated to the fields as follows:
Honours Arts & Science and History

(B.A. Arts Sc.; See Arts & Science Programme)

Honours History {2290}

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement, but requires, as a minimum, completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I History course.

NOTES

1. In selecting courses, students must ensure that they take a minimum of six units in each of three fields of History. For this purpose the Department has established the following six fields: European, Ancient, Asian, Canadian, British and the Americas (excluding Canada). This requirement must be satisfied by the end of Level III. All Level II and III History courses from the above list may be used towards this requirement. Students are permitted a maximum of 24 units of work in any one of the preceding fields. Additional History courses may be taken as electives.

2. The first 36 units of History beyond Level I must include one Level IV seminar, to be taken following the completion of at least 12 units of Level II History.

3. HUMAN 2F03 (Selected Interdisciplinary Topics in Medieval Life and Culture) may be taken as a substitute for three units of Level II History.

Requirements

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units Level II History
6 units Level III History
12 units Level IV History
36 units Courses specified by the other subject. (Combinations with Social Sciences may require more than 36 units.)
24 units Electives to total 120 units

B.A. in History {1290}

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in any Level I History course.

NOTES

1. In selecting courses, students must ensure that they take a minimum of three units in each of three fields of History. For this purpose the Department has established the following six fields of History: European, Ancient, Asian, Canadian, British, and the Americas (excluding Canada). All Level II and III History courses from the above list may be used towards this requirement. Students are permitted a maximum of 12 units of work in any one of the preceding fields. Additional History courses may be taken as electives.

2. HUMAN 2F03 (Selected Interdisciplinary Topics in Medieval Life and Culture) may be taken as a substitute for three units of Level II History.

Requirements

90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
12 units Level II History
12 units Level III History
36 units Electives

Minor in History

24 units of History. Consult the Course Listings section for course prerequisites and limited enrolment courses.

JAPANESE STUDIES

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

Combined Honours in History and Another Subject

Requirements

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
18 units JAPANESE 2Z06, 3Z06, 4L03, 4Z03
6 units from JAPANESE 3B03, JAPAN ST 2P06
12 units Courses specified by the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units Electives to total 120 units

NOTES

1. In selecting courses, students must ensure that they take a minimum of 3.5 including a grade of at least C- in any Level I History course.

2. HUMAN 2F03 (Selected Interdisciplinary Topics in Medieval Life and Culture) may be taken as a substitute for three units of Level II History.

Requirements

90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
18 units JAPANESE 2Z06, 3Z06, 4L03, 4Z03
6 units from JAPANESE 3B03, JAPAN ST 2P06
12 units Courses specified by the other subject. (Combinations with Social Sciences may require more than 36 units.)
36 units Electives to total 120 units

Minor in History

24 units of History. Consult the Course Listings section for course prerequisites and limited enrolment courses.
Minor in Japanese Studies

JAPANESE 1Z06 and JAPAN ST 2P06 and 12 additional units of Japanese or Japanese Studies courses.

DEPARTMENT OF MODERN LANGUAGES

The Department of Modern Languages offers B.A. Honours programmes in:
- Comparative Literature
- German Area Studies
- Latin American Studies
- Linguistics
- Modern Languages and Linguistics
- Modern Languages
- Russian and East European Studies.

It also offers language courses in Japanese, Polish and Portuguese. In addition, Minors are available, using electives only, in: Comparative Literature, German, Hispanic Studies, Italian, Linguistics, Russian.

Honours Arts & Science
and Comparative Literature

(B.Arts.Sc.; See Arts & Science Programme)

Combined Honours in Comparative Literature and Another Subject

This programme is designed for students who wish to combine the study of Comparative Literature (taught in English) with Modern Languages (German, Italian, Russian, Spanish) or a subject offered by another department.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in COMP LIT 1A06. Students are strongly advised to include a language other than English in their Level I programme.

NOTES

1. Students combining with a subject other than a language must successfully complete six units of a language other than English, if this was not completed in Level I. The Department strongly advises students to fulfill this requirement before Level III.

2. Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme

15 units COMP LIT 2A03, 2AA3, 3D03, 3DD3, 3G03

6 units from COMP LIT 4AA3, 4BB3, 4CC3, 4EE3

15 units from Levels II, III and IV Comparative Literature and Modern Languages

36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)

18 units Electives to total 120 units (See Note 1 above.)

Honours German Area Studies {2263}

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in GERMAN 1B06 or 1206. Students are strongly recommended to include HISTORY 1A06, in their Level I programme. If not, this course must be taken in Level II of the programme.

NOTE

Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

COURSE LIST 1

All German courses above Level I; MOD LANG 2H03, 3G03, 3W03; HISTORY 3HH3, 3I03, 3II6, POL SCI 2E06, 2006; SSCIOL 2S06, 3A03; RELIG ST 2K03, 3MM3

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme

9 units GERMAN 2E03, 3Z03, 3ZZ3

15 units from GERMAN 2A03, 2AA3, 2G03, 2Z06, 3A03, 3B03, 4CC3, 4G03, 4TT3

3 units MOD LANG 3A03

3 units from MOD LANG 2H03, 3G03, 3W03

6 units HISTORY 3H03, 3I03.

6 units POL SCI 2E06, 2006

3 units POL SCI 3PP3

12 units from Course List 1

36 units Electives to total 120 units

Combined Honours in Latin American Studies and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in HISPANIC 1Z06 or 1A06. Students with native knowledge of Spanish may with permission of the Department substitute six units of upper level Spanish language and literature courses.

NOTE

Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

COURSE LIST 1

All Hispanic courses beyond Level I, FRENCH 3Z03, HISTORY 3XX3, 3YY3, POL SCI 4Q06, PORTUGUESE 2Z06.

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme

9 units HISPANIC 3D03, 3DD3, 4DD3

12 units HISPANIC 2L03, 2LL3, 4LL3, 4SS3

3 units MOD LANG 3P03

3 units ANTHROP 2V03

9 units from Course List 1

36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)

18 units Elective

Honours Linguistics {2312}

Students who entered this programme PRIOR TO SEPTEMBER 1997 should contact the departmental counsellor for ways of meeting their programme requirements.

This programme is designed for students who wish to explore the theoretical foundations of linguistics while also acquiring practical skills in a number of languages.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.
ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in LINGUIST 1A06 and completion of at least six units of language study.

NOTES
1. In this programme students are required to study at least two languages. The department has defined four language groups (see below) for this purpose and students must take at least six units from two of these groups. By graduation, therefore, students will have completed at least six units of one language and 18 units of a second language, including 12 units above Level I.

A) Modern Indo-European
French, German, Italian, Russian, Spanish
B) Classical
Greek, Hebrew, Latin, Sanskrit
C) Modern Non-Indo-European
Japanese
D) Indigenous Languages
Cayuga, Mohawk, Ojibwa

2. Students may have to include HUMAN 2E03 in their programme in order to take HUMAN 3F03 and/or 3G03. Students should consult the instructor, Dr. Geoffrey Rockwell, Togo Salmon Hall, Room 312 to discuss their computer background.

3. Students who intend to take Psychology courses from Course List 1 should take PSYCH 1A03 and 1AA3 in their Level I programme.

COURSE LIST 1
All Linguistics courses beyond Level I; all language courses; ANTHROP 3LC3, 4T03, HUMAN 2C03, 2E03, 3F03, 3G03; PHILCS 2B03, 3F03, 4D03; PSYCH 2E03, 2H03, 2C03, 3A03, 3B03, 3E03, 3F03, 4X03

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
15 units from LINGUIST 2LL3, 3103, 3113, 3M03, 4XX3; ANTHROP 2L03, 2M03
6 units from LINGUIST 3P03, 3X03, 4X03
6 units from LINGUIST 2A03, 2AA3
6 units from LINGUIST 4B03; HUMAN 3F03, 3G03
12 units from one of the languages taken in Note 1 above
21 units from Course List 1
24 units Electives

Honours Modern Languages and Linguistics [2363]

This programme combines the study of two or more modern languages (French, German, Italian, Japanese, Russian, Spanish) with a concentration in Linguistics.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including 12 units covering two different languages other than English with grades of at least B-. Students are strongly urged to complete LINGUIST 1A06 in their Level I programme. If not, LINGUIST 1A06 must be included in Level II of their programme.

NOTES
1. Students entering the programme with FRENCH 1Z06 must complete FRENCH 1N06 or 2Z06, in addition to the 18 units of French, beyond Level I.
2. Students may have to include HUMAN 2E03 in their programme in order to take HUMAN 3F03 and/or 3G03. Students should consult the instructor, Dr. Geoffrey Rockwell, Togo Salmon Hall, Room 312 to discuss their computer background.
3. Upon completion of 60 units and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

COURSE LIST 1
All Level II, III and IV courses in Comparative Literature, Linguistics, Modern Languages, German, Hispanic Studies, Italian and Russian

REQUIREMENTS
120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
3 units MOD LANG 2A03
6 units LINGUIST 2A03, 2AA3
3 units from COMP LIT 2A03, 2AA3
54 units 27 units above Level I in each of two languages and their literatures other than English (excluding literature courses in English translation)
6 units from Course List 1 (excluding the two languages chosen)
18 units Electives to total 120 units

Combined Honours in Modern Languages and Another Subject

This programme is designed for students who wish to combine the study of one modern language and its literature (German, Italian, Russian or Spanish) with another subject.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0, including six units from the following list with a grade of B- in each course chosen: GERMAN 1B06, 1Z06, HISPANIC...
1A06, 1Z06, ITALIAN 1A06, 1Z06, 1ZZ6, RUSSIAN 1Z06. In addition, students must successfully complete at least six units from COMP LIT 1A06 or LINGUIST 1A06.

NOTES
1. When selecting their courses, students must ensure that the overall total includes at least 18 units of Level III and IV Comparative Literature, Modern Languages, Linguistics and language courses.
2. Upon completion of 60 units and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

COURSE LIST 1
All Level II, III and IV courses in Comparative Literature, Linguistics, Modern Languages, German, Hispanic Studies, Italian and Russian.

REQUIREMENTS
120 units total (Levels I-IV)
- 30 units from the Level I programme completed prior to admission into the programme
- 3 units MOD LANG 2A03
- 3 units LINGUIST 2A03
- 3 units from Course List 1
- 27 units courses above Level I from one of: German, Hispanic Studies, Italian or Russian courses
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

Honours Russian and East European Studies

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in RUSSIAN 1Z06. Students are strongly recommended to include HISTORY 1A06 in their Level I programme. If not completed, this course must be taken in Level II of the programme.

NOTE
Upon completion of 60 units of work and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

COURSE LIST 1
All Russian courses above Level I: MOD LANG 3D03, 3K03, 3K3, 3R03, 3RR3; HISTORY 4006; ANTHROP 2S03; POL SCI 2E06 and 3AA3

REQUIREMENTS
120 units total (Levels I-IV)
- 30 units from the Level I programme completed prior to admission into the programme
- 18 units RUSSIAN 2C06, 3C06, 4C06
- 9 units from MOD LANG 3D03, 3K03, 3K3, 3R03, 3RR3
- 6 units HISTORY 3H06
- 12 units POL SCI 3K06, 3M06
- 9 units from Course List 1
- 36 units Electives to total 120 units

MINORS

Minor in Comparative Literature
24 units of Comparative Literature, of which no more than six units may be taken from Level I.

Minor in German
24 units of German, of which no more than six units may be taken from Level I.

Minor in Hispanic Studies
24 units of Hispanic Studies, of which no more than six units may be taken from Level I.

Minor in Italian
24 units of Italian, of which no more than six units may be taken from Level I.

Minor in Linguistics
24 units of Linguistics, of which no more than six units may be taken from Level I.

Minor in Russian
24 units of Russian, of which no more than six units may be from Level I.

DEPARTMENT OF PHILOSOPHY

Honours Arts & Science and Philosophy
(B.Arts.Sc.; See Arts and Science Programme)

Honours Philosophy

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES
1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to take note which courses of study at a designated university abroad.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS
120 units total (Levels I-IV)
- 30 units from the Level I programme completed prior to admission into the programme
- 27 units PHILOS 2A06, 2C06, 3A06, 3G03, 3003, 4H03
- 3 units from PHILOS 2B03, 2R03
- 3 units Levels II, III or IV Philosophy
- 15 units Levels III or IV Philosophy
- 6 units Level IV Philosophy
- 36 units Electives

Combined Honours in Philosophy and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES
1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Students whose combined subject is in the Social Sciences and who choose PHILOS 2R03 for their Philosophy programme are not required to take HUMAN 2C03 as part of their Social Science requirements. The HUMAN 2C03 requirement in these cases will be replaced by three units of elective work.

4. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units PHILOS 2A06, 2C06
3 units from PHILOS 2B03, 2R03
15 units Levels III and IV Philosophy
6 units Level IV Philosophy
36 units Courses specified by the other subject. (Combinations with Social Science may require more than 36 units.)
16 units Electives to total 120 units

Honours Philosophy and Biology (B.A.) [2420050]

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I Philosophy course or an average of at least 7.0 in BIOLOGY 1A06 or a grade of at least B- in BIOLOGY 1AC3 and 1A3 with a grade of at least B- and six units of Level I Mathematics. Students are cautioned to observe that CHEM 1AA3 or 1A06 is the normal prerequisite for BIOLOGY 2B03 and BIOLOGY 2C03, which are required courses in the programme. Enrolment in this programme is limited.

NOTES
1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
12 units BIOLOGY 2B03, 2C03, 2E03, 2F03 (CHEM 2006 may replace six units of Biology courses)
24 units Level III and IV Biology courses
18 units PHILOS 2A05, 2C06, 3A03, 4F03
3 units from PHILOS 2B03, 2R03
3 units from PHILOS 2D03, 2F03, 2G03
3 units from PHILOS 3G03, 3N03
6 units from Level III or IV Philosophy
3 units Level IV Philosophy
18 units Electives to total 120 units

Honours Philosophy and Mathematics (B.A.) [2320420]

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in each of MATH 1A03 or 1A3 and MATH 1B03, and a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES
1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)
30 units from the Level I programme completed prior to admission into the programme
30 units MATH 2A03, 2AA3, 2C06, 2R03, 3A03, 3AA3, 3E03, 3EE3, 3X03, 4F03
9 units from Level III and IV Mathematics, Statistics
12 units PHILOS 2A06, 2C06
3 units from PHILOS 2B03, 2R03
21 units Level III or Level IV Philosophy
3 units Level IV Philosophy course
9 units Electives

B.A. in Philosophy [1420]

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION
Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in any Level I Philosophy course.

NOTE
Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.

REQUIREMENTS

90 units total (Levels I-III)
30 units from the Level I programme completed prior to admission into the programme
12 units PHILOS 2A06, 2C06
3 units from PHILOS 2B03, 2R03
3 units Levels II, III or IV Philosophy
6 units Levels III or IV Philosophy
36 units Electives

Minor in Philosophy

Any Level I Philosophy course and PHILOS 2A06 or 2C06; and 12 additional units of Philosophy
A. Level I Programme

Level I students should select courses carefully to meet the Level II admission requirements of a specific programme (see Faculty of Science Programme Listings in this section of the Calendar for Level II programme admission requirements). A suitable choice of Level I options will allow successful students to enter Level II of any one of several programmes.

NATURAL SCIENCES I: 30 UNITS

REQUIREMENTS
3 units MATH 1A03
3 units from MATH 1AA3, STATS 1CC3
12 units from 4 different course lists from Level I Course Lists 1 to 7 (see below)
6 units from Level I Course Lists 1 to 8 (see below)
6 units from Level I Course Lists 1 to 9 (see below)
1 course SCIENCE 1A00

LEVEL I COURSE LISTS:

COURSE LIST 1:

<table>
<thead>
<tr>
<th>BIOLOGY 1A03</th>
<th>Structural and Functional Relations in Living Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOLOGY 1AA3</td>
<td>Reproduction and Adaptation in Living Systems</td>
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</tbody>
</table>

COURSE LIST 2:

<table>
<thead>
<tr>
<th>CHEM 1A03</th>
<th>Introductory Chemistry I</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1AA3</td>
<td>Introductory Chemistry II</td>
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</table>

COURSE LIST 3:

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<thead>
<tr>
<th>COMP SCI 1SA3</th>
<th>Computing Fundamentals</th>
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<tr>
<td>COMP SCI 1MC3</td>
<td>Computer Science I</td>
</tr>
<tr>
<td>COMP SCI 1MD3</td>
<td>Computer Science II</td>
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</table>

COURSE LIST 4:

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<thead>
<tr>
<th>ENVIR SC 1B03</th>
<th>The Biosphere</th>
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<tr>
<td>ENVIR SC 1G03</td>
<td>Earth Processes</td>
</tr>
<tr>
<td>ENVIR SC 1H03</td>
<td>Atmosphere and Hydrosphere</td>
</tr>
</tbody>
</table>

COURSE LIST 5:

<table>
<thead>
<tr>
<th>PHYSICS 1B03</th>
<th>Mechanics and Waves</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICS 1BA3</td>
<td>Introduction to Modern Physics A</td>
</tr>
<tr>
<td>PHYSICS 1BB3</td>
<td>Introduction to Modern Physics B</td>
</tr>
<tr>
<td>PHYSICS 1C03</td>
<td>Newtonian Mechanics and Waves</td>
</tr>
</tbody>
</table>

COURSE LIST 6:

| PSYCH 1A03 | Introduction to Experimental Psychology               |
| PSYCH 1AA3 | The Psychology of Interpersonal Behaviour             |

COURSE LIST 7:

| MATH 1B03 | Linear Algebra I                                      |

COURSE LIST 8:

| ASTRON 1F03 | Introduction to Astronomy and Astrophysics           |
| MATLS 1A03  | Introduction to Materials                             |
| MATH 1AA3   | Calculus II                                           |
| STATS 1CC3  | Introductory Computer-Aided Statistics                |

COURSE LIST 9:

All Level I Humanities Courses
All Level I Social Sciences Courses, excluding Kinesiology
WOMEN ST 1A06

With the permission of the Associate Dean of Science (Studies), well-prepared students may be permitted to elect up to six additional units.

It is possible to complete Natural Sciences I through evening/summer studies. Students wishing this option should consult the Office of Part-Time Degree Studies for timetable information.

B. Degree Programmes

HONOURS PROGRAMMES

The programme requirements for the Honours B.Sc. programmes are listed in this section of the Calendar.

Honours (Specialist Option) Programmes

Most Departments offer four-level Honours B.Sc. programmes with a specialist option which requires concentration of studies in a specific discipline.

Honours (Complementary Studies Option) Programmes

Many Departments offer four-level Honours B.Sc. programmes (Complementary Studies Option) which require somewhat less concentration in the discipline and 21 units of complementary studies, 24 units of electives which include at least six units of Level III and IV courses.

The Honours Science (Complementary Studies Option) degree requires a breadth of studies in science at least one course each from earth, life, mathematical and physical science is required.

Combined Honours Programmes

A number of Departments offer Combined Honours degrees which are academically more challenging than single Honours programmes.

Honours degrees in Molecular Biology and Biotechnology and in Biology and Pharmacology (a five-year Co-op programme) are organized by Committees of Instruction involving the Faculties of Health Sciences and Science. The Honours Neural Computation programme is organized by a Committee of Instruction involving the Faculties of Science and Engineering while the Honours Science (Environmental Science Option) programme has a Committee of Instruction involving many departments in the Faculty of Science.

Honours Co-op Programmes

The Faculty of Science has instituted Cooperative Education programmes, beginning in Level III, in Honours Biochemistry, Honours Biology, Honours Chemistry, Honours Geology and Environmental Science, Honours Medical and Health Physics. Additional Honours Co-op programmes are in the planning stages and may be offered in the future subject to resource availability.

Honours Co-op programmes have limited enrolment and admission is by selection. Please see the admission statement for each programme in this section of the Calendar. Employment must be full-time during the work term. Students enrolled in Co-op programmes must be registered in full-time studies during the academic terms of their programme. With written permission from the work term supervisor, one three unit course may be taken during each four month period of a work term. These units may not be used to reduce the academic term course load. A Science Co-op Fee will be charged for each academic term of a Co-op programme.
For further information, please consult the Associate Dean of Science (Studies) or Science Cooperative Education in the Faculty of Science.

Minors

Minors are available to students registered in most Honours programmes, in addition to the University's regulations governing the designation of a Minor, all Departments in the Faculty of Science require the inclusion of at least six units of Level III or IV courses for Minors in a Science subject.

Depending on the student's programme, there may be certain minors which are excluded. Please see the Programme Notes for individual programmes in this section of the Calendar. Please see Minors in the General Academic Regulations section in this Calendar.

ACADEMIC REGULATIONS

Students enrolled in Science programmes, in addition to meeting the General Academic Regulations of the University, shall be subject to the following Faculty Regulations:

ADMISSION TO HONOURS B.SC. PROGRAMMES

The admission criteria for the Honours B.Sc. programmes are described explicitly in the individual programmes descriptions in this section.

Limited Enrolment

Admission is limited for the following programmes:

- Honours Biochemistry (Specialist Option)
- Honours Biology (Specialist Option)
- Honours Biology and Mathematics
- Honours Biology and Psychology
- Honours Molecular Biology and Biotechnology
- Honours Psychology (Specialist Option)

Each of these programmes requires a thesis or project in Level IV. Resource limitations in providing a thesis or project supervisor for each student dictates that the number of students admitted must be limited. Admission is by selection based on academic achievement.

For further information please see Admission to Level II Programmes in this section of the Calendar.

ADMISSION TO B.SC. PROGRAMMES

The admission criteria for the B.Sc. programmes, in each of the areas Earth, Life, Mathematical and Physical Science, are listed under the heading Three-Level B.Sc. Programmes in this section. For further information please see Admission to Level II Programmes in this section of the Calendar.

CONTINUATION IN HONOURS B.SC. AND B.SC. PROGRAMMES

For information regarding requirements for continuing in Faculty of Science programmes, please see the General Academic Regulations section in this Calendar.

Programme Probation

Please refer to the General Academic Regulations section in this Calendar for changes to regulations concerning Programme Probation in the Faculty of Science.

REINSTATEMENT TO THE FACULTY OF SCIENCE

(New Procedures for 1997-98)

A student who is ineligible to continue in the Faculty of Science or who is "May Not Continue At The University" may normally not apply for reinstatement for one full academic year. Exceptions may be made only when there are extenuating circumstances which are supported by documentation.

Students seeking reinstatement must complete the "Returning Student Application" available at the Office of the Registrar and the Office of the Associate Dean of Science (Studies). The completed application and the $50 application fee must be submitted to the Office of the Registrar by July 15 to be considered for the following Fall/Winter Session. Applications must be accompanied by a written explanation of the student's previous academic performance, reasons for reinstatement at this time, reasons why the student would expect to succeed in the desired programme if reinstated, activities since last registered at McMaster including all academic work. Reference letters are also recommended. Please see the Application Procedures section of this Calendar.

Reinstatement is not guaranteed.

FORMER SCIENCE STUDENTS AND READMISSION

Students who were previously registered in a Science programme and in good standing but did not register during the last academic year (Fall/Winter or Summer session) must write to the Office of the Associate Dean of Science (Studies) to seek permission to continue their studies. The letter should explain academic activities since the last registration.

If five years have passed since the last registration at McMaster, students must apply for Readmission through the Office of the Registrar to be permitted to continue their studies. Please see the Application Procedures section of this Calendar.

DEADLINES

The Faculty of Science will not consider applications for admission to a second degree or continuing studies, registration, degree cancellation, or dropping of courses after the deadlines stated in this Calendar under Sessional Dates and Application Procedures sections, unless documentation showing good cause is submitted to the Associate Dean of Science (Studies).

SEQUENCE OF COURSES

Students in the Faculty of Science must have completed or be registered in the courses required for Level I before they may register for courses beyond Level I.

COURSE SELECTION

It is the responsibility of the student to ensure that the selection of courses meets the degree requirements for the programme in which the student is registered and that the stated prerequisite courses were completed with a grade of at least D-.

COURSE CHANGES

All course changes must be made through the Office of the Associate Dean of Science (Studies) and are subject to the deadline dates for adding and withdrawing established by the University. (See Sessional Dates section of this Calendar.)

Beyond the September deadline date, first-term three-unit courses may be cancelled up to the November deadline. A cancelled three-unit first-term course may not be replaced by a second-term course for students who were registered for a full academic load in September. Beyond the January deadline date, second-term courses may not be replaced. Students who cancel a full-year course by the January deadline date may add a three-unit second-term course.

To add a limited enrolment course or a course requiring permission, a signed permission slip must be attached to the Application for Change of Student Record.

WORKLOAD

All programmes in the Faculty of Science may be taken by full-time and part-time students, with the exception of the Honours Co-op programmes. Students enrolled in Co-op programmes must be registered in full-time studies during the academic terms of their programme.

Students must maintain a full academic load during the Fall/Winter session to be eligible for scholarships available to full-time students. To be eligible for the Deans' Honour List, an academic load in the Fall/Winter session of at least 30 units is necessary. Students are expected to avoid timetable conflicts among their courses, and students on a full academic load should ensure the number of courses is balanced in each term.

Students who wish to take more courses than recommended for a single level of their programme may do so if their Cumulative
Average on completion of the previous Fall/Winter session is at least 7.0. Students registered in the final level of their programme are permitted to overload by up to six additional units in order to become eligible to graduate.

LETTERS OF PERMISSION

Students enrolled in science programmes may apply to the Office of the Associate Dean of Science (Studies) to take courses at another university on Letter of Permission. A fee must be paid to the Office of the Registrar. Students must achieve a grade of at least C- for transfer credit. The transcript designation reads COM, indicating complete, when a grade of C- or better is attained, or NC, indicating not complete, when a grade of less than C- is attained.

Required courses given by the department offering the programme may not be taken elsewhere unless departmental approval is given. Courses required by the programme but not given by the department offering the programme may be taken elsewhere. For example, for a student registered in a Biology programme, all Biology courses must be taken at McMaster; however, the required Chemistry course may be taken elsewhere. Electives may be taken elsewhere.

Courses taken at another university cannot be used to satisfy the university's minimum residence requirements, will not be included in the calculation of the Cumulative or Sessional Averages, and therefore cannot be used to raise standing. Students may take up to six units of courses towards a Minor on Letter of Permission.

Students must be in good standing to be eligible to take courses on a Letter of Permission.

COOPERATIVE INTERNSHIPS

The Faculty of Science offers students the opportunity to participate in 12-16 month full-time paid work placements in industry. Students are to provide a work experience related to their academic curriculum. Students compete for placements with participating companies through an application and interview process. In order to accept an Internship, students must be in Level II or III of a four-level programme, and be eligible to return to complete their undergraduate degree. A fee is assessed following the start of the placement.

For further information, please consult the Associate Dean of Science (Studies) or Science Cooperative Education in the Faculty of Science.

INTERNATIONAL STUDY DURING LEVEL III OF HONOURS PROGRAMMES

There are two ways to undertake international studies during Level III of an Honours programme; via a Formal Exchange Programme or a Third Year Study Elsewhere programme.

Formal Exchange Programme During Level III of Honours Programmes

See the heading International Study in the General Academic Regulations section in this Calendar.

Third Year Study Elsewhere Honours Programme

Third Year Study Elsewhere is not available at universities with which McMaster University has a Formal Exchange Agreement.

Students registered in single or Combined Honours programmes in the Faculty of Science are encouraged to apply to study the whole of a third year at an appropriate university* (see below).

To be eligible to take part in this programme, students are expected to complete Level II with a Cumulative Average of at least 6.0. Students must pay all associated travel, study and living expenses. For students in need of financial assistance, OSAP (Ontario Student Aid Programme) grants and loans may be available for this programme. Furthermore, McMaster University offers some bursaries to those in need of help.

Students interested in this programme should begin discussions with the Associate Dean of Science (Studies) about one year before they plan to enrol elsewhere.

Students must propose an academic programme that must be submitted to their Department for approval. Academic approval must be completed by the end of February for registration in the following Fall.

Students must maintain links through correspondence with their departments at McMaster University while they are engaged in study elsewhere. All credit for work completed may only be confirmed after departments have reviewed the students' academic achievement following their return and registration in their final year of study. The maximum credit available in this way is normally 30 units for the full year of study, equivalent to Level III. In certain cases, students may be recommended for the Deans' Honour List on the basis of work undertaken in the programme.

*There are approved universities in the following areas: Rhone-Alpes (France), Baden-Wurttemberg (Germany), Lombardy (Italy) and Catalonia (Spain).

EXCHANGE PROGRAMMES WITHIN CANADA

For information on the Group of Ten Student Exchange Programme (GOTSEP), please refer to the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Student Exchanges Officer.

PROGRAMME TRANSFERS

Up to the end of Level III, students may be permitted to transfer between Faculty of Science programmes on the recommendation of the Department concerned and with the approval of the Associate Dean of Science (Studies).

Students are eligible to apply for transfer from a B.Sc. programme to a related Honours Programme or between Honours programmes provided that they have:
1. attained a Cumulative Average of at least 6.0, and
2. completed the courses required for admission to the programme.

Permission to transfer to a programme is subject to any exceptions or special restrictions outlined in the Admission statement or the Programme Notes for that programme.

Note: The minimum Cumulative Average required to transfer to an Honours programme in the Faculty of Science is 6.0. Students entering Level III of a three-level B.Sc. programme should note that if they have completed 60 units with a Cumulative Average of 5.5, they must attain a Sessional Average of at least 7.0 on 30 units of course work to raise their Cumulative Average to 6.0. Students with a Cumulative Average of less than 5.5, who wish to transfer to an Honours programme, are advised to satisfy graduation requirements for their current three-level programme.

For further information please see Transfer Procedures in this section of the Calendar.

GRADUATION

From Honours B.Sc. and B.Sc. Programmes

To graduate from a programme, students must meet the course requirements stated in the Calendar in force when they enter that programme, with the exception that a later Calendar may explicitly modify such requirements.

The requirements for graduation from these programmes are described under the heading Graduation in the General Academic Regulations section in this Calendar.

Transferring to Graduate with a Three-Level B.Sc. Degree from an Honours B.Sc. Programme

Students who successfully complete Level III of any Honours B.Sc. degree may request permission from the Associate Dean of Science (Studies) Office for transfer to graduate with a three-level B.Sc. degree.

SECOND BACHELOR'S DEGREE PROGRAMMES

In addition to the regulations in the General Academic Regulations section in this Calendar, the following Faculty regulations apply.

For many of the four-level Honours degrees in science, a Cumulative Average of at least 7.0 (overall average of B-) will be required for admission. For three-level degrees, a Cumulative Average of at least 5.0 (overall average of C) will be required for admission.

Students will be admitted to Second Degree studies only if their studies involve a significant additional component of work in the subject of concentration of a programme. Certain subject combinations are not permitted for Second Degrees. Students interested in applying for a Second Degree programme should consult the Office of the Associate Dean of Science (Studies) for further details.

Please see the Application Procedures section of this Calendar.
Special Course Requirements

SCIENCE INQUIRY COURSE LIST

The following are restricted to students in an Honours (Complementary Studies Option) programme:

- CHEM 4103 Inquiry in Chemistry
- COMP SCI 4Z13 Computer Science Inquiry
- MATH 4Z13 Inquiry in Mathematics
- PHYSICS 4Z13 Inquiry: Energy, Physics and the Environment
- PHYSICS 4ZJ3 Inquiry: Relativity and Gravitation

The following are restricted to students in specified programmes:

- BIOCHEM 4C03 Biochemistry Inquiry
- BIOCHEM 4P03 Research Project
- BIOLOGY 4C09 Senior Thesis
- BIOLOGY 4F06 Senior Project
- BIOLOGY 4FF3 Biology Inquiry
- CHEM 4G06 Senior Thesis
- COMP SCI 4ZP6 Project
- GEOG 4C06 Research Paper
- GEOG 4CC3 Review Paper
- GEOG 4VV6 Research in Environmental Issues
- GEOLOGY 4K06 Geology Thesis
- PHYSICS 4A03 Special Topics
- PSYCH 4J03 Psychology Inquiry I
- PSYCH 4K03 Psychology Inquiry II

The following are open to students with the specified course prerequisites:

- GEOLOGY 4C03 Climate Change: A Geological Perspective
- GEOLOGY 4D03 Ecology and Geology of Coral Reefs
- GEOLOGY 4103 Minerals and Society
- GEOLOGY 4W03 Environmental Analysis: A Case History Approach
- MATH 3Z03 History of Mathematics

FIELD COURSES

Field courses are offered through the Departments of Biology, Geography, and Geology. Some of these courses are taken outside the Fall/Winter session, during the spring or summer.

- Students who enrol in field courses must pay both: a fee to the department to cover travel expenses, room and board and the associated tuition fee to McMaster at Fall registration.

Although students initially register for field courses through the appropriate departmental offices, it is their responsibility to include field courses on their registration forms for the appropriate Fall/Winter session.

Detailed information regarding field courses and deadlines for registration may be obtained from the individual departmental offices.

March Counselling and Important Procedures

Counselling is available throughout the year from the Office of the Associate Dean of Science (Studies) and the academic departments in the Faculty of Science. However, it is highly recommended that all students in the Faculty of Science make a counselling appointment with a Departmental Undergraduate Advisor during the March Counselling period.

During the March Counselling period:

1. Information sessions are held by the departments in the Faculty of Science to discuss undergraduate programmes, graduate study opportunities, career options, etc.;
2. Students in Levels II, III, and IV obtain up-to-date Degree Status Reports (Degree Audits) for the programmes in which they are registered, and a copy of the new Undergraduate Calendar;
3. All Level I students seeking admission to a Level II programme for the following Fall/Winter session must complete an application form. See Admission to Level II Programmes;
4. Students in Levels II or III who wish to transfer to another programme for the following Fall/Winter session must complete an application form. See Transfer Procedures;

5. Students wishing to take courses requiring permission, including limited enrolment courses and Science Inquiry courses, apply to the appropriate department for permission. See Courses Requiring Permission and Limited Enrolment Courses.

The dates for the March Counselling period may vary somewhat from year to year. The dates and information will be posted on campus, outlined in the campus newspaper, and will be announced during classes. Application forms mentioned above will be available in the General Sciences Building, Room 116. It is the student's responsibility to participate in March Counselling activities.

ADMISSION TO LEVEL II PROGRAMMES

Any student seeking admission to a Level II programme in the Faculty of Science for the following Fall/Winter session must complete an Application for Admission to Level II during the March Counselling period. This form, which allows students to rank four programme choices, must be completed and returned to the Office of the Associate Dean of Science (Studies) by the end of March.

For admission in 1997-98 to all Level II programmes in the Faculty of Science, students must meet the minimum requirements as described in the individual programme descriptions in the Faculty of Science section of the 1996-97 Calendar. Admission to limited enrolment programmes is also based on Cumulative Average achieved; students will be admitted by a selection committee. See Limited Enrolment in this section of the Calendar.

Level I students must meet the admission criteria for a Level II programme according to the Calendar in effect when they registered for Level I. Students must follow the programme requirements of the Calendar in force when they enter Level II, except when a later Calendar explicitly modifies such requirements.

Students who have a Result of Session of May Continue at the University but who do not achieve the admission requirements for any Level II programme must return to Natural Sciences I, or apply to transfer to another Faculty. Students may repeat or upgrade any of the previous Level I courses but are advised to take only twelve units of additional Level I courses. Only forty-two units of Level I courses may be used as credit towards a three-year programme.

TRANSFER PROCEDURES

To be eligible to transfer between programmes in the Faculty of Science, students must meet the criteria as described under the heading Programme Transfers in this section of the Calendar.

Students in Levels II or III who wish to transfer to another programme in the Faculty of Science for the following Fall/Winter session must complete an Application to Transfer to Another Programme during the March Counselling period. This form must be completed and returned to the Office of the Associate Dean of Science (Studies) by the end of March. Students will be notified of the results of their applications on their grade reports in early June. Programme transfers are not normally permitted during the Fall/Winter academic session.

COURSES REQUIRING PERMISSION

In the Course Listings section of the Calendar, courses requiring permission may be identified by checking the course prerequisite which states as a requirement: Permission of the instructor, department, coordinator, chair, etc.

It is the student's responsibility to apply to the corresponding departmental office, instructor, etc. for permission by the end of March for courses in which they wish to register for the following Fall/Winter session.

Students who do not apply for permission by the end of March risk losing the opportunity to take the course in the following Fall/Winter session.

LIMITED ENROLMENT COURSES

In the Course Listings section of this Calendar, certain courses are described as having an enrolment limit, by the phrase: Enrolment is limited which appears below the prerequisite statement.
There are two types of limited enrolment courses as follows:

1. Limited enrolment courses with a prerequisite stating as a requirement: Permission of the instructor, department, coordinator, chair, etc. Have the enrolment controlled by requiring that permission be obtained prior to registration in the course. It is the student's responsibility to apply to the corresponding departmental office for permission by the end of March for courses in which they wish to register for the following Fall/Winter session.

   Students must state an alternate course on their registrations for each limited enrolment course selected. If permission has not been obtained for a course, it will be deleted from the Fall/Winter registration and the alternate course selection will be substituted.

   If a limited enrolment course is an absolute requirement for a programme, then students in that programme have a guaranteed place in the course. This will be noted in the course prerequisite.

2. Limited enrolment courses that make no mention of obtaining permission have the enrolment controlled on a first-come, first-served basis. Students must state an alternate course on their registrations for each limited enrolment course they list.

DEPARTMENT OF BIOCHEMISTRY

Honours Arts & Science and Biochemistry
(B.Art.Sc; See Arts & Science programme)

Honours Molecular Biology and Biotechnology
(See Molecular Biology and Biotechnology)
(See also Honours Biochemistry (Specialist Option), Level IV Molecular Biology, Biotechnology and Genetic Engineering Option; and Honours Biochemistry Co-op, Year 4 Molecular Biology, Biotechnology and Genetic Engineering Option)

Honours Biochemistry (2042) (Complementary Studies Option)

ADMISSION

Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1C3
6 units CHEM 1A03, 1AA3
6 units PHYSICS 1B03 (or 1C03)
3 units from Level I Course Lists 3, 4, 6, 7
6 units from Level I Course Lists 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

Students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1C3. However, STATS 1C3 is strongly recommended.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and a grade of C+ in each of four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3, and MATH 1A03.

NOTES
1. They are Level II (and III) prerequisites for many Level II (and IV) courses. The prerequisites should be considered when choosing your Level II and III programmes.
2. A minor in Biology or Chemistry is not permitted in the Honours Biochemistry (Complementary Studies Option) programme.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
18 units BIOCHEM 2A06, BIOLOGY 2C03, CHEM 2B06, 2R03
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives, excluding Biochemistry

LEVEL III: 30 UNITS
15 units BIOCHEM 3B03, 3BB3, 3L03, BIOLOGY 2B03, CHEM 2N03
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology.
6 units Electives, excluding Biochemistry (students wishing to take BIOCHEM 4D03 must elect CHEM 4B06, 4G03, 4P03 (maximum of six units from BIOCHEM 4B06, 4G03, 4P03)
3 units from Level III, IV Science courses, excluding Biochemistry
6 units Electives

Honours Biochemistry (Specialist Option) (2040)

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1C3
6 units CHEM 1A03, 1AA3
6 units PHYSICS 1B03 (or 1C03)
3 units from Level I Course Lists 3, 4, 6, 7
6 units from Level I Course Lists 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

Students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1C3. However, STATS 1C3 is strongly recommended.

MINIMUM AVERAGES/GRADS:
A Cumulative Average of 5.0 and a grade of C+ in each of four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3, and MATH 1A03.

NOTES
1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. In Level IV a Biochemistry and a Molecular Biology, Biotechnology and Genetic Engineering option are available.
3. A minor in Biology or Chemistry is not permitted in the Honours Biochemistry (Specialist Option) programme.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
21 units BIOCHEM 2A06, BIOLOGY 2B03, 2C03, CHEM 2N03, 2B06
3-6 units from CHEM 2P06, 2R03
3-6 units Electives. CHEM 2C03, COMP SCI 1S2A3 (or 1M3C) and STATS 2MA3 are suggested

LEVEL III: 30 UNITS
12 units from BIOCHEM 3B03, 3BB3, 3L03, 3P03
6 units BIOLOGY 3C03, CHEM 3F03
6 units Electives, excluding Biochemistry (students considering Level IV Molecular Biology, Biotechnology and Genetic Engineering Option must elect BIOLOGY 3E03)

LEVEL IV: 30 UNITS (Biochemistry Option) (2040)
9 units BIOCHEM 4E03, 4F03, 4M03
12 units from Level III, IV Biochemistry courses which must include one of BIOCHEM 4B06, 4G03, 4P03 (maximum of six units from BIOCHEM 4B06, 4G03, 4P03)
3 units from Level III, IV Science courses, excluding Biochemistry
6 units Electives
LEVEL IV: 30 UNITS (Molecular Biology, Biotechnology and Genetic Engineering Option) \(2041\)

Completion of Level III Honours Biochemistry (Specialist Option) with a Cumulative Average of at least 6.0 is required for admission. Students must indicate this option on the registration form for Level IV.

12 units \(\text{BIOCHEM 4D03, 4E03, 4I03, 4M03}\)
9 units from Level III, IV Biochemistry courses which must include one of \(\text{BIOCHEM 4B06, 4G03, 4L03, 4P03}\) (maximum of six units from \(\text{BIOCHEM 4B06, 4G03, 4L03, 4P03}\))
3 units from Level III, IV Science courses, excluding Biochemistry (\(\text{BIOLOGY 3X03 or 4V03}\) is recommended)
6 units Electives

Honours Biochemistry Co-op \(2045\)

ADMISSION

Enrolment in this programme is limited to a maximum of 25 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II Honours Biochemistry (Specialist Option) or Honours Biochemistry and Chemistry or Honours Molecular Biology and Biotechnology with a Cumulative Average of at least 6.0.

Information about the programme and the selection procedure may be obtained from the Chair of the Committee of Instruction and will be explained in the month of February in an Information Session.

NOTES

1. This is a five-year co-op programme which includes two eight-month work terms which must be spent in Biochemistry related placements.
2. Students must be registered full-time and take a full academic workload.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing your Level II and III courses.
5. No minors or Theme Schools are permitted in the Honours Biochemistry (Co-op) programme.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses.

LEVEL I
30 units from the Natural Sciences I requirements

LEVEL II
30 units from Honours Biochemistry (Specialist Option), Honours Biochemistry and Chemistry (\(\text{BIOLOGY 2B03 and 2C03}\) must be completed), Honours Molecular Biology and Biotechnology (\(\text{CHEM 2N03}\) must be completed) and Biochemistry (\(\text{BIOLOGY 3X03 or 4V03}\) is recommended)

YEAR 3
15 units from Academic Level III, Term 1, plus Work Orientation course and first work term of eight months' duration, Term 2 and Summer Term.

TERM 1
9 units \(\text{BIOCHEM 3B03, 3L03, BIOLOGY 3Q03}\)
3 units from Level III, IV Biochemistry, Biology, Chemistry
3 units Electives (Students considering Level IV Molecular Biology, Biotechnology and Genetic Engineering Option must elect \(\text{BIOLOGY 3E03}\))

TERM 2 AND SUMMER
Work Term

YEAR 4
30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer Term.

TERM 1
3 units \(\text{BIOCHEM 4M03}\)
9 units from Level III, IV Biochemistry, Biology, Chemistry
3 units Electives

TERM 2
9 units \(\text{BIOCHEM 3B03, 3P03, CHEM 3F03}\) (Students who have obtained appropriate experience during the previous work term may request permission from the Department to take 3 units of Level III, IV Biochemistry instead of \(\text{BIOCHEM 3P03}\))
3 units from Level III, IV Biochemistry, Biology, Chemistry
3 units Electives

SUMMER
Work Term

YEAR 5
15 units from Academic Level IV, Term 2, and completion of second eight-month work term, Term 1.

TERM 1
Work Term

TERM 2
9 units from \(\text{BIOCHEM 4E03, 4G03, 4I03, 4L03, 4P03}\)
3 units from Level III, IV Science courses, excluding Biochemistry
3 units Electives

(Molecular Biology, Biotechnology and Genetic Engineering Option) \(2046\)

Completion of Year 3 Honours Biochemistry (Co-op Option) with a Cumulative Average of at least 6.0 is required for admission. Students must indicate this option on the registration form for Year 4.

YEAR 4
30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer Term.

TERM 1
6 units \(\text{BIOCHEM 4D03, 4M03}\)
3 units from Level III, IV Biochemistry, Biology, Chemistry
3 units from Level III, IV Biochemistry
3 units Electives

TERM 2
9 units \(\text{BIOCHEM 3B03, 3P03, CHEM 3F03}\) (Students who have obtained appropriate experience during the previous work term may request permission from the Department to take 3 units of Level III, IV Biochemistry instead of \(\text{BIOCHEM 3P03}\))
3 units from Level III, IV Biochemistry, Biology, Chemistry
3 units Electives

SUMMER
Work Term

YEAR 5
15 units from Academic Level IV, Term 2, and completion of second eight-month work term, Term 1.

TERM 1
Work Term

TERM 2
6 units \(\text{BIOCHEM 4E03, 4I03}\)
3 units from \(\text{BIOCHEM 4G03, 4L03, 4P03}\)
3 units from Levels III, IV Science courses, excluding Biochemistry
3 units Electives
Honours Biochemistry and Chemistry (2040070)

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units PHYSICS 1B03 (or 1C03)
3 units MATH 1B03
6 units from Level I Course Lists 3, 4, 5, 6, 8, 9
1 course SCIENCE 1A00
PHYSICS 1BA3 (or 1BB3) must be completed by the end of Level II and is recommended in Level I.

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3 and an average of 6.0 in MATH 1A03, 1AA3.

NOTES
1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. Students should seek counselling for this programme in the Department of Chemistry.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
27 units BIOCHEM 2A06, CHEM 2A03, 2B06, 2C03, 2P06; MATH 2A03
3 units Electives. Students considering Level III Honours Biochemistry (Specialist Option) should select BIOLOGY 2C03. Students considering Level III Honours Chemistry (Specialist Option) should select PHYSICS 2A03.

(For students entering Level II in 1998-99) If not completed: PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS
12 units BIOCHEM 3B03, 3BB3, 3L03, 3P03
9 units CHEM 3B06, 3D03
3 units from CHEM 3A03, 3Q03
6 units Electives. Students wishing to take BIOCHEM 4D03 in Level IV must elect BIOLOGY 3E03

LEVEL IV: 30 UNITS
9 units BIOCHEM 4E03, 4I03, 4M03
9 units from BIOCHEM 4D03, 4G03
6 units from BIOCHEM 4B06 or CHEM 4G06, or both BIOCHEM 4P03 and CHEM 4T03
3 units from CHEM 3Z03, 4A03, 4D03
3 units from Level III, IV Chemistry
6 units Electives

Minor in Biochemistry
6 units from CHEM 1A05, 1A03, 1AA3
6 units from CHEM 2B06, 2B06

6 units from BIOCHEM 3G03 and one of 2EE3, 3GG3, or 3AA3 and 3A03, or 3B03 and 3BB3
6 units from Level IV Biochemistry

DEPARTMENT OF BIOLOGY

Honours Philosophy and Biology
(B.A.; See Faculty of Humanities, Department of Philosophy)

Honours Arts & Science and Biology
(B.A.Sc.; See Arts & Science programme)

Honours Molecular Biology and Biotechnology
(See Molecular Biology and Biotechnology)
(See also Honours Biochemistry (Specialist Option), Level IV Molecular Biology, Biotechnology and Genetic Engineering Option; and Honours Biochemistry Co-op, Year 4 Molecular Biology, Biotechnology and Genetic Engineering Option)

Honours Biology (Complementary Studies Option) {2052}

ADMISSION
Completion of Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units PHYSICS 1B03 (or 1C03)
3 units MATH 1B03
6 units from Level I Course Lists 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, and a grade of C+ in each of three of MATH 1A03, CHEM 1A03, 1AA3, PHYSICS 1B03 (1C03), STATS 1CC3

NOTES
1. Students in Levels III and IV of this programme should select courses in consultation with the Chair of the Department of Biology.
2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. The prerequisites should be considered when choosing your Level II (and III) programme.

COURSE LIST
All Level III and IV Biology courses, except BIOLOGY 4C09 and
4L09; BIOCHEM 2EE3, 3A03, 3AA3, 3B03, 3BB3, 3C03, 3G03, 3G63, 3H03, 3N03, 4D03, 4E03, 4M03; ENGINEER 4X03; GEOG 3P03, 4P03; GEOLOGY 2L03, 3L03, 4D03; MOL BIOL 4F03, 4H03, 4J03; PHARMAC 4B03; PSYCH 2F03, 3F03, 3FB3, 3R03, 3S03, 3T03, 4F03, 4U03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03
6 units from CHEM 2B06, or both CHEM 2D03 and BIOCHEM 2EE3
6 units from the Faculty of Humanities and/or the Department of Religious Studies
3 units Electives, excluding Biochemistry and Biology
3 units Electives

LEVEL III: 30 UNITS
3 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03 (whichever is not completed)
6 units from Level III, IV Biology
6 units from the Course List (see above)
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Biology
LEVEL IV: 30 UNITS
6 units from the Science Inquiry Course List
6 units from Level III, IV Biology
6 units from the Course List (see above)
6 units from Level III, IV courses, excluding Biology
6 units Electives

Honsours Biology (Specialist Option) {2050}

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3 and an average of 6.0 in MATH 1A03, 1AA3, 1B03.

NOTES
1. Students should seek counselling for this programme in either the Department of Mathematics and Statistics or in the Department of Biology.
2. Students are advised to carefully note graduate programme requirements.
3. Students considering graduate studies in Biology are recommended to complete BIOLOGY 4C09 or BIOLOGY 4F06.
4. Students considering graduate studies in Mathematics, are recommended to complete MATH 2A03, 2E03 and either 2S03 or 2T03 in Level II, MATH 3A03 and 3X03 in Level III, and MATH 3A03 and 4X03 in Level IV.
5. Students must complete at least 9 units from Level IV courses.

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, and a grade of C+ in each of three of MATH 1A03, CHEM 1AA3, PHYSICS 1B03 (or 1C03), STATS 1C03.

NOTES
1. Students are advised to note carefully the prerequisites for all Levels III and IV courses listed in the following programme, particularly BIOCHEM 2EE3, 3G03.
2. The Department of Biology has the following areas of specialization: a) Animal Physiology, b) Cell Development, Molecular Biology and Biotechnology, c) Ecology, d) Genetics and Evolution, e) Microbiology, f) Plant Biology.

COURSE LIST
All Levels and IV Biology courses; BIOCHEM 2EE3, 3A03, 3AA3, 3B03, 3BB3, 3C03, 3G03, 3GG3, 3H03, 3N03, 4D03, 4G03, 4M03; ENGINEERING 3E03; GEOG 3P03, 4P03; GEOLOGY 2J03, 3J03, 4D03; MOL BIO 4F03, 4H03, 4J03; PHARMAC 4B03; PSYCH 2F03, 3FA3, 3FB3, 3R03, 3S03, 3T03, 4F03, 4U03.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses.

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
21 units BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03; CHEM 2006
3 units STATS 2MA3
6 units Electives, excluding Biochemistry and Biology. CHEM 2F03 is recommended.

LEVEL III: 30 UNITS
18 units from Levels III, IV Biology
6 units from the Course List (see above)
3 units Electives, excluding Biochemistry and Biology
3 units Electives

LEVEL IV: 30 UNITS
18 units from Levels III, IV Biology (which must include either BIOLOGY 4F06 or 4C09)
6 units from the Course List (see above)
6 units Electives
BIOLOGY 4C09 is highly recommended

Honours Biology and Mathematics {2050320}

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
6 units CHEM 1A03, 1AA3
6 units MATH 1B03
3 units from Level I Science Course Lists 3, 4, 5, 6
6 units from Level I Course Lists 3, 4, 5, 6, 8, 9
1 course SCIENCE 1A00

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
12 units BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03
12 units MATH 2A03, 2C03, 2E03, 2F03
3 units from MATH 2S03, 2T03
3 units Electives

LEVEL III: 30 UNITS
12 units from Level III, IV Biology, (See Note 5 above.)
9 units MATH 3A03, 3F03, 3N03
3-6 units STATS 2D03, 2MB3
3-6 units Electives

LEVEL IV: 30 UNITS
(For students who entered Level II or III in 1995-96)
18 units from Level III, IV Biology, Mathematics, Statistics, PSYCH 4103 which must include at least 9 units of Level IV Biology (See Note 5 above.)
12 units Electives

LEVEL IV: 30 UNITS
(Beginning in 1998-99)
18 units from Level III, IV Biology, Mathematics, Statistics, PSYCH 4103 which must include at least 9 units of Level IV Biology (See Note 5 above.)
3-6 units STATS 3A03, 3D03, 3S03
3-6 units Electives
6-9 units Electives

Honours Biology and Pharmacology (Co-op) {2050419}

ADMISSION
Enrolment in this programme is limited to a maximum of 25 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II of an Honours Biology programme (including CHEM 2006) with a Cumulative Average of at least 6.0.

Information about this programme and the selection procedure can be obtained from the Chair of the Committee of Instruction and will also be explained in the month of February in an Information Session. It is highly recommended that students interested in enrolling in the programme attend the information Session. Students wishing to apply must submit a formal written application to the Office of the Dean of Science Studies in the first week of March. The selection will be based on interviews and/or tutorial sessions to be held the first weekend in March, as well as on academic performance. Successful candidates will be notified in writing.
NOTES
1. This is a five-year co-op programme, three terms of which must be spent off-campus in work related to pharmacology, toxicology or pharmaceutics. These three terms will include the summer term following the completion of Level III, the second term of Level IV and the first term of the fifth year. Level IV continues through the fourth and fifth year of the programme. A senior thesis will be completed during the summer of the fourth year. PHARMAC 3A06, 3B06, 4A03, 4AA3, 4C03, 4D03 and 4E03 will be based on a self-directed problem based learning approach. PHARMAC 4B03 may be taught in a lecture format in some years.
2. Students must be registered full-time and take a full academic workload.
3. Students are required to complete a Work Orientation Course before the first work placements.
4. Students must be registered in the Department of Biology.
5. No minors or Theme Schools are permitted in the Honours Biology and Pharmacology Co-op programme.

COURSE LIST
BIOCHEM 2E03, 3G03, 3GG3, 3H03, 3N03; All Level III and IV Biology courses; GEOG 3P03, 3U03, 3W03, 4P03; MOL BIOL 4F03, 4H03, 4J03; PSYCH 4F03

REQUIREMENTS
129 units total (Levels I to IV), of which no more than 48 units may be Level I courses.

LEVEL I
30 units from the Natural Sciences I requirements

LEVEL II: 30 UNITS
15 units BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03
6 units CHEM 2003
3 units STATS 2M03
6 units Electives, excluding Biochemistry and Biology. CHEM 2R03 is recommended.

YEAR 3
30 units from Academic Level III, Terms 1 and 2, plus Work Orientation course, and completion of first four-month work term, Summer Term

TERMS 1 AND 2
6 units from the Course List (see above). If BIOCHEM 2A06 is not completed, students must take BIOCHEM 2E03 and 3G03
9 units BIOLOGY 3P03, 3U03, 3W03
12 units PHARMAC 3A06, 3B06
3 units Electives → Work Orientation Course

SUMMER
Work Term

YEAR 4
15 units from Academic Level IV, Term 1, completion of second four-month work term, Term 2, completion of senior thesis, Summer Term.

TERM 1
6 units BIOLOGY 3X03; PHARMAC 4A03
3 units from PHARMAC 4B03, 4C03
6 units from the Course List (see above)

TERM 2
Work Term

SUMMER
9 units from PHARMAC 4F09, BIOLOGY 4L09

YEAR 5
15 units from Academic Level IV, Term 2, and completion of third four-month work term, Term 1.

TERM 1
Work Term

TERM 2
6 units from PHARMAC 4A03, 4D03, 4E03
3 units from the Course List (see above)
6 units Electives

Honours Biology and Psychology (2050460)

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1C03
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units PHYSICS 1B03 (or 1C03)
3 units PSYCH 1A03
6 units from Level I Course Lists 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00
PSYCH 1A03 must be completed by the end of Level II and is strongly recommended in Level I.

MINIMUM AVERAGES/ GRADES:
A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, a grade of C+ in PSYCH 1A03, and an average of 6.0 in CHEM 1A03, 1AA3.

NOTES
1. Counselling for this programme is shared by the Departments of Biology and Psychology and alternates each year.
2. MATH 1B03 is strongly recommended for students intending to pursue graduate work in Psychology.
3. In Level III or IV students must complete at least one laboratory course in Psychology (see Course List 4). Enrolment is limited for the Psychology laboratory courses.
4. Students planning to do postgraduate work in Psychology or Neuroscience are strongly recommended to take PHYSICS 1BB3.
5. A minor in Biochemistry is not permitted in the Honours Biology and Psychology programme.

COURSE LIST 1
BIOLOGY 2D03, 2E03, 2F03; All Level III and IV Biology courses

COURSE LIST 2
PSYCH 2E03, 2F03, 2H03, 2T03; All Level III and IV Psychology courses except PSYCH 3C06, 3CC3, 3D03, 3DD3

COURSE LIST 3
BIOCHEM 3H03, 3N03, 4D03, 4E03, 4M03; MOL BIOL 4F03, 4H03; PHARMAC 4B03

COURSE LIST 4
PSYCH 3E03, 3L03, 3L13, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)
LEVEL II: 30 UNITS
12 units BIOLOGY 2B03, 2C03, CHEM 2006
6 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
3 units from PSYCH 2R03
9 units Electives. CHEM 2F03 is recommended.
(For students entering Level II in 1998-99) If not completed:
PSYCH 1AA3

LEVEL III: 30 UNITS
6 units BIOCHEM 2EE3, 3G03
9 units from Course List 1 (see above)
9 units from Course List 2 (see above) (See Note 3 above.)
6 units Electives

LEVEL IV: 30 UNITS
24-27 units from Course Lists 1, 2 and 3 (see above), including
at least nine units from Course Lists 1 and 3, and at least
nine units from Course List 2. One of BIOLOGY 4C09, 4F06 or PSYCH 4D06 is required.
3-6 units Electives

B.Sc. Three-Level Degree
A three-level programme with a Biology Orientation is available
through the B.Sc. in Life Science programme which is listed
under the heading Three-Level B.Sc. Programmes in this section.

Minor in Biology
6 units from BIOLOGY 1A06, 1A08, 1A3A
18 units from Level II, III, IV Biology courses, including at least
six units from Level III, IV Biology courses

DEPARTMENT OF CHEMISTRY

NOTES
1. Students in all Chemistry programmes are expected to have
basic skills in the use of personal computers, word processing
software and spreadsheet software. COMP SCI 1SA3 is
recommended for students without those skills.
2. Students are advised that combined Honours programmes are
more challenging than single Honours programmes.
3. Students who had previously been required to take CHEM 4T06
as part of their programme must take CHEM 4TA3 and 3 units
of Level III, IV Chemistry.

Honours Arts & Science and Chemistry
(B.Arts.Sc.; See Arts & Science programme)

Honours Biochemistry and Chemistry
(See Department of Biochemistry)

Honours Chemistry {2072}
(Complementary Studies Option)

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1A3A,
6 units CHEM 1A03, 1A3A
3 units PHYSICS 1B03 (or 1C03)
3 units MATH 1B03
3 units from Level I Course Lists 1, 3, 4, 6
3 units from Level I Course Lists 1, 3, 4, 5, 6, 8
6 units from Level I Course Lists 1, 3, 4, 5, 6, 8, 9
1 course SCIENCE 1A00
PHYSICS 1BA3 (or 1BB3) must be completed by the end of
Level II; the election of PHYSICS 1BA3 in Level I is very strongly
recommended.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and an average of 6.0 in CHEM
1A03, 1A3A.

NOTES
1. This programme fulfills the academic requirements for
membership in the Chemical Society of Canada.

2. COMP SCI 2MF3, MATH 2003, and PHYSICS 2A03 or 2B06
are recommended electives.
3. For those considering postgraduate studies in Chemistry, it
should be noted that 18 units of Level IV Chemistry are required
for consideration for admission at McMaster.
4. In some cases there are Level II (and III) prerequisites for
Level III (and Level IV) courses. The prerequisites should be
considered when choosing your Level II (III) programme.
5. Students who wish to transfer from Level II of the B.Sc. in
Physical Science to Level III of Honours Chemistry
(Complementary Studies Option) must attain a CA of at least
6.0 including CHEM 2A03, 2B06 (or 2005), 2C03, 2P06, MATH
2A03 (or 2N03 or both MATH 2G03 and 2003).
6. Students who wish to transfer from Level III of the B.Sc. in
Physical Science to Level IV of the Honours Chemistry
(Complementary Studies Option) must attain a CA of at least
6.0 including CHEM 2A03, 2B06 (or 2005), 2C03, 2P06, MATH
2A03 (or 2N03 or both MATH 2G03 and 2003), CHEM 3A03,
3B06 (or 3B03 and 3C03), 3D03 and 3Q03.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units
may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
18 units CHEM 2A03, 2B06, 2C03, 2P06
3 units MATH 2A03
6 units from the Faculty of Humanities and/or the Department
of Religious Studies
3 units Electives, excluding Chemistry
(For students entering Level II in 1997-98) If one of PHYSICS 1A06,
1B06, 1C06 not completed, then students must take PHYSICS
1B03 (or 1C03) and 1BA3 (or 1BB3)
(For students entering Level II in 1998-99) If not completed: PHYSICS
1BA3 (or 1BB3)

LEVEL III: 30 UNITS
15 units CHEM 3A03, 3B06, 3D03, 3Q03
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding
Physical Geography and Psychology
6 units Electives, excluding Chemistry

LEVEL IV: 30 UNITS
6 units from the Science Inquiry Course List
3 units CHEM 4TA3
3 units from Level III, IV Chemistry
6 units from Level IV Chemistry
6 units Electives from Level III, IV, excluding Chemistry
6 units Electives

Honours Chemistry (Specialist Option) {2070}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1A3A
6 units CHEM 1A03, 1A3A
3 units PHYSICS 1B03 (or 1C03)
3 units MATH 1B03
3 units from Level I Course Lists 1, 3, 4, 6
3 units from Level I Course Lists 1, 3, 4, 5, 6, 8
6 units from Level I Course Lists 1, 3, 4, 5, 6, 8, 9
1 course SCIENCE 1A00
PHYSICS 1BA3 (or 1BB3) must be completed by the end of
Level II; the election of PHYSICS 1BA3 in Level I is very strongly
recommended.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and an average of 6.0 in CHEM 1A03,
1A3A.
15 units from Level II of Honours Chemistry (Complementary Studies Option), Honours Chemistry (Specialist Option), Honours Applied Chemistry, Honours Biological Chemistry, or Honours Biochemistry and Chemistry

Year 3
15 units from Academic Level III, Term 1, plus Work Orientation course, and first work term of eight months duration, Term 2 and Summer term.

TERM 1
6 units CHEM 3A03, 3Q03
3 units HUMAN 2C03
6 units Electives, excluding Chemistry → Work Orientation Course

TERM 2 AND SUMMER
Work Term

Year 4
30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer term.

TERMS 1 AND 2
15 units CHEM 3B06, 3D03, 3I03, 4TA3
3 units from the Science Inquiry Course List
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units from Level III, IV courses, excluding Chemistry

SUMMER
Work Term

Year 5
(Beginning in 1998-1999)
15 units from Academic Level IV, Term 2, plus completion of second eight-month work term, Term 1.

TERM 1
Work Term.

TERM 2
3 units from Level III, IV Chemistry
3 units from Level IV Chemistry
3 units from the Science Inquiry List
6 units Electives

Honours Applied Chemistry

NOTE
The Honours Applied Chemistry programme is being phased out. Level III will be last offered in September 1997. An Honours Chemistry Co-op programme begins in Level III and admission is from Level II of a number of Honours Chemistry programmes. Students interested in applied chemistry should consider one of those programmes. Students who wish to continue in this programme should consult the 1996-97 Undergraduate Calendar for programme requirements.
Honours Biological Chemistry {2048}

ADMISSION

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, 1A3
- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03 (or 1C03)
- 3 units MATH 1B03
- 6 units from Level I Course Lists 3, 4, 5, 6, 8, 9
- 1 course SCIENCE 1A00

PHYSICS 1B03 (or 1BB3) must be completed by the end of Level II and is very strongly recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in CHEM 1A03, 1AA3.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. A minor in Biochemistry is not permitted in the Honours Biological Chemistry programme.
3. Students considering BIOCHEM 3L03 in Level IV should select BIOCHEM 2EE3 in Level III, students considering BIOCHEM 4L03 in Level IV should select BIOCHEM 3BB3 in Level III.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I

- 30 units (See Admission above.)

LEVEL II: 30 UNITS

- 3 units BIOLOGY 2B03
- 16 units CHEM 2A03, 2B06, 2C03, 2P06
- 3 units MATH 2A03
- 6 units Electives, excluding Chemistry.

(For students entering Level II in 1997-98) If one of PHYSICS 1A06, 1B06, 1C06 not completed, then students must take PHYSICS 1B03 (or 1C03) and 1B03 (or 1BB3).

(For students entering Level II in 1998-99) If not completed: PHYSICS 1B03 (or 1BB3)

LEVEL III: 30 UNITS

- 6 units BIOCHEM 3G03; BIOLOGY 2C03
- 3 units from BIOCHEM 2EE3, 3BB3 (See Note 3 above)
- 12 units CHEM 3A03, 3B06, 3C03
- 3 units from CHEM 3D03, 3F03
- 6 units Electives.

LEVEL IV: 30 UNITS

- 6 units CHEM 4D03, 4DD3
- 3 units from BIOCHEM 3BB3, 3BB3, 4L03
- 6 units from CHEM 4G06 or both CHEM 4TA3 and 3 units of Level III, IV Chemistry
- 3 units from BIOCHEM 3L03, Level IV Biochemistry
- 3 units from Level III, IV Biology
- 3 units Electives, excluding Biology
- 6 units Electives

Honours Chemistry and Mathematics {2070320}

ADMISSION

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, 1A3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03 (or 1C03)
- 3 units MATH 1B03
- 3 units from Level I Course Lists 1, 3, 4, 6
- 6 units from Level I Course Lists 1, 3, 4, 6, 8, 9
- 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in CHEM 1A03, 1AA3 and a grade of C+ in each of MATH 1A03, 1A3.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. Students should seek counselling for this programme in the Department of Chemistry or in the Department of Mathematics and Statistics.
3. A minor in Statistics is not permitted in the Honours Chemistry and Mathematics programme.
4. Students interested in graduate studies in Mathematics should consider taking MATH 3E03, 3EE3.
5. Students interested in graduate studies in Chemistry at McMaster must take 18 units of Level IV Chemistry.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses and with at least 12 units from Level IV courses

LEVEL I

- 30 units (See Admission above.)

LEVEL II: 30 UNITS

- 15 units CHEM 2B06, 2C03, 2P06
- 15 units GEOLGY 2B03, 2C03, 2D03, 2E01, 2EE2
- 3 units MATH 2A03

LEVEL III: 30 UNITS

- 15 units CHEM 3A03, 3B06, 3P03, 3Q03
- 9 units GEOLGY 2K03, 3C03, 3Q03
- 3 units from GEOLGY 2103, 2J03
- 3 units Electives

(For students entering Level III in 1996-99) If not completed: PHYSICS 1B03 (or 1BB3)

LEVEL IV: 30 UNITS

- 3 units CHEM 3A03
- 6 units from Level III, IV Chemistry
- 6 units from Level III, IV Geology
- 6 units from Level III, IV Chemistry, Geology
- 9 units Electives

Honours Chemistry and Geology {2070250}

ADMISSION

Completion of Natural Sciences I, including:

- 6 units MATH 1A03, 1A3
- 6 units CHEM 1A03, 1AA3
- 6 units ENVIR SC 1G03, 1H03
- 3 units PHYSICS 1B03 (or 1C03)
- 3 units MATH 1B03
- 6 units from Level I Course Lists 1, 3, 4, 5, 6, 8, 9

LEVEL I

- 1 course SCIENCE 1A00

PHYSICS 1B03 (or 1BB3) must be completed by the end of Level III. The election of PHYSICS 1B03 is very strongly recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in CHEM 1A03, 1AA3 and an average of 6.0 in ENVIR SC 1G03, 1H03.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. Students must register for GEOLGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLGY 2A01 is taken during the regular term of Level II.
3. Students should seek counselling for this programme in the Department of Chemistry.

REQUIREMENTS

123 units total (Levels I to IV) of which no more than 48 units may be Level I courses

LEVEL I

- 30 units (See Admission above.)

LEVEL II: 33 UNITS

- 15 units CHEM 2B06, 2C03, 2P06
- 15 units GEOLGY 2B03, 2C03, 2D03, 2E01, 2EE2
- 3 units MATH 2A03

LEVEL III: 30 UNITS

- 15 units CHEM 2A03, 2B06, 2P03, 2Q03
- 9 units GEOLGY 2K03, 3C03, 3Q03
- 3 units from GEOLGY 2103, 2J03
- 3 units Electives

(For students entering Level III in 1996-99) If not completed: PHYSICS 1B03 (or 1BB3)

LEVEL IV: 30 UNITS

- 3 units CHEM 3A03
- 6 units from Level III, IV Chemistry
- 6 units from Level III, IV Geology
- 6 units from Level III, IV Chemistry, Geology
- 9 units Electives

Honours Chemistry and Mathematics {2070320}

ADMISSION

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, 1A3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03 (or 1C03), PHYSICS 1B03 (or 1BB3)
- 3 units MATH 1B03
- 3 units from Level I Course Lists 1, 3, 4, 6
- 6 units from Level I Course Lists 1, 3, 4, 6, 8, 9

LEVEL I

- 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in CHEM 1A03, 1AA3 and a grade of C+ in each of MATH 1A03, 1A3.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. Students should seek counselling for this programme in either the Department of Chemistry or in the Department of Mathematics and Statistics.
3. A minor in Statistics is not permitted in the Honours Chemistry and Mathematics programme.
4. Students interested in graduate studies in Mathematics should consider taking MATH 3E03, 3EE3.
5. Students interested in graduate studies in Chemistry at McMaster must take 18 units of Level IV Chemistry.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses and with at least 12 units from Level IV courses

LEVEL I

- 30 units (See Admission above.)

LEVEL II: 30 UNITS

- 15 units CHEM 2B06, 2C03, 2P06
- 9 units MATH 2A03, 2C03, 2F03
- 3 units from MATH 2S03, 2T03
- 3 units from MATH 2AA3, 2E03; STATS 2D03

(For students entering Level II in 1997-98) If one of PHYSICS 1A06, 1B06, 1C06 not completed, then students must take PHYSICS 1B03 (or 1C03) and 1B03 (or 1BB3)
LEVEL III: 30 UNITS
15 units CHEM 2A03, 3B06, 3D03, 3Q03
12 units MATH 3A03, 3F03, 3FF3, 3X03
3 units Electives

LEVEL IV: 30 UNITS
(For students who entered Level III in 1996-97)
6 units CHEM 4G06
3 units MATH 4Q03
6 units from Level III, IV Chemistry
6 units from Level III, IV Mathematics
6 units from Level III, IV Chemistry, Mathematics, Statistics
3 units Electives

LEVEL IV: 30 UNITS
(Beginning in 1998-99)
6 units CHEM 4G06
9 units MATH 3AA3, 4Q03, 4X03
6 units from Level III, IV Chemistry
6 units from Level III, IV Chemistry, Mathematics, Statistics
3 units Electives

Honours Chemistry and Physics {2070440}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
6 units CHEM 1A03, 1A03
6 units PHYSICS 1B03 (or 1C03), PHYSICS 1BA3 (or 1BB3)
3 units MATH 1B03
3 units from Level I Course Lists 1, 3, 4, 6
6 units from Level I Course Lists 1, 3, 4, 6, 8, 9
1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0, and an average of 6.0 in each of COMP SCI 1MC3, 1MD3.

NOTES
1. Students may choose their electives to complete a coherent set of courses, such as:
   - Numerical Analysis: MATH 3Q03, 4Q03, 4Q03 and 4R03
   - Hardware: PHYSICS 2B06, 3BA3 (or 3BB6), 4DA3 (or 4DD6)
2. COMP SCI 3EA3 is listed as required in Level IV but may be taken in Level III.
3. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. The prerequisites should be considered when choosing your Level II (III) programme.
4. A minor in Astronomy is not permitted in the Honours Chemistry and Physics programme.

REQUIREMENTS
120 to 123 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
15 units CHEM 2B06, 2C03, 2P06
9 units MATH 2A03
3 units from Level I Course Lists 2, 2003
9 units PHYSICS 2B06, 2K03

LEVEL III: 30-31 UNITS
12 units CHEM 2A03, 3B06, 3Q03
6 units MATH 3C03, 3D03
6 units PHYSICS 3M03, 3MM3
6-7 units from PHYSICS 3B06, 3BA3, 3BB3, 3K04 (or 3K03), 3N03

LEVEL IV: 30-32 UNITS
3 units PHYSICS 4F03
3 units from Level IV Chemistry
1 course from CHEM 4G06, PHYSICS 4J04, 4Q04
12-16 units from Level III, IV Astronomy, Chemistry, Physics, including either CHEM 4Y03 or PHYSICS 3K04 (or 3K03) if not completed
6 units Electives

B.Sc. Three-Level Degree
A three-level programme with a Chemistry orientation is available through the B.Sc. in Physical Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

Minor in Chemistry
6 units from CHEM 1A06, 1A03, 1AA3
18 units Level II, III, IV Chemistry courses, including at least 6 units from Level III, IV Chemistry courses

DEPARTMENT OF COMPUTER SCIENCE AND SYSTEMS

Honours Economics and Computer Science
(B.A.; See Faculty of Social Sciences, Department of Economics)

Honours Arts & Science and Computer Science
(B.A.; See Arts & Science programme)

Honours Computer Science {2147}
(Complementary Studies Option)

ADMISSION
Completion of any Level I programme, including:
6 units MATH 1A03, 1AA3
3 units MATH 1B03
6 units COMP SCI 1MC3, 1MD3
15 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3.

NOTES
1. Students may choose their electives to complete a coherent set of courses, such as:
   - Numerical Analysis: MATH 2Q03, 3QA3, 3QB3, 3Q03
   - Hardware: PHYSICS 2B06, 3BA3 (or 3BB6), 4DA3 (or 4DD6)
2. COMP SCI 3E03 is listed as required in Level IV but may be taken in Level III.
3. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. The prerequisites should be considered when choosing your Level II (III) programme.
4. A minor in Mathematics or Mathematics and Statistics is not permitted in the Honours Computer Science (Complementary Studies) programme.
5. COMP SCI 1MA3 can be used as a substitute for 1MC3, COMP SCI 1MB3 can be used as a substitute for 1MD3, and COMP SCI 2MC3 can be used as a substitute for 2SC3.

REQUIREMENTS
120 to 123 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units COMP SCI 2MD3, 2MF3, 2MJ3, 2SC3
6 units MATH 2R03, 2T03
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives, excluding Computer Science if not completed: SCIENCE 1A00

LEVEL III: 30 UNITS
6 units COMP SCI 3MG3, 3MH3
6 units from COMP SCI 3CB3, 3GA3, 3IA3, 3TA3
3 units COMP SCI 2ME3
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Computer Science

LEVEL IV: 30 UNITS
6 units COMP SCI 3EA3, 3MI3
6 units from COMP SCI 4ZP6 or the Science Inquiry Course List
6 units from Level IV Computer Science, (excluding COMP SCI 4MP6, 4ZP6, NEURCOMP 3W03
6 units Electives from Level III, IV, excluding Computer Science
6 units Electives
Honours Computer Science {2145}
(Specialist Option)

ADMISSION
Completion of any Level I programme, including:
6 units MATH 1A03, 1A0A
3 units MATH 1B03
6 units COMP SCI 1MC3, 1MD3
15 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03.

NOTES
1. Students may choose their electives to complete a coherent set of courses, such as:
   - Numerical Analysis: MATH 3Q03, 4Q03, 4QQ3 and 4RR3
   - Hardware: PHYSICS 2B06, 3BA3 (or 3B06), 4DA3 (or 4D06)
2. COMP SCI 3EA3 is listed as required in Level II, but may be taken in Level IV.
3. Level II and III courses should be selected carefully so that prerequisites for the Level III and IV courses in the desired area are satisfied.
4. A minor in Mathematics or Mathematics and Statistics is not permitted in the Honours Computer Science (Specialist Option) programme.
5. COMP SCI 1MA3 can be used as a substitute for 1MC3, COMP SCI 1MB3 can be used as a substitute for 1MD3, and COMP SCI 2MC3 can be used as a substitute for 2SC3.

COURSE LIST
All Level III and IV Computer Science (excluding COMP SCI 4MP6, 4ZP6, 4ZI3), all Level III, IV Mathematics and Statistics courses; NEURCOMP 3W03; PHYSICS 3B06, 3BA3, 3B03, 3D06, 4DA3, 4DB3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)
Students entering from a Faculty other than the Faculty of Science must complete the requirements of the Natural Sciences I programme before entry to Level IV.

LEVEL II: 30 UNITS
15 units COMP SCI 2MD3, 2ME3, 2MF3, 2MJ3, 2SC3
6 units MATH 2A03, 2R03
3 units from MATH 2S03, 2T03
6 units Electives
If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS
12 units COMP SCI 3EA3, 3MG3, 3MH3, 3MI3
3 units from COMP SCI 3CB3, 3EA3, 3GA3, 3IA3, 3TA3
6 units MATH 3A03, 3X03
3 units from Level III, IV Mathematics, Statistics
6 units Electives

LEVEL IV: 30 UNITS
6 units COMP SCI 4MP6
3 units from MATH 3AA3, 4C03, 4J03, 4Q03, 4S03, 4X03
6 units from Level III, IV Mathematics, Statistics
3 units from the Course List (see above)
6 units Electives, excluding Computer Science, Mathematics, Statistics
6 units Electives

Honours Computer Science and Mathematics {2145542}
and Statistics

ADMISSION
Completion of any Level I programme, including:
6 units MATH 1A03, 1AA3
6 units COMP SCI 1MC3, 1MD3
3 units MATH 1B03
15 units from Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03.

NOTES
1. A minor in Mathematics or Mathematics and Statistics is not permitted in the Honours Computer Science and Mathematics programme.
2. COMP SCI 1MA3 can be used as a substitute for 1MC3, COMP SCI 1MB3 can be used as a substitute for 1MD3, and COMP SCI 2MC3 can be used as a substitute for 2SC3.

COURSE LIST
All Level III and IV Computer Science, Mathematics and Statistics courses; MATH 2E03; NEURCOMP 3W03; PHYSICS 2C03, 2D03, 2K03, 2L03; STATS 2D03, 2MA3, 2MB3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
9 units COMP SCI 2MD3, 2MF3, 2SC3
12 units from MATH 2A03, 2AA3, 2C03, 2B03
3 units from MATH 2S03, 2T03
6 units Electives
If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS
12 units COMP SCI 2ME3, 2MG3, 2MH3, 2MI3
3 units from COMP SCI 3CB3, 3EA3, 3GA3, 3IA3, 3TA3
6 units MATH 3A03, 3X03
3 units from Level III, IV Mathematics, Statistics
6 units Electives

LEVEL IV: 30 UNITS
6 units COMP SCI 4MP6
3 units from MATH 3AA3, 4C03, 4J03, 4Q03, 4S03, 4X03
6 units from Level III, IV Mathematics, Statistics
3 units from the Course List (see above)
6 units Electives, excluding Computer Science, Mathematics, Statistics
6 units Electives

Honours Computer Science and Mathematics {2145320}

ADMISSION
Completion of any Level I programme, including:
6 units MATH 1A03, 1AA3
6 units COMP SCI 1MC3, 1MD3
3 units MATH 1B03
15 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03.

NOTES
1. A minor in Statistics or Mathematics and Statistics is not permitted in the Honours Computer Science and Mathematics programme.
2. COMP SCI 1MA3 can be used as a substitute for 1MC3, COMP SCI 1MB3 can be used as a substitute for 1MD3, and COMP SCI 2MC3 can be used as a substitute for 2SC3.

COURSE LIST
All Level III and IV Computer Science, Mathematics and Statistics courses; MATH 2E03; NEURCOMP 3W03; PHYSICS 2C03, 2D03, 2K03, 2L03; STATS 2D03, 2MA3, 2MB3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
9 units COMP SCI 2MD3, 2MF3, 2SC3
12 units from MATH 2A03, 2AA3, 2C03, 2B03
3 units from MATH 2S03, 2T03
6 units Electives
If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS
12 units COMP SCI 2ME3, 2MG3, 2MH3, 2MI3
3 units from COMP SCI 3CB3, 3EA3, 3GA3, 3IA3, 3TA3
6 units MATH 3A03, 3X03
3 units from Level III, IV Mathematics, Statistics
6 units Electives

LEVEL IV: 30 UNITS
6 units COMP SCI 4MP6
3 units from MATH 3AA3, 4C03, 4J03, 4Q03, 4S03, 4X03
6 units from Level III, IV Mathematics, Statistics
3 units from the Course List (see above)
6 units Electives, excluding Computer Science, Mathematics, Statistics
6 units Electives
LEVEL III: 30 UNITS
12 units COMP SCI 2ME3, 3MG3, 3MH3, 3M13
3 units from MATH 2C03, 2003
9 units STAT 2MB3, 3D06
3 units Electives, excluding Computer Science, Mathematics, Statistics
3 units Electives

LEVEL IV: 30 UNITS
3 units from COMP SCI 3CB3, 3EA3, 3GA3, 3IA3, 3TA3
6 units COMP SCI 4MP6
6 units from Level III, IV Mathematics
9 units from Level III, IV Statistics
3 units from Level III, IV Computer Science (excluding COMP SCI 4Z13), Mathematics, Statistics, NEURCOMP 3W03
3 units Electives, excluding Computer Science, Mathematics, Statistics, NEURCOMP 3W03

Honours Computer Science B.Sc. {2149}
as a Second Degree

ADMISSION
Completion of a Bachelor's degree in a discipline other than computer science with a Cumulative Average of at least 7.0 from a recognized university, including MATH 1A03, 1AA3, 1B03, and COMP SCI 1MC3, 1MD3 or equivalent.

As Second Degree candidates, applicants must first apply for admission to the University, through the Office of the Registrar (Admissions) indicating they wish to apply for the Honours Computer Science B.Sc. as a Second Degree programme.

NOTE
If a student in the programme has previously taken a required course (or its equivalent), he/she does not have to re-take the course. However, if the credit from that course has been used for a previous degree, the student will be required to take another course with the required number of units.

COURSE LIST
All Level III, IV Computer Science courses (excluding COMP SCI 4MP6, 4Z13, 4ZP6), Mathematics and Statistics courses, NEURCOMP 3W03; PHYSICS 3B06, 3CA3, 3GA3, 3H03, 3D06, 4DA3, 4D03

REQUIREMENTS:
60 units total
15 units COMP SCI 2MD3, 2ME3, 2MF3, 2MJ3, 2SC3
9 units MATH 2A03, 2R03, 2T03
12 units COMP SCI 3EA3, 3MG3, 3MH3, 3M13
15 units from the Course List, which must include at least nine units of Level IV Computer Science
6 units from COMP SCI 4ZP6, Level IV Computer Science
3 units from COMP SCI 3CB3, 3GA3, 3IA3, 3TA3, Level IV Computer Science

B.Sc. Three-Level Degree
A three-level programme with a Computer Science orientation is available through the B.Sc. in Mathematical Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

Minor in Computer Science
6 units COMP SCI 1MC3, 1MD3
3 units COMP SCI 2SC3
15 units from Level II, III, IV Computer Science, including at least six units from Level III, IV Computer Science

NOTE
COMP SCI 1MA3 can be used as a substitute for 1MC3, COMP SCI 1MB3 can be used as a substitute for 1MD3, and COMP SCI 2MC3 can be used as a substitute for 2SC3.

DEPARTMENT OF GEOGRAPHY

Honours Geography (B.A.)
(See B.A. programmes in Geography, Faculty of Social Sciences, Department of Geography)

B.A. in Geography
(See B.A. programmes in Geography, Faculty of Social Sciences, Department of Geography)

Honours Geography and Geology (B.A.)
(See B.A. programmes in Geography, Faculty of Social Sciences, Department of Geography)

Honours Geography and Environmental Studies (B.A.)
(See B.A. programmes in Geography, Faculty of Social Sciences, Department of Geography)

Honours Arts & Science and Geography
(See Arts & Science programme)

Honours Geography (B.Sc.) {2241}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
3 units BIOLOGY 1A03
3 units CHEM 1A03
6 units ENVIR SC 1G03, 1H03
3 units PHYSICS 1B03 (or 1C03)
3 units from BIOLOGY 1AA3, ENVIR SC 1B03
6 units from Level I Course Lists 1, 2, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

ENVIR SC 1B03 must be completed by the end of Level II and is recommended in Level I.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and a grade of C+ in each of two of ENVR SC 1B03, 1G03, 1H03.

COURSE LIST
GEOG 3C03, 3F03, 3G03, 3J03, 3K03, 3L03, 3M03, 3N03, 3P03, 3U03, 4A03, 4B03, 4C03, 4D03, 4E03, 4F03, 4G03, 4H03, 4I03, 4J03, 4K03, 4L03, 4M03, 4N03, 4P03, 4Q03, 4R03, 4S03, 4T03, 4U03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
15 units GEOG 2F03, 2N03, 2T03, 2W03, 3E03
15 units Electives

(For students entering Level II in 1998-99) If not completed: ENVIR SC 1B03

LEVEL III: 30 UNITS
3 units GEOG 3003
15 units from the Course List (see above)
6 units Electives, excluding Geography
6 units Electives

LEVEL IV: 30 UNITS
1 course from GEOG 4C06, 4CC3
12-15 units from the Course List (see above), including at least nine units from Level IV courses
6 units Electives, excluding Geography
6 units Electives

Honours Geography and Environmental Science (B.Sc.) {2242}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
3 units BIOLOGY 1A03
3 units CHEM 1A03, 1AA3
3 units ENVIR SC 1B03
3 units PHYSICS 1B03 (or 1C03)
3 units from ENVIR SC 1G03, 1H03
6 units from Level I Course Lists 1, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00
ENVIR SC 1G03 and 1H03 must be completed by the end of Level II and are recommended in Level I.

**MINIMUM AVERAGES/GRADES:**
A Cumulative Average of 5.0 and a grade of C+ in ENVIR SC 1803 and in either ENVIR SC 1G03 or 1H03

**COURSE LIST 1**
ENVIR SC 4W03; GEOG 3F03, 3G03, 3K03, 3M03, 3N03, 3NN3, 3P03, 3W03, 4A03, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03; GEOLOGY 4C03, 4D03, 4S03

**COURSE LIST 2**
BIOLOGY 3F03, 3R03, 3SS3, 3TT3, 4A03, 4AA3, 4J03, 4Y03, ENGSOCY 3Z03

**COURSE LIST 3**
BIOLOGY 2D03, 2E03, GEOLOGY 2C03, 2K03

**REQUIREMENTS**
120 units total (Level I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**
30 units  (See Admission above)

**LEVEL II: 30 UNITS**
9 units  BIOCHEM 2EE3, BIOLOGY 2F03, CHEM 2D03
12 units  GEOG 2F03, 2N03, 2T03, 2W03
9 units  Electives
(For students entering Level II in 1995-96) if not completed: ENVIR SC 1G03, 1H03

**LEVEL III: 30 UNITS**
18 units  GEOG 3C03, 3E03, 3J03, 3K03, 3NN3, 3P03, 3W03, 4A03, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03; GEOLOGY 4C03, 4D03, 4S03
9 units  from Course Lists 2 and 3 (see above)
3 units  from Course Lists 2 and 3 (see above)
6 units  Electives

**LEVEL IV: 30 UNITS**
6 units  GEOG 4V6
9 units  from Course Lists 2 and 3 (see above)
9 units  from Level IV courses from Course Lists 1 and 2 (see above)
6 units  Electives

Honours Geography and Environmental Science Co-op (B.Sc.)

(2244)

**ADMISSION**
Enrolment in this program is limited to a maximum of 10 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II Honours Geography and Environmental Science with a Cumulative Average of at least 6.0.

Information about the program and the selection procedure may be obtained from the Chair of the Committee of Instruction and will be explained in the month of February in an Information Session.

**NOTES**
1. This is a five-year co-op programme which includes three four-month work terms which must be spent in placements related to Environmental Science. A senior thesis will be completed as part of Level IV.
2. Students must be registered full-time and take a full academic programme.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. No minors or Theme Schools are permitted in the Honours Geography and Environmental Science Co-op programme.
5. At least 9 units of Level IV courses from Course Lists 1 and 2 must be completed after Year 3.

**COURSE LIST 1**
ENVIR SC 4W03; GEOG 3F03, 3G03, 3K03, 3M03, 3N03, 3NN3, 3P03, 3W03, 4A03, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03; GEOLOGY 4C03, 4D03, 4S03

**COURSE LIST 2**
BIOLOGY SFF3, 3R03, 3SS3, 3TT3, 4A03, 4AA3, 4J03, 4Y03, ENGSOCY 3Z03

**COURSE LIST 3**
BIOLOGY 2D03, 2E03, GEOLOGY 2C03, 2K03

**REQUIREMENTS**
129 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**
30 units  from the Natural Sciences I requirements

**LEVEL II**
30 units  from Level II Honours Geography and Environmental Science (B.Sc.)

**YEAR 3**
30 units  from Academic Level III, Terms 1 and 2, plus Work Orientation course, and completion of first four-month work term, Summer Term.

**TERMS 1 AND 2**
18 units  GEOG 3C03, 3E03, 3J03, 3K03, 3NN3, 3P03, 3UU3
3 units  from Course Lists 2 and 3 (see above)
3 units  from Course Lists 1 and 2 (see above)
6 units  Electives

SUMMER
Work Term

**YEAR 4**
24 units  from Academic Studies Level IV, Term 1, completion of second four-month work term, Term 2, plus senior thesis, Summer Term.

**TERM 1**
3 units  GEOG 4CC3
3 units  from Course Lists 2 and 3 (see above)
6 units  from Course Lists 1 and 2 (see above) (At least nine units of Level IV courses from Course Lists 1 and 2 must be completed after Year 3)
3 units  Electives

**TERM 2**
Work Term

**SUMMER**
9 units  GEOG 4B09

**YEAR 5**
15 units  from Academic Level IV, Term 2, and completion of third four-month work term, Term 1.

**TERM 1**
Work Term

**TERM 2**
6 units  from Course Lists 2 and 3 (see above)
6 units  from Course Lists 1 and 2 (see above)
3 units  Electives

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Honours Geography and Geology (B.Sc.) {2241250}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
6 units CHEM 1A03, 1AA3
6 units ENVIR SC 1G03, 1H03
3 units PHYSICS 1B03 (or 1C03)
3 units from Level I Courses Lists 1, 3, 6, 7
6 units from Level I Course Lists 1, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00
ENVIR SC 1B03 must be completed by the end of Level II and is recommended in Level I.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and a grade of C+ in each of ENVIR SC 1G03, 1H03.

NOTES
1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. Students must take GEOLOGY 3S03 in Level III or IV when offered.

COURSE LIST 1
GEOG 4A03, 4C03, 4CC3, 4D03, 4E03, 4K03, 4K33, 4NN3, 4P03, 4Q03, 4R03, 4W03

COURSE LIST 2
All Level IV Geology courses

COURSE LIST 3
GEOG 3C03, 3F03, 3I03, 3K03, 3L03, 3N03, 3NN3, 3P03, 3U03, 3UU3, 3W03

COURSE LIST 4
All Level III Geology courses

REQUIREMENTS
120-123 units total (Levels I to IV), of which no more than 48 units may be Level I courses.

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
6 units GEOG 2N03, 2T03
6 units GEOG 2F03, 2W03
15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
3 units from Science, Engineering

(For students entering Level II in 1997-98) If CHEM 1A06 not completed, then students must take CHEM 1A03, 1AA3

(For students entering Level II in 1998-99) If not completed: ENVIR SC 1B03

LEVEL III: 30 UNITS
9 units GEOG 3E03, 3M03, 3O03
3 units from GEOG 3F03, 3N03, 3P03, 3U03, 3UU3, 3W03
6 units GEOLOGY 3C03, 3F03
3 units from GEOLOGY 2I03, 2J03
3 units Electives, excluding Geography, Geology
6 units Electives

LEVEL IV: 30 UNITS
6 units from Course List 1 (see above)
6 units from Course List 2 (see above)
9 units from Course Lists 1, 2, 3 and 4 (see above)
9 units Electives

B.Sc. Three-Level Degree

A three-level programme with a Geography orientation is available through the B.Sc. in Earth Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

Minor in Geography
6 units from Level I Geography, ENVIR SC 1B03, 1G03, 1H03
18 units from Level II, III, IV Geography courses, including at least six units of Level III, IV courses

No more than six units may come from GEOG 2C03, 2E03, 2P03, 3JJ3 and 3F03. It is possible for a student to complete this Minor through evening and summer study.

DEPARTMENT OF GEOLOGY

Honours Chemistry and Geology
(See Department of Chemistry)

Honours Geography and Geology (B.Sc.)
(See Department of Geography)

Honours Geography and Geology (B.A.)
(See Faculty of Social Sciences, Department of Geography)

Honours Geography
(Complementary Studies Option)

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
6 units CHEM 1A03, 1AA3
3 units ENVIR SC 1G03
3 units PHYSICS 1B03 (or 1C03)
3 units from ENVIR SC 1B03, 1H03
3 units from Level I Course Lists 1, 3, 6, 7
6 units from Level I Course Lists 1, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00
ENVIR SC 1B03 and 1H03 must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and a grade of C+ in ENVIR SC 1G03.

NOTES
1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. In some cases there are Level II (and III) prerequisites for Level III and (Level IV) courses. These should be considered when choosing your Level II (III) programme.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses.

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
6 units from the Faculty of Humanities and/or the Department of Religious Studies
12 units Electives, excluding Geography. The election of GEOG 2N03 is strongly recommended.

(For students entering Level II in 1998-99) If not completed: ENVIR SC 1B03, 1H03

LEVEL III: 30 UNITS
12 units from Level III, IV Geography
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Geography
3 units Electives

LEVEL IV: 30 UNITS
6 units from the Science Inquiry Course List
15 units from Level III, IV Geography
6 units from Level III, IV courses, excluding Geography
3 units Electives
Honours Geology (Specialist Option) {2250}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
6 units CHEM 1A03, 1AA3
3 units ENVIR SC 1G03
3 units PHYSICS 1B03 (or 1C03)
3 units from ENVIR SC 1B03, 1H03
3 units from Level I Course Lists 1, 3, 6, 7
6 units from Level I Course Lists 1, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

Both ENVIR SC 1B03 and 1H03 must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADS:
A Cumulative Average of 5.0 and a grade of C+ in ENVIR SC 1G03.

NOTES
1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. Students must take GEOLOGY 4M03 in Level III or IV.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
3 units CHEM 2R03
3 units GEOG 2N03
15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
6 units GEOLOGY 2I03, 2J03
3 units Electives
(For students entering Level II in 1998-99) If not completed: ENVIR SC 1B03, 1H03

LEVEL III: 30 UNITS
6 units GEOLOGY 3C03, 3F03
6 units GEOLOGY 3J03, 3Q03
3 units GEOG 3N03
3 units Electives, excluding Geology
12 units Electives

LEVEL IV: 30 UNITS
3 units GEOLOGY 4T03
15 units from Level IV Geology
12 units Electives
If not completed: GEOLOGY 4M03

Honours Geology and Physics {2250440}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units ENVIR SC 1G03
6 units PHYSICS 1B03 (or 1C03), 1BA3 (or 1BB3)
3 units MATH 1B03
6 units from Level I Course Lists 1, 3, 4, 6, 8, 9
1 course SCIENCE 1A00

ENVIR SC 1H03 is strongly recommended in Level I

MINIMUM AVERAGES/GRADS:
A Cumulative Average of 5.0, a grade of C+ in ENVIR SC 1G03, an average of 6.0 in PHYSICS 1B03 (or 1C03) 1BA3 (or 1BB3), and an average of 6.0 in 6 units from MATH 1A03, 1AA3, 1BB3.

NOTES
1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. GEOLOGY 3A03 and 3B03 must be completed but are offered in alternate years. These courses should be taken when they are offered.
3. A minor in Astronomy is not permitted in the Honours Geology and Physics programme.

REQUIREMENTS
124-125 units total (Levels I to IV), of which no more than 48 units may not be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 33 UNITS
15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
3 units from GEOLOGY 2I03, PHYSICS 2I03
3 units MATH 2A03
3 units from MATH 2C03, 2D03
9 units PHYSICS 2B06, 2K03

LEVEL III: 30-31 UNITS
3 units GEOLOGY 3C03
3 units from GEOLOGY 3A03, 3B03
3 units GEOLOGY 3F03
6 units MATH 3C03, 3D03
4-6 units from PHYSICS 2M04, CHEM 2P06
6 units PHYSICS 3M03, 3MM3
3-6 units Electives

LEVEL IV: 31 UNITS
3 units GEOLOGY 4T03
3 units from GEOLOGY 3A03, 3B03
7 units PHYSICS 4B04, 4K03
9 units from Level III, IV Astronomy, Geology, Physics
9 units Electives

B.Sc. Three-Level Degree
A three-level programme with a Geology orientation is available through the B.Sc. in Earth Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

Minor in Geology
1 course from ENVIR SC 1A05, 1G03, GEOLOGY 1C03
18-21 units from Level II, III and IV Geology courses, including at least six units from Level III, IV Geology courses.
An emphasis on environmental geology can be obtained by selection of GEOLOGY 2K03, 4C03, 4D03, 4I03, and 4W03.

MATERIALS SCIENCE AND ENGINEERING

Honours Materials Science (Specialist Option) {2360}

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units COMP SCI 1MC3
3 units PHYSICS 1B03 (or 1C03), 1BA3 (or 1BB3)
3 units MATH 1B03
3 units from Level I Course Lists 1, 3, 4, 6, 8, 9
1 course SCIENCE 1A00

PHYSICS 1BA3 is recommended.

MINIMUM AVERAGES/GRADS:
A Cumulative Average of 5.0 and a grade of at least C+ in each of CHEM 1A03, 1AA3, MATH 1AA3.

OR
Completion of the Engineering I requirements, including:
3 units CHEM 1E03
8 units ENGINEER 1A00, 1C04, 1D04
5 units MATH 1H05
6 units MATH 1N03, 1NN3
6 units PHYSICS 1D03, 1E03
6 units Approved complementary studies electives

MINIMUM AVERAGES/GRADS:
A Cumulative Average of at least 4.0
Honours Arts & Science and Mathematics  
(B.Arts Sc.; See Arts & Science programme)

Honours Mathematics (Specialist Option)  
(Complementary Studies Option) {2320}

ADMISSION
Completion of any Level I programme, including:
9 units MATH 1A03, 1A3, 1B03
21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1A03, 1B03.

NOTES
1. By electing STATS 2D03 and STATS 2MB3 in Level II of this programme, a student can also complete Level II Honours Statistics (Specialist Option) or Level II Honours Mathematics and Statistics (Specialist Option).
2. A minor in Statistics is not permitted in the Honours Mathematics (Specialist Option) programme.

COURSE LIST 1
MATH 2E03, STATS 2D03, 2MA3, 2MB3

COURSE LIST 2
All Level III and IV Mathematics and Statistics courses

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 34 UNITS
6 units MATH 2A03, 2B03
7 units ENGINEER 2003 (unless MATLS 1A03 already taken), 2P04
11 units MATLS 2B03, 2D03, 2H03, 2X02
6 units PHYSICS 2B06

LEVEL III: 32-33 UNITS
4 units CHEM ENG 2A04
13 units MATLS 3E04, 3I05, 3T04
3 units MATH 3I03
3 units from STATS 3I03, 3Y03
3 units from PHYSICS 3O03, 3M03
6-7 units Electives

LEVEL IV: 29-30 UNITS
8 units MATLS 4A02, 4K04, 4L02
15-16 units from the Course List (see above)
6 units Electives, excluding Astronomy, Chemistry, Computer Science, Engineering, Engineering Physics, Materials, Mathematics, Physics, Statistics

Honours in Mathematics Processings
3 units from ENGINEER 2003, MATLS 1A03
1 course from CHEM ENG 2A04, MATLS 3A03
11 units MATLS 2X02, 3I05, 3T04
6 units from MATLS 2B06, 2B03, 2D03

NOTE
In order to ocututte prerequisite requirements, at least 6 units of appropriate Level II Mathematics must be taken.

Honours in Mathematics Properties
3 units from ENGINEER 2003, MATLS 1A03
1 course from CHEM ENG 2A04, MATLS 3A03
11 units MATLS 2X02, 3I05, 3T04
6 units from MATLS 2B06, 2B03, 2D03

NOTE
In order to meet prerequisite requirements, at least 6 units of appropriate Level II Mathematics must be taken.

DEPARTMENT OF MATHEMATICS AND STATISTICS

Honours Biology and Mathematics  
(See Department of Biology)

Honours Chemistry and Mathematics  
(See Department of Chemistry)

Honours Computer Science and Mathematics  
(See Department of Computer Science and Systems)

Honours Computer Science and Statistics  
(See Department of Computer Science and Systems)

Honours Economics and Mathematics  
(B.A.; See Faculty of Social Sciences, Department of Economics)

Honours Philosophy and Mathematics  
(B.A.; See Faculty of Humanities, Department of Philosophy)
**Honours Mathematics and Physics {2320440}**

**ADMISSION**

Completion of the Natural Sciences I requirements, including:
- 6 units MATH 1A03, 1A3
- 6 units CHEM 1A03, 1A3
- 6 units PHYSICS 1B03 (or 1C03), 1B3 (or 1BB3)
- 3 units MATH 1B03

3 units from Level I Course Lists 1, 3, 4, 6
6 units from Level I Course Lists 1, 3, 4, 6, 8, 9

COMP SCI 1MC3 or 1SA3 is recommended in Level I.

**MINIMUM AVERAGES/GRADES:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1A03, 1B03, PHYSICS 1B03 (or 1C03), 1B3 (or 1BB3)

**NOTES**

1. Students who complete Level II of Honours Mathematics and Physics are eligible to proceed to any Level III Honours (Specialist Option) programme in Mathematics or Physics.

2. PHYSICS 3C03 is listed in Level III but is offered in alternate years, and may be taken in Level IV.

3. A minor in Astronomy or Statistics is not permitted in the Honours Mathematics and Physics programme.

**COURSE LIST**

- COMP SCI 2MC3, 2MD3, 2SC3; MATH 2E03; STATS 2D03, 2MB3
- All Level III and IV Astronomy courses; all Level III and IV Mathematics and Statistics courses; PHYSICS 4J04, all Level III and IV Physics courses except PHYSICS 3G03, 3S03, 3T03, 4R03, 4T03

**REQUIREMENTS**

121-124 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**

- 30 units (See Admission above.)

**LEVEL II: 31 UNITS**

- 12 units MATH 2A03, 2AA3, 2C03, 2R03
- 3 units from MATH 2S03, 2T03
- 16 units PHYSICS 2B06, 2H04, 2K03, 2L03

**LEVEL III: 30-32 UNITS**

- 9 units MATH 3A03, 3F03, 3X03
- 12-13 units PHYSICS 3C03, 3K03, (or 3K03), 3M03, 3MM3
- 3-4 units from the Course List (see above)
- 6 units Electives

**LEVEL IV: 30-31 UNITS**

- 6 units MATH 3AA3, 4X03
- 4 units PHYSICS 4R04
- 14-15 units from the Course List (see above)
- 6 units Electives

**Honours Mathematics and Statistics {2320543}**

(Complementary Studies Option)

**ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1A3, 1B03
- 21 units Level I courses to complete a Level I programme

**MINIMUM AVERAGES/GRADES:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**NOTES**

1. Students contemplating graduate studies in Mathematics or Statistics should consider Honours Mathematics and Statistics (Specialist Option).

2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These should be considered when choosing your Level II (and III) programme.

**REQUIREMENTS**

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**

- 30 units (See Admission above.)
LEVEL III: 30 UNITS
6 units STATS 3D06
6 units from MATH 3A03, 3E03, 3X03
3 units from Level III Mathematics and Statistics, MATH 2K03
3 units from HUMAN 2C03, MATH 2E03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Mathematics, Statistics

LEVEL IV: 30 UNITS
(For students entering Level IV in 1997-98)
6 units from the Science Inquiry Course List
6 units from Level III, IV Mathematics courses
6 units from Level III, IV Statistics courses
6 units from Level III, IV courses, excluding Mathematics, Statistics
6 units Electives

LEVEL IV: 30 UNITS
(Beginning in 1998-99)
6 units from the Science Inquiry Course List
15 units from Level III, IV Mathematics and Statistics courses, MATH 2K03
3 units from Level III, IV courses, excluding Mathematics, Statistics
6 units Electives

Honours Mathematics and Statistics (2320542)
(Specialist Option)

ADMISSION
Completion of any Level I programme, including:
9 units MATH 1A03, 1AA3, 1B03
21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1A03, 1AA3, 1B03.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be from Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units MATH 2A03, 2AA3, 2C03, 2R03
3 units from MATH 2S03, 2T03
6 units STATS 2D03, 2MB3
9 units Electives
If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS
15 units MATH 3A03, 3E03, 3X03; STATS 3D06
3 units from MATH 3AA3, 3EE3
6 units from Level III, IV Statistics
6 units Electives

LEVEL IV: 30 UNITS
9 units MATH 4X03; STATS 4D03, 4M03
3 units from MATH 3AA3, 3EE3 (whichever not completed)
6 units from Level III, IV Mathematics
6 units from Level III, IV Statistics
6 units Electives

Honours Statistics (2543)
(Complementary Studies Option)

NOTE
The Honours Statistics (Complementary Studies Option) programme is being phased out. Level III will be last offered in September 1997. Students who entered the programme prior to September 1997 may follow the programme as outlined in the 1996-97 Undergraduate Calendar or alternatively may apply for transfer to the Honours Mathematics and Statistics (Complementary Studies Option) programme.

Honours Statistics (Specialist Option) (2542)

ADMISSION
Completion of any Level I programme, including:
9 units MATH 1A03, 1AA3, 1B03
21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1A03, 1B03.

NOTE
A minor in Mathematics is not permitted in the Honours Statistics (Specialist Option) programme.

COURSE LIST 1
COMP SCI 2MC3, 2MD3, 2ME3, 2SB3, 2SC3; MATH 2E03

COURSE LIST 2
All Level III and IV Statistics courses

COURSE LIST 3
COMP SCI 3IA3, 3SC3, 3SD3; MATH 3E03, 3EE3, 3F03, 3FF3, 3G03, 3R03, 4A06, 4C03, 4J03, 4K03, 4Q03, 4QQ3, 4RR3, 4W03, MATH 4X03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units MATH 2A03, 2AA3, 2C03, 2R03
3 units from MATH 2S03, 2T03
6 units STATS 2D03, 2MB3
9 units Electives
If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS
15 units MATH 3A03, 3AA3, 3X03; STATS 3D06
6 units from Course Lists 1, 2 and 3 (see above)
9 units Electives

LEVEL IV: 30 UNITS
6 units from Course Lists 1, 2 and 3 (see above)
9 units Electives

B.Sc. Three-Level Degree
A three-level programme with a Mathematics or Statistics orientation is available through the B.Sc. in Mathematical Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

Minor in Mathematics and Statistics
9 units MATH 1A03, 1AA3, 1B03
18 units from Level II, III, IV Mathematics and Statistics, including at least six units from Level III, IV Mathematics and Statistics

NOTE
It is possible for a student to complete this Minor through evening and summer study.

MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Honours Molecular Biology and Biotechnology (2365)
A Cumulative Average of 3 units

1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction and also draws on the Departments Biology, Biochemistry and Pathology and the McMaster Institute for Molecular Biology and Biotechnology.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0, an average of 6.0 in PSYCH 1A03, 1A3 and a grade of C+ in each of three of CHEM 1A03, 1A3, MATH 1A03, STATS 1CC3, PHYSICS 1B03 (or 1C03).

NOTES
1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction and also draws on the Departments Biology, Biochemistry and Pathology and the McMaster Institute for Molecular Biology and Biotechnology.

REQUIREMENTS: 120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 30 UNITS
21 units BIOCHEM 2A06; BIOLOGY 2B03, 2C03; CHEM 2D06, 2E03
3 units from BIOLOGY 2D03, 2E03, CHEM 2N03
6 units Electives. Electives BIOLOGY 2D03, 2E03, CHEM 2N03 are recommended.

LEVEL III: 30 UNITS
3 units from BIOLOGY 3H03, BIOCHEM 3B03
6 units BIOCHEM 3B03, 3L03
15 units BIOLOGY 3E03; 3NN3, 3O03, 3V03; CHEM 3F03
6 units Electives

LEVEL IV: 30 UNITS
9-3 units from BIOCHEM 4B06, 4G03, 4L03, 4P03; BIOLOGY 4C09, 4F06
6 units from BIOCHEM 4D03, BIOCHEM 4E03
3 units from BIOCHEM 3C03, 4I03, 4M03, 4Q03
3 units from BIOLOGY 3C03, 3X03, 4I13, 4M03, 4P03, 4PP3, 4R03, 4V03
3 units from MOL BIOL 4F03, 4H03, 4J03
3-9 units Electives

BIOL 4M03 is highly recommended.

DEPARTMENT OF PHYSICS AND ASTRONOMY

NOTE
Students in all Physics programmes are expected to have basic skills in the use of personal computers, word processing and spreadsheet software, and some familiarity with a programming language such as Basic, C, Fortran or Pascal. COMP SCI 1SA3 is recommended for students without those skills.

Honours Chemistry and Physics
(See Department of Chemistry)

Honours Geology and Physics
(See Department of Geology)

Honours Mathematics and Physics
(See Department of Mathematics and Statistics)

Honours Arts & Science and Physics
(B.Arts Sc.; See Arts & Science programme)

Honours Physics
(Complementary Studies Option)

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1A3
3 units COMP SCI 1MC3, 1MD3
6 units PHYSICS 1B03 (or 1C03)
6 units from Level I Course Lists 1, 2, 4, 5, 7, 8, 9
1 course COMP SCI 1A00
MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0, an average of 6.0 in MATH 1A03, 1A3, 1B03 and an average of 6.0 in 6 units from PHYSICS 1B03 (or 1C03), 1B3A (or 1B3B).

NOTES
1. The Physics Department considers Honours Physics (Specialist Option) to be more appropriate for graduate studies in Physics.
2. A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Physics (Complementary Studies Option) programme.

REQUIREMENTS
123-125 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 31 UNITS
13 units PHYSICS 2B06, 2K03, 2H04
6 units MATH 2A03, 2K3
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives

LEVEL III: 31-32 UNITS
7 units MATH 3C03; PHYSICS 3H04
3 units from PHYSICS 3C03, 3M03
6-7 units from Level III Physics, Level III Astronomy, MATH 3D03
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Physics, Astronomy

LEVEL IV: 31-32 UNITS
3 units PHYSICS 4A03
3 units from the Science Inquiry Course List
4 units PHYSICS 4J04
9-10 units from Level III, IV Physics (excluding 4Z13, 4Z13), Level III Astronomy
6 units from Level III, IV courses, excluding Physics, Astronomy
6 units Electives

Honours Physics (Specialist Option) [2440]

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1A3
6 units CHEM 1A03, 1A3
6 units from PHYSICS 1B03 (or 1C03), 1B3A (or 1B3B)
3 units MATH 1B03
3 units from Level I Course Lists 1, 3, 4, 6
6 units from Level I Course Lists 1, 3, 4, 6, 8, 9
1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0, an average of 6.0 in MATH 1A03, 1A3, 1B03 and an average of 6.0 in 6 units from PHYSICS 1B03 (or 1C03), 1B3A (or 1B3B).

NOTES
1. Students who have completed Level II of Honours Physics (Specialist Option) with a Cumulative Average of 6.0 are eligible to proceed to Level III of Honours Physics (Specialist Option), Honours Physics (Theory Option), or Honours Astrophysics (with completion of either ASTRON 1F03 or 2E03). They may also be considered for admission to Level III of Honours Materials Science (Specialist Option), preferably if MATLS 1A03 or ENGINEER 2003 has been completed in Level II.
2. Students interested in applied physics should include PHYSICS 3B06, 4D06 in their programme.
3. Students transferring to this programme who have credit in PHYSICS 2G03 must replace it with PHYSICS 2K03 and 2L03. MATH 2003 does not have to be replaced with MATH 2C03, but MATH 2AA3 must be completed.
4. A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Physics (Specialist Option) programme.

REQUIREMENTS
124-125 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above)

LEVEL II: 31 UNITS
9 units MATH 2A03, 2A3, 2C03
16 units PHYSICS 2B06, 2H04, 2K03, 2L03
6 units Electives, excluding Physics

LEVEL III: 31-32 UNITS
6 units MATH 3C03, 3D03
3-6 units from PHYSICS 3B03, 3B03, 3W06 (See Note 2 above)
16-17 units PHYSICS 3H04, 3K04 (or 3K03), 3M03, 3MM3, 3N03
3-6 units Electives

LEVEL IV: 32 UNITS
14 units PHYSICS 4A03, 4B04, 4F03, 4J04
3-6 units from PHYSICS 4A03, 4D03, 4D06 (See Note 2 above.)
3 units from PHYSICS 3A03, 3C03, 4E03, 4G03, 4K03; ASTRON 3X03, 3Y03
3-6 units from Level III, IV Science
6 units Electives (See Note 2 above.)

Honours Physics (Theory Option) [2441]

ADMISSION
Completion of Level II Honours Physics (Specialist Option) or Level II Honours Mathematics and Physics with a Cumulative Average of at least 6.0.

NOTES
1. PHYSICS 3C03 must be completed but is offered in alternate years. The requirement is listed in Level III but the course should be taken when offered.
2. Students who opt for PHYSICS 3A03 as part of the requirement for Level IV should note that it is offered in alternate years. They should take it when offered.
3. A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Physics (Theory Option) programme.

REQUIREMENTS
122-127 units total (Levels I to IV) of which no more than 48 units may be Level I courses

LEVEL I
30 units from the Natural Sciences I requirements

LEVEL II
31-33 units from either the Honours Physics (Specialist Option), Level II or the Honours Mathematics and Physics Level II requirements

LEVEL III: 31-32 UNITS
9 units MATH 3C03, 3D03, 3Q03
3 units PHYSICS 3C03 (See Note 1 above.)
16-17 units PHYSICS 3H04, 3K04 (or 3K03), 3M03, 3MM3, 3N03
3 units Electives (See Note 2 above.)

LEVEL IV: 31-32 UNITS
3 units from MATH 4B03, 4V03, PHYSICS 3A03. (See Note 2 above.)
10 units PHYSICS 4A03, 4B04, 4F03
9 units from ASTRON 3X03, 3Y03, PHYSICS 3A03, 4E03, 4G03, 4K03
6-7 units from Level III, IV Science
3 units Electives (See Note 1 above.)

Honours Astrophysics [2444]

ADMISSION
Completion of Level II Honours Physics (Specialist Option), including either ASTRON 1F03 or 2E03, with a Cumulative Average of at least 6.0.

NOTES
1. ASTRON 3X03 and 3Y03 must be completed but are offered in alternate years. These courses should be taken when they are offered.
LEVEL IV: 30 UNITS
3 units BIOLOGY 4U03
3 units from ENG PHYS 3X03, ENGINEER 4X03
12 units PHYSICS 4A03, 4D06, 4E03
12 units PHYSICS 4K03, 4R06, 4T03

Honours Medical and Health Physics (2443)

ADMISSION:
Enrolment in this programme is limited to a maximum of 10 students per year. Selection is based on academic and other achievements (see below) but requires, as a minimum, completion of Level II Honours Medical and Health Physics with a Cumulative Average of at least 6.0.

Information about the programme and the selection procedure may be obtained from the Chair of the Committee of Instruction and will be explained in the month of February in an Information Session.

NOTES
1. This is a five-year co-op programme which includes two eight-month work terms which must be spent in Medical or Health Physics related placements.
2. Students must be registered full-time and take a full academic programme.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. At least one of ENG PHYS 3X03 or ENGINEER 4X03 must be completed and the requirement is listed in Year 4, Term 1, but may be taken in Term 2 of either Year 4 or Year 5.
5. No minors or Theme Schools are permitted in the Honours Medical and Health Physics (Co-op) programme.

REQUIREMENTS
120-121 units total (Levels I to IV) of which no more than 48 units may be Level I courses

LEVEL I
30 units from the Natural Sciences I requirements

LEVEL II
31 units from the Honours Physics (Specialist Option) Level II requirements, including one of ASTRON 1F03, 2E03

LEVEL III: 31-32 UNITS
3 units from ASTRON 3X03, 3Y03
3-6 units from PHYSICS 3A03, 3B03, 3C03
16-17 units PHYSICS 3H04, 3K04 (or 3K03), 3M03, 3MM3, 3N03
6 units MATH 3C03, 3D03
0-3 units Electives

LEVEL IV: 31 UNITS
13 units PHYSICS 4A03, 4B04, 4F03, 4G03
3 units from ASTRON 3X03, 3Y03
6 units from PHYSICS 3A03, 3C03, 4E03, 4K03
3-6 units from PHYSICS 4D03, 4D05, 4D06
3 units from Level III, IV Science
0-3 units Electives

Honours Medical and Health Physics (2443)

ADMISSION:
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03; 1AA3
3 units BIOLOGY 1A03
6 units CHEM 1A03, 1AA3
3 units PHYSICS 1B03 (1C03)
3 units MATH 1B03
3 units from BIOLOGY 1AA3, PHYSICS 1BA3 (or 1BB3)
6 units from Level I Course Lists 1, 3, 4, 5, 6, 8, 9
1 course SCIENCE 1A00

BIOLOGY 1AA3 and PHYSICS 1BA3 (or 1BB3) must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 5.0, an average of 6.0 in MATH 1A03, 1AA3, 1B03 and a grade of C+ in PHYSICS 1B03 (or 1C03)

NOTE
A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Medical and Health Physics programme.

REQUIREMENTS
122 units total (Levels I to IV), of which no more than 48 units may be from Level I courses

LEVEL I:
30 units (See Admission above)

LEVEL II: 31 UNITS
3 units BIOCHEM 2EE3
1 course from CHEM 2D03, 2O06
6 units MATH 2A03, 2E03
3 units from MATH 2C03, 2C03
13 units PHYSICS 2B06, 2K03, 2H04
0-3 units Electives. PHYSICS 2C03 is recommended.
(For students entering Level II in 1997-98) If not completed: MATH 1B03, BIOLOGY 1A03, 1AA3 (if 1A06 not completed)
(For students entering Level II in 1998-99) If not completed: BIOLOGY 1AA3, PHYSICS 1BA3 (or 1BB3)

LEVEL III: 31 UNITS
9 units BIOCHEM 2B03; MATH 3C03, 3D03
19 units PHYSICS 3H04, 3M03, 3MM3, 3N03, 3R03, 3T03
3 units Electives. BIOCHEM 3G03 is recommended
(for students who entered Level II in 1996-97) If BIOCHEM 2E03 was not completed in Level II, then students must take BIOCHEM 2EE3

YEAR 3
17 units from Academic Level III, Term 1, plus Work Orientation course, and completion of the first work term or eight months duration, Term 2 and Summer term.

TERM 1
3 units MATH 3C03
11 units PHYSICS 3HA2, 3N03, 3M03, 3T03
3 units Electives
(for students who entered Level II in 1996-97): If BIOCHEM 2E03 not completed, then BIOCHEM 2EE3 must be taken.
 ➔ Work Orientation Course

TERM 2 AND SUMMER
Work Term

YEAR 4
31 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer term.

TERMS 1 AND 2
6 units BIOLOGY 2B03, 4U03
3 units from ENG PHYS 3X03, ENGINEER 4X03
3 units MATH 3D03
7 units PHYSICS 3I01, 3MM3, 3R03
12 units PHYSICS 4D06, 4R06

SUMMER
Work Term

YEAR 5
12 units from Academic Level IV, Term 2, plus completion of second eight-month work term, Term 1.
TERM 1
Work Term.

TERM 2
6 units PHYSICS 3HB2, 4I01, 4K03
6 units PHYSICS 4E03, 4T03

B.S.C. Three-Level Degree
A three-level programme with a Physics orientation is available through the B.Sc. in Physical Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

Minor in Astronomy
3 units from ASTRON 1F03, 2E03
3-9 units from either one of MATH 2A03, 2A06, 2G03 and one of MATH 2C03, 2D03, or MATH 2N03
1 course from PHYSICS 2A03, 2B06
1 course from PHYSICS 2H03, 2H04, CHEM 2P06, 2R03
3 units from PHYSICS 2D03, 2G03, 2K03
6 units ASTRON 3K03, 3Y03
3 units from PHYSICS 3M03, 3O03, CHEM 3B03

Minor in Physics
6 units from PHYSICS 1A06, 1B06, 1C06, 1B03 (or 1C03), 1B03 (or 1C03)
18 units from Levels II, III, IV Physics including at least six units from Level III, IV Physics

NOTE
Students with credit in PHYSICS 2H03 can complete a Minor in Physics without any Mathematics beyond Level I. Otherwise MATH 2A03 must be taken. However, more flexibility is possible if one of MATH 2C03, 2D03 is completed. Additional flexibility is possible if PHYSICS 2B06 is completed.

DEPARTMENT OF PSYCHOLOGY

Honours Psychology (B.A.)
(See Faculty of Social Sciences, Department of Psychology)

Major Psychology (B.A.)
(See Faculty of Social Sciences, Department of Psychology)

B.A. in Psychology
(See Faculty of Social Sciences, Department of Psychology)

Honours Biology and Psychology
(B.Sc.; See Department of Biology)

Honours Arts & Science and Psychology
(B.Arts Sc.; See Arts & Science programme)

Honours Psychology (B.Sc.)
(Complementary Studies Option)  

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
3 units BIOLOGY 1A03
3 units CHEM 1A03
3 units PHYSICS 1B03 (or 1C03)
6 units PSYCH 1A03, 1AA3
3 units from Level I Course Lists 1, 2, 3, 4, 5, 7, 8
6 units from Level I Course Lists 1, 2, 3, 4, 5, 7, 8, 9
1 course SCIENCE 1A00

3 units CHEM 1A03
3 units PHYSICS 1B03 (or 1C03)
6 units PSYCH 1A03, 1AA3
3 units from Level I Course Lists 1, 2, 3, 4, 5, 7, 8
6 units from Level I Course Lists 1, 2, 3, 4, 5, 7, 8, 9
1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and an average of 6.0 in PSYCH 1A03, 1AA3.

NOTES
1. In Level III or IV a student must complete at least one laboratory course in Psychology (see the Course List). Enrolment is limited in the laboratory courses.
2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These must be considered when choosing your Level II (and III) programme.

COURSE LIST
PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3SO3, 3V03, 4G03, 4Q03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
3 units PSYCH 2R03
9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
3 units HUMAN 2C03
6 units from the Faculty of Humanities and/or the Department of Religious Studies
3 units Electives, excluding Psychology
6 units Electives

LEVEL III: 30 UNITS
3 units from PSYCH 2E03, 2F03, 2H03, 2T03, or Level III Psychology
12 units from Level III Psychology, including one course from the Course List (See Note 1 above.)
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Psychology
3 units Electives

LEVEL IV: 30 UNITS
6 units from the Science Inquiry Course List
15 units from Level III, IV Psychology
6 units from Level III, IV courses, excluding Psychology
3 units Electives
If not completed: One course from the Course List (See Note 1 above.)

Honours Psychology (B.Sc.) (Specialist Option)  

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
3 units BIOLOGY 1A03
3 units CHEM 1A03
3 units PHYSICS 1B03 (or 1C03)
6 units PSYCH 1A03, 1AA3
3 units from Level I Course Lists 1, 2, 3, 4, 5, 7, 8
6 units from Level I Course Lists 1, 2, 3, 4, 5, 7, 8, 9
1 course SCIENCE 1A00
Students will also be considered for admission if they have completed MATH 1A03 instead of STATS 1CC3. However, STATS 1CC3 is strongly recommended and must be completed by the end of term I in Level II.

MATH 1B03 is strongly recommended for students intending to pursue graduate work in Psychology.

**MINIMUM AVERAGES/GRADES:**
A Cumulative Average of 5.0 and an average of 6.0 in PSYCH 1A03, 1AA3.

**NOTES**
1. In Level III or IV a student must complete at least one laboratory course in Psychology (see the Course List). Enrolment is limited in the laboratory courses.
2. Completion of MATH 1A03, CHEM 1A03 and PHYSICS 1B03 (or 1B03) by the end of Level II is recommended.

**COURSE LIST**

**LEVEL I**
- 30 units (See Admission above.)

**LEVEL II:** 30 UNITS
- 3 units PSYCH 2RR3
- 9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
- 9 units from Levels I and II Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics, Physics
- 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
- 3 units Electives

**LEVEL III:** 30 UNITS
- 3 units from PSYCH 2E03, 2F03, 2H03, 2T03, or Level III Psychology
- 15 units from Level II Psychology, including one course from the Course List (See Note 1 above.)
- 6 units from Level III, IV Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics, Physics
- 6 units Electives

**LEVEL IV:** 30 UNITS
- 6 units PSYCH 4D06
- 12 units from Levels III, IV Psychology
- 6 units Electives, excluding Psychology
- 6 units Electives

If not completed: one course from the Course List (See Note 1 above.)

**B.Sc. Three-Level Degree**
A three-level programme with a Psychology orientation is available through the B.Sc. in Life Science which is listed under the heading Three-Level B.Sc. Programmes in this section.

**Minor in Psychology**
- 6 units from PSYCH 1A06, 1A03, 1AA3
- 18 units from Level II, III Psychology courses, including at least six units from Level III Psychology courses

It is possible for a student to complete this Minor through evening and summer study.

When choosing Level II courses students should consider the prerequisite requirements for the various Level III courses.

**SCIENCE**

**Honours Science (Complementary Studies Option)**

**NOTES**
1. The Honours Science (Complementary Studies Option) programme has been revised (see Honours Science (Complementary Studies Option) programme Streams A, B, C, D outlined below).

2. Students currently registered in Levels II, III or IV of this programme should follow the requirements as outlined in the 1995-96 Calendar or alternatively may apply for transfer to the 1997-98 programme outlined below.

**Honours Science (Complementary Studies Option)**

**STREAM A**
- 3 units MATH 1A03
- 12 units from 4 different course lists from Level I Course Lists 1 to 7 (see below for courses required for each stream)
- 6 units from Level I Course Lists 1 to 8
- 6 units from Level I Course Lists 1 to 9
- 1 course SCIENCE 1A00

One of ENVIR SC 1B03, 1G03, 1H03 must be completed by the end of Level II.

**MINIMUM AVERAGES/GRADES:**
A Cumulative Average of 5.0 and one of:
- for Stream A: a grade of C+ in each of ENVIR SC 1B03, 1G03, 1H03
- for Stream B: a grade of C+ in one of BIOLOGY 1AA3, PSYCH 1AA3
- for Stream C: a grade of C+ in each of two of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03
- for Stream D: a grade of C+ in one of CHEM 1AA3, PHYSICS 1BA3 (or 1BB3)

**MINIMUM AVERAGES/GRADES:**
A Cumulative Average of 5.0 and an average of 6.0 in PSYCH 1A03, 1AA3.

**NOTES**
1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction.
2. Initial counselling for this programme may be obtained from the Chair of the Committee of Instruction.
3. There are Level II (and III) prerequisites for many Level III and IV courses. These should be considered when choosing your Level II programme.
4. Minors within the Faculty of Science are not permitted in the Honours Science (Complementary Studies Option) programme.
5. Students in this programme must choose a stream in Level II and must follow this stream through to completion of the programme. The four possible streams are as follows:
   - **Stream A** Earth Sciences: Geography and Geology
   - **Stream B** Life Sciences: Biology and Psychology
   - **Stream C** Mathematical Sciences: Computer Science, Mathematics, Statistics
   - **Stream D** Physical Sciences: Astronomy, Chemistry and Physics

6. Students who choose Stream A or B must take STATS 1CC3. Students who choose Stream C or D must take MATH 1AA3.

**COURSE LIST A**
All Level II, III and IV Physical Geography*, and Geology courses. *Physical Geography courses are marked with an asterisk in the Geography course listing.

**COURSE LIST B**
- BIOCHEM 2E03, 2EE3, 3BB3, 3C03, 3G03, 3GG3, 3H03, 3N03, 4G03, 4D03, 4E03, 4F03, 4G03, 4Q03, ENGINEER 4X03, ENGS PHYS 3X03, MOL BIOL 4F03, 4H03, PHARMAC 4B03
- All Level II, III and IV Biology courses
- All Level II, III, and IV Psychology courses, except PSYCH 2A03, 2B03, 2C03, 2V03, 3CC3, 3D03, 3DD3, 4D06, 4V03, 4V03

**COURSE LIST C**
All Level II, III and IV Computer Science, Mathematics and Statistics courses


COURSE LIST D
All Level II, III and IV Astronomy, Chemistry and Physics courses

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I:
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units from Level II courses in the selected stream Course List (courses may be chosen from one Course List only)
6 units from Level II courses in any Course List, excluding courses from the selected stream Course List
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives, excluding courses from the selected stream Course List
If not completed for all streams: one of ENVIR SC 1A06, 1B03, 1G03, 1H03, GEOG 1C03, 1G03 GEOLOGY 1C03
If not completed for:
Stream B: BIOLOGY 1A03 and 1AA3 (or 1A06), PSYCH 1A03 and 1AA3 (or 1A06)
Stream C: 9 units from COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03
Stream D: CHEM 1A03 and 1AA3 (or 1A06), MATH 1B03, PHYSICS 1B03 (or 1C03) and 1BA3 (or 1BB3) (or one of 1A05, 1B06, 1C06)

LEVEL III: 30 UNITS
12 units from Level III courses in the selected stream Course List
3 units from Level III courses in any Course List, excluding courses from the selected stream Course List
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding courses from the selected stream Course List

LEVEL IV: 30 UNITS
6 units from the Science Inquiry Course List
12 units from Level III, IV courses in the selected stream Course List
6 units from Level III, IV courses in any Course List, excluding courses from the selected stream Course List
6 units Electives, excluding courses from the selected stream Course List

Honours Science (Environmental Science Option) [2511]

ADMISSION
Completion of Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
3 units BIOLOGY 1A03
6 units CHEM 1A03, 1AA3
6 units ENVIR SC 1B03, 1G03
3 units from Level I Course Lists 3, 5, 6, 7
6 units from Level I Course Lists 1, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00
BIOLOGY 1A03 and ENVIR SC 1H03 must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 5.0 and an average of 6.0 in CHEM 1A03, 1AA3, BIOLOGY 1A03, ENVIR SC 1B03, 1G03.

NOTES
1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction, and involves the Departments of Biochemistry, Biology, Chemistry, Geography and Geology.
2. Initial counselling for this programme may be obtained from the Chair of the Committee of Instruction.

3. There are Level II (and III) prerequisites for many Level III (and IV) courses. These should be considered when choosing your Level II (and III) programme.
4. Minors within the Faculty of Science are not permitted in the Honours Science (Environmental Science Option) programme.
5. The completion of PHYSICS 1B03 (or 1C03), 1BA3 (or 1BB3) is recommended by the end of Level III.

COURSE LIST
BIOLOGY 3E03, 3L03, 3U03, 3UU3, 4A03, 4PP3, 4S03, 4U03, 4Y03; CHEM 1A03, 1AA3, 1B03, 1C03, 1D03, 1G03, 1H03, 1K03, 1L03, 1P03, 1R03, 1S03, 1T03, 1U03, 1V03, 1W03, 1X03, 1Y03; GEOG 1A03, 1B03, 1C03, 1D03, 1E03, 1F03, 1G03, 1H03, 1I03, 1J03, 1K03, 1L03, 1M03, 1N03, 1O03, 1P03, 1Q03, 1R03, 1S03, 1T03, 1U03, 1V03, 1W03, 1X03, 1Y03, 1Z03, 2A03, 2B03, 2C03, 2D03, 2E03, 2F03, 2G03, 2H03, 2I03, 2J03, 2K03, 2L03, 2M03, 2N03, 2O03, 2P03, 2Q03, 2R03, 2S03, 2T03, 2U03, 2V03, 2W03, 2X03, 2Y03, 2Z03, 3A03, 3B03, 3C03, 3D03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3Q03, 3R03, 3S03, 3T03, 3U03, 3V03, 3W03, 3X03, 3Y03, 3Z03, 4A03, 4B03, 4C03, 4D03, 4E03, 4F03, 4G03, 4H03, 4I03, 4J03, 4K03, 4L03, 4M03, 4N03, 4O03, 4P03, 4Q03, 4R03, 4S03, 4T03, 4U03, 4V03, 4W03, 4X03, 4Y03, 4Z03, 5A03, 5B03, 5C03, 5D03, 5E03, 5F03, 5G03, 5H03, 5I03, 5J03, 5K03, 5L03, 5M03, 5N03, 5O03, 5P03, 5Q03, 5R03, 5S03, 5T03, 5U03, 5V03, 5W03, 5X03, 5Y03, 5Z03, 6A03, 6B03, 6C03, 6D03, 6E03, 6F03, 6G03, 6H03, 6I03, 6J03, 6K03, 6L03, 6M03, 6N03, 6O03, 6P03, 6Q03, 6R03, 6S03, 6T03, 6U03, 6V03, 6W03, 6X03, 6Y03, 6Z03, 7A03, 7B03, 7C03, 7D03, 7E03, 7F03, 7G03, 7H03, 7I03, 7J03, 7K03, 7L03, 7M03, 7N03, 7O03, 7P03, 7Q03, 7R03, 7S03, 7T03, 7U03, 7V03, 7W03, 7X03, 7Y03, 7Z03, 8A03, 8B03, 8C03, 8D03, 8E03, 8F03, 8G03, 8H03, 8I03, 8J03, 8K03, 8L03, 8M03, 8N03, 8O03, 8P03, 8Q03, 8R03, 8S03, 8T03, 8U03, 8V03, 8W03, 8X03, 8Y03, 8Z03, 9A03, 9B03, 9C03, 9D03, 9E03, 9F03, 9G03, 9H03, 9I03, 9J03, 9K03, 9L03, 9M03, 9N03, 9O03, 9P03, 9Q03, 9R03, 9S03, 9T03, 9U03, 9V03, 9W03, 9X03, 9Y03, 9Z03

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STATS 1CC3
6 units from ENVIR SC 1B03, 1G03, 1H03
9 units from 3 different course lists from Level I Course Lists 1, 2, 3, 5, 6, 7
3 units from Level I Course Lists 1, 2, 3, 4, 5, 6, 7, 8
6 units from Level I Course Lists 1, 2, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADERS:
A Cumulative Average of 3.5 and a grade C- in one of ENVIR SC 1B03, 1G03, 1H03

NOTES
1. There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II (and III) courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.
2. In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Geography or Geology. Those who do not intend a particular emphasis should obtain counselling from the Department of Geology.
**FACULTY OF SCIENCE**

**COURSE LIST 1**

GEOG 2F03, 2K03, 2L03, 2N03, 2T03, 2W03; all Level II Geology courses

**COURSE LIST 2**

GEOG 3E03, 3F03, 3L03, 3K03, 3M03, 3N03, 3NN3, 3O03, 3P03, 3W03; all Level III Geology courses

**REQUIREMENTS**

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

15 units from Course List 1 (see above)
6 units from the Faculty of Humanities and/or the Department of Religious Studies
3 units HUMAN 2C03
3 units Electives, excluding courses from Course List 1
3 units Electives

**LEVEL III: 30 UNITS**

12 units from Course List 3. No more than six units from Biology may be taken
3 units HUMAN 2H03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
3 units Electives, excluding Biochemistry, Biology, Psychology
6 units Electives, excluding Biology

**B.Sc. in Mathematical Science**

**ADMISSION**

Completion of any Level I programme, including:
6 units MATH 1A03, 1AA3
3 units from COMP SCI 1MC3, MATH 1B03
21 units Level I courses to complete a Level I programme MATH 1B03 must be completed by the end of Level II.

Students wishing Level II Computer Science courses must take both COMP SCI 1MC3 and 1MD3.

**MINIMUM AVERAGES/GRADERS:**

A Cumulative Average of 3.5 and a grade of C- in each of three COMP SCI 1MC3, 1MD3, MATH 1A03, 1AA3, 1B03.

**NOTES**

1. There are Level II prerequisites for many Level III courses; these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.

2. In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Mathematics and Statistics or Computer Science and Systems. Those who do not intend a particular emphasis should obtain counselling from the Department of Mathematics and Statistics.

**COURSE LIST 1**

COMP SCI 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3, 2SB3, 2SC3; MATH 2A03, 2AA3, 2A06, 2B06, 2C05, 2E03, 2G03, 2J06, 2K03, 2L03, 2M03, 2N03, 2P03, 2S03, 2T03; STATS 2D03, 2MD3

**COURSE LIST 2**

All Level III and IV Computer Science, Mathematics and Statistics courses

**REQUIREMENTS**

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

18 units from Course Lists 1 and 2. No more than six units from Biology may be taken
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives, excluding Biochemistry, Biology, Psychology

**LEVEL III: 30 UNITS**

12 units from Course List 3. No more than six units from Biology may be taken
3 units HUMAN 2H03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
3 units Electives, excluding Biochemistry, Biology, Psychology
6 units Electives, excluding Biology

**B.Sc. in Life Science**

**ADMISSION**

Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, STAT 1CC3
3 units BIOLOGY 1A03
3 units CHEM 1A03
3 units PSYCH 1A03
6 units from BIOLOGY 1AA3, CHEM 1AA3, PSYCH 1AA3
3 units from Level I Course Lists 1, 2, 3, 4, 5, 6, 7, 8, 9
6 units from Level I Course Lists 1, 2, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00

**MINIMUM AVERAGES/GRADERS:**

A Cumulative Average of 3.5 and an average of 4.0 in 6 units from BIOLOGY 1AA3, CHEM 1AA3, PSYCH 1AA3.

**NOTES**

1. There are Level II prerequisites for many Level III courses; these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.

2. In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Mathematics and Statistics or Computer Science and Systems. Those who do not intend a particular emphasis should obtain counselling from the Department of Mathematics and Statistics.

**COURSE LIST 1**

COMP SCI 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3, 2SB3, 2SC3; MATH 2A03, 2AA3, 2A06, 2B06, 2C05, 2E03, 2G03, 2J06, 2K03, 2L03, 2M03, 2N03, 2P03, 2S03, 2T03; STATS 2D03, 2MD3

**COURSE LIST 2**

All Level III and IV Computer Science, Mathematics and Statistics courses

**REQUIREMENTS**

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

15 units from Course List 1 (see above)
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives, excluding Biochemistry, Biology, Psychology

**LEVEL III: 30 UNITS**

12 units from Course List 3. No more than six units from Biology may be taken
3 units HUMAN 2H03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
3 units Electives, excluding Biochemistry, Biology, Psychology
6 units Electives, excluding Biology
B.Sc. in Physical Science

ADMISSION
Completion of the Natural Sciences I requirements, including:
6 units MATH 1A03, 1AA3
3 units CHEM 1A03
3 units PHYSICS 1B03 (or 1C03)
3 units from CHEM 1AA3, PHYSICS 1B03 (or 1BB3)
6 units from Level I Course Lists 1, 3, 4, 6, 7
3 units from Level I Course Lists 1, 2, 3, 4, 6, 7, 8
6 units from Level I Course Lists 1, 2, 3, 4, 5, 6, 7, 8, 9
1 course SCIENCE 1A00
MATH 1B03, CHEM 1AA3, PHYSICS 1BA3 (or 1BB3) must be taken by the end of Level II and are strongly recommended in Level I.

MINIMUM AVERAGES/GRADES:
A Cumulative Average of 3.5 and a grade of C- in one of CHEM 1AA3, PHYSICS 1BA3 (or 1BB3).

NOTES
1. There are Level II prerequisites for many Level III courses; these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.
2. In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Chemistry or Physics. Those who do not intend a particular emphasis should obtain counselling from the Department of Physics.
3. Students proceeding in Physics must include PHYSICS 2B06 and MATH 2A03 and MATH 2C03 in Level II.

COURSE LIST 1
CHEM 2A03, 2B06, 2C03, 2D06, 2P06, 2R03; MATH 2A03, 2G03, 2N03, 2O03; PHYSICS 2A03, 2B06, 2G03, 2H03, 2H04, 2I03, 2K03

COURSE LIST 2
All Level III Astronomy, Chemistry, and Physics courses

REQUIREMENTS
90 units total (Level I to III), of which no more than 42 units may be Level I courses

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
18 units from Course List 1 (see above)
6 units from the Faculty of Humanities and/or the Department of Religious Studies
6 units Electives, excluding Astronomy, Chemistry, and Physics
(For students entering Level II in 1997-98) If not completed: MATH 1B03; if CHEM 1A06 not completed then students must take both CHEM 1A03 and 1AA3; if PHYSICS 1A06 not completed students must complete both PHYSICS 1B03 (or 1C03) and 1B03 (or 1BB3)
(For students entering Level II in 1998-99) If not completed: MATH 1B03, CHEM 1AA3, PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS
12 units from Course List 2 (see above)
3 units HUMAN 2C03
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
6 units Electives, excluding Astronomy, Chemistry, and Physics
3 units Electives, excluding Biology
The social sciences are concerned with the systematic study of activities and human relationships in societies which range from the pre-industrial to the post-industrial. Social Scientists examine social, economic and political problems as well as the interaction between people and their natural and artificial environments. Developments in theory and refinements of method have, in recent years, given great impetus to social science studies and research.

The Faculty of Social Sciences includes the following departments or schools and programmes:
- Anthropology, Economics, Gerontology, Kinesiology, Labour Studies, Political Science, Religious Studies, Social Work, Sociology, Geography and Psychology have programmes in the Faculty of Social Sciences as well as in the Faculty of Science.
- The Faculty offers Bachelor of Arts, Honours Bachelor of Arts, Bachelor of Kinesiology and Bachelor of Social Work Degrees.

Students are strongly advised to take advantage of the extensive advisory services provided by the Faculty. New students in particular should plan a programme of study that will allow them a number of options for Level II.

### PROGRAMMES AND DEGREES

#### A. Level I Programmes

**SOCIAL SCIENCES I**

**PROGRAMME NOTES**

1. Students registered in Honours B.A. or B.A. programmes in the Faculty of Social Sciences are required to complete six units of courses chosen from the Faculty of Humanities and/or the Department of Religious Studies. Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities. It is recommended that this requirement be completed in Level I.

2. Normally, a student will take only six units of Level I work in any one discipline. In special circumstances a student may be permitted to take up to 12 Level I units in one discipline.

3. Many programmes in the Faculty of Social Sciences require Mathematics. The Centre for Continuing Education offers three levels of non-degree math skills courses to help students upgrade their competence in mathematics in preparation for university study (CCE 101, CCE 102 and CCE 108). For students in Social Sciences, completion of CCE 108 will be recognized as satisfying the prerequisites for MATH 1K03 and STATS 1L03.

For more information, please contact the Centre for Continuing Education.

**REQUIREMENTS: 30 UNITS**

- **12 units** from ANTHROP 1A03, 1Z03; ECON 1A06; GEOG 1B06; GERONTOL 1A06; LABR ST 1A03, 1Z03; POL SCI 1G06; PSYCH 1A03, 1AA3; RELIG ST 1B06, 1D06, 1E06, 1H03, 1I06; SOC WORK 1A06; SOCIOI 1A06
- **18 units** Electives, which may include Social Sciences courses (See Note 1 above.)

#### B. Degree Programmes

**HONOURS PROGRAMMES**

The Honours programmes provide a concentration in the particular field, as well as an extended time of study, and are normally a requirement for those who contemplate proceeding to graduate studies.

Students enrolled in an Honours programme in the Faculty of Social Sciences, in addition to meeting the University requirements for an Honours degree (see the General Academic Regulations section in this Calendar) must also fulfill the following breadth and skills requirements prescribed by the Faculty: six units from the Faculty of Humanities and/or the Department of Religious Studies. Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities; six units of Research Methods/Statistics prescribed by the Department(s) and a course in critical thinking (HUMAN 2C03). Honours programmes in the Faculty of Social Sciences consist of a total of 120 units of work, normally completed over four years.

**Honours (Specialist Option):** In addition to Honours programmes, the departments of Economics, Geography, Labour Studies, Psychology and Sociology offer an Honours (Specialist Option) programme which involves greater concentration of work in the particular discipline.

**Combined Honours Programmes:** Subject to possible timetable restrictions, and provided that the student meets the requirements for entry into each of the relevant Honours programmes, a student may combine work in any two departments and be graduated with a Combined Honours degree. These combinations are available within the Faculty, with programmes in the Faculty of Humanities, with the Arts and Science programme and with the Women's Studies programme. The Honours Gerontology degree is offered only in combination with another subject. All Combined Honours programmes must be approved by both Departments concerned as well as by the Office of the Associate Dean(s) (Studies). Students will normally complete approximately 36 units of work beyond Level I in each component of the programme (normally 12 units per level in each subject).

**Minor:** A minor is an option available to students enrolled in a four- or five-level programme. A minor normally consists of at least 18 units of Level II, III, or IV courses beyond the designated Level I course(s) that meet the requirements set out in the programme description of that minor. Students are responsible for ensuring that the courses taken meet these requirements. Students who have the necessary requirements may apply for recognition of that minor when they graduate. If granted, this recognition will be recorded on the student's transcript.

**COMBINED B.A./B.S.W.:** The School of Social Work offers a Combined B.A./B.S.W. programme of studies leading to a B.A. and a B.S.W. degree. (See the programme description in this section.)

The B.S.W. degree may be attained separately as a subsequent degree by those students who have already received one or more undergraduate degrees.

**BACHELOR OF KINESIOLOGY:** The Department of Kinesiology offers a programme of studies leading to the B.Kin. degree. (See the programme description in this section.)
BACHELOR OF ARTS PROGRAMMES: B.A. programmes consist of a total of 90 units of work, normally completed over three years. The only three-level Combined Bachelor's degree programme is in Gerontology and Another Subject. The other subject may be from the Faculty of Social Sciences or the Faculty of Humanities. This programme may also be combined with the B.S.W. as a four-level programme.

Part-time Studies

Subject to limitations of course offerings, a student may pursue on a part-time basis any programme in the Faculty of Social Sciences, except for the B.Kin. programme.

ACADEMIC REGULATIONS

Students enrolled in a programme in the Faculty of Social Sciences, in addition to meeting the Academic Regulations of the University, shall be subject to the following regulations of the Faculty of Social Sciences.

ADMISSION AND REINSTATEMENT

Students from other Faculties are able to transfer to degree programmes offered by the Faculty of Social Sciences provided they have obtained a Cumulative Average of at least 3.5 and have completed the necessary programme admission requirements.

Students who do not meet these requirements must consult with the Office of the Associate Dean (Studies). Requests for transfer will be considered at the same time as applications for reinstatement (see below).

A student who may not continue at the University may apply for reinstatement. Application for reinstatement must be made to the Office of the Registrar using the Returning Student Application form by the deadline for the session. See Sessional Dates section of this Calendar. Reinstatement applications will be carefully reviewed and the evidence considered will include the student's academic performance before and after admission to McMaster, letter of explanation supported by two Letters of Reference and other appropriate documentation.

Reinstatement is not automatic or guaranteed and decisions are normally made after July 15 for September entry.

DEADLINES

The Faculty of Social Sciences will not consider applications for admission, admission to a second degree or continuing studies, registration, or dropping and adding of courses after the deadlines stated in this Calendar under Sessional Dates and Application Procedures, unless written documentation is provided showing good cause, as determined by the Faculty Admissions, Study and Reviewing Committee.

HUMANITIES/RELIGIOUS STUDIES REQUIREMENT

Students registered in the Faculty of Social Sciences except for those in B.Kin. and those completing a B.A. with a B.S.W., are required to complete six units of courses chosen from the Faculty of Humanities and/or the Department of Religious Studies.

Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities. Students in Psychology programmes should note the additional Business, Humanities or Science requirements.

COURSES IN KINESIOLOGY OR SOCIAL WORK AVAILABLE FOR UNDERGRADUATE CREDIT

Some Kinesiology and Social Work courses may be taken by undergraduate students in other programmes as elective credit. Kinesiology courses which require permission of the instructor are: KINESIO 3E03, 3F03, 3P03, 3Q03, 4L03, 4M03, 4C03, 4V03, 4S03, 4J03, 4T03 do not require permission of the instructor, but may be subject to enrolment restrictions. Enrolment in SOCWORK 3C03, 3G03, 3H03, 4B03, 4C03, 4E03, 4J03, 4K03, 4M03, 4V03 is limited and requires permission of the Department.

All other Social Work and Kinesiology courses are open only to students registered in those programmes.

COURSE SELECTION AND CHANGES

A student must ensure that the selection of courses meets the degree requirements for the programme in which the student is registered, that any prerequisites have been met, and that the appropriate written permission has been obtained if required.

All registrations, programme changes and course changes must be approved by the Office of the Associate Dean (Studies) and are subject to the deadline dates established by the University as published in this Calendar under the Sessional Dates section.

Qualified students are permitted to transfer between B.A. and Honours programmes with the approval of the Office of the Associate Dean (Studies). Transfers are subject to the deadline dates established by the University.

ACADEMIC ADVISING

Counselling is available throughout the year from the Office of the Associate Dean of Social Sciences (Studies) and the departments or academic units in the Faculty of Social Sciences. It is highly recommended that students consult with a Departmental Undergraduate Advisor during the March Counselling period.

AWARDS

Full-time students must maintain a full academic load as defined by their programme during the Fall/Winter session to be eligible for full-time, in-course awards. For conditions and terms of awards for full-time and part-time students, please refer to the Undergraduate Academic Awards section of this Calendar.

OVERLOAD

Students who wish to take more courses than recommended for a single level of their programme may do so if their Cumulative Average on completion of the previous Fall/Winter session is at least 7.0. Students registered in the final level of their programme are permitted to overload by up to six additional units in order to become eligible to graduate.

WITHDRAWAL

Students who wish to withdraw from the University are required to advise the Office of the Associate Dean (Studies) in writing. Students must surrender their McMaster Identification Cards to the Office of the Associate Dean (Studies) to ensure the processing of any fee refunds. Students who fail to withdraw formally from any course(s) by the stated deadlines will remain registered whether or not they attend classes and will be assigned a grade.

LETTER OF PERMISSION

Students in good academic standing who wish to attend another university to take courses for credit toward a McMaster degree, must first request a Letter of Permission from the Office of the Associate Dean (Studies) and pay the appropriate fee. Students should take note of any conditions on the Letter of Permission that might apply, including the requirement of a grade of at least C- for transfer credit. Courses taken at another university cannot be used to satisfy the University's minimum residence requirements, will not be included in the calculation of the McMaster average, and therefore cannot be used to raise standing. The transcript designations will read "COM", indicating "complete", when a grade of C- or better is attained.

STUDENT EXCHANGE PROGRAMMES

There are a number of official exchange programmes offered to undergraduate students registered in the Faculty of Social Sciences, including Province of Ontario Exchange Programmes in Germany and France, and McMaster University-wide Exchange Programmes in China, Denmark, England, and the United Kingdom. Official exchange programmes offer students the most inexpensive means of studying abroad as students participating in these exchanges avoid the foreign student fees by paying fees to McMaster. You may, however, arrange to study elsewhere for a year independent of the official exchange programmes.

All students must have completed at least one year of continuous study and be in good standing to be eligible to participate in an exchange. In most cases, students who participate in exchange programmes abroad for the third level of an Honours programme.

Students interested in any exchange programme must discuss their plans with their department and with the Office of the Associate Dean (Studies) if they intend to transfer credit to their McMaster degree programme. Such discussions should begin about one year before they plan to enrol elsewhere.

For further information please see International Study in the General Academic Regulations section in this Calendar. Information concerning Group of Ten Student Exchange Programme (GOTSSEP) can be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Student Exchanges.
Acceptance to the Ontario and University-wide Exchange Programmes is by recommendation. Application forms can be obtained from:

Student Exchanges
Hamilton Hall, Room 405
Telephone: (905) 925-9140, extension 24748

DEPARTMENT OF ANTHROPOLOGY

ANTHROPOLOGY SUBFIELDS
(Applicable to all Anthropology programmes)
Anthropology includes the four major subfields of Social/Cultural Anthropology, Physical/Biological Anthropology, Archaeology, and Linguistics. Students may specialize in any one of these subfields though it is not necessary to do so. It should be noted, however, that each subfield has its own sequence of courses and prerequisites. (See the Course Listings section in this Calendar.)

CULTURAL/SOCIAL ANTHROPOLOGY
ANTHROP 2B03, 2F03, 2H03, 2I03, 2P03, 2R03, 2S03, 2X03, 2Z03, 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3G03, 3P03, 3Q03, 3R03, 3S03, 3SY3, 3T03, 3V03, 3Z02, 3Z23, 4AE3, 4D03, 4I03, 4N03, 4P03, 4Q03, 4Y03

PHYSICAL/BIOLOGICAL ANTHROPOLOGY
ANTHROP 2D03, 2E03, 2FF3, 2JJ3, 2U03, 3C03, 3H03, 3N03, 3P03, 3Z03, 3Z23, 4J03, 4R03, 4S03 (Relevant courses are also offered by Biology and Kinesiology.)

ARCHAEOLOGY
ANTHROP 2C03, 2PA3, 2V03, 3A03, 3CC6, 3E03, 3EG3, 3K03, 4F03, 4H03, 4HF3, 4P03, 4U03 (Relevant courses are also offered by History and Classics.)

LINGUISTICS
ANTHROP 2L03, 2L3, 2M03, 3L3, 4L3, 4T03

OTHER COURSES
Courses not distinguished by subfield include the reading courses ANTHROP 3W03, 3WW3, 4G03, 4G3, as well as the seminar courses ANTHROP 4B03 and 4BB3.

In planning a programme, it is important for students to take note of the prerequisites of certain upper-level courses.

Honours Arts & Science and Anthropology
(B.A.RT.S.SC.; See Arts & Science programme)

Honours Anthropology

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in ANTHROP 1A03 and 1Z03.

NOTE
Students who were registered in the programme prior to September 1997 may use the following previously cross-listed Linguistics courses toward their Anthropology requirements: LINGUIST 2A03, 2AA3, 2L3, 3I03, 3P03, 3X03, 3XX3, 4B03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
12 units ANTHROP 2E03, 2F03, 2I03, 2P03
3 units from ANTHROP 2D03, 2FF3, 2Z03, 3H03, 3K03, 3P03
3 units from ANTHROP 3A03, 3B03, 3D03, 3F03
3 units ANTHROP 4I03
9 units Level IV Anthropology
21 units Level II, III or IV Anthropology (See Note above.)
3 units from SOC SCI 2J03 or STATS 1CC3* (or an equivalent research methods course as prescribed by other Social Sciences Programmes.)
3 units HUMAN 2C03
33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

If requirement completed in Level I, these units will be taken as electives.

Combined Honours in Anthropology and Another Subject

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in ANTHROP 1A03 and 1Z03. Satisfaction of admission requirements for the Honours programme in the other B.A. subject is required.

NOTE
Students who were registered in the programme prior to September 1997 may use the following previously cross-listed Linguistics courses toward their Anthropology requirements: LINGUIST 2A03, 2AA3, 2L3, 3I03, 3P03, 3X03, 3XX3, 4B03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
12 units ANTHROP 2E03, 2F03, 2I03, 2P03
3 units from ANTHROP 2D03, 2FF3, 2Z03, 3H03, 3K03, 3P03
3 units from ANTHROP 3A03, 3B03, 3D03, 3F03
3 units ANTHROP 4I03
3 units Level IV Anthropology
15 units Level II, III or IV Anthropology (See Note above.)
36 units courses specified for the other subject
3 units from SOC SCI 2J03 or STATS 1CC3* or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject.
3 units HUMAN 2C03. Students combining Honours Arts and Science with Anthropology are exempt from this requirement.
9 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Anthropology with Arts and Science, or with a Humanities subject, are exempt from this requirement.

If requirement completed in Level I, these units will be taken as electives.

B.A. in Anthropology

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 3.5 including an average of at least 4.0 in ANTHROP 1A03 and 1Z03.

NOTE
Students who were registered in the programme prior to September 1997 may use the following previously cross-listed Linguistics courses: LINGUIST 2A03, 2AA3, 2L3, 3I03, 3P03, 3X03, 3XX3, 4B03.

REQUIREMENTS

90 units total (Levels I to III), of which 42 may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
6 units from ANTHROP 2E03, 2F03, 2P03
16 units Level II, III or IV Anthropology (See Note above.)
36 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

Minor in Anthropology

NOTE
Students who were working towards a minor prior to September 1997 may use the following previously cross-listed Linguistics courses: LINGUIST 2A03, 2AA3, 2L3, 3I03, 3P03, 3X03, 3XX3, 4B03.

REQUIREMENTS

6 units ANTHROP 1A03 and 1Z03
3 units from ANTHROP 2E03, 2F03, 2P03
15 units Level II, III or IV Anthropology (See Note above.)
Honours Arts & Science and Economics
(B. Arts Sc.; See Arts & Science programme)

COOPERATIVE INTERNSHIP OPTION FOR HONOURS ECONOMICS STUDENTS

Any honours economics students who have successfully completed all Level II requirements may apply for the non-credit cooperative internship option. Students who qualify compete for placements with participating employers through an application process. The number of students accepted into the option is small and depends on available placements. A total involvement in approved placement(s) of at least four months is required, and the placement(s) must be undertaken before the student has completed all the course requirements for the honours degree. During the period of a placement, a student will pay an administrative fee to the University. At the conclusion of a placement, a job report from the student and a letter of evaluation, from the employer must be submitted.

COOPERATIVE INTERNSHIP OPTION

Undergraduate

S 24 units
Honours Arts

MATH 1003 or equivalent.

S 3 units
2BOS.

S 24 units
or with a Humanities Research Methods/Statistics requirement specified for the other subject. (See Note 7 above.)

S 3 units
**If requirement completed in Level I or with OAC’s, these units will be taken as electives.

HONOURS ECONOMICS {2150}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0, including a grade of B- in ECON 1A06, Credit in OAC Calculus or MATH 1K03 or equivalent.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

30 units ECON 2G03, 2G3S, 2H3S, 3A03, 3A3S, 3F03, 3G03, 3L3S, 4A03

3 units from ECON 2K03, 3I03

18 units Level II, III, IV Economics or COMMERCE 2FAS with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2J03, 2N03, 2P03, 2T03.

6 units ECON 2B03 and 3U03; or 3O06

3 units* from MATH 1M03 or 1A03

3 units** from STAT 1L03, 2D03 (or OAC Finite Math)

3 units HUMAN 2C03

24 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religion. The number of units of Economics courses above Level I (excluding ECON 2B03, 3006 and 3U03) must not exceed 60.

*If requirement completed in Level I, these units will be taken as electives.

**If requirement completed in Level I or with OAC’s, these units will be taken as electives.

33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religion. The number of units of Economics courses above Level I (excluding ECON 2B03, 3006 and 3U03) must not exceed 60.

*If requirement completed in Level I, these units will be taken as electives.

**If requirement completed in Level I or with OAC’s, these units will be taken as electives.

Combined Honours in Economics and Another Subject

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0, including a grade of B- in ECON 1A06. Credit in OAC Calculus or MATH 1K03 or equivalent. Satisfaction of admission requirements for the Honours programme in the other B.A. subject is required.

NOTES

1. One of OAC Finite Math, STATS 1L03, or STATS 2D03 is a prerequisite for research methods courses offered by the Department of Economics (ECON 2B03 and 3O06).

2. Students registered in Combined Honours programmes within the Faculty of Social Sciences who wish to satisfy the inquiry and Honours Seminar requirements specified by the other department may replace ECON 3F03 and 4A03 with another six units Economics.

REQUIREMENTS 120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

21 units ECON 2G03, 2G3S, 2H3S, 3F03, 3L3S, 4A03

3 units from ECON 2K03, 3I03

9 units Level II, III, IV Economics or COMMERCE 2FAS with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2J03, 2N03, 2P03, 2T03.

36 units Courses specified for the other subject

4 units ECON 2B03 and 3U03; or 3O06 or, in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject. (See Note 7 above.)

3 units* from MATH 1M03 or 1A03

3 units** from STAT 1L03, 2D03 (or OAC Finite Math)

3 units HUMAN 2C03. Students combining Honours Arts & Science with Economics are exempt from this requirement.

6 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religion. Students combining Economics with Arts & Science, or with a Humanities subject, are exempt from this requirement.

*If requirement completed in Level I, these units will be taken as electives.

**If requirement completed in Level I or with OAC’s, these units will be taken as electives.

Honours Economics and Computer Science

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including COMP SCI 1M03 and 1M03, and including a grade of at least B- in ECON 1A06, and a weighted average of at least 7.0 in ECON 1A06, COMP SCI 1M03, 1M03 or 1M03, MATH 1A03, 1A03 and 1B03. MATH 1B03 may be postponed until Level II.

REQUIREMENTS 120 units total (Levels I to IV), of which 48 units may be Level I courses
Honours Economics and Mathematics

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in each of ECON 1A06, MATH 1A03, 1A03 and 1B03.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
21 units ECON 2G03, 2H03, 2J03, 2K03, 3A03, 3H03, 4A03, 4I03, 4J03, 4K03, 4L03, 4M03, 4R03, 4T03
3 units from ECON 2K03, 3L03
12 units Level II, III, IV Economics or COMMERCE 2FA3 with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2J03, 2K03, 2L03, 2M03, 2T03.
18 units COMPSCI 2MD3, 2MF3, 2SC3, 3G03, 3M03, 3M03, 4MP5
6 units from ECON 3A03, 3E03, 3H03, 3I03, 3L03
6 units Level II, III or IV Computer Science. (COMPSCI 3E03 is strongly recommended. COMPSCI 3E03, 3E03, 3E03, 3E03 are recommended as preparation for Business Data Processing.)
6-9 units STAT 2D03; one of STAT 2M03 or 3D06, or ECON 2B03 and 3U03, or 3U06
3 units HUMAN 2C03
12-15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A. in Economics

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 and a grade of at least 3.5 in each of ECON 1A06. Credit in OAC Calculus or MATH 1K03 or equivalent.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
9 units ECON 2B03, 2C03, 2H03, 2J03, 2K03, 2L03
3 units in ECON 2K03, 3I03
12 units Level II, III, IV Economics or COMMERCE 2FA3 with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 3J03, 3K03, 3L03, 3M03, 3T03.
3 units from MATH 1A03 or 1B03
3 units* from STAT 1L03, 2D03 (or OAC Finite Math)
30 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. The number of units of Economics courses above Level I (excluding ECON 2B03, 3U03 and 3U03) must not exceed 36.

Minor in Economics

NOTE
Although ECON 2G03 and 2H03 are not required for the Minor in Economics, most Level III and IV Economics courses have at least one of these courses as a prerequisite.

REQUIREMENTS
6 units ECON 1A06
18 units Level II, III, IV Economics or COMMERCE 2FA3 with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2J03, 2K03, 2L03, 2T03.

DEPARTMENT OF GEOGRAPHY

Honours Geography (B.Sc.) and Honours Geography and Environmental Science (B.Sc.)

(See B.Sc. programmes in Geography, Faculty of Science, Department of Geography.)

Honours Arts & Science and Geography

Honours Geography (B.A., Specialist Option)

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of 7.0 in six units of Level I Geography (or ENVIR SC 1A06).

NOTES
1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in GEOG 1H03 or an average of at least 7.0 in six units from GEOG 1C03, 1G03, ENVIR SC 1G03, 1H03 (or 1A06).
2. STATs 1C03 and one of MATH 1M03 or 1A03, must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
12 units from GEOG 2A03, 2B03, 2C03, 2D03, 2F03, 2K03, 2R03, 2T03, 2W03, 2Y03
9 units GEOG 3003, 4C06
9 units Level IV Geography
21 units Level II or IV Geography, excluding GEOG 3J03 and 3R03
6 units one of STATs 1C03 or GEOG 3L03 and GEOG 2N03
3 units from MATH 1M03 or 1A03, which must be completed by the end of 60 units.
3 units HUMAN 2C03
27 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

Honours Geography

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I Geography (or ENVIR SC 1A06).

NOTES
1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in GEOG 1B06 or an average of at least 7.0 in six units from GEOG 1C03, 1G03, ENVIR SC 1G03, 1H03 (or 1A06).
2. STATs 1CC3 and one of MATH 1M03 or 1A03, must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>120 units total (Levels 1 to IV), of which 48 units may be Level I courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30 units</strong>     from the Level I programme completed prior to admission to the programme. (See Admission above.)</td>
</tr>
<tr>
<td><strong>3 units</strong>     GEOG 3O03</td>
</tr>
<tr>
<td><strong>12 units</strong>     GEOG 4CC3 and nine additional units of Level IV Geography or GEOG 4C06 and six additional units of Level IV Geography</td>
</tr>
<tr>
<td><strong>27 units</strong>     Level II, III or IV Geography excluding 2C03, 2E03, 2P03, 3JJ3 and 3P03</td>
</tr>
<tr>
<td><strong>6 units</strong>     one of STATS 1CC3* or GEOG 2LL3; and GEOG 2N03</td>
</tr>
<tr>
<td><strong>3 units</strong>     from MATH 1M03 or 1A03, which must be completed by the end of 60 units.</td>
</tr>
<tr>
<td><strong>3 units</strong>     HUMAN 2C03</td>
</tr>
<tr>
<td><strong>36 units</strong>     Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.</td>
</tr>
</tbody>
</table>

*If requirement completed in Level I, these units will be taken as electives.

**Combined Honours B.A. in Geography and Another Subject**

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I Geography (or ENVIr SC 1A06). Satisfaction of admission requirements for the Honours programme in the other B.A. subject is required.

**NOTES**

1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of GEOG 1C03, 1G03, ENVIr SC 1G03, 1H03 and a grade of at least C+ in ENVIr SC 1A06 and completion of ECON 1A06.

2. STATs 1CC3 and one of MATH 1M03 or 1A03, must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

3. Students who have completed ENVIr SC 1A06 but have not completed GEOG 1C03 and/or 1G03 must contact the Department of Geography regarding admission to the programme.

**COURSE LIST 1**

| GEOG | 2F03, 2K03, 2L3, 2N03, 2R03, 2RR3, 2T03, 2W03, 3F03, 3G03, 3K03, 3L03, 3M03, 3N03, 3P03, 3W03, 4A03, 4D03, 4E03, 4K03, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03 |

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>120 units total (Levels 1 to IV), of which 48 units may be Level I courses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30 units</strong>     from the Level I programme completed prior to admission to the programme. (See Admission above.)</td>
</tr>
<tr>
<td><strong>3 units</strong>     GEOG 3003</td>
</tr>
<tr>
<td><strong>24 units</strong>     one of STATS 1CC3* or GEOG 2LL3; and GEOG 2N03</td>
</tr>
<tr>
<td><strong>36 units</strong>     Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.</td>
</tr>
</tbody>
</table>

*If requirement completed in Level I, these units will be taken as electives.

**Honours Geography and Environmental Studies (B.A.)**

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in GEOG 1C03 and 1G03, a grade of at least C+ in ENVIr SC 1A06 and completion of ECON 1A06.

**NOTES**

1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in six units from GEOG 1C03, 1G03, ENVIr SC 1G03, 1H03 and a grade of at least C+ in ENVIr SC 1A06 and completion of ECON 1A06.

2. STATs 1CC3 and one of MATH 1M03 or 1A03, must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.
### GERONTOLOGICAL STUDIES

#### Combined Honours in Gerontology and Another Subject

**ADMISSION**

Enrolment in this programme is limited. Admission is by selection.

Completion of any Level I programme with a minimum Cumulative Average of 6.0 including a grade of at least B- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the Honours B.A. programme in the other subject is required.

**NOTES**

1. Application for admission, including a statement explaining the applicant's interest in the programme, must be made to the Chair of the Committee of Instruction, prior to April 1. The Admissions Committee may wish to interview the applicant.
2. Students who have not taken GERONTOL 1A06 in Level I may be considered for admission to the programme if they have an equivalent introductory gerontology course. Such students must consult the Chair of the Committee of Instruction regarding GERONTOL 1A06 equivalency prior to applying.
3. Courses other than those listed in Course List 1 may be substituted with the prior permission of the Chair of the Committee of Instruction.
4. Students are encouraged to take both GERONTOL 2B03 and 3D03.
5. GERONTOL 2C03 or 3C03 and 3G03 or another approved three unit statistics course must be completed by the end of Level III.
6. Students who complete the Thesis in the other subject must replace GERONTOL 4A06 with six units of Level II, III or IV Gerontology or Course List 1.

**Course List 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2B03</td>
<td>HTH SCI</td>
</tr>
<tr>
<td>3B03</td>
<td>PHILOS</td>
</tr>
<tr>
<td>3C03</td>
<td>RELIG ST</td>
</tr>
<tr>
<td>3G03</td>
<td>SOC WORK</td>
</tr>
<tr>
<td>3H03</td>
<td>SOCIOL</td>
</tr>
</tbody>
</table>

### Minor in Geography

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>from GEOG 1B06, 1C03, 1G03, ENVIR SC 1A06, 1G03, 1H03</td>
<td>Level III Geography</td>
</tr>
<tr>
<td>12</td>
<td>Level II or IV Geography</td>
<td>Electives</td>
</tr>
</tbody>
</table>

**ADMISSION**

Completion of any Level I programme with a minimum Cumulative Average of 3.5 including a grade of at least C- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the B.A. in the other subject is required.

**Requirements**

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>from GEOG 2E03, 2F03, 2G03, 2H03, 2J03, 2L03, 2M03, 2N03, 2P03, 2Q03, 2R03, 2S03, 2T03, 2U03, 2V03, 2W03, 2X03, 2Y03</td>
<td>Level II Geography</td>
</tr>
<tr>
<td>12</td>
<td>from GEOG 3C03, 3D03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3Q03, 3R03, 3S03, 3T03, 3U03, 3V03, 3W03, 3X03, 3Y03, 3Z03</td>
<td>Level III Geography</td>
</tr>
<tr>
<td>36</td>
<td>Electives</td>
<td>Electives</td>
</tr>
</tbody>
</table>

### B.A. in Gerontology and Another Subject

**ADMISSION**

Enrolment in this programme is limited. Admission is by selection.

Completion of any Level I programme with a minimum Cumulative Average of 3.5 including a grade of at least C- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the B.A. in the other subject is required.

**Requirements**

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>from GEOG 1C03, 1G03, 1H03, ENVIR SC 1A06, 1G03, 1H03</td>
<td>Level I Geography</td>
</tr>
<tr>
<td>15</td>
<td>from GEOG 2E03, 2F03, 2G03, 2H03, 2J03, 2L03, 2M03, 2N03, 2P03, 2Q03, 2R03, 2S03, 2T03, 2U03, 2V03, 2W03, 2X03, 2Y03</td>
<td>Level II Geography</td>
</tr>
<tr>
<td>12</td>
<td>from GEOG 3C03, 3D03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3Q03, 3R03, 3S03, 3T03, 3U03, 3V03, 3W03, 3X03, 3Y03, 3Z03</td>
<td>Level III Geography</td>
</tr>
<tr>
<td>36</td>
<td>Electives</td>
<td>Electives</td>
</tr>
</tbody>
</table>

*If requirement completed in Level I, these units will be taken as electives.*
NOTES
1. Application for admission, including a statement explaining the applicant’s interest in the programme, must be made to the Chair of the Committee of Instruction, prior to April 1. The Admissions Committee may wish to interview the applicant.
2. Students who have not taken GERONTOL 1A06 in Level I may be considered for admission to the programme if they have an equivalent introductory gerontology course. Such students must consult the Chair of the Committee of Instruction regarding GERONTOL 1A06 equivalency prior to applying.
3. Courses other than those listed in Course List 1 may be substituted, with the prior permission of the Chair of the Committee of Instruction.
4. No more than six units of work in the other subject of the combined programme which are also in Course List 1 may be used to fulfill the requirements of both programme components.
5. Students are encouraged to take both GERONTOL 2B03 and 3D03.
6. Students in the B.A. in Gerontology and Another Subject/Bachelor of Social Work should consult with the Chair of the Committee of Instruction regarding GERONTOL 2B03 (the Gerontology Field Observation requirement) and SOC WORK 4V03.

COURSE LIST 1
ANTHROP 3Z03
ECON 3D03, 3Z03
GEOG 4S03
HTH SCI 3B03
PHILOS 3C03
RELIG ST 2M03, 2N03, 2WW3
SOC WORK 3C03, 4E03
SOCIOL 3CC3, 3G03, 3HH3, 3X03, 4P03
or other designated and approved courses (See Note 3 above.)

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme (See Admission above.)
3 units from GERONTOL 2A03, 2AA3
6 units from GERONTOL 2C03 or 3C03 and 3B03
3 units from GERONTOL 2B03, 3D03 (See Note 5 above.)
12 units Level II, III or IV Gerontology or courses from Course List 1
24 units Courses specified for the other subject (See Note 4 above.)
12 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A. in Gerontology as a Second Degree {1265}

ADMISSION
Enrolment in this programme is limited. Admission is by selection.

Completion of an undergraduate degree from a recognized university normally with a minimum Cumulative Average of 4.0 (or its equivalent), a grade of at least C- in GERONTOL 1A06 (or its equivalent), and evidence of a personal interest in Gerontological Studies, which may be evaluated by one, or a combination of a written statement and an interview.

An applicant is normally required to complete the prerequisite undergraduate degree work by April of the year in which application is made.

As Second Degree candidates, applicants must first apply for admission to the University, through the Office of the Registrar (Admissions) indicating they wish to apply for Gerontology as a Second Degree. This application step must be completed prior to April 1. A supplementary application for admission to the Gerontology programme will then be sent to the applicant from the Office of the Registrar (Admissions).

The supplementary application, including a statement explaining the applicant’s interest in the programme, must be addressed to the Chair of the Committee of Instruction and sent to the Office of the Registrar (Admissions) prior to May 15.

Students who have not included GERONTOL 1A06 in their first degree programme may be considered for admission to the programme if they have an equivalent introductory gerontology course. Such students must consult the Chair of the Committee of Instruction regarding GERONTOL 1A06 equivalency prior to applying.

NOTES
1. Students who wish to enter a graduate or professional programme after completion of their second degree in Gerontology are advised to choose courses required for entry to these programmes. These may include research methods courses, advanced seminar in gerontology, a directed research course for second degree students and other courses at level four. Students should consult the requirements for their post-graduate or professional programme of choice.

2. Students are required to complete a total of 30 units for the second degree, all of which must be completed at McMaster. Applicants may apply for permission to the Chair of the Committee of Instruction for credit in equivalent Gerontology courses or courses from Course List 1 as part of their first degree. If the requirement is waived, additional courses must be taken at McMaster to total 30 units.

3. Courses other than those listed in Course List 1 may be substituted with the prior permission of the Chair of the Committee of Instruction.

4. GERONTOL 2B03 and 3D03 both must be counted toward the required units in Gerontology. Students are encouraged to take both GERONTOL 2B03 and 3D03.

COURSE LIST 1
ANTHROP 3Z03
ECON 3D03, 3Z03
GEOG 4S03
HTH SCI 3B03
PHILOS 3C03
RELIG ST 2M03, 2N03, 2WW3
SOC WORK 3C03, 4E03
SOCIOL 3CC3, 3G03, 3HH3, 3X03, 4P03
or other designated and approved courses. (See Note 3 above.)

REQUIREMENTS (MINIMUM)
30 units total
3 units from GERONTOL 2A03, 2AA3
3 units from GERONTOL 2B03
3 units from GERONTOL 2B03, 3D03 (See Note 4 above.)
3 units from GERONTOL 2C03, 3C03 or 4E03
12 units Level II, III or IV Gerontology or courses from Course List 1
6 units Electives

Combined Honours in Gerontology and Another Subject as a Second Degree

ADMISSION
Enrolment in this programme is limited. Admission is by selection.

Former McMaster students who have completed a three-level B.A. degree in Combined Gerontology and Another Subject may apply to the Combined Honours in Gerontology and Another Subject as a Second Degree if they have a minimum Cumulative Average of 6.0. The other subject must be the same as in the first degree and students must be accepted for Honours both by Gerontology and by the other department.

Applicants must first apply for admission to the University through the Office of the Registrar (Admissions) indicating they wish to apply for Honours Gerontology and Another Subject as a Second Degree. This application step must be completed prior to April 1. A supplementary application for admission to the Gerontology programme will then be sent to the applicant from the Office of the Registrar (Admissions).

The supplementary application, including a statement explaining the applicant’s interest in the programme, must be addressed to the Chair of the Committee of Instruction and sent to the Office of the Registrar (Admissions) prior to May 15.
NOTES
1. Students are required to take courses to total at least 30 units, including all Honours requirements for both subjects. All units for the second degree must be completed at McMaster.
2. Courses other than those listed below in Course List 1 may be substituted with the prior permission of the Chair of the Committee of Instruction.
3. Students are encouraged to take both GERONTOL 2B03 and 3D03.

**Course List 1**

ANTHROP 3Z03
ECON 3D03, 3Z03
GEOG 4S03
HTH SCI 3B03
PHILOS 3C03
RELIG ST 2M03, 2N03, 2WW3
SOC PHIL 3C03
SOCIOI 3CC3, 3G03, 3H3, 3XO3, 4P03
or other designated and approved courses. (See Note 2 above.)

**Requirements (Minimum)**

30 units total

Gerontology courses or courses from Course List 1 to complete the Honours requirements including six units of research methods.

Courses specified for the other subject.

**Department of Kinesiology**

Web Address: [http://kinlabserver.mcmaster.ca](http://kinlabserver.mcmaster.ca)

The Department of Kinesiology offers a four-year program leading to the Bachelor of Kinesiology degree, which has been restructured to provide a broad-based education in the field of kinesiology. The program is divided into four levels, each with specific course requirements and electives. Students must complete a minimum of 120 units (Levels I to IV), of which 48 units may be Level I.

**Level I: 30 Units**

15 units KINESIOL 1A06, 1B03, 1D03, 1E03
1 course KINESIOL 1CA0 (See Note 1 above.)
15 units Electives

**Level II: 30 Units**

12 units KINESIOL 2A03, 2B03, 2C06 (KINESIOL 2A03 and 2B03 will be first offered in 1998-99)
1 course KINESIOL 2FL0 (If not satisfied in Level I. See Note 1 above.)
18 units Electives

**Levels III and IV: 60 Units**

30 units Level III or IV Kinesiology (maximum allowed)
30 units Electives

**B. Kin. as a Second Degree**

Enrolment in this program is limited.

**Admission**

Completion of any undergraduate degree from a recognized university with a minimum average of at least 7.0 (B+).

**Notes**

1. McMaster graduates (or potential graduates) must apply using the McMaster Returning Student Application form, which can be obtained from the Office of the Registrar, Gilmour Hall, Room 108. Graduates (or potential graduates) from other universities must use the 105D application form, which can be obtained from the Admissions Office of any Ontario university. Completed applications must be returned to the appropriate office (either the Office of the Registrar, McMaster University or the Ontario Universities’ Application Centre) with the appropriate fee by May 15. Students are strongly urged to apply well before the deadline.

2. The degree must be completed on a full-time basis and typically requires two years.

3. Students entering the program who meet the exemption requirement for KINESIOL 1CA0 (Standard First Aid/CPR) may take KINESIOL 2FL0 (Aspects of Fitness, Lifestyle Management and Recreation) in their first year. To qualify for this exemption, a student must have completed Standard First Aid from either the Red Cross or St. John’s and two person rescue CPR (“C” qualification) or hold a current NLS (National Life Saving) certification.

**Programs for Students Who Entered Level I Prior to September 1997**

Bachelor of Kinesiology (B. Kin.)

Enrolment in this program is limited.

**Note**

Since September 1995, practicum courses have been graded as Pass or Fail and are not included in the calculation of the Cumulative Average.

**Requirements**

123-132 units total (Levels I to IV), of which 51 units including 3 practicum units may be Level I.

**Level I: 33 Units (Last Offered in 1996-97)**

18 units KINESIOL 1A06, 1B06, 1E06
3 units Standard First Aid/CPR (1CA1), Fitness (1F01) and Basic Aquatic Survival Skills (1S01)
12 units Electives
LEVEL II: 30-33 UNITS
18 units KINESIOI 2A06, 2B06, 2C06 (KINESIOI 2A06 and 2B06 will be last offered in 1997-98.)
0-3 units Dance (2D01), Body Awareness (2E01) and Play (2P01) (Last offered in 1997-98.)
12 units Electives

LEVELS III AND IV: 60-66 UNITS
30 units Level III or IV Kinesiology (maximum allowed)
0-6 units Practicum
30 units Electives

B. Kin. as a Second Degree (2609)
(Available only to students who entered this programme before September 1997.)

NOTES
1. The degree must be completed on a full-time basis and typically requires two years.
2. Since September 1995, practicum courses have been graded as Pass or Fail and are not included in the calculation of the Cumulative Average.

REQUIREMENTS
63-78 units total (60-66 units Kinesiology and 3-12 units Practicum)
18 units KINESIOI 1A06, 1B06, 1E06 (KINESIOI 1B06 and 1E06 were last offered in 1996-97)
3 units Standard First Aid/CPR (1CA1), Fitness (1F01) and Basic Aquatic Survival Skills (1S01) (Last offered in 1996-97.)
18 units KINESIOI 2A06, 2B06, 2C06 (KINESIOI 2A06 and 2B06 will be last offered in 1997-98.)
0-9 units Practicum (including Dance-2D01, Body Awareness-2E01 and Play-2P01 which will be last offered in 1997-98.)
24-30 units Level III or IV Kinesiology (maximum allowed)

Bachelor of Physical Education (B.P.E.)
Students who are registered in the B.P.E. programme (entered prior to September 1994) who require assistance in determining course requirements, should contact an Academic Advisor in the Office of the Associate Dean (Studies), Faculty of Social Sciences.

LABOUR STUDIES

PROGRAMMES FOR STUDENTS ENTERING IN SEPTEMBER 1997

Honours Labour Studies (Specialist Option) (2641)

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1203 or 1AA3. Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C05, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOI 1A06.

NOTES
1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer to another Labour Studies programme except by the normal application process.
4. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.

COURSE LIST

COMMERCE 3B03
ECON 2C03, 2E03, 2F03, 2K03, 2N03
GERONTOL 3J03
HISTORY 3N03
POL SCI 3D03, 3E03, 3E03, 3F03
SOCIOI 2E06, 2R03, 2R03, 2Q06, 2V06, 3F06, 3LL3

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme (See Admission above.)
21 units LABR ST 2A03, 2C03, 2D03, 3G03, 4A09, 4C09, 4D03, COMMERCE 4B03
6 units Level II Labour Studies; COMMERCE 2B03
9 units Level III Labour Studies; COMMERCE 4B03
6 units from Course List I
3 units from SOC SCI 2J03 or STATS 1C03* or an equivalent Research Methods/Statistics course as prescribed by the other Social Sciences Programmes. (See Note 4 above.)

Honours Labour Studies (2640)

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1203 or 1AA3. Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C05, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOI 1A06.

NOTES
1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer to another Labour Studies programme except by the normal application process.
4. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.
Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1Z03 or 1AA3. Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C06, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOL 1A06. Satisfaction of admission requirements for the Honours B.A. programme in the other subject is required.

NOTES
1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer to another Labour Studies programme except by the normal application process.
4. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.
5. Electives: SOCIOL 1A06, ECON 1A06 and six units from the Faculty of Humanities and/or the Department of Religious Studies should be included in the Level I programme to provide some electives in this programme.
6. Students combining Labour Studies with a Humanities subject or with Religious Studies must complete LABR ST 4A09 and SOC SCI 2J03 or STATS 1C03. Students in other Combined Honours Programmes may complete the Honours Seminar requirement as specified by the other Department and replace LABR ST 4A09 with six units Level III Labour Studies courses.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme (See Admission above.)
21 units LABR ST 2A03, 2C03, 2D03, 3G03, 4A09 (See Note 6 above.)
3 units Level II Labour Studies; COMMERCE 2BA3
9 units Level III Labour Studies; COMMERCE 4BC3, 4BD3
3 units from LABR ST 4C03, 4D03
36 units courses specified for the other subject
3 units from SOC SCI 2J03 or STATS 1CC3 or an equivalent Research Methods/Statistics course specified by the other subject. (See Note 4 above.)
3 units HUMAN 2C03 Students combining Honours Arts & Science with Labour Studies are exempt from this requirement.
12 units* SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units
0-15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Labour Studies with Arts & Science, or with a Humanities subject are exempt from this requirement.

*If requirement completed in Level I, these units will be taken as electives.

B.A. in Labour Studies [1640]

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1Z03 or 1AA3. Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C06, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOL 1A06.

NOTES
1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1. Students applying for the Honours programme will automatically be considered for the B.A. programme.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer to another Labour Studies programme except by the normal application process.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme (See Admission above.)
15 units LABR ST 2A03, 2C03, 2D03, 3G03, COMMERCE 4BC3
6 units Level II Labour Studies; COMMERCE 2BA3
9 units Level III Labour Studies; COMMERCE 4BD3
12 units* SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units
18 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

Minor in Labour Studies

Enrolment is limited.

Labour Studies will admit a maximum of 10 students to the Minor each year.

NOTES
1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1.
2. Students working towards a Minor in Labour Studies may take no more than three units of Level IV courses.
3. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
4. Students may not transfer from the Minor in Labour Studies to another Labour Studies programme except by the normal application process.
5. Students who have completed LABR ST 2A06 may take nine units Level II, III, IV Labour Studies instead of 12 units.

REQUIREMENTS
6 units LABR ST 1A03 and 1Z03 or 1AA3
6 units LABR ST 2A03 (See Note 5 above.), 2C03
12 units Level II, III or IV Labour Studies (See Note 2 above.)
12 units ECON 1A06 and SOCIOL 1A06

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1997

Honours Labour Studies [2641]
(Specialist Option)

(Available only to those students who entered this programme before September 1997.)

NOTES
1. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
2. Students may not transfer to another Labour Studies programme except by the normal application process.
3. Students who have not completed LABR ST 2A06 may substitute LABR ST 2A03 and three additional units Level II Labour Studies, preferably LABR ST 2D03.
4. Students who have not completed LABR ST 3AA3 are advised to take LABR ST 3G03.
5. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.

**COURSE LIST 1**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>COMMERC 3EC3</td>
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<tr>
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<td>6</td>
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<tr>
<td>LASR ST 2A06</td>
<td>6</td>
</tr>
</tbody>
</table>

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme
- 27 units LABR ST 2A06 (See Note 3 above.), 2C03, 4A09, 4C03, 4D03, COMMERC 4BC3
- 6 units Level II Labour Studies; COMMERC 2BA3
- 12 units Level III Labour Studies; COMMERC 4BD3 (See Note 4 above.)
- 6 units Level II or III Labour Studies; Course List 1
- 3 units from SOC SCI 2J03 or STATS 1CC3* or an equivalent Research Methods/Statistics course as prescribed by other Social Science programmes (See Note 5 above.)
- 3 units HUMAN 2C03
- 12 units* SOCIOl 1A06 and ECON 1A06 which must be completed by the end of 60 units.
- 21 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

**Honours Labour Studies [2640]**

**(Available only to students who entered this programme before September 1997.)**

**NOTES**

1. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
2. Students may not transfer to another Labour Studies programme except by the normal application process.
3. Electives: SOCIOl 1A06, ECON 1A06 and six units from the Faculty of Humanities and/or the Department of Religious Studies should be included in the Level I programme to provide some electives in this programme.
4. Students combining Labour Studies with a Humanities subject or with Religious Studies must complete LABR ST 4A09 and SOC SCI 2J03 or STATS 1CC3. Students in other Combined Honours Programmes may complete the Honours Seminar requirement as specified by the other Department and replace LABR ST 4A09 with six units Level III Labour Studies courses.
5. Students who have not completed LABR ST 2A06 may substitute LABR ST 2A03 and three additional units Level II Labour Studies, preferably LABR ST 2D03.
6. Students who have not completed LABR ST 3AA3 are advised to take LABR ST 3G03.
7. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.

**REQUIREMENTS**

120 - 123 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme
- 18 units LABR ST 2A06 (See Note 5 above.), 2C03, 4A09 (See Note 4 above.)
- 6 units Level II Labour Studies; COMMERC 2BA3
- 9 units Level III Labour Studies; COMMERC 4BC3, 4BD3 (See Note 6 above.)
- 3 units from LABR ST 4C03, 4D03
- 36 units courses specified for the other subject
- 3 units from SOC SCI 2J03 or STATS 1CC3* or an equivalent Research Methods/Statistics course as specified by the other subject. (See Note 7 above.)
- 3 units HUMAN 2C03

*Students combining Honours Arts & Science with Labour Studies are exempt from this requirement.

*If requirement completed in Level I, these units will be taken as electives.

**B.A. in Labour Studies [1640]**

**(Available only to students who entered this programme before September 1997.)**

**NOTES**

1. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
2. Students may not transfer to another Labour Studies programme except by the normal application process.

3. Students who have not completed LABR ST 2A06 may substitute LABR ST 2A03 and three additional units Level II Labour Studies, preferably LABR ST 2D03.

4. Students who have not completed LABR ST 3AA3 are advised to take LABR ST 3G03.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme.
- 12 units LABR ST 2A06 (See Note 3 above.), 2C03; COMMERCE 4B03
- 6 units Level II Labour Studies; COMMERCE 2B03
- 12 units Level III Labour Studies; COMMERCE 4B03 (See Note 4 above.)
- 12 units* SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units.
- 18 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

**PHYSICAL EDUCATION (B.P.E.)**

(See Department of Kinesiology)

**DEPARTMENT OF POLITICAL SCIENCE**

Honours Arts & Science and Political Science

(B. Arts Sc.; See Arts & Science programme)

Honours Political Science *(2450)*

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1A06.

**NOTES**

1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1A06.

2. Students should be noted to those Level II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

3. POL SCI 3N06 (previously 2F06) and 2O06 are required for students enrolled in Honours Political Science programmes and they are recommended for students in the B.A. programme.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 6 units POL SCI 2006
- 30 units Level II, III or IV Political Science of which a maximum of 12 units may be Level II
- 6 units POL SCI 4Z06
- 6 units Level IV Political Science
- 8 units LABPOL SCI 3N06 (previously 2F06)
- 3 units HUMAN 2C03
- 33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. (The maximum Political Science courses to be taken is 60 units.)

**Combined Honours in Political Science and Another Subject**

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1A06. Satisfaction of the admission requirements for the Honours programme in the other subject is required.

**NOTES**

1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1A06 or 1G06. Satisfaction of the admission requirements for the Honours programme in the other subject is required.

2. Students should be noted to those Level II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

3. POL SCI 3N06 (previously 2F06) and 2O06 are required for students enrolled in Honours Political Science programmes and they are recommended for students in the B.A. programme.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 6 units POL SCI 2006
- 12 units Level III Political Science
- 12 units Level II, III or IV Political Science
- 6 units Level IV Political Science
- 36 units Courses specified for the other subject
- 6 units POL SCI 3N06 (previously 2F06) or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject.
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Political Science are exempt from this requirement.
- 9 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Political Science with Arts & Science, or with a Humanities subject, are exempt from this requirement. (The maximum Political Science courses to be taken is 48 units.)

B.A. in Political Science *(1450)*

**ADMISSION**

Completion of any Level I programme, with a Cumulative Average of at least 3.5 including a grade of at least C- in POL SCI 1A06.

**NOTES**

1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1A06 or 1G06.

2. Students should be noted to those Level II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

3. POL SCI 3N06 (previously 2F06) and 2O06 are required for students enrolled in Honours Political Science programmes and they are recommended for students in B.A. programmes.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 12 units Level II Political Science
- 12 units Level III Political Science
- 36 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. (The maximum Political Science courses to be taken is 36 units.)

**Minor in Political Science**

**NOTE**

Level IV courses have limited enrolment with preference given to Honours Political Science students. Students must apply by ballot through the Department.

**REQUIREMENTS**

8 units Level I Political Science
18 units Level II, III or IV Political Science of which up to 12 units may be Level II courses
DEPARTMENT OF PSYCHOLOGY

Honours Psychology (B.Sc.) and Honours Psychology (B.Sc.) (Complementary Studies Option)
(See B.Sc. programmes in Psychology, Faculty of Science, Department of Psychology)

Honours Biology and Psychology (B.Sc.)
(See B.Sc. programmes in Biology, Faculty of Science, Department of Biology)

Honours Arts and Science and Psychology (B.A., Specialist Option)

ADMISSION
Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in PSYCH 1A06 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

NOTES
1. Beginning in 1998-99, admission to the programme will be as follows:
   Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in PSYCH 1A06 or an average of at least 7.0 in PSYCH 1A03 and 1A33 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

2. Applications for all Levels may be picked up at the Office of the Associate Dean (Studies), Faculty of Social Sciences, Kenneth Taylor Hall, Room 120. The applications are available March 1st and must be submitted by March 31st.

3. Credit in MATH 1A03 or MATH 1M03 with a grade of at least C must be completed before entrance into Level II of the programme.

4. STATS 1CC3 (or PSYCH 2F03) and PSYCH 2RR3 must be completed before entrance into Level III of the programme.

5. At some time during the programme, the student:
   a) must meet a laboratory requirement by completing one of PSYCH 3E03, 3L03, 3L33, 3QQ3, 3S03, 3V03, 4G03, 4QQ3.
   b) must complete a six units from the Faculty of Humanities and/or the Department of Religious Studies;
   c) must complete HUMAN 2C03.

6. BIOLOGY 1A03 or 1A06 is a prerequisite for PSYCH 2F03.

7. Students intending to pursue graduate work in Psychology or to take Mathematics beyond Level I are strongly recommended to include MATH 1B03 in their undergraduate programme.

COURSE LIST 1

PSYCH 3E03, 3L03, 3L33, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

LEVEL II: 30 UNITS
18 units Level III Psychology: or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and 15 units of Level III Psychology. (See Note 5(a) above.)
6 units Electives, excluding Psychology. (See Note 5(b) and (c) above.)
6 units Electives

LEVEL IV: 30 UNITS
6 units PSYCH 4D06
12 units Level III or IV Psychology including one course from Course List 1, if not already completed. (See Note 5(a) above.)
12 units Electives (See Note 5(b) and (c) above.)

Honours Psychology (B.A.)

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in PSYCH 1A06 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

NOTES
1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in PSYCH 1A06 or an average of at least 7.0 in PSYCH 1A03 and 1A33 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

2. Credit in MATH 1A03 or MATH 1M03 with a grade of at least C must be completed before entrance into Level II of the programme.

3. STATS 1CC3 (or PSYCH 2F03) and PSYCH 2RR3 must be completed before entrance into Level III of the programme.

4. At some time during the programme, the student:
   a) must meet a laboratory requirement by completing one of PSYCH 3E03, 3L03, 3L33, 3QQ3, 3S03, 3V03, 4G03, 4QQ3.
   b) must complete six units from the Faculty of Humanities and/or the Department of Religious Studies;
   c) must complete HUMAN 2C03.

5. BIOLOGY 1A03 or 1A06 is a prerequisite for PSYCH 2F03.

6. Students who entered Level II Honours B.A. Psychology before September 1994, may, in Level IV, register for Psychology 4D06 (Psychology Thesis) with permission of the course coordinator. These students will be transferred to Honours Psychology (Specialist Option).

COURSE LIST 1

PSYCH 3E03, 3L03, 3L33, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

LEVEL II: 30 UNITS
6 units STATS 1CC3* (or PSYCH 2F03), PSYCH 2RR3
9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
3 units* from the Faculty of Science, excluding Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A03 (or 1A06) is highly recommended.
6 units Electives, excluding Psychology. (See Note 4(b) and (c) above.)

LEVEL III: 30 UNITS
15 units Level III Psychology; or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and 12 units of Level III Psychology. (See Note 4(a) above.)
12 units Electives, excluding Psychology (See Notes 4(b) and (c) above.)
3 units Electives

LEVEL IV: 30 UNITS
15 units Level III or IV Psychology including one course from Course List 1, if not already completed. (See Notes 4(a) and 6 above.)
9 units Electives excluding Psychology. (See Notes 4(b) and (c) above.)
6 units Electives
Combined Honours in Psychology and Another Subject (B.A.)

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in PSYCH 1A06 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03. Satisfaction of the admission requirements for the Honours programme in the other subject is required.

NOTES
1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in PSYCH 1A06 or an average of at least 7.0 in PSYCH 1A03 and 1AA3 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03. Satisfaction of the admission requirements for the Honours programme in the other subject is required.

2. Credit in MATH 1A03 or MATH 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.

3. STATS 1CC3 (or PSYCH 2R03) and PSYCH 2RR3 must be completed before entrance into Level III of the programme.

4. At some time during the programme, the student:
   a) must meet a laboratory requirement by completing one of PSYCH 3E03, 3L3, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3. Enrolment in Psychology Laboratory courses is limited.
   b) must complete six units from the Faculty of Humanities and/or the Department of Religious Studies.
   c) must complete HUMAN 2C03.

5. BIOLOGY 1A03 or 1A06 is a prerequisite for PSYCH 2F03.

COURSE LIST 1
PSYCH 3E03, 3L3, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

LEVEL II: 30 UNITS
6 units
   a) from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
   b) from the Faculty of Science, excluding the Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A03 (or 1A06) is recommended.
12 units Courses as specified for the other subject.
6 units Electives
*If requirement completed in Level I, these units will be taken as electives.

LEVEL III: 30 UNITS
12 units
   a) Level III Psychology, or three units from PSYCH 2E03, 2F03, 2H03, 2T03, if not taken in Level II and nine units of Level III Psychology. (See Note 4 (a) above.)
   b) Level III Psychology, or three units from PSYCH 2E03, 2F03, 2H03, 2T03, if not taken in Level II and nine units of Level III Psychology. (See Note 4 (b) and (c) above.)
12 units Courses as specified for the other subject.
6 units Electives (See Note 4 (b) and (c) above.)

LEVEL IV: 30 UNITS
12 units
   a) Level III or IV Psychology including one course from Course List I, if not already completed. (See Note 4 (a) above.)
   b) Level III or IV Psychology including one course from Course List I, if not already completed. (See Note 4 (b) above.)
12 units Courses as specified for the other subject.
6 units Electives (See Note 4 (b) and (c) above.)

Psychology Major (B.A.)

NOTE
The Psychology Major programme is being phased out. Level IV will be last offered in September 1997.

LEVEL IV: 30 UNITS (LAST OFFERED IN 1997-98)
12 units
   a) Level III or IV Psychology
   b) from Business, Humanities or Science, excluding Psychology
12 units Electives of which no more than three units may be Psychology courses

B.A. in Psychology

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 3.5 and a grade of at least C- in PSYCH 1A06.

NOTES
1. Beginning in 1998-99, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 3.5 and a grade of at least C- in PSYCH 1A06 or an average of at least 4.0 in PSYCH 1A03 and 1AA3.
2. Completion of one of MATH 1K03, 1M03 or 1A03 is required in Level I. Completion in Level I is highly recommended.
3. PSYCH 2G03 or STATS 1CC3 (or PSYCH 2R03) must be completed before entrance into Level III of the programme.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses

LEVEL II: 30 UNITS
6 units
   a) from PSYCH 2G03, STATS 1CC3* (or PSYCH 2R03) (See Note 3 above.)
   b) from PSYCH 2E03, 2F03, 2H03, 2T03
3 units Level II Psychology
6 units
   a) from MATH 1K03, 1M03 or 1A03 (See Note 2 above.)
   b) from Business, Humanities or Science, excluding Psychology
6 units Electives, excluding Psychology
3 units Electives
*If requirement completed in Level I, these units will be taken as electives.

LEVEL III: 30 UNITS
12 units
   a) Level III Psychology, or three units from PSYCH 2E03, 2F03, 2H03, 2T03, if not taken in Level II and nine units from Level III Psychology
   b) Level III Psychology, or three units from PSYCH 2E03, 2F03, 2H03, 2T03, if not taken in Level II and nine units from Level III Psychology
6 units
   a) from Business, Humanities or Science, excluding Psychology
   b) from Business, Humanities or Science, excluding Psychology
6 units Electives
6 units Electives

Minor in Psychology

REQUIREMENTS
6 units PSYCH 1A06 or 1A03 and 1AA3
12 units Level II or III Psychology
6 units Level III Psychology

DEPARTMENT OF RELIGIOUS STUDIES

Fields of Study
The Department offers courses in four fields of study. Students are encouraged to specialize in any one of these fields. Level II, III and IV courses are allocated to the fields as follows:

I. ASIAN RELIGIONS
   RELIG ST 2J06, 2L03, 2P06, 2RR3, 2T03, 2TT3, 3AA3, 3E03, 3H03, 3I03, 3L03, 3S03, 3U03, 3UU3, 4F03, 4G03
   SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES
   RELIG ST 2B03, 2D03, 2EE3, 2GG3, 2HH3, 2NN3, 2VV3, 2YY3, 2Z03, 3M03, 3N03, 3P03, 3T03, 4B03, 4C03
   HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT
   RELIG ST 2C03, 2CC3, 2H03, 2I03, 2J03, 2K03, 2L03, 2UU3, 2X03, 2XX3, 2YY3, 2Z03, 3D03, 3I03, 3K03, 3L03, 3MM3, 3NN3, 3YY3, 3ZZ3, 4D03, 4E03
   IV. CONTEMPORARY AND COMPARATIVE RELIGIONS
   RELIG ST 2AA3, 2BB3, 2EA3, 2EB3, 2M03, 2N03, 2QQ3, 2SS3, 2V03, 2W03, 2WW3, 3J06

NOTE
Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit or Japanese or both early in their programme (see the calendar offerings listed under these headings). Students wishing to specialize in Biblical Studies should consider work in Greek (see offerings under Classics, Greek in the Course Listings section of this Calendar) or Hebrew or both.
Honours Religious Studies {2475}

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Religious Studies courses, preferably including one Level I Religious Studies course.

NOTES
1. All honours students are strongly urged to consult a departmental undergraduate advisor in the selection of their Level three and four courses.
2. Part-time students should note that RELIG ST 3F03 and 4A06 are regularly offered in the evening. Other courses required for completion of the degree are offered in the evening whenever possible. Students who anticipate difficulty fulfilling programme requirements should consult a departmental undergraduate advisor as early as possible in their programme.
3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
3 units from Asian Religions
6 units three units each from two of Biblical Studies, Western Religious Thought and Contemporary and Comparative Religions
15 units RELIG ST 3F03, 4A06, 4J06 (See Note 5 above.)
12 units Level II, III or IV Religious Studies of which at least six units must be Level III. Level III courses which have been taken to satisfy the above fields of study requirements may be subtracted from these six units of Level III.
36 units Courses specified for the other subject
6 units* from Linguistics, a language other than English, Statistics or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject. (See Note 4 above.)
3 units HUMAN 2C03. Students combining Honours Arts and Science with Religious Studies are exempt from this requirement.
9 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities. Students combining Religious Studies with Arts & Science, or with a Humanities subject are exempt from this requirement.
*If requirement completed in Level I, these units will be taken as electives.

B.A. in Religious Studies {1475}

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 3.5 and an average of at least 4.0 in six units of Religious Studies courses, preferably including one Level I Religious Studies course.

NOTES
1. All students should consult the Departmental Handbook and are strongly urged to consult a departmental undergraduate advisor at least once each year.
2. Part-time students should note that RELIG ST 3F03 is regularly offered in the evening. Other courses required for completion of the degree are offered in the evening whenever possible. Students who anticipate difficulty fulfilling programme requirements should consult a departmental undergraduate advisor as early as possible in their programme.
3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
3 units from Asian Religions
6 units three units each from two of Biblical Studies, Western Religious Thought and Contemporary and Comparative Religions
3 units RELIG ST 3F03
12 units Level II, III or IV Religious Studies of which at least six units must be Level III. Level III courses which have been taken to satisfy the above fields of study requirements may be subtracted from these six units of Level III.
36 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities. (The maximum Religious Studies courses to be taken is 48 units.)

Minor in Religious Studies

REQUIREMENTS
24 units Religious Studies courses with no more than six units from Level I
## Combined B.A./B.S.W.

### ADMISSION

Completion of any Level I programme, including PSYCH 1A06 or 1A03 and 1A33 and SOCIO 1A06, normally with a CA of at least 6.0 and evidence of personal suitability, which may be evaluated by

one or a combination of written statements, tests, or interviews.

An applicant must complete Level I by April of the year in which

application is made.

In choosing Level I courses, the student should take care to in-

clude those courses that will allow entry to the B.A. programme. Students should consult the relevant sections of the Calendar and/or the Office of the Associate Dean (Studies).

Enrolment in the Combined B.A./B.S.W. programme is limited. Students who intend to apply for the combined B.A. and B.S.W. programme must consult the School of Social Work prior to application. Students admitted to the Combined programme who have com-

pleted B.A. work beyond Level I normally will require three years

after admission to complete the programme.

### TWO-TIER APPLICATIONS

If you are transferring from a university other than McMaster, or a
college, you must complete two application forms as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Course Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>SOC WORK 2B06, 2C03, 2D03, 3D06, 3DD6, 4D06, 4DD6</td>
</tr>
<tr>
<td>II</td>
<td>SOC WORK 3N03, 3P03, 3R03, 3G03, 4C03, 4P03, 4T03, 4V03, 4W03, 4X03, 4Y03</td>
</tr>
<tr>
<td>III</td>
<td>SOC WORK 3C03, 3G03, 3H03, 4A03, 4B03, 4C03, 4E03, 4J03, 4K03, 4M03, 4Z03</td>
</tr>
</tbody>
</table>

2. **Progression Within Programme:** Students must achieve a

minimum grade of C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06 and 4D06, and a Pass in SOC WORK 3DD6 and 4DD6 and a CA of at least 6.0.

3. **Students must complete three units of Social Sciences Research Methods,** (eg. SOCIO 2Z03, 3H06, GERONTOL 2C03, 3C03, POL SCI 2F06 or 3N06) as a Social Work requirement or as required for the B.A. A statistics course may not substitute for a research methods course.

4. **Graduation:** To qualify for the B.A./B.S.W. degrees, students must complete a total of at least 60 units of Social Work: 45 units towards the B.W. degree and 12 units Group III as elective for the B.A. programme.

The B.S.W. degree component will be granted only if the student

has achieved a grade of at least C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06, and 4D06, and a Pass in SOC WORK 3DD6 and 4DD6, and a CA of 6.0.

5. **Students are expected to assume the cost of travelling to and from field practice agencies.**

### REQUIREMENTS

- **138 units total (Levels I to IV), of which 48 units may be Level I courses**
- **30 units** from the Level I programme completed prior to admission to the programme. (See Admission above.)
- **12 units** SOC WORK 2B06, 2C03, 2D03 (which must be completed prior to enrolling in SOC WORK 3D06 and 3DD6)
- **12 units** SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)
- **3 units** from SOC WORK 3N03, 3P03
- **12 units** SOC WORK 4D06, 4DD6
- **3 units** from SOC WORK 4C03, 4X03, 4Y03
- **6 units** Group III Social Work courses
- **12 units** Group III Social Work courses (See Note 4 above.)
- **3 units** PSYCH 2A03 (which must be completed prior to enrolling in SOC WORK 3D06 and 3DD6)
- **3 units** Social Sciences Research Methods. (If completed as part of the B.A., these units will be taken as electives. See Note 3 above.)
- **24 units** Courses specified for the B.A. (This may vary according to the B.A. programme.)
- **18 units** Electives. (Other requirements may be specified by the B.A. programme.)

### B.S.W. 

#### ADMISSION

Completion of an undergraduate degree from a recognized univer-
sity, including introductory Psychology and Sociology, (equiva-
lent to the McMaster courses PSYCH 1A06 or 1A03 and 1A33 and SOCIO 1A06) normally with an average of at least 6.0 or its equiv-
lent, and evidence of personal suitability which may be evaluated

by one or a combination of written statements, interviews, or tests. First Nations students may select an alternate application process. Those who wish to do so should consult the School of Social Work for details.

An applicant is required to complete the prerequisite undergradu-
ate degree work by April of the year in which application is made.

Enrolment in the B.S.W. programme is limited. Students who intend to apply to the B.S.W. programme must consult the School of Social Work prior to application.

All applications for admission to the School of Social Work are considered annually and must be made directly to the School well before March 1 for the Fall/Winter term. Applicants must also apply to the University.

### NOTES

1. **Course Groupings:** There are three groups of courses in the Social Work programme:

   - Group I includes core courses which are required.
   - Group II includes courses which are primarily practice oriented.
   - Group III includes courses which are primarily policy oriented.

Only Group III courses may be taken for elective credit by undergraduates not in Social Work, with the exception of SOC WORK 4A03 which is open only to Social Work students. Social Work students must take 12 units from Group III courses for elective credit. Permission of the School for Group III courses is required for all students.
TWO-TIER APPLICATIONS

Individuals interested in the B.S.W. programme must complete two application forms as follows:

1. General Application (December 1)

If you wish to study full-time, you must obtain either a 105D application form from the Admissions Office of any Ontario university or, if you are a McMaster graduate, obtain the McMaster Returning Student Application form from the Office of the Registrar, Gilmour Hall, Room 108. You must return the completed form to the appropriate office (either the Ontario Universities' Application Centre (OUAC) or to the Office of the Registrar, McMaster University) with the appropriate fee.

If you wish to study part-time, you must obtain either a McMaster University Part-time Application form or, if you are a McMaster graduate, a McMaster Returning Student Application form from the Office of the Registrar, Gilmour Hall, Room 108. You must return the completed form to the appropriate office (either the Ontario Universities' Application Centre or the Office of the Registrar, McMaster University) with the appropriate fee.

In order to allow adequate time for the processing of the General Application, applicants are advised to submit their application by December 1.

2. Supplementary Application (March 1)

After the General Application has been received at McMaster, the School of Social Work will mail you a Supplementary Application form, which must be completed and returned directly to the School of Social Work by March 1. To avoid delay, you are advised to request this form personally through direct contact with the School of Social Work. This form is used to decide when applicants are able to write an admissions test, which is scheduled for two dates in March of each year, both on site and at alternative testing centres outside Hamilton.

Adequate time is needed to make these arrangements and to complete the admissions process. Therefore, it is impossible to consider applicants whose Supplementary Application arrives after the March 1 deadline.

NOTES

1. Course Groupings: There are three groups of courses in the Social Work programme:
   - Group I includes core courses which are required;
   - Group II includes core courses which are primarily practice oriented;
   - Group III includes courses which are primarily policy oriented.

   Only Group III courses may be elective credit by undergraduates not in Social Work, with the exception of SOC WORK 4A03 which is open only to Social Work students. Social Work students must take 12 units from Group III courses. Permission of the School for Group III courses is required for all students.

GROUP I
SOC WORK 2B06, 2C03, 2D03, 3D06, 3D06, 4D06, 4D06

GROUP II
SOC WORK 3N03, 3O03, 3P03, 3R03, 4G03, 4003, 4P03, 4T03, 4V03, 4W03, 4X03, 4Y03

GROUP III
SOC WORK 3C03, 3G03, 3H03, 4A03, 4B03, 4C03, 4E03, 4J03, 4K03, 4M03, 4Z03

2. Progression Within Programme: Students must achieve a minimum grade of C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06, and 4D06, and Pass in SOC WORK 3D06 and 4D06, and a CA of at least 6.0.

3. Three units of Group II must be taken if Psychology 2A03 is completed prior to admission to the B.S.W. programme.

4. Three units of Group III must be taken if three units of Social Sciences Research Methods were completed prior to admission to the B.S.W. programme (e.g. SOCIOI 2203, 3H06, GERONTOL 2C03, 3C03, POL SCI 2F06 or 3N06). A statistics course may not substitute for a research methods course.

5. Progression: To qualify for the B.S.W. students must complete a total of 60 units of credit. The B.S.W. will be granted only if the student has achieved a grade of at least C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06, and 4D06, and Pass in SOC WORK 3D06 and 4D06, and a CA of 6.0.

6. Students are expected to assume the cost of travelling to and from field practice agencies.

REQUIREMENTS

60 units total

12 units SOC WORK 2B06, 2C03, 2D03 (which must be completed prior to enrolling in SOC WORK 3D06 and 4D06)

3 units PSYCH 2A03. If requirement was completed prior to admission, these units must be chosen from Group II Social Work courses. (See Note 3 above.)

12 units SOC WORK 3D06, 3D06 (which must be completed prior to enrolling in SOC WORK 4D06 and 4D06)

3 units from SOC WORK 3N03, 3R03

12 units SOC WORK 4D06, 4D06

3 units from SOC WORK 4O03, 4X03, 4Y03

9 units Group III Social Work courses

3 units Social Sciences Research Methods. If requirement was completed prior to admission, these units must be chosen from Group III Social Work courses. (See Note 4 above.)

3 units additional Group II Social Work courses. (See Note 3 above.)

DEPARTMENT OF SOCIOLOGY

Honours Arts & Science and Sociology

(B.Arts Sci.; See Arts & Science programmes)

Honours Sociology (Specialist Option) {2522}

In 1998-99, enrolment in this programme may be limited.

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOI 1A06.

NOTES

1. A student may take a maximum of six units of Level IV independent research (SOCIOI 4M03, 4MM6 or 4N03).

2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

6 units SOCIOI 2506

3 units from SOCIOI 3A03, 3P03, 3PP3

3 units from SOCIOI 3I03, 3003, 3W03

12 units Level IV Sociology

24 units Level II, III or IV Sociology

9 units SOCIOI 2203 which must be completed by the end of 60 units, and SOCIOI 3H06

3 units HUMAN 2C03

30 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

Honours Sociology {2520}

In 1998-99, enrolment in this programme may be limited.

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOI 1A06.

NOTES

1. A student may take a maximum of six units of Level IV independent research (SOCIOI 4M03, 4MM6 or 4N03).

2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

6 units SOCIOI 2506

3 units from SOCIOI 3A03, 3P03, 3PP3
Combined Honours in Sociology and Another Subject

In 1998-99, enrolment in this programme may be limited.

ADMISSION
Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOL 1A06. Satisfaction of admission requirements for the Honours programme in the other B.A. subject is required.

NOTES
1. A student may take a maximum of six units of Level IV Independent research (SOCIOL 4M03, 4MM6 or 4N03).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
6 units SOCIOL 2S06
3 units from SOCIOL 3A03, 3P03, 3PP3
3 units from SOCIOL 3I03, 3003, 3W03
12 units Level IV Sociology
12 units Level II, III or IV Sociology
36 units Courses specified for the other subject
6-9 units SOCIOL 2Z03 which must be completed by the end of Level II, and SOCIOL 3H06 or, in combined programmes within the Faculty of Social Sciences, the six units Research Methods/Statistics course specified for the other subject.
3 units HUMAN 2C03. Students combining Honours Arts and Science with Sociology are exempt from this requirement.
6-9 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A. in Sociology

ADMISSION
Completion of any Level I programme, with a Cumulative Average of at least 3.5 including a grade of at least C- in SOCIOL 1A06.

NOTES
1. Students enrolled in the B.A. Gerontology and Sociology programme will complete GERONTOL 2C03 or 3C03 to satisfy the Research Methods requirement and will replace SOCIOL 2Z03 with three units of Level II or III Sociology.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
6 units SOCIOL 2S06
3 units SOCIOL 2Z03 (See Note 1 above.)
15 units Level II or III Sociology
36 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

Minor in Sociology

NOTES
1. Students who have already completed SOCIOL 2006 or 2506 may use these units towards this requirement of the minor.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS
6 units SOCIOL 1A06
6 units from SOCIOL 2C06, 2D06, 2P03 and 2RR3, 2V06 (See Note 7 above.)
12 units Level II or III Sociology

Programmes For Students Who Entered Prior To September 1996

Honours Sociology (Specialist Option) {2522}
(available only to students who entered this programme before September 1996.)

NOTES
1. A student may take a maximum of six units of Level IV independent research (SOCIOL 4M03, 4MM6 or 4N03).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
6 units SOCIOL 2S06
3 units from SOCIOL 3A03, 3P03, 3PP3
3 units from SOCIOL 3I03, 3003, 3W03
12 units Level IV Sociology
24 units Level II, III or IV Sociology
6 units SOCIOL 3H06
3 units HUMAN 2C03
33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

Honours Sociology

(available only to students who entered this programme before September 1996.)

NOTES
1. A student may take a maximum of six units of Level IV independent research (SOCIOL 4M03, 4MM6 or 4N03).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses
30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
6 units SOCIOL 2S06
3 units from SOCIOL 3A03, 3P03, 3PP3
3 units from SOCIOL 3I03, 3003, 3W03
12 units Level IV Sociology
18 units Level II, III or IV Sociology
6 units SOCIOL 3H06
3 units HUMAN 2C03
39 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

Combined Honours in Sociology and Another Subject

(available only to students who entered this programme before September 1996.)

NOTES
1. A student may take a maximum of six units of Level IV independent research (SOCIOL 4M03, 4MM6 or 4N03).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.
REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I courses

<table>
<thead>
<tr>
<th>Units</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td>30</td>
<td>from the Level I programme completed prior to admission to the programme. (See Admission above.)</td>
</tr>
<tr>
<td>6</td>
<td>SOCIOL 2S06</td>
</tr>
<tr>
<td>3</td>
<td>from SOCIOL 3A03, 3P03, 3PP3</td>
</tr>
<tr>
<td>3</td>
<td>from SOCIOL 3C03, 3O03, 3W03</td>
</tr>
<tr>
<td>12</td>
<td>Level IV Sociology</td>
</tr>
<tr>
<td>12</td>
<td>Level II, III or IV Sociology</td>
</tr>
<tr>
<td>36</td>
<td>Courses specified for the other subject</td>
</tr>
<tr>
<td>6</td>
<td>SOCIOL 3H06 or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject.</td>
</tr>
<tr>
<td>3</td>
<td>HUMAN 2C03</td>
</tr>
<tr>
<td>9</td>
<td>Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Sociology with Arts &amp; Science, or with a Humanities subject, are exempt from this requirement.</td>
</tr>
</tbody>
</table>

FACULTY OF SOCIAL SCIENCES B.A. in Sociology

90 units total (Levels I to III), of which 42 units may be Level I courses

<table>
<thead>
<tr>
<th>Units</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>from the Level I programme completed prior to admission to the programme. (See Admission above.)</td>
</tr>
<tr>
<td>6</td>
<td>SOCIOL 2S06</td>
</tr>
<tr>
<td>18</td>
<td>Level II or III Sociology including one of SOCIOL 2Y03, 2Z03 or 3H06 (See Note 1 above.)</td>
</tr>
<tr>
<td>36</td>
<td>Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.</td>
</tr>
</tbody>
</table>

NOTE
1. Students enrolled in the B.A. Gerontology and Sociology programme will complete GERONTOL 2C03 or 3C03 to satisfy the Research Methods requirement.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I courses

<table>
<thead>
<tr>
<th>Units</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>from the Level I programme completed prior to admission to the programme. (See Admission above.)</td>
</tr>
<tr>
<td>6</td>
<td>SOCIOL 2S06</td>
</tr>
<tr>
<td>18</td>
<td>Level II or III Sociology including one of SOCIOL 2Y03, 2Z03 or 3H06 (See Note 1 above.)</td>
</tr>
<tr>
<td>36</td>
<td>Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.</td>
</tr>
</tbody>
</table>
WOMEN'S STUDIES PROGRAMME

E-MAIL ADDRESS: daenzer@mcmaster.ca

Director
Patricia M. Daenzer/B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)

Administrative Assistant
Pat Young

Women's Studies is a rapidly expanding discipline which brings fresh new approaches to scholarship. It focuses on women's contributions to civilization in all fields of endeavour, past and present. It examines the ways in which ideas about women have developed and tests the validity of those ideas in the light of new knowledge and theories. It establishes the importance of gender as a category of analysis in scholarly enquiry, social relations, cultural expression and belief systems.

Students choose a subject they wish to pair with Women's Studies and work towards a combined degree. By offering a Combined Honour B.A. degree with another subject of the student's own choice, Women's Studies encourages the reassessment of the traditional academic disciplines in order to create a more balanced understanding of women and men.

Women's Studies courses are interdisciplinary, allowing students to explore the relationship between different branches of knowledge and to test the presuppositions of established theoretical frameworks in any area of enquiry. The Director of Women's Studies advises students on selection of appropriate courses.

The programme emphasizes the integration of theory and practice, with small-group teaching, personal attention to individual development and the encouragement of student-designed research at all levels.

The Women's Studies programme is committed to understanding and seeking to improve the conditions of life for all women. Students in the programme are trained in feminist theories and in applied skills, enabling them to be creatively responsive to community needs and to be capable of critically analyzing women's issues and problems in the local and international work world.

Graduates of the programme will find many career options in such areas as education, health care, labour relations, personnel management, industrial and government consulting, as well as in work for higher degrees in Women's Studies.

ACADEMIC REGULATIONS

The Women's Studies programme is governed by the general Academic Regulations of the University and the regulations described below.

Honours Arts & Science and Women's Studies (B. Arts Sc.; See Arts & Science programme)

Combined Honours B.A. in Women's Studies and Another Subject

ADMISSION

Completion of any Level I programme with a weighted average of at least 7.0 in 12 units of Level I work, including a grade of at least B- in WOMEN ST 1A06 and satisfaction of admission requirements for the Honours B.A. programme in the other subject.

NOTES

1. Enrolment in the programme is limited. Application for admission (forms available in the Women's Studies office), including a letter explaining the applicant's interest in the programme, should be made to the Director of Women's Studies prior to April 15.

2. Students who have not taken WOMEN ST 1A06 because they have transferred from another university may be considered for admission to the programme if they are deemed by the Admission Committee to have fulfilled requirements equivalent to WOMEN ST 1A06.

3. Registration in each level of the programme requires written approval of the Director of the Women's Studies programme and the appropriate Other Subject Counsellor.

4. In Levels II, III and IV, students must take the six-unit Women's Studies course appropriate to their level and six additional units of approved discipline-related courses at each level. Students should plan their programmes in consultation with the Director of Women's Studies, the Departmental Counsellor for their other subject and the Associate Dean of the Faculty in which the student is registered.

REQUIREMENTS

30 units from Level I, completed prior to admission to the programme. (See Admission above.)

6 units WOMEN ST 2A06

6 units from WOMEN ST 2B06, 2C06, 2H03, 2HH3, RELIG ST 2B03, 2B33, SOCIO 2Q06, 2U06

6 units WOMEN ST 3A06

6 units from WOMEN ST 3B03, 3C03, 3CC3, 3D06, 3E03

HISTORY 3X03, LABR ST 3E03, PHILOS 3I03, SOCIOI 3D03, 3E03, 3X03

6 units WOMEN ST 4A06

6 units from WOMEN ST 4B06, 4C06, HISTORY 4H06, KINESIO 4T03, SOCIOI 4U03

18 units Elective course work beyond Level I

Some courses not listed above may be substituted, at the appropriate level, from: Anthropology, Classics, Comparative Literature, English, French, Geography, History, Kinesiology, Labour Studies, Philosophy, Religious Studies and Sociology. Students must select their courses in consultation with the Director of Women's Studies.

Note: The courses required for the Women's Studies portion of the Combined Honours programme must not include courses offered by the Department in the student's other subject area.

Minor In Women's Studies

REQUIREMENTS

6 units WOMEN ST 1A06

18 units Level II, III Women's Studies courses as listed under Women's Studies in the Course Listings section of this Calendar.
THEME SCHOOLS

The concept of a Theme School was outlined in a key series of recommendations in the University’s Strategic Plan. A Theme School is a centre of interdisciplinary learning in which a group of faculty members identifies a set of intellectual problems arising out of their research, establishes a programme of study focused on these problems, and gathers a group of students interested in learning about these problems. Students and faculty will form an intellectual community that will explore these problems through self-directed learning and independent study.

Theme Schools will be taken as a minor in conjunction with any four- or five-level programme. (See Minors in the General Academic Regulations section of this Calendar.)

It is anticipated that Theme Schools’ life cycles will normally be five years. They will accept approximately 80 students a year for three years.

The subject area of Theme Schools will vary over time, depending on the interests of faculty and students.

Individual Theme Schools will invite applications from students wishing to enrol early in each calendar year. Normally, students will indicate their particular interests and qualifications. Students selected for a school will be informed in the spring.

Currently, three schools are in operation. The Theme School in Science, Technology, and Public Policy will be admitting students for the first intake in September 1997; the last intake for The Theme School in International Justice and Human Rights was in September 1996; the last intake to the Theme School on New Materials and Their Impact on Society was in September 1995.

SCHEDULING OF COURSES

Students participating in Theme Schools should be aware that many Theme School courses will be held on Thursday evenings. This is necessary to make Theme School courses available to students from a wide variety of programmes. The Theme Schools will arrange classes that meet the scheduling needs of their students; however, it may be necessary for students to change their optional courses in their Honours programmes to have conflict-free schedules.

ACADEMIC REGULATIONS

Theme School Minor programmes are governed by the General Academic Regulations of the University and the regulations described in each Theme School.

Normally, students will enter a Theme School in Level II and will complete a four- or five-year degree with a Theme School Minor. Continuation in the Theme School normally requires students to maintain standing in their programme.

THEME SCHOOL ON INTERNATIONAL JUSTICE AND HUMAN RIGHTS

This Theme School provides students with a chance to investigate problems of human rights and international justice from an interdisciplinary perspective. Students conduct individual and group research using problem-based and self-directed learning techniques.

REQUIREMENTS

The last intake for this Theme School was September 1996.

Students are required to complete 24 units in order to obtain the Theme School minor. Six units must consist of Level I work acceptable to the Director. In Level II all students must take TSUJR 2A06*, the Introductory Seminar. In Levels III and IV students may complete their minor by taking an additional 12 units of Theme School courses.

* Last offered in 1996-97.

THEME SCHOOL ON NEW MATERIALS AND THEIR IMPACT ON SOCIETY

WEB ADDRESS:

http://www.science.mcmaster.ca/fhemeschool/homepage.html

The Theme School on New Materials and Their impact on Society is being phased out. The last Intake was September 1995.

Director

A. John Berlinsky/B.Sc., M.Sc., Ph.D.
A.N. Bourns Bldg., Room 454, ext. 24683

Throughout history, the discovery and development of new materials have had a profound impact on the evolution of human civilization. Our ability to produce such materials as bronze, iron, paper and silicon created new directions in science, industry, health care and the arts and have affected all aspects of human endeavour, from war and peace to space exploration to daily living.

This Theme School explores the discovery of new materials and investigates the impact of materials-driven technology on business, health, recreation, technology, the arts and the environment.

REQUIREMENTS

The last intake for this Theme School was September 1995.

This programme has three main components comprising 24 units as follows:

a) Courses (TSNM 2B03*, 3B03**, 4B03, 4C03);

b) The Theme School Seminar (TSNM 2A02*, 3A02**, 4A02); and

c) Research Internship (TSNM 2R06*, 3R06**).

The Seminar is required of all students for a total of six units.

A minimum of 18 units must be taken from among the Theme School courses and research internships. Normally, one or two courses are taken in the Fall and Winter terms.

* Last offered in 1995-96.

** Last offered in 1996-97.

See specific courses and their descriptions listed under Theme Schools in the Course Listings section in this Calendar.

THEME SCHOOL ON SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

Director

John Hodgins Engineering Bldg., Room 230, ext. 22019

This Theme School is a response to the reality that the formation of public policy in our society requires not only scientific and technological knowledge, but also an awareness of the social and ethical implications of scientific and technological developments. The foundational course in Level II aims to develop a basic understanding of the nature of science, technology and technological change, and of the interaction between science and technology on the one hand, and larger societal values and public policy on the other.
Some of the elective courses are interdisciplinary, in which instructors and students apply the perspectives of a variety of fields to the relationship between science, technology and our social life. Other elective courses bring the perspectives of a single discipline to these dynamic relations.

One of the key aims of the Theme School is to prepare students to participate in the formation of public policy as citizens and/or professionals with a particular sensitivity to the ethical dimension of the social and political debate concerning many current science/technology projects.

ADMISSION

Enrolment in the Theme School Minor is limited.

The Theme School on Science, Technology, and Public Policy will admit a maximum of 80 students to the minor in 1997-98. Admission will be by selection and on condition that a student is accepted into any four- or five-level programme in the University.

Applications for admission in 1997-98 should be made to the Director by April 11, 1997. Application forms may be obtained from any Associate Dean's Office or in the case of Commerce students, the Academic Programmes Office. Applications will be reviewed once the Level I grades are available in mid-May. Students will be notified by mail of the decision. If vacancies exist in the Theme School after June 1, students may continue to apply; applications will be accepted until the enrolment limit is reached.

REQUIREMENTS

Students are required to complete 24 units in order to obtain the Theme School minor including six units of Level I work acceptable to the Director. In Level II all students must take STPP 2A06, the introductory course. In Levels III and IV students may complete their minor by taking an additional 12 units of Theme School courses.

See specific courses and their descriptions listed under Theme Schools in the Course Listings section in this Calendar.
INTERDISCIPLINARY MINORS AND THEMATIC AREAS

INTERDISCIPLINARY MINORS

The following four listings constitute University-sanctioned Minors in Health and Society, Indigenous Studies, Jewish Studies, and Peace Studies.

No degree is granted for these programmes of study, but students registered in four- or five-level programmes can receive a Minor designation on their transcripts following graduation if their chosen Minor programme is successfully completed. Please see the Minor subsection in the University’s General Academic Regulations section for further information.

Health and Society

Health issues are a major public concern and increasing attention is being devoted to the social bases of health and illness. Concepts of health and illness are shifting away from clinical definitions to a strong emphasis on well-being and lay concerns. In confronting decisions about their health people are faced with profound moral dilemmas about life and death, while governments are faced with issues of cost-effectiveness and the introduction of policies which promote health. These issues transcend traditional medical treatment. Indeed, medicine as a particular system of thought and practice is subject to analysis in the same way as other social phenomena, alternative disease models and systems of healing. These themes are the focus of courses in Health and Society.

The requirements for a Minor are 24 units chosen from the courses listed below. For more information on specific courses, please consult the Course Listings section in this Calendar. Students should note that not all listed courses may be available and should check carefully for prerequisites.

Students wishing to pursue a Minor in Health and Society may obtain more information, including information on course substitutions, from Dr. Vivienne Walters, Kenneth Taylor Hall, Room 718, ext. 24692.

Courses Dealing with Health and Society Issues

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHROP 2U03</td>
<td>Plagues and People</td>
</tr>
<tr>
<td>ANTHROP 3Z03</td>
<td>Medical Anthropology: The Biomedical Approach</td>
</tr>
<tr>
<td>ECON 3Z03</td>
<td>Health Economics</td>
</tr>
<tr>
<td>GEOG 4S03</td>
<td>Geography of Health Care</td>
</tr>
<tr>
<td>KINESIOL 3SS3</td>
<td>Body, Mind, and Spirit</td>
</tr>
<tr>
<td>LABR ST 3D03</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>PHILOS 2D03</td>
<td>Special Populations</td>
</tr>
<tr>
<td>PHILOS 3C03</td>
<td>Advanced Bioethics</td>
</tr>
<tr>
<td>PSYCH 3B03</td>
<td>Abnormal Psychology I (Fundamentals)</td>
</tr>
<tr>
<td>PSYCH 3N3</td>
<td>Abnormal Psychology II (Major Disorders)</td>
</tr>
<tr>
<td>RELIG ST 2M03</td>
<td>Death and Dying: Comparative Views</td>
</tr>
<tr>
<td>RELIG ST 2N03</td>
<td>Death and Dying: The Western Experience</td>
</tr>
<tr>
<td>RELIG ST 2WW3</td>
<td>Health, Healing and Religion</td>
</tr>
<tr>
<td>SCIENCE 2G03</td>
<td>The Right to Food</td>
</tr>
<tr>
<td>SOC WORK 3C03</td>
<td>Social Aspects of Health and Disease</td>
</tr>
<tr>
<td>SOCIOL 3G03</td>
<td>Sociology of Health Care</td>
</tr>
<tr>
<td>SOCIOI 3H03</td>
<td>Sociology of Health</td>
</tr>
</tbody>
</table>

Please see the Course Listings section for a detailed description of the above courses.

INDIGENOUS STUDIES

The Minor in Indigenous Studies was developed as a direct response to the wishes of representatives of Indigenous groups in Ontario, of students, and of educators, for greater accessibility to a university education for native students. The structure of the programme was developed by the President's Committee on Indigenous Issues. This Committee, comprising University and Aboriginal representatives, formulates policy on all issues affecting the Indigenous communities at large. The Committee serves as the primary resource on all subjects relating to the education and support needs of the University’s Indigenous population, both in Indigenous-specific and general programming and services.

The Indigenous Studies Minor responds to a desire for a programme of study that examines Indigenous people’s history, spirituality, and contemporary situation, with particular attention to the Indigenous people’s own perspective. As such, the Minor will provide new perspectives on these subjects for non-native students and will enliven the University experience of native students.

The Minor concept has been developed by the President's Committee on Indigenous Issues with significant input from Indigenous representatives from the province. The idea of a Minor was chosen because it responded first to the need of native students to attain a degree in regular academic disciplines while enriching their knowledge of Indigenous societies and culture. Second, it will assist non-native students who wish to learn more about Indigenous peoples as a complement to their chosen programme of study.

Academic Regulations

The Indigenous Studies Minor is governed by the general Academic Regulations of the University and the regulations described below. In order to qualify for the Indigenous Studies Minor students in four or five-level programmes must complete 24 units of work including INDIG ST 1B06 (Introduction to Indigenous Studies) and 18 units chosen from the list below. No more than six of these 18 units may be Level I courses. At least 12 of the 18 units for the Minor must be Indigenous Studies or Indigenous language courses. Students wishing to pursue a Minor in Indigenous Studies may obtain more information from the Indigenous Studies office, Chestnut New Hall, Room 228, ext. 27426.

- INDIG ST 2A06 Introduction to Indigenous People's Spirituality
- INDIG ST 2B03 Introduction to Indigenous People's History
- INDIG ST 2C03 The Spiritual Teachings of Elders
- INDIG ST 3A03 History of the Eastern Woodland People
- INDIG ST 3B03 History of Contemporary Indigenous Peoples: Selected Topics
- INDIG ST 3C03 Study of Iroquois First Nations in Contemporary Times
- INDIG ST 3CC3 Contemporary Indigenous Societies: Selected Topics
- INDIG ST 3D03 Contemporary Native Literature in Canada
- INDIG ST 3E03 Contemporary Native Literature in the United States
- CJIBWA 1Z06 Beginner's intensive Ojibwa
- CJIBWA 2Z06 Intermediate Ojibwa
- CJIBWA 3Z06 Advanced Ojibwa
- MOHAWK 1Z06 Beginner's intensive Mohawk
- MOHAWK 2Z06 Intermediate Mohawk
- MOHAWK 3Z06 Advanced Mohawk
- CAYUGA 1Z06 Beginner's intensive Cayuga
- CAYUGA 2Z06 Intermediate Cayuga
- CAYUGA 3Z06 Advanced Cayuga
- ANTHROP 2H03 Environment and Culture
- ANTHROP 2V03 The Aztecs, Maya and Inka
- ANTHROP 3A03 Cultures in Contact: The Canadian North
- ANTHROP 3F03 Contemporary Northern Peoples
- POL SCI 3C03 Government and Politics of Indigenous Peoples

Please see the Course Listings section for a detailed description of the above courses.
### Jewish Studies

Jewish Studies is an international, multidisciplinary field devoted to the study of Judaism, Jewish history, thought, culture and community. The Minor in Jewish Studies is open to all students registered in a four or five-level programme in any Faculty. Students will be required to complete a minimum of 24 units from the lists below. At least 12 of these units will be taken from List A, comprised of courses focusing directly on an area of Jewish Studies. Students are urged to take at least six units of Hebrew language as part of their List A requirements. A minimum of six units will be taken from List B, comprised of courses which provide crucial background for understanding important issues in Jewish Studies. Students taking List B courses as part of their minor are required to write assignments and research papers on topics directly related to Jewish Studies.

Students are also encouraged to engage in a year of study in Israel, normally done in the third year of a four-year programme. Details are available through the Department of Religious Studies, University Hall, Room 104, ext. 24567, or McMaster International, John Hodgins Engineering Bldg., Room A414.

Students wishing to pursue a Minor in Jewish Studies may obtain more information from the Jewish Studies Minor Area Coordinator in the Department of Religious Studies, University Hall, Room 104.

**LIST A**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEBREW 2A03</td>
<td>Introduction to Biblical Hebrew I</td>
</tr>
<tr>
<td>HEBREW 2B03</td>
<td>Introduction to Biblical Hebrew II</td>
</tr>
<tr>
<td>HEBREW 3A03</td>
<td>Intermediate Hebrew I</td>
</tr>
<tr>
<td>HEBREW 3B03</td>
<td>Intermediate Hebrew II</td>
</tr>
<tr>
<td>RELIG ST 2B03</td>
<td>Women in the Biblical Tradition</td>
</tr>
<tr>
<td>RELIG ST 2D03</td>
<td>The Five Books of Moses</td>
</tr>
<tr>
<td>RELIG ST 2EE3</td>
<td>The Prophets</td>
</tr>
<tr>
<td>RELIG ST 2NN3</td>
<td>The Jewish World in New Testament Times</td>
</tr>
<tr>
<td>RELIG ST 2V03</td>
<td>The Bible as Story</td>
</tr>
<tr>
<td>RELIG ST 2Y03</td>
<td>The Bible and Film</td>
</tr>
<tr>
<td>RELIG ST 3M03</td>
<td>Songs of David: Poetry in the Hebrew Bible</td>
</tr>
<tr>
<td>RELIG ST 3R03</td>
<td>Death and the Afterlife in Early Judaism and Christianity</td>
</tr>
<tr>
<td>RELIG ST 3Z03</td>
<td>Judaism, the Jewish People and the Birth of the Modern World</td>
</tr>
<tr>
<td>RELIG ST 3ZZ3</td>
<td>Judaism and the Jewish People in the Twentieth Century</td>
</tr>
<tr>
<td>RELIG ST 4B03</td>
<td>Advanced Seminars in Early Judaism</td>
</tr>
<tr>
<td>RELIG ST 4W06</td>
<td>Guided Reading in Religious Studies</td>
</tr>
<tr>
<td>RELIG ST 4Y03</td>
<td>Guided Reading in Religious Studies</td>
</tr>
</tbody>
</table>

**LIST B**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHROP 3B03</td>
<td>Ethnology of Europe</td>
</tr>
<tr>
<td>ANTHROP 3G03</td>
<td>Comparative Mythology</td>
</tr>
<tr>
<td>ANTHROP 3H03</td>
<td>Anthropological Demography</td>
</tr>
<tr>
<td>ENGLISH 3S03</td>
<td>Biblical Traditions in Literature</td>
</tr>
<tr>
<td>HISTORY 2EA3</td>
<td>Islam and Mediterranean Society, 600-1300</td>
</tr>
<tr>
<td>HISTORY 2EB3</td>
<td>Islam in the World, 1300-1800</td>
</tr>
<tr>
<td>HISTORY 3AA3</td>
<td>The Modern Middle East</td>
</tr>
<tr>
<td>HISTORY 3I03</td>
<td>International Relations of the European Powers, 1914-45</td>
</tr>
<tr>
<td>PHILOS 2A06</td>
<td>Ancient Greek Philosophy</td>
</tr>
<tr>
<td>PHILOS 3A06</td>
<td>From Kant to Hegel</td>
</tr>
<tr>
<td>PHILOS 3H03</td>
<td>Philosophy of Religion</td>
</tr>
<tr>
<td>PHILOS 2D03</td>
<td>Moral Issues</td>
</tr>
<tr>
<td>POL SCI 3AA3</td>
<td>International Politics in the Postwar Period</td>
</tr>
<tr>
<td>POL SCI 4D03</td>
<td>Human Rights and International Politics</td>
</tr>
<tr>
<td>SOC SCI 2C03</td>
<td>Genocide and Ethnicity</td>
</tr>
<tr>
<td>SOC WORK 4C03</td>
<td>Racism and Social Marginalization in Canadian Society</td>
</tr>
<tr>
<td>SOC WORK 4E03</td>
<td>Women and Social Welfare</td>
</tr>
<tr>
<td>SOC WORK 4J03</td>
<td>Social Change and Social Welfare</td>
</tr>
<tr>
<td>SOC WORK 4M03</td>
<td>International and Comparative Social Welfare</td>
</tr>
<tr>
<td>SOCIOL 2E06</td>
<td>Racial and Ethnic Group Relations</td>
</tr>
<tr>
<td>SOCIOL 3M06</td>
<td>Religion and Modern Society</td>
</tr>
<tr>
<td>SOCIOL 3Z03</td>
<td>Ethnic Relations</td>
</tr>
</tbody>
</table>

Please see the Course Listings section for a detailed description of the above courses.

### Peace Studies

Peace Studies, which is concerned with war and peace - their nature, causes and relation to social life - is a growing international field. It is now possible for students to complete a Minor in Peace Studies at McMaster. The requirements of the Minor include the core course, SOC SCI 2806, and an additional 18 units above Level 1, selected from the courses listed below.

The courses listed are offered by various departments and are relevant to the study of peace and conflict. They are drawn from a wide variety of disciplines within the Faculties of Humanities, Social Sciences and Science. The range of options available for the Minor ensures an interdisciplinary approach. The Minor should be of interest to students wishing to pursue a wide range of careers.

Students wishing to pursue a Minor in Peace Studies can obtain further information from Dr. Rhoda Howard or Kim McNicol at the Centre for Peace Studies, University Hall, Room 104, ext. 24729.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHROP 2X03</td>
<td>War and Aggression</td>
</tr>
<tr>
<td>ANTHROP 3T03</td>
<td>Domination and Resistance</td>
</tr>
<tr>
<td>ECON 2F03</td>
<td>Globalization and Economic Development</td>
</tr>
<tr>
<td>HISTORY 3I03</td>
<td>The International Relations of The European Powers, 1914-1945</td>
</tr>
<tr>
<td>HISTORY 3R3</td>
<td>War and Society in 20th Century Britain</td>
</tr>
<tr>
<td>PHILOS 2G03</td>
<td>Social and Political Issues</td>
</tr>
<tr>
<td>PHILOS 3P03</td>
<td>Philosophies of War and Peace</td>
</tr>
<tr>
<td>POL SCI 2E06</td>
<td>International Politics</td>
</tr>
<tr>
<td>POL SCI 3A03</td>
<td>International Politics in the Post-War Period</td>
</tr>
<tr>
<td>POL SCI 4M06</td>
<td>Issues in International Politics</td>
</tr>
<tr>
<td>RELIG ST 2H03</td>
<td>The Theory and Practice of Nonviolence</td>
</tr>
<tr>
<td>RELIG ST 2L03</td>
<td>Life, Work and Teachings of Mahatma Gandhi</td>
</tr>
<tr>
<td>RELIG ST 2M03</td>
<td>The Right to Food</td>
</tr>
<tr>
<td>RELIG ST 2N03</td>
<td>Introduction to the Study of Peace</td>
</tr>
<tr>
<td>RELIG ST 2O03</td>
<td>Genocide and Ethnicity</td>
</tr>
<tr>
<td>RELIG ST 2P03</td>
<td>Peace and Development</td>
</tr>
<tr>
<td>RELIG ST 2Q03</td>
<td>Political Sociology</td>
</tr>
</tbody>
</table>

Please see the Course Listings section for a detailed description of the above courses.

### THEMATIC AREAS

The following listing is designed to assist you in choosing courses in areas of study, in which there is currently no B.A. programme.

### Asian Studies

While there is no B.A. programme in Asian Studies, students interested in concentrating in this area may choose from among the following courses offered by various departments. Those desiring further information on specific courses should consult the departmental listing in the Calendar. (Students interested in Japanese Studies should enquire about the Combined Honours programme in Japanese Studies and Another Subject.)

Students wishing to pursue Asian Studies may obtain further information from Dr. D. Barrett, Chester New Hall, Room 625, ext. 24130, or Dr. K. Shinohara, University Hall, Room 126, ext. 23393.

### COURSES DEALING STRICTLY WITH ASIAN MATERIAL

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 2C03</td>
<td>China: People and Land in Transition</td>
</tr>
<tr>
<td>GEOG 3J3</td>
<td>Geography of Japan</td>
</tr>
<tr>
<td>HISTORY 2G3</td>
<td>China: Historical Foundations</td>
</tr>
<tr>
<td>HISTORY 3G3</td>
<td>China: The Revolutionary Century, 1895-1985</td>
</tr>
<tr>
<td>HISTORY 2E3</td>
<td>Islam and Mediterranean Society, 600-1300</td>
</tr>
<tr>
<td>HISTORY 2E3</td>
<td>Islam in the World, 1300-1800</td>
</tr>
<tr>
<td>HISTORY 3A3</td>
<td>Imperial Islam: The Ottomans</td>
</tr>
<tr>
<td>HISTORY 3A3</td>
<td>The Modern Middle East</td>
</tr>
<tr>
<td>HISTORY 3B3</td>
<td>Modern Japan</td>
</tr>
<tr>
<td>HISTORY 4B6</td>
<td>Special Topics in the History of Modern Japan</td>
</tr>
<tr>
<td>HISTORY 4G6</td>
<td>Special Topics in the History of Modern China</td>
</tr>
<tr>
<td>HISTORY 4G6</td>
<td>Topics in Middle Eastern and Islamic History</td>
</tr>
<tr>
<td>RELIG ST 2J06</td>
<td>India: Its Culture, Social History, Religion and Philosophy</td>
</tr>
</tbody>
</table>
INTERDISCIPLINARY MINORS AND THEMATIC AREAS

RELIG ST 2L03  Life, Work and Teachings of Mahatma Gandhi
RELIG ST 2P06  Japanese Civilization
RELIG ST 2RR3  Introduction to Hindu Philosophy
RELIG ST 2TT3  Taoism and the Search for Immortality in China
RELIG ST 3AA3  Popular Religion in India
RELIG ST 3E03  Japanese Religion
RELIG ST 3H03  Story Telling in East Asian Religions
RELIG ST 3I03  Storytelling in Indian Religion
RELIG ST 3L03  Issues in Asian Religious Thought: India
RELIG ST 3S03  Issues in Asian Religious Thought: East Asia
RELIG ST 3U03  The Buddhist Tradition in India
RELIG ST 3UUS  Ch'an and Zen Buddhism
RELIG ST 4F03  Advanced Seminar in East Asian Religions
RELIG ST 4G03  Advanced Seminar in South Asian Religions

COURSES WITH SIGNIFICANT ASIAN CONTENT

ECON 2C03  Asian-Pacific Economies
POL SCI 4MM6  International Relations of the Pacific Rim
RELIG ST 1B06  World Religions
RELIG ST 2BB3  Images of the Divine Feminine
RELIG ST 2H03  Religious Non-Violence
RELIG ST 2Q03  Cults in North America
RELIG ST 2SS3  Women and Religion
RELIG ST 2WW3  Health, Healing and Religion

LANGUAGE COURSES

JAPANESE 1Z06  Beginner's Intensive Japanese
JAPANESE 2Z06  Intermediate Intensive Japanese
JAPANESE 3B03  Business Japanese
JAPANESE 3Z76  Advanced Intensive Japanese
JAPANESE 4L03  Japanese Literature
JAPANESE 4Z03  Advanced Practice in Japanese
JAPAN ST 4A06  Guided Reading in Japanese Studies
JAPAN ST 4B03  Guided Reading in Japanese Studies
SANSKRIT 3A06  Introduction to Sanskrit Grammar
SANSKRIT 4B06  Readings in Sanskrit Texts

Please see the Course Listings section for a detailed description of the above courses.

Canadian Studies

There is no B.A. in Canadian Studies, but students interested in this area may choose from among the following courses, subject to meeting the prerequisites.

HUMANITIES

ART HIST 3B03  Aspects of Canadian Art
ENGLISH 2G03  Contemporary Canadian Fiction
ENGLISH 3Z03  Contemporary Canadian Poetry
FRENCH 2D03  Introduction to the Civilization of French Canada
FRENCH 2E03  Literature of Quebec
FRENCH 3AA3  The Modern French-Canadian Novel
FRENCH 3BB3  Contemporary Quebec Theatre
FRENCH 4U03  Topics in French-Canadian Literature
HISTORY 2J06  The History of Canada
HISTORY 3K03  Canadian Political Development Since 1840
HISTORY 3N03  The History of the Canadian Working Class
HISTORY 3U03  Aspects of French Canadian History
MUSIC 3T03  Canadian Music

SOCIAL SCIENCES

ANTHROP 3A03  Cultures in Contact: The Canadian North
ANTHROP 3F03  Contemporary Northern Peoples
ECON 2K03  Economic History of Canada
GEOG 2E03  Geography of Planning
GEOG 3T03  Selected Problems in Urban Planning
GEOG 4Z03  The Landscape of Urban Housing
POL SCI 2G06  Politics in Canada
POL SCI 2D06  Political Participation and Elitist Politics in Canada
POL SCI 3FF3  Canadian Foreign Policy
POL SCI 3GG3  Politics of Federalism
POL SCI 3IJ3  Elections and Electoral Behaviour in Canada
POL SCI 3JJ3  Provincial Politics in Canada
POL SCI 4O06  Canadian Public Policy
POL SCI 4S06  Canadian Political Theory

Please see the Course Listings section for a detailed description of the above courses.
PART-TIME DEGREE STUDIES

The University offers a broad range of educational opportunities if you wish to take degree studies on a part-time basis. In addition to the daytime offerings in the Fall/Winter there is a wide selection of evening classes available in the Fall/Winter and Spring/Summer sessions. There is a limited number of daytime classes scheduled for the Spring/Summer session.

If you take degree courses, you will associate with one of the undergraduate Faculties (Business, Health Sciences, Humanities, Science or Social Sciences). By so doing, you will have the opportunity to consult with the academic counsellors of your Faculty, and with the departments whose courses are of interest to you. If your interests change, it is often possible to transfer to another department or Faculty.

The courses which you take in the early stages of your education will form the basis for choosing your programme of study. The Level 1 courses will give you the information you need for this purpose, as well as provide the prerequisites for more advanced courses and admission to programmes of study. The programmes of study which are available entirely through evening and summer courses are indicated on the Degrees by Programme chart, in the Degrees and Programmes section of this Calendar. You should also familiarize yourself with the requirements and information found in the following sections: Admissions Requirements, General Academic Regulations and Sessional Dates, as well as the programme descriptions found in the specific Faculty sections.

ADMISSION

Before you register for any degree course or programme, you must apply for admission.

- If you have already completed some university, community college, or other post-secondary education, you will be required to submit official transcripts of this work and a Transcript Assessment Fee, along with your application, in order to be considered for admission and possible credit towards your McMaster programme.
- If you satisfy the University's normal admission requirements for full-time study, you may choose to register for part-time study in most programmes.
- If you do not satisfy these requirements, you may be admissible as a Mature Student and given the opportunity to show that you can deal successfully with university work. Initially, you may take only one course at a time.

See the Admission Requirements section in this Calendar for details concerning all avenues of admission to degree study.

AVAILABILITY OF COURSES

Although both daytime and evening courses are open to all students, as a part-time student, you may have other responsibilities which restrict you to the courses offered in the evenings, winter and summer. If you can arrange to take day courses in the Fall/Winter session, the options are greatly enlarged.

Normally, publications for part-time students are made available in March for the Spring/Summer session and in June for the Fall/Winter session.

OFFICE OF PART-TIME DEGREE STUDIES

The Acting Coordinator of Part-time Degree Studies, Tina Horton, may be telephoned at 525-9140, ext. 24324 or 24325, for counselling and to discuss preparation and plans for degree study.

The Office is located in Gilmour Hall, Room 103, and is open in the day, and in the evening by appointment. More detailed information concerning programmes and courses is provided by the Academic Counsellors within each Faculty as follows:

- Business: ext. 23941
- Humanities: ext. 24326
- Science: ext. 27590
- Social Sciences: ext. 24604

Information about application procedures and admission regulations is available through the Office of the Registrar, (Gilmour Hall, Room 108, 525-4500).

Information about non-degree courses and programmes, including courses for pre-university upgrading, is available through the Centre for Continuing Education (525-9140, ext. 24321).

MOHAWK/MCMASTER EDUCATION INFORMATION CENTRE

McMaster University supports the Mohawk/McMaster Education Information Centre in downtown Hamilton. This centre exists to provide information and maintain comprehensive collections of calendars and brochures concerning educational opportunities across Canada. The staff can help you to make contact with the appropriate persons at McMaster.

The Information Centre is at the Hamilton Public Library (Central Branch), 55 York Boulevard, Hamilton, just off Jackson Square, telephone (905) 525-9140, ext. 22020.

MAPS

The McMaster Association of Part-time Students (MAPS) maintains an office and student lounge in Kenneth Taylor Hall, Room 102, telephone 525-9140, ext. 22021, and publishes a newsletter, Link, which is sent to all part-time students. The office and lounge are open from Monday to Thursday, day and evening, and Friday during the day.

MAPS Executive Director, Sheila Smith, is available during these hours to help students. All part-time students are invited to use these facilities and to assist their Association in its efforts to improve the quality and range of educational opportunities available to students who can only attend university on a part-time basis.
CERTIFICATE AND DIPLOMA PROGRAMMES

CENTRE FOR CONTINUING EDUCATION

Located in the Commons Building, Room 116, the Centre for Continuing Education offers Certificate and Diploma programmes, independently and in conjunction with several professional associations, as well as short courses and workshops for personal and professional development. For students who are not sure about degree studies, the Centre offers registration in degree courses as a Listener, as well as a variety of courses designed to prepare students for degree studies. For details, please contact the Centre for Continuing Education at extension 24321.

CERTIFICATE AND DIPLOMA PROGRAMMES
APPROVED FOR ADVANCED CREDIT

For information with regard to the awarding of advanced credit, please see the Graduates of McMaster Certificate Programmes in the Admissions Requirements section of this Calendar.

ADDICTIONS STUDIES DIPLOMA PROGRAMME (8969)
This programme (150 hours) is designed to provide foundation studies in the field of addictions. Advanced Credit - 9 units

ADDICTIONS CAREWORKER DIPLOMA PROGRAMME (8951)
The diploma requirements consist of 300 hours of study organized in compulsory courses and skill and knowledge electives. Advanced Credit - pending

EMPLOYEE ASSISTANCE PROGRAMME (EAP) CERTIFICATES
The two EAP certificate programmes (160 hours each) are designed to introduce the core concepts and practices in the expanding field of occupational assistance. Advanced Standing - 9 units

MCMASTER BUSINESS CERTIFICATE (8980)
This 12 module or six-course programme, offered in association with the Michael DeGroote School of Business at McMaster covers the fundamentals of modern business. Advanced Credit - 9 units

MCMASTER HUMAN RESOURCES SPECIALIST CERTIFICATE (8958)
This ten-course programme covers concepts and practices basic to human resources management. Advanced Credit - 12 units

ACCOUNTING DIPLOMA PROGRAMME (8956)
This eleven-course programme is designed for individuals planning a career in managerial or financial accounting. All courses satisfy programme requirements for both the Society of Management Accountants of Ontario (SMA) and the Certified General Accountants Association (CGA). Advanced Credit - 12 units

METALLURGY OF IRON AND STEEL CERTIFICATE (8991)
This programme (150 hours) comprehensively covers metallurgical principles involved in the extraction, refining and manufacturing of ferrous products. Advanced Credit - 6 units

WOMEN AND VIOLENCE (8949)

CAREWORKER CERTIFICATE PROGRAMME
This programme (250 hours) provides an educational opportunity for those who work with or are planning to work with women who have experienced violence. Advanced Credit - pending

MICROCOMPUTER SYSTEMS DIPLOMA PROGRAMME (8954)
This eight-course programme provides students with a thorough background in the fundamentals of computer science within the context of microcomputers. Advanced Credit - 12 units

POLICE STUDIES CERTIFICATE PROGRAMME (8966)
This programme (370 hours) is designed to develop a capacity for critical inquiry at the university level, while augmenting the training received by police and security personnel. Advanced Credit - 12 units

CERTIFICATE AND DIPLOMA PROGRAMMES

QUALIFIED ADMINISTRATIVE ASSISTANTS PROGRAMME (QAA) (8965)
A seven-course programme which provides a solid background in general business education. Advanced Credit - 9 units

CREDIT UNION INSTITUTE OF CANADA (CUIC) (8983)
I. General Studies Programme (Nine courses)
This programme provides a general overview of credit union administration and management.
II. Management Studies Programme (12 courses)
This programme offers a mix of general and credit-union specific courses on credit union business management. Advanced Credit - 12 units

CANADIAN PUBLIC PERSONNEL MANAGEMENT ASSOCIATION (CPPMA) (8955)
This seven-course programme is offered by CCE as a recognized academic component to obtain the professional designation Canadian Personnel Professional (CPP). Advanced Credit - 9 units

CANADIAN INSTITUTE OF CERTIFIED ADMINISTRATIVE MANAGERS (CAM) (8989)
This nine-course programme covers a mix of courses in the professional management field. Advanced Credit - 9 units

INSTITUTE OF CANADIAN BANKERS (ICB) (8988)
I. Business Programme
This programme provides a solid foundation in general business education at the university level.
II. Specialized Studies Programme
This programme consists of five courses in an area of concentration (Finance & Accounting, Human Resource Management). Advanced Credit - 12 units

THE INSURANCE INSTITUTE OF CANADA - INSURANCE FELLOWSHIP PROGRAMME (FIC) (8996)
This ten-course programme is designed to encourage insurance professionals to broaden their general business education, while specializing in a selected major stream, such as risk management. Advanced Credit - 12 units

THE NATIONAL CERTIFICATE PROGRAMME IN VOLUNTARY & NON-PROFIT SECTOR MANAGEMENT (8959)
Offered in association with the Canadian Centre for Philanthropy, this eight-course programme is geared to senior-level staff, as well as volunteers with management experience in the non-profit sector. Advanced Credit - 9 units

HUMAN RESOURCES PROFESSIONALS ASSOCIATION OF ONTARIO (8974)
This eight-course programme is designed to provide human resources practitioners and those in general management positions with the core knowledge needed in their field. Advanced Credit - 9 units

PURCHASING MANAGEMENT ASSOCIATION OF CANADA (8961)
This eight-course programme, designed for those in or wishing to enter the materials management field, is comprised of business management courses. Advanced Credit - 9 units

MOHAWK-MCMASTER GEOGRAPHIC INFORMATION SYSTEMS SPECIALIST CERTIFICATE (8947)
This collaborative six-course programme is designed for those who have some experience in the field of GIS and who have some computer background. Advanced Credit - pending

THE MCMASTER CERTIFICATE IN WRITING (8977)
This programme is currently under development in partnership with the Faculty of Humanities and the local writing community. Advanced Credit - pending

CERTIFIED EMPLOYEE BENEFITS SPECIALIST PROGRAMME (8968)
The CEBS programme is a ten course curriculum co-sponsored by the International Foundation of Employee Benefit Plans and Dalhousie University. Advanced Credit - pending

For information concerning other Diploma programmes offered at the University, please see the Post-Professional Health Sciences Education Programmes in the Faculty of Health Sciences section as well as the Diploma in Music Performance in the Faculty of Humanities section of this Calendar.
COURSE LISTINGS

ANTHROPOLOGY

Faculty as of January 15, 1997

Chair
D. Ann Herring

Professors Emeriti
David R. Counts/B.A. (Texas), Ph.D. (Southern Illinois)
David J. Dames/A.B. (Toledo), A.M., Ph.D. (Chicago)
William C. Noble/B.A. (Toronto), Ph.D. (Calgary)
Richard J. Preston/M.A., Ph.D. (North Carolina)
Richard Slobodian/B.A., M.S. (City College of New York), Ph.D. (Columbia)

Adjunct Associate Professors
Christopher Henry
Trudy Nicks
Aubrey Cannon/B.A.

Associate Professors
Laura Finsten/B.A.
Edward V. Glanville/B.A., Ph.D.
Harvey Feit/B.A.
Shelley Saunders/B.A., M.A., Ph.D.

Adjunct Professors
Matthew Cooper/B.A. (Brooklyn College), M.Phil., Ph.D. (Yale)
Harvey Feit/B.A. (Queens), M.A., Ph.D. (McGill)
Edward V. Glanville/B.A., Ph.D.
Christopher Hallpike/B.A., M.A., Ph.D. (Tulane)
William L. Rodman/B.A. (Sydney), M.A., Ph.D. (Chicago)
Shelley Saunders/B.A., M.A., Ph.D. (Toronto)

Associate Professors
Regina Dannell/(Western Ontario) B.A. (Bryn Mawr), M.A., Ph.D. (Pennsylvania)
Michael Spence/(Western Ontario) B.A., M.A., Ph.D. (Southern Illinois)/part-time

Adjunct Associate Professors
Ellen Badone/B.A., M.A. (Toronto), Ph.D. (California, Berkeley)
Aubrey Cannon/B.A. (Simon Fraser), Ph.D. (Cambridge)
Laura Finsten/B.A. (Western Ontario), M.A. (Calgary), Ph.D. (Purdue)
D. Ann Herring/B.A., M.A., Ph.D. (Toronto)
Trudy Nicks (Royal Ontario Museum)/B.A., M.A., Ph.D. (Alberta)/part-time
Peter G. Ramsden/B.A. (Toronto), M.A. (Calgary), Ph.D. (Toronto)
Wayne Warr/B.A., M.A. (McMaster), Ph.D. (ANU)
Dennis Wills/B.A. (Waterloo), M.A. (McMaster), Ph.D. (British Columbia)

Assistant Professor
Peta Rethmann/B.A. (Vienna), M.A. (Munich), Ph.D. (McGill)

Associate Members
Henry Schwarz/(Geology) B.A. (Chicago), M.S., Ph.D. (California Institute of Technology), F.R.S.C.

Department Notes:
1. Not all Anthropology courses listed in this Calendar are taught every year. Students are advised to consult the department's brochure and the timetable which is published annually by the Registrar's Office to determine whether a course is offered.
2. The department offers two Level I Anthropology courses, ANTHROP 1A03 and 1B03, taken together, are designed to provide an introduction to the study of Anthropology.
3. Registration in all courses with a course code ending **** is listed as selected topics and independent research require prior arrangement with the instructor; otherwise, no grade will be submitted for the course.
4. To identify Anthropology courses by subdiscipline, students should refer to the lists of courses under Anthropology Subfields in the section Faculty of Social Sciences, Department of Anthropology.

Courses
If no prerequisite is listed, the course is open.

ANTHROP 1A03 INTRODUCTION TO ANTHROPOLOGY: CULTURE AND SOCIETY
A general introduction to the study of human culture and society in all of its aspects. Examples and illustrations will be drawn largely from non-Western societies.
Three hours (lectures and discussion); one term

ANTHROP 1B03 THE HUMAN JOURNEY: THE ANTHROPOLOGY OF THE PAST
An examination of the story of the human species, from the earliest origins to the rise of civilization, as told by physical anthropology and archaeology.
Three hours (lectures and discussion); one term

ANTHROP 2B03 INDIGENOUS PEOPLES OF NORTH AMERICA
A comparative study of selected cultures of this continent, dealing with traditional and modern situations.
Three hours (lectures and discussion); one term

ANTHROP 2DD3 PRIMATE BEHAVIOUR
A survey of current issues in primate behaviour, including taxonomy, demography, social structure, reproduction, play cognition and sociobiology.
Students will conduct a zoo observation study.
Three hours (lecture and discussion); one term

ANTHROP 2E03 HUMAN VARIATION AND EVOLUTIONARY CHANGE
An introduction to the study of human evolution, evolutionary mechanisms, and variability in living species of human and non-human primates.
Three hours (lectures and discussion); one term

ANTHROP 2F03 SOCIAL ANTHROPOLOGY
An introduction to the concepts and theory underlying the comparative study of social institutions with particular emphasis on preliterate societies.
This course is designed to equip students with a repertoire of concepts necessary for more advanced courses in anthropology.
Three hours (lectures and discussion); one term

ANTHROP 2G03 FORENSIC ANTHROPOLOGY
A study of human bones and teeth with a consideration of how to determine sex, age, stature and other individual characteristics from these remains alone.
Three hours (lectures and discussion); one term

ANTHROP 2H03 INTRODUCTION TO ANTHROPOLOGY: HUMAN BIOLOGY
A study of human evolution and hominid diversity, with particular emphasis on human biology and prehistoric humans.
Three hours (lectures and discussion); one term

ANTHROP 2I03 HUMAN GROWTH
A study of the development of human populations, with particular emphasis on the growth and development of human populations.
Three hours (lectures and discussion); one term

ANTHROP 2J03 HISTORY OF ANTHROPOLOGY
Some of the major developments and personalities in the history of anthropology, with emphasis upon the English-speaking world.
Three hours (lectures and discussion); one term

ANTHROP 2K03 ENVIRONMENT AND CULTURE
Relationships between human societies and their environments are examined. A focus is how culture shapes our ideas of nature and the consequence of our actions. Case studies explore both environmental movements and indigenous societies.
Three hours (lectures and discussion); one term

ANTHROP 2L03 PHONETICS
A study of the sounds of language and human articulatory capabilities.
Three hours (lectures); one term

ANTHROP 2L03 LANGUAGE AND PREHISTORY
A survey of the language families of the world, emphasizing the historical implications of language distributions. Historical linguistic methods will be introduced and compared with archaeological findings for prehistoric Eurasia, Africa, Oceania and North America.
Three hours (lectures and discussion); one term
ANTHROP 2M03 PHONOLOGY
A study of the patterns of distinctive sounds in the world's languages. Three hours (lectures); one term
Prerequisite: ANTHROP 2L03/LINGUIST 2L03

ANTHROP 2N03 NORTH AMERICAN PREHISTORY
An examination of the origins and development of the major indigenous cultural groups of prehistoric North America. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1203 or 2PA3

ANTHROP 2P03 PEOPLES OF THE PACIFIC
An introduction to the ways of life and thought in Pacific island societies. The course will emphasize the material culture, networks of social relations, and systems of belief, of the peoples of Melanesia, Polynesia, and Micronesia. Three hours (lectures and discussion); one term

ANTHROP 2PA3 INTRODUCTION TO PREHISTORIC ARCHAEOLOGY
An introduction to the goals and methods of archaeological research with a focus on specific problems in human prehistory. Three hours (lectures and discussion); one term
Prerequisite: Three units of Level 1 Anthropology

ANTHROP 2R03 RELIGION, MAGIC, AND WITCHCRAFT
An introduction to the cross-cultural study of the relationship between the natural and supernatural, and between ideology and social action. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1A03 or 2F03

ANTHROP 2S03 PEOPLES OF INNER EURASIA
This survey course will examine the ethnology, languages and histories of the people that fall or once fell within the lands that make up or adjourn the territory that was once the Soviet Union. Where possible, discussion of present conflicts or future tensions will be couched in terms of historical influences. Three hours (lectures); one term

ANTHROP 2U03 PLAGUES AND PEOPLE
A consideration of the role played by infectious disease in human evolution. The social and biological outcomes of major epidemics and pandemics, past and present, will be explored. Three hours (lectures and discussion); one term

ANTHROP 2V03 AZTECS, MAYA AND INKA
A survey of these three great prehistoric New World civilizations, using archaeological, ethnohistoric and colonial information. Topics will include religion, social structure, political and economic organization, as well as the similarities and differences among the Aztecs, Maya and Inka. Three hours (lectures); one term

ANTHROP 2X03 WARFARE AND AGGRESSION
The aim of the course is to assess the extent to which violence is both controlled by and an expression of society and culture. Three hours (lectures and discussion); one term

ANTHROP 2Y03 INTRODUCTION TO SOCIAL RESEARCH
This course is designed to develop those skills necessary to pursue and understand research. Several general methods of sociological research will be examined. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1A03 or 2F03 and registration in an Anthropology programme

ANTHROP 3A03 CULTURES IN CONTACT: THE CANADIAN NORTH
A comparative ethnographic analysis of traditional and contemporary hunting and gathering cultures in the Canadian Arctic and Subarctic. The course examines socio-political change, environmental relations, and the impact of the fur-trade on aboriginal communities. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1A03 or 2F03; or registration in a Health Sciences programme

ANTHROP 3A03 READING ETHNOGRAPHIES
Learning to evaluate ethnographic text is a fundamental skill in anthropological training and research. This course examines selected texts, some of which have become classic in the history of the discipline, to distinguish the reliable from unreliable. Through detailed study, students will gain critical resources for future studies. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03

ANTHROP 3A03 ARCHAEOLOGY AND SoCIETY
A critical examination of the history of archaeology and the social and political implications of our understanding of the ancient human past. Three hours (lectures and discussion); one term
Prerequisite: Three units of Level 1 Anthropology

ANTHROP 3B03 ETHNOLOGY: EUROPE
A comparative ethnological survey of selected societies in Europe. Three hours (lectures and discussion); one term
Prerequisite: Six units of Social/Cultural Anthropology

ANTHROP 3C03 HUMAN ADAPTABILITY/ THE PHYSICAL ENVIRONMENT
Biocultural models of the ways in which humans cope with features of their physical environment, such as hot and cold climates, high altitude, photoperiodicity and solar radiation. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 is highly recommended.

ANTHROP 3C04 ARCHAEOLOGICAL FIELD SCHOOL
Field instruction in the techniques used in the excavation of an archaeological site. The course includes hands-on instruction in manual excavation methods, mapping, field recording, and laboratory analysis. Prerequisite: ANTHROP 2PA3 or an equivalent course in archaeological methods.

ANTHROP 3E03 SPECIAL TOPICS IN ARCHAEOLOGY I
The topic varies with each instructor (e.g. one class may examine Ancient Mesopotamian Cities and another focus on The Archaeology of Death). Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3E03 SPECIAL TOPICS IN ARCHAEOLOGY II
As per ANTHROP 3E03. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3F03 CONTEMPORARY NORTHERN PEOPLES
An examination of current issues in relation to aboriginal peoples in selected northern regions of the world. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1A03 or registration in a Health Sciences programme

ANTHROP 3G03 COMPARATIVE MYTHOLOGY
The reconstruction of lost mythic traditions by means of comparative techniques drawn from historical linguistics. The Indo-European traditions of Eurasia will be examined. Three hours (lectures and discussion); one term

ANTHROP 3H03 ANTHROPOLOGICAL DEMOGRAPHY
This course offers an introduction to the study of population dynamics (birth, death, migration) and population structure. It focuses on issues particularly pertinent to anthropological studies of past and present populations. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2E03

ANTHROP 3I03 ARCHAEOLOGICAL INTERPRETATION
Technique and methodology in the investigation of archaeological material. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3J03 LINGUISTICS AND CULTURE I: STRUCTURALISM
A study of the application of linguistic models, particularly structuralism, to sociocultural anthropology and related disciplines. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II and above
Antirequisite: ANTHROP 2003/LINGUIST 2003
ANTHROP 3N03 PRIMATE EVOLUTION
Comparative anatomy and evolutionary development of humans and our nearest living relatives, the other primates.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2E03
Antirequisite: ANTHROP 3N3

ANTHROP 3P03 RESEARCH METHODS IN CULTURAL ANTHROPOLOGY
Methodologies and techniques of research, especially field study, in sociocultural anthropology.
Three hours (lectures and discussion); one term
Prerequisite: Registration in any programme in Anthropology

ANTHROP 3P33 PALEOPATHOLOGY
The origins and evolution of human diseases and methods of identifying disease in ancient human remains.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03

ANTHROP 3Q03 ANTHROPOLOGICAL APPROACHES TO THE STUDY OF AGING
An examination of the contribution of anthropology to the study of aging with an emphasis on cross-cultural comparisons, and including an assessment of the anthropological literature relating to the biological basis of aging in modern and prehistoric populations.
Three hours (lectures and discussion); one term
Prerequisite: Six units of Social/Cultural Anthropology, or registration in any programme in Gerontology
Cross-list: GERONTOL 3Q03

ANTHROP 3RR3 TOPICS IN THE ANTHROPOLOGY OF GENDER
Selected topics relating to the construction and practice of gender in various cultural contexts.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or IV of an Anthropology programme

ANTHROP 3S03 HISTORY OF THOUGHT IN SOCIAL ANTHROPOLOGY
The development of anthropology as a discipline, with emphasis on the emergence and refinement of concepts concerning culture, social structure, and sociocultural change.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or IV Anthropology

ANTHROP 3S33 PSYCHOLOGICAL ANTHROPOLOGY
An introduction to concepts and topics in the anthropology of affect and emotion. The course attends to wider issues of depression, violence, trance, and identity.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03

ANTHROP 3T03 POWER AND RESISTANCE
A critical examination of power in post-colonial conflicts. Examines concepts and case studies of local resistance to economic globalization, the re-defining of nationalities, and the spread of universalizing cultures.
Three hours (lectures and discussion); one term
Prerequisite: Six units of Social/Cultural Anthropology

ANTHROP 3W03 COMPARATIVE ECONOMIC ORGANIZATION
An examination of contrasting types of economic organization, with particular reference to societies with a non-industrial base.
Three hours (lectures and discussion); one term
Prerequisite: Six units of Social/Cultural Anthropology

ANTHROP 3W13 SPECIAL TOPICS IN ANTHROPOLOGY II
Reading and discussion of selected topics in Anthropology. It is incumbent upon the student to secure arrangements with the supervising instructor prior to registration in this course; otherwise, no grade will be submitted.
One term
Prerequisite: Registration in any programme in Anthropology

ANTHROP 3W23 SPECIAL TOPICS IN ANTHROPOLOGY II
As per ANTHROP 3W3, but on a different topic.
One term
Prerequisite: Registration in any programme in Anthropology

ANTHROP 3Z03 MEDICAL ANTHROPOLOGY: THE BIOMEDICAL APPROACH
Patterns of stress and disease with emphasis on the modern biomedical approach. Disease in the evolutionary context with emphasis on disease as a failure of adaptation and response.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 or 2F03 is highly recommended.

ANTHROP 3Z23 MEDICAL ANTHROPOLOGY: SYMBOLIC HEALING
An interdisciplinary approach to traditional systems of healing such as Greek humeral medicine, Chinese, Shamanic, etc. Emphasis will be on cultural and psychological parameters of healing.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 or 2F03 is highly recommended.

ANTHROP 4E33 ANTHROPOLOGY AND ENVIRONMENT
This course examines the different and rapidly changing ways in which anthropologists study relationships between humans and their environments. It also considers the contributions which anthropologists are making to environmentalism and knowledge about current ecological issues.
Three hours (seminar); one term
Prerequisite: ANTHROP 2F03 and registration in an honours programme, or permission of the instructor

ANTHROP 4B03 CURRENT PROBLEMS IN ANTHROPOLOGY I
The topic varies with each instructor.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Anthropology or permission of the instructor

ANTHROP 4B13 CURRENT PROBLEMS IN ANTHROPOLOGY II
As per ANTHROP 4B03, but on a different topic.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Anthropology

ANTHROP 4D03 APPLIED ANTHROPOLOGY
An examination of how anthropology is applied to solve human problems. Includes discussion of how students can use their anthropological training in non-academic occupations.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV Honours Anthropology

ANTHROP 4F03 ARCHAEOLOGICAL THEORY
A seminar on current topics and issues in archaeological theory.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3 and registration in any honours programme

ANTHROP 4G03 INDEPENDENT RESEARCH I
Independent study of a research problem through published materials and/or fieldwork. Study may include museum internship, participation in faculty research, or student-initiated practica or library research. Students will be required to write up the results of their inquiry in scholarly form. It is incumbent upon the student to secure arrangements with the supervising instructor prior to registration in the course; otherwise, no grade will be submitted.
One term
Prerequisite: Registration in any programme in Anthropology

ANTHROP 4G03** INDEPENDENT RESEARCH II
As per ANTHROP 4G03**, but on a different topic.
One term
Prerequisite: Registration in Level IV Honours Anthropology

ANTHROP 4H3 ARCHAEOLGY OF HUNTERS AND FORAGERS
Study of the prehistoric technologies and organizational strategies used in making a living from the natural environment, and examination of the cultural contexts of foraging economies.
Three hours (seminar); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 4I3 CONTEMPORARY ANTHROPOLOGICAL THEORY
Seminar on selected recent developments in anthropological theory.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Anthropology
Enrolment is limited. Access will be provided to all Level IV Honours Anthropology students.
ANTHROP 4J03 ADVANCED TOPICS IN PHYSICAL ANTHROPOLOGY
Study at an advanced level of selected topics within the subdiscipline. Topics may change from year to year.
Three hours (seminar); one term
Prerequisite: ANTHROP 2E03

ANTHROP 4L43 ADVANCED TOPICS IN LINGUISTIC ANTHROPOLOGY
An advanced course which examines various topics including folklore, myth, etc. Students will conduct field and archival research on topics of their choosing.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 3G03

ANTHROP 4N03 ANTHROPOLOGY OF SPACE AND PLACE
A comparison of the formal and informal ways in which people learn within their cultural context, and a survey of the uses of anthropology in schools.
Three hours (seminar); one term
Prerequisite: Registration in an Honours programme in Social Sciences

ANTHROP 4P03 ANTHROPOLOGY OF THE GREAT LAKES
This course will consider recent research drawn from a number of disciplines concerned with the human environment as a social and cultural construction. Topics may include experience and sense of place; the social construction of urban space; ideology and built form; spatial discourses.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Anthropology or permission of the instructor.

ANTHROP 4P13 FROM FORAGING TO FARMING IN THE LOWER GREAT LAKES
The course examines the development of Late Woodland horicultural village societies in the lower Great Lakes, from about A.D. 900 until shortly after European contact, taking as the prime example the historically well-known Iroquoian groups of Ontario, Quebec and New York.
Three hours (seminar); one term
Prerequisite: ANTHROP 2P3A

ANTHROP 4Q03 ANTHROPOLOGICAL PERSPECTIVES ON HUMAN EVOLUTION
The seminar seeks: 1) to discern the linkages between some of the main processes at work in "global systems"; 2) to discuss in what ways these processes are global and in what ways they are systematic; 3) to develop hypotheses for the framework of global scale social theory.
Three hours (seminar); one term
Prerequisite: Registration in an Honours programme in Social Sciences

ANTHROP 4R03 EARLIER HUMAN POPULATIONS
The analysis of human skeletal samples, including such topics as paleopathology, paleodemography, paleonutrition and biological distance analyses.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03

ANTHROP 4S03 INFECTION DISEASE AND HUMAN EVOLUTION
An advanced course in the evolution of infectious disease and changing relationships between Homo sapiens and infectious diseases in the course of human history.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2G03 and registration in Level IV Honours Anthropology. Not open to students with credit in ANTHROP 4J03 if the topic was Infectious Disease and Human Evolution.

ANTHROP 4T03 LINGUISTICS AND CULTURE B: GENERATIVE GRAMMAR
An examination at an advanced level of Chomsky's generative grammar as a paradigm for the study of minds and cultures.
Three hours (seminar); one term
Prerequisite: ANTHROP 3L3S

ANTHROP 4U03 PREHISTORY OF THE BRITISH ISLES
A seminar course in the archaeology of Great Britain and Ireland from the Lower Paleolithic to the Bronze Age. Within these limits, chronology and topical emphasis may vary.
Three hours (seminar); one term
Prerequisite: ANTHROP 2P3A

ANTHROP 4V03 DEVELOPING SOCIETIES
Topics may include, for example, the meaning of development, innovation and technological change, urbanization and protest movements.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or IV Honours Anthropology

ART 1F06 STUDIO PRACTICE
An introduction to visual art fundamentals. Prerequisite: Permission of the School of Art, Drama and Music based on required portfolio interview. If you intend to take ART 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the School for a portfolio interview in March. The portfolio should contain a variety of original work in different media including work derived from both first-hand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. Applicants for this course should use the MHA QTAC code.

ART 2A06 PAINTING I
An introduction to approaches and techniques related to the development of paintings from conception through organization to completed work. Four hours demonstration and two hours independent study; two terms
Prerequisite: ART 1F06

ART 2B06 SCULPTURE I
A series of workshops and seminars to expand the student's understanding and experience in the production of three-dimensional works of art. A portfolio of three-dimensional works will be produced.
Four hours demonstration and two hours independent study; two terms
Prerequisite: ART 1F06

ART 2C03 DRAWING I
An exploration of a variety of approaches to drawing with an emphasis on the study of the figure.
One studio practice (three hours); two terms
Prerequisite: ART 1F06

ART 2F06 PRINTMAKING I
An introduction to printmaking techniques including monotypes, collotypes and editioned prints in intaglio, lithography and relief. Emphasis will be on developing personal images that relate to these techniques.
Four hours demonstration and two hours independent study; two terms
Prerequisite: ART 1F06

ART 3A03 ADVANCED PAINTING I
A series of defined assignments and independent projects focused on improving skills and fostering personal direction in the field of painting. Two hours demonstration and one hour independent study (twice weekly); one term
Prerequisite: ART 2A06

ART 3A33 ADVANCED PAINTING II
A series of self-directed projects and in-class assignments with emphasis on independent development preparing the student for Level IV work. Two hours demonstration and one hour independent study (twice weekly); one term
Prerequisite: ART 2B06

ART 3B03 ADVANCED SCULPTURE I
A series of advanced workshops and projects designed to develop individual artistic direction in the field of sculpture. Two hours demonstration and one hour independent study (twice weekly); one term
Prerequisite: ART 2B06

ART 3B83 ADVANCED SCULPTURE II
A series of self-directed projects and in-class assignments with emphasis on independent development preparing the student for Level IV work. Two hours demonstration and one hour independent study (twice weekly); one term
Prerequisite: ART 2B06
ART 3C03 DRAWING II
An exploration of drawing with an emphasis on refining skills and developing personal direction.
One studio practice (three hours); two terms
Prerequisite: ART 3C03

ART 3G06 CURRENT PRACTICES IN THE VISUAL ARTS
An independent studio course in conjunction with a series of lectures and critiques by contemporary visual artists and individuals involved in the business of art. The development and realization of a body of self-directed work and a written thesis are requirements of this course. Work will be supervised and critiqued by a committee of studio faculty on an ongoing basis.
Three hours; two terms
Prerequisite: Registration in Level III of any Honours programme in Art

ART 3P03 ADVANCED PRINTMAKING I
Continuation of ART 2F06 with a more in-depth investigation of lithographic print techniques and greater emphasis on self-directed work.
Two hours demonstration and one hour independent study (twice weekly); one term
Prerequisite: ART 2F06

ART 3PP3 ADVANCED PRINTMAKING II
Continuation of ART 2F06 with a more in-depth investigation of intaglio and relief print techniques and greater emphasis on self-directed work.
Two hours demonstration and one hour independent study (twice weekly); one term
Prerequisite: ART 2F06

ART 4B12 MAJOR STUDIO PROJECT
A summation of independent investigations in the visual arts resulting in a significant body of work, an exhibition, and a written thesis. Work will be supervised and critiqued by a committee of studio faculty on an ongoing basis.
Prerequisite: ART 3G06 with a grade of at least B- and registration in Level IV of any programme in Honours Art
Antirequisite: ART 4C06

ART 4C06 MINOR STUDIO PROJECT
An independent investigation into painting, sculpture, printmaking, drawing or mixed media to be conducted under the supervision of a committee of studio faculty.
Prerequisite: ART 3G06 with a grade of at least B- and registration in Level IV of Combined Honours in Art and Another Subject
Antirequisite: ART 3F06 or credit or registration in ART 4B12

ART HISTORY

Courses and programmes in Art History are administered within the School of Art, Drama and Music of the Faculty of Humanities.

Courses

ART HIST 1A06 INTRODUCTION TO THE STUDY AND HISTORY OF THE VISUAL ARTS
An examination of the various forms and functions of art and architecture in the Western tradition, with an historical study of the major monuments of that tradition.
Two lectures, one tutorial; two terms

ART HIST 2B03 GREEK ART
The architecture, sculpture, and painting of the Greek and Hellenistic worlds.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: CLASSICS 2B03

ART HIST 2C03 ROMAN ART
The architecture, sculpture, and painting of the Roman world.
Three lectures; one term
Prerequisite: ART HIST 2B03
Cross-list: CLASSICS 2C03

ART HIST 2D03 19TH- AND 20TH-CENTURY ART AND ARCHITECTURE
A study of the major movements in art and architecture from c. 1780 to c. 1960.
Three lectures; one term
Prerequisite: Registration in Level II and above

ART HIST 2E03 APPLIANCES TO ART HISTORY
A study of the various approaches which art historians of the last 100 years have been taking in investigating the art of the past.
Three lectures; one term
Prerequisite: ART HIST 1A06

ART HIST 2G03 THE ART OF THE MEDIEVAL WORLD
A systematic survey of the history of medieval art between c. 350 and 1400 A.D.
Three lectures; one term
Prerequisite: Registration in Level II and above

ART HIST 2H03 AESTHETICS
An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: PHILOS 2H03
Offered in alternate years.

ART HIST 2M03 THE THE ART AND ARCHITECTURE OF THE ITALIAN RENAISSANCE 1400-1560
The history of art in Renaissance Italy with an emphasis on the works of individual artists and architects.
Three lectures; one term
Prerequisite: Registration in Level II and above

ART HIST 2N03 ITALIAN BAROQUE ART AND ARCHITECTURE
An examination of the major trends in Italian art and architecture from 1600-1760.
Three lectures; one term
Prerequisite: Registration in Level II and above

ART HIST 2X06 THE ART OF THE FILM
An introduction to film style and technique through a detailed critical analysis of major works from the silent period to the present day.
Two lectures, plus one weekly film screening; two terms
Prerequisite: Six units from the Faculty of Humanities, and registration in Level II and above
Cross-list: DRAMA 2X06
Offered in alternate years.

ART HIST 3AA3 CONTEMPORARY ART
A summation of major developments in painting, sculpture, and other media from World War II to the present together with a review of related critical theory.
Three lectures; one term
Prerequisite: ART HIST 2D03 or 2P03
Offered in alternate years.

ART HIST 3803 ASPECTS OF CANADIAN ART
A survey of the visual arts in Canada from the earliest explorations and settlements to the present.
Three lectures; one term
Prerequisite: Registration in Level III or IV of any programme
Offered in alternate years.

ART HIST 3B83 THE ART OF THE AMERICAN NORTHERN EUROPE IN THE 17TH CENTURY
A discussion of the art of France, Flanders, the Netherlands and England in the Baroque period. Emphasis will be given to Rubens, Poussin and Rembrandt.
Three lectures; one term
Prerequisite: ART HIST 2N03
Offered in alternate years.

ART HIST 3CC3 LITERATURE AND FILM
An examination of the particular characteristics of both literature and film and the relationship between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.
Three lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level III or IV of a programme in Drama, Literature or Art History. ART HIST 2X06 is recommended.
Cross-list: COMP Lit 3L03, DRAMA 3H03, and ENGLISH 3CC3

ART HIST 3E03 EUROPEAN ARCHITECTURE OF THE 17TH AND 18TH CENTURIES
This course will examine the developments in architecture primarily in Italy, France and England in the 17th and 18th centuries with background material, where necessary, on 16th-century architectural styles.
Three lectures; one term
Prerequisite: ART HIST 2N03

ART HIST 3F03 THE AMERICAN CINEMA I
A survey of some of the prominent features of the American Cinema from its beginning to 1950. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.
Two lectures, plus one weekly film screening; one term
Prerequisite: ART HIST 2X06
Cross-list: DRAMA 3R03
ART HIST 3FF3  THE AMERICAN CINEMA II  
A survey of some of the predominant features of the American Cinema from 1950 to the present day. Emphasis will be placed both on the artistic value of the films and on their social significance and impact. Two lectures, plus one weekly film screening; one term. Prerequisite: ART HIST 2X06. Cross-list: DRAMA 3RR3

ART HIST 3GG3  LATE ANTIQUE AND EARLY CHRISTIAN ART  
The art and architecture of the later Roman Empire, and the birth of Christian Art (A.D. 200-600). Three lectures; one term. Prerequisite: ART HIST 2C03 or 2G03. Cross-list: CLASSICS 3G03. Alternates with ART HIST 3H03.

ART HIST 3H03  ARCHAIK GREEK ART  
The formative period of Greek Art from its origins to the Dark Ages to the Persian Wars (c. 1000-480 B.C.) and its relationship to the art of the Near East. Three lectures; one term. Prerequisite: ART HIST 2B03. Cross-list: CLASSICS 3H03. Alternates with ART HIST 3G03.

ART HIST 3L03  VENETIAN RENAISSANCE PAINTING  
An examination of the works of the major painters of the Renaissance in Venice, including such artists as Giovanni Bellini, Giorgione, and Titian. Three lectures; one term. Prerequisite: ART HIST 2M03. Offered in alternate years.

ART HIST 3M03  ART AND CIVILIZATION AT THE DAWN OF THE ITALIAN RENAISSANCE 1200-1400  
A study of Italian art and civilization in the age of transition between the Middle Ages and the Renaissance. Three lectures; one term. Prerequisite: Registration in Level III or IV of a programme in Art or Art History. Offered in alternate years.

ART HIST 3T03  TOPICS IN NATIONAL CINEMAS I  
Previous topics include: Soviet and East European Cinema, Consult the School of Art, Drama and Music concerning topic to be offered. Two lectures, plus one weekly film screening; one term. Prerequisite: ART HIST 2X06. Cross-list: DRAMA 3T03 and MOD LANG 3T03. ART HIST 3T03 may be repeated, if on a different topic, to a total of six units.

ART HIST 3T03  TOPICS IN NATIONAL CINEMAS II  
Previous topics include: Canadian Cinema, French Cinema and Japanese Cinema. Consult the School of Art, Drama and Music concerning topic to be offered. Two lectures, plus one weekly film screening; one term. Prerequisite: ART HIST 2X06. Cross-list: DRAMA 3T03. ART HIST 3T03 may be repeated, if on a different topic, to a total of six units.

ART HIST 3V03  SUPERVISED READING  
Readings in a field of special interest to the student, under the guidance of a Faculty member. Prerequisite: Registration in Level III or IV of Honours Art History or Level IV Honours Art and a grade of at least A- in a previous course in the chosen field and permission of the School of Art, Drama and Music. Anti-requisite: ART HIST 4D03.

ART HIST 4A03  SPECIAL STUDIES IN CONTEMPORARY ART  
An in-depth examination of one or more significant movements in contemporary art, theory and criticism from c. 1970 to the present. Topics will include such movements as Minimal Art, Conceptual Art, Earthworks, Body Art, Photo-Realism, Pattern and Decoration, Neo-Expressionism, etc. Seminar (two hours); one term. Prerequisite: ART HIST 3AA3. Offered in alternate years. Enrolment is limited.

ART HIST 4B03  SEMINAR IN ANCIENT ART  
Consult the School of Art, Drama and Music concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: ART HIST 2B03 and 2C03, and registration in Level III or IV of an Honours programme in Art History. Cross-list: CLASSICS 4BB3. ART HIST 4B03 may be repeated, if on a different topic, to a total of six units. Enrolment is limited.

ART HIST 4C03  THE ART OF THE HIGH RENAISSANCE IN ROME  
A study of the art and architecture of Raphael, Michelangelo and their contemporaries in Rome in the early 16th century. Seminar (two hours); one term. Prerequisite: ART HIST 2M03. Offered in alternate years. Enrolment is limited.

ART HIST 4C03  STUDIES IN THEATRE AND FILM  
Senior Seminar: A comparative examination of the performance, visual and narrative techniques of theatre and film, including specific examples of adaptation. Seminar (two hours), plus weekly film screening; one term. Prerequisite: Registration in Level IV of an Honours programme in Art History. Cross-list: DRAMA 4C03. Offered in alternate years. Enrolment is limited.

ART HIST 4D03  STUDIES IN THE HISTORY AND HISTORIOGRAPHY OF EARLY ITALIAN ART  
An investigation of major Italian artists from the thirteenth through fifteenth centuries, the historiographical tradition related to these figures, and the methodological premises of that tradition. Seminar (two hours); one term. Prerequisite: Registration in Level III or Level IV of a programme in Art or Art History. Previous completion of ART HIST 2E03 is recommended. Alternates with ART HIST 4V03. Offered in alternate years. Enrolment is limited.

ART HIST 4F03  DUTCH PAINTING OF THE 17TH CENTURY  
A study of the so-called "minor masters" of Holland's Golden Age of painting. Seminar (two hours); one term. Prerequisite: ART HIST 3BB3. Offered in alternate years. Enrolment is limited.

ART HIST 4F03  STUDIES IN FILM  
Senior Seminar: An examination of selected films. Seminar (two hours); one term. Prerequisite: Registration in Level IV of an Honours programme in Art or Art History. ART HIST 2X06/DRAMA 2X06 is recommended. Cross-list: DRAMA 4FF3. Offered in alternate years. Enrolment is limited.

ART HIST 4M03  ASPECTS OF THE ART OF MATISSE AND PICASSO  
An examination of selected paintings, sculptures and drawings by Henri Matisse and Pablo Picasso. Three lectures; one term. Prerequisite: ART HIST 2D03 or 2P03. Offered in alternate years.

ART HIST 4N03  NEOCLASSICISM AND ROMANTICISM  
An historical and critical investigation of selected issues and artists connected with the Neoclassical and Romantic movements. Seminar (two hours), one term. Prerequisite: ART HIST 2D03 or 2C03. Offered in alternate years.

ART HIST 4P06  THESIS  
Supervised study of a problem in the history of art of special interest to the student. Prerequisite: Registration in Level IV of any Honours programme in Art History, and a grade of at least A- in a previous course in the chosen field, and permission of the School of Art, Drama and Music.

ART HIST 4Q03  CARAVAGGIO  
A study of all of the paintings attributed to Caravaggio and their stylistic and documentary evidence. The variety of methods of examining an artist's work is emphasized. Three lectures; one term. Prerequisite: ART HIST 2N03. Offered in alternate years.
ARTS & SCIENCE

ART HIST 4R03 PAINTING AND SCULPTURE OF 15TH-CENTURY ITALY

An examination of the representational arts of the early Renaissance with emphasis on the Florentine contribution.

Three lectures; one term
Prerequisite: ART HIST 2M03
Offered in alternate years.

ART HIST 4S03 SPECIAL STUDIES IN FILM

Previous topics include: Genre Studies, Film Comedy, Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term
Prerequisite: ART HIST 2X06
Cross-list: DRAMA 3J03
ART HIST 4S03 may be repeated, if on a different topic, to a total of six units.

ART HIST 4V03 THE STUDY, CRITICISM AND EVALUATION OF ART

A seminar to introduce students to the history, theory, and practice of connoisseurship, its focus will be to develop skills in confronting the single work of art.

Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a programme in Art or Art History
Alternate with ART HIST 4D03
Enrolment is limited.

ART HIST 4X03 INTRODUCTION TO ART GALLERIES AND MUSEUMS

A study of the history and methods of institutions created for the purpose of collecting, preserving, displaying and interpreting art objects.

Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a programme in Art or Art History
Offered in alternate years.

Enrolment is limited.

ARTS AND SCIENCE

Director
Barbara M. Feneri/Biochemistry) B.Sc., Ph.D. (Edinburgh)

Council of instructors
N. Balakrishnan/(Mathematics and Statistics) B.Sc., M.Sc. (Madrash), Ph.D. (U.T.T., Kanpur)
John D. Browning/(Modern Languages) B.A., M.Phil. (London), Ph.D. (Essex)
Sylvia Bowerbank/(English and Arts & Science) B.A. (McMaster), B.Ed. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)
David W. Butterfield/(Economics) B.S., M.S. Eng. (Calif. Inst. of Tech.), A.B., M.A., Ph.D. (California-Berkeley)
William E. Harris/(Physics and Astronomy) B.Sc. (Alberta), M.Sc., Ph.D. (Toronto)
Robert J. Henderson/(Kinesiology) B.P.E. (McMaster), M.A. (Alberta)
Graham K. Knight/(Sociology) B.A. (Kent), M.A., Ph.D. (Carleton)
Cyril H. Levith/(Sociology) B.A., M.A. (Waterloo), Ph.D. (Freie Universität, Berlin)
Miroslav Lovric/(Mathematics and Statistics) B.S. (Zagreb), M.S., Ph.D. (Ohio State)
Alan Mendelson/(Religious Studies) A.B. (Kenyon College), M.A. (Brandeis), Ph.D. (Chicago)
Sara H. Mendelson/(Arts & Science) B.A. (Chicago), D.Phil. (Oxford)
P.K. Rangachari/(Medicine) M.B.B.S. (All India Institute of Medical Sciences, New Delhi), Ph.D. (Alberta)
Koichi Shinohara/(Religious Studies) B.L., M.L. (Tokyo), Ph.D. (Columbia)
Gordon Slade/(Mathematics and Statistics) B.A., M.Sc. (Toronto), Ph.D. (British Columbia)
M. Jean Wilson/(Modern Languages) B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto)

Department Notes:
1. Prerequisites: The prerequisite for all Level I, II, III and IV courses is normally registration in the Arts and Science Programme.
2. Limited Enrolment: Enrolment in Level I of the Arts and Science Programme is limited to approximately 60 students.

Courses

ARTS & SCI 1A06 WESTERN CIVILIZATION

An examination of some of the central themes in Western social, religious and cultural history, from classical Greece to late eighteenth-century Europe. Students will analyze selected texts from the Bible and from the works of such writers as Thucydides, Plato, and Shakespeare. Topics will include themes of historical change; the influence of such factors as class, race and gender on the evolution of social systems; the relationship between political movements and the rise of experimental science.

ARTS & SCI 1B06 WRITING AND INFORMAL LOGIC

The primary aim of this course is to develop the student's critical and analytical skills in dealing with the written word. Students will examine the structure of selected texts, analyze various types of reasoning, and receive individual attention in expository writing.

ARTS & SCI 1C06 INQUIRY

Inquiry seminars are designed to develop skills basic to the systematic investigation of public issues. These skills include those involved in formulating questions, gathering and interpreting evidence from a variety of sources, evaluating arguments, and reaching well-considered conclusions. This inquiry course involves students in investigation of issues relevant to Third World Development.

ARTS & SCI 1D06 CALCULUS

This course aims to provide a thorough understanding of the principles and major applications of differential and integral calculus of functions of one variable, as well as an introduction to multivariate calculus and differential equations.

ARTS & SCI 1D06 serves as a prerequisite for all upper level Mathematics, Statistics, Computer Science and Physics courses, for which MATH 1A06 or MATH 1A03 is a prerequisite.

ARTS & SCI 2A06 MODERN WESTERN CIVILIZATION

Development of political, economic, sociological and psychological thought in the writings of such major figures as Hobbes, Locke, Rousseau, Adam Smith, Burke, Tocqueville, Marx, Mill, Weber, von Hayek, Polanyi, Nietzsche, Schopenhauer, Freud and Skinner.

ARTS & SCI 2B06 PHYSICS

This course explores many of the great concepts of physics in a quantitative way. Beginning with Newtonian mechanics, it moves into Einstein's relativity, wave phenomena, atomic physics, quantum mechanics and cosmology. Selected laboratory projects will be carried out.

ARTS & SCI 2R06 STATISTICS: MATHEMATICAL MODELS FOR CHANGE, CHANCE AND ERROR

Probability, distributions, measures of association, tests of significance, mathematical models, and other quantitative methods useful in the analysis of variable phenomena are considered.

ARTS & SCI 3A06 LITERATURE

Literary works drawn from a variety of genres and periods will be examined. The course will focus on the ways in which great writers have treated enduring human ethical concerns. It will attempt to show how literary creativity involves the matching of formal and stylistic mastery, on the one hand, with ethical awareness on the other.

ARTS & SCI 3B03 TECHNOLOGY AND SOCIETY I

The Culture of Technology. Current technological practices and approaches are studied as a cultural activity with its own beliefs, values, social structures and institutions.

ARTS & SCI 3B03 TECHNOLOGY AND SOCIETY II

The Social Control of Technology. The dominant mechanisms of the social control of technology will be studied. Includes an examination of assessment methods and the role of ethics.

Prerequisite: ARTS & SCI 3B03

ARTS & SCI 3C06 INQUIRY TOPIC: ENVIRONMENT

The so-called environmental crisis will be explored as a crisis of western culture's inability to live in a harmonious relationship with the earth. The central premise of this inquiry is that the structure of the environment is not just a matter of solving environmental crisis; we have yet to grasp the nature of the problem.

ARTS & SCI 3C06 INQUIRY TOPIC: DISCOVERY: THE CONTEXT OF BIOMEDICAL RESEARCH

Using a problem-based approach, the antecedents and consequences of biomedical discoveries will be explored. Issues discussed will include: organization of laboratories, funding, publications, priority disputes, rewards, frauds, academic-industry links, patents, experimental ethics.
ARTS&SCI 3CE6 INQUIRY TOPIC: MEDIA

This course consists of four sections dealing with theoretical and analytical perspectives, political economy of the media, news media and entertainment media and their cultural effects.

ARTS&SCI 3L03 EASTERN STUDIES I: INDIA

Readings of Indian texts in translation will centre around themes such as the nature of human nature, free will and determinism; personal identity and the quest for perfection; renunciation and social action; violence and non-violence; altruism and selfishness.

Two lectures, one tutorial; one term.

Prerequisite: Registration in Level III and above.

Cross-list: RELIG ST 3L03

ARTS&SCI 3S03 EASTERN STUDIES II: ASIA

Readings of East Asian texts in translation will centre around themes such as culture vs. nature, virtue vs. power, social responsibility vs. personal cultivation, bookish learning vs. meditation.

Two lectures, one tutorial; one term.

Prerequisite: Registration in Level III and above.

Cross-list: RELIG ST 3S03, JAPAN ST 3S03

ARTS&SCI 4A06 INDIVIDUAL STUDY

This course consists of a library, laboratory, or field project under the supervision of a faculty member. Students intending to register must first consult the Director of the Arts & Science Programme and then prepare an outline for approval after consultation with the faculty supervisor.

ARTS&SCI 4A12 INDIVIDUAL STUDY

ARTS&SCI 4A06 based on more extensive study.

ARTS&SCI 4C06 THESIS

This course consists of a library, laboratory, or field project under the supervision of a faculty member. Three copies of a completed thesis must be submitted by the end of classes. Students intending to register must first consult the Director of the Arts & Science Programme and then prepare an outline for approval after consultation with the faculty supervisor.

ARTS&SCI 4C12 THESIS

ARTS&SCI 4C06 based on more extensive research.

ASIAN STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

ASTRONOMY

(SEE PHYSICS AND ASTRONOMY)

BIOCHEMISTRY

Faculty as of January 15, 1997

Chait
J.P. Capone

Professors Emeriti

Russell A. Bell/Ph.D. (Wellington), M.Sc. (Wisconsin), Ph.D. (Stanford), F.C.I.C., Professor of Chemistry
Karl B. Freeman/B.A., Ph.D. (Toronto)
Ross H. Hall/B.A. (British Columbia), M.A. (Toronto), Ph.D. (Cambridge)
Dennis R. McCalla/B.Sc. (Alberta), M.Sc. (Saskatchewan), Ph.D. (California Inst. of Technology), F.C.I.C.

Professors

Vetal S. Ananthanarayan/M.Sc., Ph.D. (Madras)
Luis A. Benda/Ph.D., B.Sc., (Uruguay)
John P. Capone/B.Sc. (Western Ontario), Ph.D. (McMaster)
William W. Chan/M.A., Ph.D. (McGill)
Fkhard M. Epan/A.B. (Johns Hopkins), Ph.D. (Colorado)
Barbara M. Flerier/Ph.D. (Edinburgh)
Gerhard E. Gerber/B.Sc., Ph.D. (Toronto)
Hara P. Ghosh/Ph.D., M.D., (Calcutta)
Radhey S. Gupta/M.Sc. (New Delhi), Ph.D. (Bombay)
Richard J. Haslam/Ph.D. (Oxford), Professor of Pathology

John A. Hassell/B.Sc. (Brooklyn College), Ph.D. (Connecticut)
Evert Nieboer/M.Sc. (McMaster), Ph.D. (Waterloo)

Associate Professors

David W. Andrews/B.Sc. (Ottawa), Ph.D. (Toronto)
Douglas W. Bryant/Ph.D. (McGill), M.Sc., Ph.D. (York)/part-time
Calvin B. Hartley/B.Sc. (Waterloo), Ph.D. (McMaster)/part-time
Daniel S.C. Yang/B.Sc., M.Sc. (Alberta), Ph.D. (Pittsburgh)

Assistant Professors

Albert M. Berghuis/M.Sc. (Groningen, The Netherlands), Ph.D. (British Columbia)
Aled M. Edwards/Ph.D. (McGill)
Lof D. Frappier/Ph.D. (Queen's), Ph.D. (McGill)
Corinne G. Lote/B.Sc., Ph.D. (Alberta)
Gerard D. Wright/B.Sc., Ph.D. (Waterloo)

Associate Members

Stephanie A. Atkinson/Pediatrics B.A. (Western Ontario), Ph.D. (Toronto)
Brian F. Leber/Medicine B.Sc., M.D.C.M., F.R.C.P.C.
Gurmeet Singh/Pathology B.Sc., Ph.D. (Dalhousie)
Thillainathan Sivakumar/Pathology B.Sc. (Ceylon) M.Sc., Ph.D. (Queen's), F.R.S.C. (London)
Bradley N. White/Biology B.Sc. (Nottingham), Ph.D. (McMaster)

Courses

If no prerequisite is listed, the course is open.

BIOCHEM 2A06 PRINCIPLES OF BIOCHEMISTRY

An overview of biochemical processes emphasizing the importance of structure, function, reactivity and energetics of molecules in biological systems. Designed for students intending to proceed to Level III Biochemistry courses.

Three lectures or tutorial; two terms.

Prerequisite: Credit or registration in one of CHEM 2B06, 2006, and registration in an Honours Biochemistry programme or Honours Molecular Biology and Biotechnology.

Antirequisite: BIOCHEM 2E03, 2E03, 3G03, 3G3

BIOCHEM 2E03 METABOLISM AND PHYSIOLOGICAL CHEMISTRY

A brief introduction to proteins, enzymes and gene expression followed by a more detailed treatment of energy and intermediary metabolism with emphasis on physiological chemistry.

Three lectures; second term.

Prerequisite: CHEM 2E03 or credit or registration in one of CHEM 2B06, 2006.

Antirequisite: BIOCHEM 2A06, 2E03, 3G3

BIOCHEM 3B03 NUCLEIC ACID STRUCTURE AND FUNCTION

Fundamental properties of DNA and RNA. Molecular mechanisms involved in the processing of genetic information. Related methods of investigation will be discussed.

Three lectures; first term.

Prerequisite: One of BIOCHEM 2A06, 3G3.

Antirequisite: BIOCHEM 3A03, BIOLOGY 3H03

BIOCHEM 3B03 PROTEIN STRUCTURE AND ENZYME MECHANISM

Fundamental aspects of protein structure including physical methods of investigation. Theoretical basis of enzyme catalysis and the experimental study of kinetics and mechanism.

Three lectures; second term.

Prerequisite: One of BIOCHEM 2A06, 3G03.

Antirequisite: BIOCHEM 3A03

BIOCHEM 3C03 CELLULAR BIOCHEMISTRY

Biochemical basis of complex cellular processes such as compartmentalization, vesicular traffic, cell division, movement and communication. Includes physical principles of related techniques and instrumentation.

Three lectures; one term.

Prerequisite: BIOCHEM 2A06, or BIOCHEM 3G3 and one of BIOCHEM 2E03, 3G3

BIOCHEM 3E03 ENVIRONMENTAL BIOCHEMISTRY LABORATORY

Fundamental principles and techniques of experimental biochemistry analysis of environmental problems.

One lab (three hours), one tutorial (three hours); one term.

Prerequisite: Enrollment in Level III of Honours Science (Environmental Science Option).

Antirequisite: BIOCHEM 3L03
Biochemistry 3G03  Biochemistry of Macromolecules
Chemical and conformational properties of proteins and relationships to their function including regulation of enzyme activity. Chemical and physical structure of DNA and RNA relevant to biological function. Three lectures; first term
Prerequisite: CHEM 2006 or 2C06, or a grade of B+ in CHEM 2D03
Antirequisite: BIOCHEM 2A06, 2E03, 3A03, 3A03

Biochemistry 3H03  Clinical Biochemistry
An outline of clinical chemistry; its relation to disease and relevance to health care.
Three lectures; one term
Prerequisite: BIOCHEM 2A06, or BIOCHEM 3G03 and one of BIOCHEM 2E3, 3G3

Biochemistry 3L03  Biochemistry Laboratory
Illustration of fundamental principles and techniques of experimental biochemistry and molecular biology.
One lab (three hours), one tutorial (three hours); first term
Prerequisite: BIOCHEM 2A06, and registration in an Honours Biochemistry programme or in the Honours Molecular Biology and Biotechnology programme; or BIOCHEM 3G03, one of BIOCHEM 2E3, 3G3 and registration in Honours Biological Chemistry
Antirequisite: BIOCHEM 3E03

Biochemistry 3N03  Nutrition and Metabolism
Study of nutritional biochemistry and the regulation of metabolism; the role of specific nutrients in functional processes of the body in health and disease.
Three lectures; one term
Prerequisite: BIOCHEM 2A06, or BIOCHEM 3G03 and one of BIOCHEM 2E3, 3G3

Biochemistry 3P03  Biochemistry Laboratory Projects
Research projects illustrating modern methods in biochemistry and molecular biology.
One lab (three hours), one tutorial (three hours); second term
Prerequisite: BIOCHEM 3L03 and either registration in an Honours Biochemistry programme or permission of the Department
Antirequisite: BIOLOGY 3V03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

Biochemistry 4A03  Recent Advances in Biochemistry and Molecular Biology
Student presentation and critical evaluation of selected topics from the current research literature.
Three lectures; one term
Prerequisite: Registration in Level IV of an Honours Programme in Biochemistry. Permission of the Department is required by March 31.
Antirequisite: BIOCHEM 4C03

Biochemistry 4B06  Senior Thesis
A thesis based on a project directly supervised by a member or associate member of the Department of Biochemistry.
Three labs (three hours); two terms
Prerequisite: BIOCHEM 3P03, or BIOLOGY 3V03 and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme. Students must have a C+ of at least 62.5. Permission of the Department is required by March 31.
Antirequisite: BIOCHEM 4G03, 4L03, 4P03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

Biochemistry 4C03  Biochemistry Inquiry
Broader aspects of biochemistry such as those relating to food, drugs, health and environment discussed in small groups. Group and individual projects, seminars and lectures as appropriate to the subject matter.
Three hours; one term
Prerequisite: Registration in Level IV of Honours Biochemistry (Complementary Studies Option); or one of BIOCHEM 2A06, 2E03, 2E3, or 3G3 and registration in a Complementary Studies programme and permission of the instructor
Antirequisite: BIOCHEM 4A03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

Biochemistry 4D03  Biotechnology and Genetic Engineering
Theory, methods and applications in genetic engineering and biotechnology with emphasis on recombinant DNA, hybridomas, engineered organisms, and fermentation processes.
Three lectures; first term
Prerequisite: BIOLOGY 3E03; one of BIOCHEM 3A03, 3B03, BIOLOGY 3H03 and one of BIOCHEM 2A06, 3G3; or registration in Level IV of Honours Arts & Science and Biochemistry

Biochemistry 4E03  Gene Expression
Advanced course covering current concepts and strategies of molecular mechanisms of eukaryotic gene expression and regulation at the transcriptional, post-transcriptional, translational and post-translational levels.
Three lectures; second term
Prerequisite: One of BIOCHEM 3A03, 3B03, BIOLOGY 3H03 and one of BIOCHEM 2A06, 3G3

Biochemistry 4G03  Biotechnology and Genetic Engineering Laboratory
This lab is complementary to BIOCHEM 4D03. Experiments may involve cloning, engineered mutagenesis, DNA sequencing, expression of cloned genes and fermentation.
Two labs (four hours); one term
Prerequisite: Registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme and one of BIOCHEM 3P03, BIOLOGY 3V03 and either one of BIOCHEM 3A03, 3B03 or both BIOCHEM 2A06 and BIOLOGY 3H03. Permission of the Department is required by March 31.
Antirequisite: BIOCHEM 4B06, 4L03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

Biochemistry 4J03  Structural and Mechanistic Aspects of Macromolecules
Three lectures; second term
Prerequisite: BIOCHEM 3B3, one of BIOCHEM 3B03 or 3G03 and one of CHEM 3003, 3F03

Biochemistry 4J03  Biochemical Immunology
This advanced course applies small group based learning to immunological problems. Topics concern development of immunoassays, resistance to infection and immunity in health and disease.
One session (two hours), one tutorial; one term
Prerequisite: One of BIOLOGY 3X03, 4F03 and one of BIOLOGY 3H03, BIOCHEM 3A03, 3B03, 3G03
Cross-list: MOL BIOL 4J03

Biochemistry 4L03  Advanced Biochemistry Laboratory
Fundamental principles of experimental biochemistry with emphasis on modern methods in enzymology and molecular biology.
Two labs (four hours); one term
Prerequisite: BIOCHEM 3L03 and either BIOCHEM 3A03 or both BIOCHEM 3B03 and 3B3
Antirequisite: BIOCHEM 4B06, 4G03

Biochemistry 4M03  Membrane Structure and Function
Chemical structure and molecular organization of membrane constituents. Molecular basis of the biological activity of membranes.
Three lectures; first term
Prerequisite: Registration in Level IV of an Honours Biochemistry or Honours Molecular Biology and Biotechnology programme or Year 4 of Honours Biochemistry Co-op programme or BIOCHEM 3G03 and one of BIOCHEM 2E3, 3G3

Biochemistry 4P03  Research Project
A research project will be supervised by a member or associate member of the Department of Biochemistry.
Three labs (three hours); one term
Prerequisite: BIOCHEM 3A03, 3B03 and 3B3, or 3G3 and 3G3, and one of BIOCHEM 3P03, BIOLOGY 3V03, and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme. Permission of the Department is required by March 31.
Antirequisite: BIOCHEM 4B06
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

Biochemistry 4Q03  Biochemical Pharmacology
Interactions of drugs with living systems. Drug absorption, distribution, mechanism of action, metabolism and elimination will be discussed.
Three lectures; first term
Prerequisite: BIOCHEM 2A06 and registration in Level IV of an Honours Biochemistry or Honours Molecular Biology and Biotechnology programme or Year 4 of Honours Biochemistry Co-op programme; or BIOCHEM 3G03 and one of BIOCHEM 2E3, 3G3
Antirequisite: BIOLOGY 3AA3
BIOLOGY

Faculty as of January 15, 1997

Chair
A.J. Rainbow

Professors Emeriti
Stanley T. Bayley/B.Sc., Ph.D. (London)
Douglas Davidson/B.Sc. (Durham), D.Phil. (Oxford)
Douglas M. Davies/B.A., Ph.D. (Toronto), F.E.S.C.
Kenneth A. Kershaw/B.Sc. (Manchester), Ph.D. (N. Wales), D.Sc. (Wales), F.R.S.C.
Stanley Mak/M.Sc. (Saskatchewan), Ph.D. (Toronto)
Richard A. Morton/M.S., Ph.D. (Chicago)
Ludvik A. Prevec/M.A., Ph.D. (Toronto)
Iwao Takahashi/B.A. (Hakodate), M.S.A. (Kyushu), Ph.D. (Montreal)
Stephen F.H. Thrale/Ph.D. (Alberta), Ph.D. (Cambridge)
Jean E.M. Westermann/B.Sc. (Western Ontario), M.A. (Mount Holyoke), Ph.D. (Toronto)

Professors
Turlough Finan/B.Sc., M.Sc. (Galway, Ireland), Ph.D. (Guelph)
G. Brian Golding/B.Sc. (Dalhousie), Ph.D. (Alberta)
Frank L. Graham/Ph.D. (Memorial), M.A., Ph.D. (Toronto)
Delfsworth G. Hatfield/Ph.D. (Queen's), Ph.D. (Queen's), Ph.D. (McMaster)
John A. Hassell/Biochemistry, Pathology B.Sc. (Brooklyn College), Ph.D. (Connecticut)
John A. Lett/B.Sc. (British Columbia), M.S., Ph.D. (California, Davis)
D. Gordon McDonald/B.Sc. (Western Ontario), M.Sc., Ph.D. (Calgary)
Collin A. Nurse/B.ESc. (Western Ontario), Ph.D. (Harvard)
Michael J. Donnelly/B.Sc., Ph.D. (Toronto)
Andrew J. Rainbow/B.Sc. (Manchester), M.Sc. (London), Ph.D. (McMaster)
Rama S. Singh/B.Sc. (Agra), M.Sc. (Kanpur), Ph.D. (Calcutta, Davis)
George J. Sorger/B.Sc. (McGill), M.S., Ph.D. (Yale)
Bradley N. White/B.Sc. (Nottingham), Ph.D. (McMaster)
Christopher M. Wood/B.Sc., M.Sc. (British Columbia), Ph.D. (East Anglia)

Associate Professors
Ana Campos/B.A., M.A. (Rio de Janeiro), Ph.D. (Brandeis)
Patricia Chow-Fraser/B.Sc., M.Sc. (Waterloo), Ph.D. (Toronto)
Allan D. Dingle/B.Sc. (McMaster), M.Sc. (Illinois), Ph.D. (Brandeis)/Part-time/Undergraduate Advisor
H. Lisle Gibb/B.Sc. (Queens'), M.S., Ph.D. (Michigan)
J. Roger Jacobs/B.Sc. (Calgary), M.Sc., Ph.D. (Toronto)
Jurek Koleza/M.Sc., Ph.D. (Poznan)
James S. Pringle/Royal Botanical Gardens, A.B. (Dartmouth), M.S. (New Hampshire), Ph.D. (Tennessee)/Part-time
C. David Rolfe/B.Sc., M.Sc. (Guelph), Ph.D. (British Columbia)
Herbert E. Schellhorn/B.Sc., M.Sc. (Guelph), Ph.D. (North Carolina)
Elizabeth A. Weretilnyk/B.Sc., Ph.D. (Alberta)

Assistant Professors
Susan A. Dudley/B.Sc., M.Sc. (McGill), Ph.D. (Chicago)
James S. Quinn/B.Sc. (Queen's), M.Sc. (Brock), Ph.D. (Oklahoma)

Instructional Assistants
Marvin Gunderman/B.Sc., M.Sc. (McMaster)
Theima Leech/B.Sc., M.Sc. (Guelph)
Beryl Piccinin/B.Sc. (Mount Allison), M.Sc. (McMaster)
Raymond Provat/B.Sc. (McMaster), B.Ed. (Toronto)

Courses

If no prerequisite is listed, the course is open.

BIOLOGY 1A03  STRUCTURAL AND FUNCTIONAL RELATIONS IN LIVING SYSTEMS

Structure, molecular composition and function in sub-cellular and cellular systems and in whole organisms.
Three lectures, one lab (three hours); one term
Prerequisite: Registration in one of Natural Sciences I, Arts & Science I, any programme above Level I, or a grade of at least 80% in Biology I. Registration in or completion of CHEM 1AA3, MBA3 (or 1A06) is strongly recommended.
CHEM 1AA3 (or 1A06) are prerequisites for many Biology courses in Level II, III, and IV. OAC Biology is strongly recommended.
Corequisite: SCIENCE 1A00
Antirequisite: BIOLOGY 1A06

BIOLOGY 1AA3  REPRODUCTION AND ADAPTATION IN LIVING SYSTEMS

Reproduction, cellular and whole organisms; an introduction to genetics and evolution, replication and function of DNA; adaptive strategies in ecological systems.
Three lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 1A03
Antirequisite: BIOLOGY 1A06

BIOLOGY 1J03  HUMAN PHYSIOLOGY

Physiology of respiration, circulation, energy and muscle metabolism and reproduction.
Three lectures; one term
Not open to students registered in Natural Science I or in any Biology, Biochemistry or Molecular Biology and Biotechnology programme

BIOLOGY 2B03  CELL BIOLOGY

Basic treatment of cell structure and function, including transport and chemical signals: adaptation of structure and function in specialized cells.
Three lectures; two lectures, one lab (three hours); or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 1A03 (or 1A06), CHEM 1AA3 (or 1A06)

BIOLOGY 2C02  GENETICS

Structure, function and transmission of genes; chromosomal basis of inheritance; mono- and dihybrid crosses; sequential steps in gene function; linkage maps; sex chromosome inheritance.
Three lectures, or two lectures and one tutorial (three hours); one term
Prerequisite: BIOLOGY 1A03 (or 1A06), CHEM 1AA3 (or 1A06)

BIOLOGY 2D03  THE PLANT KINGDOM

An introduction to the major groups of green plants. Growth and development of vegetative parts and mechanisms of reproduction will be emphasized.
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 1A03 (or 1A06) or ENVIR SC 1A06 (or both 1B03 and one of 1H03 or 1G03)

BIOLOGY 2E03  THE ANIMAL KINGDOM

Selected aspects of design in the major animal groups, with emphasis on adaptations to terrestrial versus aquatic environments.
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 1A03 (or 1A06) or ENVIR SC 1A06 (or both 1B03 and one of 1H03 or 1G03)

BIOLOGY 2F03  FUNDAMENTALS OF ECOLOGY

A broad overview of ecology at the level of organisms, populations and communities.
Three lectures, or two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 1A03 (or 1A06) or ENVIR SC 1A06 (or both 1B03 and one of 1H03 or 1G03)

BIOLOGY 3A03  FUNDAMENTAL CONCEPTS OF PHARMACOLOGY

Drug interactions with living organisms; absorption and elimination of drugs, variations in drug action, drug toxicity, receptor structure and function, and signal transduction pathways.
Three lectures, one tutorial; one term
Prerequisite: CHEM 2006 or 2B06, and credit or registration in one of BIOLOGY 3F03, 3U03, 3U13, and credit in one of BIOCHEM 2A05, 3A03 or 3G03. Credit in BIOCHEM 2E03 is recommended.
Antirequisite: BIOCHEM 4Q03 or registration in Honours Biology and Pharmacology

BIOLOGY 3B03  PLANT PHYSIOLOGY

Principles of physiology and plant cell metabolism. Topics include: photosynthesis, phototranspiration, mineral nutrition, water relations and transpiration.
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2B03 and 2D03

BIOLOGY 3B03  ULTRASTRUCTURE, DEVELOPMENT AND FUNCTION OF PLANT CELLS

Cells and tissues will be studied. Students will take photomicrographs and electron micrographs.
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2B03 and 2D03

BIOLOGY 3C03  MICROBIAL PHYSIOLOGY AND REGULATION

Study of prokaryotic cellular functions including regulation of metabolism, basic energy-yielding pathways, morphogenesis and reproduction.
Three lectures; or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 3E03
BIOLOGY 3E03 INTRODUCTORY MICROBIOLOGY
Biology of the prokaryotic cell including structure-function relationships, antimicrobial agents and bacterial taxonomy. Use of microorganisms in biotechnology.
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2B03 and either CHEM 2D03 or 2006, BIOCHEM 3G03 is strongly recommended.

BIOLOGY 3F03 VERTEBRATE ANATOMY
An introduction to the development of structure and function in vertebrates.
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2E03

BIOLOGY 3J03 MOLECULAR BIOLOGY OF THE NUCLEUS
Structure of the nucleus and of chromatin; organization of DNA sequences; DNA replication, transcription; gene expression; some relevant techniques
Three lectures, or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2C03. BIOLOGY 3J03 is highly recommended.

BIOLOGY 3K03 ANIMAL PHYSIOLOGY
Respiration, circulation, acid-base balance and renal function.
Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2F03. One of BIOLOGY 2D03 or 2E03 and STATS 1C03 are recommended.
Antirequisite: ENGINEER 4X03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

BIOLOGY 3L03 ANIMAL PHYSIOLOGY - HOMEOSTASIS
Respiration, circulation, acid-base balance and renal function.
Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2B03 and permission of the instructor. BIOCHEM 2E03 and 3G03 are recommended.
Antirequisite: ENGINEER 4X03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

BIOLOGY 3M03 MICROBIAL GENETICS
The genetics of bacteriophages, bacteria and fungi. Special emphasis will be placed on relationships between microbial genetics and general problems in genetics.
Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2C03, BIOLOGY 3E03 and BIOCHEM 2E03 are strongly recommended.

BIOLOGY 3P03 CELL PHYSIOLOGY
Analysis of cell function with an emphasis on electrical properties, ion transport proteins, signalling via second messengers, mechanisms of cell homeostasis, and epithelial transport.
Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03; credit or registration in BIOCHEM 3G03

BIOLOGY 3Q03 FIELD BIOLOGY I
Field work plus written assignments chosen from an assortment of modules offered by faculty from McMaster and other Ontario Universities' Biology Departments. Available modules are posted in January each year. Content and schedules vary annually. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.
Prerequisite: BIOLOGY 1AA3 (or 1A06) or ENVIR SC 1AA6 (or both 1B03 and one of 1H03 or 1G03) and acceptance into a specific module

BIOLOGY 3R03 GENETICS
Population structure and dynamics. Natural selection and regulation of organisms by environmental and biological factors. An evolutionary view of predation, competition, life history schedules.
Three lectures; one term
Prerequisite: BIOLOGY 2F03

BIOLOGY 3S03 MOLECULAR BIOLOGY
Matter, dosimetry, tracer methods, radiation in medicine, biological effects, radiation levels and regulations, radiation protection.
Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2C03 and either CHEM 2D03 or 2006.

BIOLOGY 3T03 ORGANIZATION OF THE CYTOPLASM
A detailed examination of the molecular organization and function of cytoplasmic structures in metazoa, with particular focus on the differentiation and specialization of the cell surface and the cytoskeleton.
Three lectures, or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03

BIOLOGY 3U03 ANIMAL PHYSIOLOGY
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2D03 or 2E03 and permission of the instructor.

BIOLOGY 3V03 TECHNIQUES IN INVERTEBRATE PHYSIOLOGY
Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2B03 or 2C03 and permission of the instructor.

BIOLOGY 3W03 ADVANCED MICROBIAL TECHNIQUES
An introduction to the use of techniques for the study of microorganisms, with emphasis on specific research applications and problems in the area of microbial genetics.
Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2B03 or 2C03 and permission of the instructor.

BIOLOGY 3X03 INTRODUCTORY IMMUNOLOGY
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2D03 or 2E03 and STATS 1C03 are recommended.
Antirequisite: ENGINEER 4X03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

BIOLOGY 3Y03 PLANT RESPONSES TO THE ENVIRONMENT
Plants display many modifications in their development in response to their environment. This course will examine these phenotypic responses from metabolic, ecological and evolutionary perspectives.
Three lectures; one term
Prerequisite: BIOLOGY 2B03, 2C03 and 2003. BIOLOGY 3EB3 is recommended.
Antirequisite: BIOLOGY 4Y03

BIOLOGY 3Z03 INVERTEBRATE PHYSIOLOGY
Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2B03 or 2C03.

BIOLOGY 4G03 ANATOMY AND PHYSIOLOGY OF THE VERTEBRATE
A study of the principles underlying developmental phenomena; polarity, gradients and pattern formation; intra and intercellular mechanisms governing cell determination and differentiation; cell lineage and cell recognition.
Three lectures; or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03, 2003. BIOLOGY 3N03 is strongly recommended.
BIOLOGY 4A03 ADVANCED TOPICS IN ECOLOGY
Examination of current topics in ecology including ecosystem and landscape ecology, evolutionary ecology, and behavrial ecology.
Two lectures, one tutorial (three hours); one term
Prerequisite: One of BIOLOGY 3J03, 3S53 or 3TT3

BIOLOGY 4AA3 CONSERVATION BIOLOGY
Examination of how biological principles, mainly from population biology and genetics can be applied to conserving diversity in the natural world.
Two lectures, one tutorial (three hours); one term
Prerequisite: BIOLOGY 2C03 and one of BIOLOGY 3J03, 3S53 or 3TT3.

BIOLOGY 4B03 PLANT METABOLISM AND MOLECULAR BIOLOGY
Analysis of plant cell metabolism and the regulation of metabolism at the biochemical and molecular genetic level.
Three lectures; one term
Prerequisite: BIOCHEM 2A06 or 3G03, BIOLOGY 3B03 and 3H03 are recommended.
Offered in alternate years.
Not offered in 1997-98.

BIOLOGY 4C09 SENIOR THESIS
A thesis based upon a research project carried out under the direction of a member of the Faculty.
Prerequisite: Registration in Level IV of any Honours Biology programme and permission of the Chair
Antirequisite: BIOLOGY 4F08, PSYCH 4D06, or PHARMAC 4F09
See the heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

BIOLOGY 4D03 MOLECULAR EVOLUTION
The study of how molecules change over time within and between species. The experimental data, techniques and theories will be examined.
Three lectures, or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 3J03
Offered in alternate years.
Not offered in 1997-98.

BIOLOGY 4EE3 THE SCIENCE AND POLITICS OF HUMAN NATURE
The nature of genetic diversity in humans; the nature versus nurture debate in relation to genetic determinism and biological basis of behaviour.
Two lectures and one tutorial; one term
Prerequisite: BIOLOGY 2C03 and one of BIOLOGY 3F03, 3J03, ANTHROP 2E03

BIOLOGY 4F06 SENIOR PROJECT
Students may enlarge their background in a field of specialization through an experimental or library project under the direction of a member of the Faculty.
Prerequisite: Registration in Level IV Biology programme and permission of the Chair
Antirequisite: BIOLOGY 4C09 or PSYCH 4D06
See the heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

BIOLOGY 4FF3 BIOLOGY INQUIRY
This course will provide students with an opportunity to develop skills required to launch broadly-based investigations of selected biological themes. Small groups will meet to define areas of interest, to discuss component problems, and give seminars on the chosen topics.
Seminar and discussions (three hours); one term
Prerequisite: Registration in Honours Biology (Complementary Studies Option), Honours Biochemistry (Complementary Studies Option), or Honours Science (Complementary Studies Option) and permission of the course coordinator
Antirequisite: BIOLOGY 4C09, 4F06
See the heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

BIOLOGY 4G03 HUMAN ANATOMY
A study of the human body by dissection, self-teaching modules and videotapes.
Two labs (two and one half hours); two terms
Prerequisite: A grade of at least B+ in BIOLOGY 3F03 or 3K03, or at least B+ in BIOLOGY 2E03 or co-registration in BIOLOGY 3F03 and 3K03. These are minimum requirements, and final selection by the Chair of the Department of Biology will be based on academic merit
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.
Offered in alternate years.
Not offered in 1997-98.

BIOLOGY 4H03 GENETIC ANALYSIS OF BEHAVIOUR
Selected topics in behaviour will be examined at the genetic and molecular level. Topics will include circadian rhythms, courtship behaviour, twin studies, learning and memory.
Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 3I03 or both 2B03 and 2C03. PSYCH 2F03, 3R03, and BIOLOGY 3H03 are recommended.
Offered in alternate years.
Offered in 1997-98.

BIOLOGY 4I03 ADVANCED TOPICS IN IMMUNOLOGY
This course will build on previous knowledge of the immune system and cover selected topics such as allergy, autoimmunity, tumor, reproductive and viral immunity, and AIDS.
Two lectures, one tutorial (two hours); one term
Prerequisite: BIOLOGY 3X03 or 4I03

BIOLOGY 4J03 FIELD BIOLOGY II
A second field module chosen from those offered by faculty from McMaster and other Ontario Universities' Biology Departments. This module must differ from any completed credit in BIOLOGY 3F03. Available modules are posted in January of each year. Content and schedules vary annually. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.
Prerequisite: BIOLOGY 1AA3 (or 1A06) or ENVIR SC 1A06 (or both 1B03 and one of 1H03 or 1G03) and acceptance into a specific module

BIOLOGY 4L09 SENIOR THESIS FOR CO-OP STUDENTS
A thesis based upon a research project carried out under the direction of a member of the Biology Department.
Prerequisite: Registration in the Honours Biology and Pharmacology Co-op programme. Approval of the project must be obtained from the Programme Director and the Chair of the Department by the end of preregistration.

BIOLOGY 4M03 MOLECULAR ASPECTS OF EUKARYOTIC CHROMOSOMES
Chromatin structure, repeated DNA sequences, concerted evolution of gene families, telomeres, centromeres, gene transfer, oncogenes, transposable elements.
Three lectures; one term
Prerequisite: BIOLOGY 3G03 and either BIOCHEM 2A06 or both BIOCHEM 2E03 and 3G03

BIOLOGY 4P03 MEDICAL MICROBIOLOGY
Bacterial diseases: identification, epidemiology and treatment.
Three lectures, or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 3E03
Offered in alternate years.
Offered in 1997-98.

BIOLOGY 4P07 ENVIRONMENTAL MICROBIOLOGY
Study of interaction of microorganisms with their environment with emphasis on topics of ecological significance including plant-microbe interactions, nutrient cycling and waste treatment.
Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 3E03
Offered in alternate years.
Not offered in 1997-98.

BIOLOGY 4P09 HUMAN GENETICS
The human genome and genetic disease. Topics include normal and pathological cytology; the human genome project; gene mapping, linkage and therapy.
Two (or one) lecture(s), one (or two) tutorial(s); one term
Prerequisite: Credit or registration in BIOLOGY 2B03, 2C03. BIOLOGY 3I03 is highly recommended.

BIOLOGY 4S03 TOXICOLOGY OF AQUATIC ENVIRONMENTS
Chemistry, mechanisms of toxicity, and ecotoxicology of environmental pollutants in aquatic environments.
Two lectures, one lab (three hours); one term
Prerequisite: Six units of Level III or IV Biology laboratory courses, BIOCHEM 2E03 and 3G03 are recommended.
Offered in alternate years.
Not offered in 1997-98.

BIOLOGY 4T03 NEUROBIOLOGY
Selected topics in neurobiology at the molecular and cellular level including growth factors and neuronal development, ion channels, neurotransmitter functions, learning and memory, and neurodegenerative disorders.
Two (or one) lecture(s), one (or two) tutorial(s); one term
Prerequisite: BIOLOGY 3F03; or permission of the instructor. One or more of BIOLOGY 3H03, 3H13, 3L13, PSYCH 2F03, 3F03 are also recommended.
Offered in alternate years.
Not offered in 1997-98.
BIOL 4U03 RADIATION BIOLOGY AND RADIATION BIOPHYSICS
The effects of radiation on biological material at the molecular, cellular, tissue and whole organism level. Applications of radiation in medicine and toxicology.
Three lectures, or two lectures and one tutorial; one term
Prerequisite: BIOLOGY 2B03 or 2E03 and one of BIOLOGY 3L03 or PHYSICS 3103; or registration in Level IV of Medical Health and Physics Co-op, or permission of the instructor
Antirequisite: BIOLOGY 3C03

BIOL 4V03 VIROLOGY
The viruses of animals, bacteria, and plants, with emphasis on the molecular biology of virus replication and the diversity of virus-cell interactions.
Two lectures, one tutorial (two hours); one term
Prerequisite: BIOCHEM 3M33, 3U03, 3UU3 and permission of the instructor
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar. Offered in alternate years. Offered in 1997-98.

BIOL 4V03 ECOLOGY OF INLAND WATERS
Physical, chemical and biological interrelationships of inland waters, including aspects of pollution.
Two lectures; one lab; one term
Prerequisite: BIOLOGY 2F03, one of BIOLOGY 3D03 or 2E03, and one of BIOLOGY 3S83 or 3T13

PHARM 4B03 DRUGS AND BEHAVIOUR
Behavioural measures to study drug action and the use of drugs to study the organization and physiochemical mechanisms in normal and abnormal behaviour.
One tutorial (three hours); one term
Prerequisite: PHARMAC 3A06 or BIOLOGY 3AA3

BUSINESS
(SEE COMMERCE)

CANADIAN STUDIES
(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

CAYUGA
(SEE INDIGENOUS STUDIES)

CHEMICAL ENGINEERING
Faculties as of January 15, 1997
Chair
P.E. Wood

Professors Emeriti

Professors
John L. Brash/B.Sc., Ph.D. (Glasgow), D.Hon.C. (Paris Nord)
James M. Dickson/B.A.Sc., M.A.Sc. (Waterloo), Ph.D. (Virginia Tech.)
Irwin A. Feuerstein/B.Chem.Eng. (City College of New York), M.S. (Newark College of Engineering), Ph.D. (Massachusetts)
Andrew N. Hrymak/B.Eng. (McMaster), Ph.D. (Carnegie Mellon)

Thomas E. Marlin/B.S. (SUNY), M.S. (Dayton), Ph.D. (Massachusetts)/NSERC Industrial Research Chair in Process Control
Robert H. Pelton/B.Sc., M.Sc. (Guelph), Ph.D. (Brisco)
Paul A. Taylor/B.Sc., Ph.D. (Univ. of Wales), P.Eng.
Donald R. Woods/B.Sc. (Queen's), M.S., Ph.D. (Wisconsin), D.Sc. (Queen's), F.C.I.C., F.A.I.Ch.E., P.Eng.
Joseph D. Wright/B.Sc. (Alberta), Ph.D. (Cambridge), P.Eng./part-time

Assistant Professors
Elizabeth A. Edwards/B.Eng., M.Eng. (McGill), Ph.D. (Stanford)
Shiping (Stephen) Zhu/B.Eng. (Zhejiang), Ph.D. (McMaster)

Department Note:
All Chemical Engineering courses are open to students registered in a Chemical Engineering programme, subject to prerequisites requirements. Prior permission of the Department is necessary for students from other Engineering departments and other faculties.

Courses
CHEM ENG 2A04 HEAT TRANSFER
Heat transfer in chemical engineering systems. Steady and unsteady state conduction, natural and forced convection, radiant heat transfer, condensation of vapour and boiling.
Three lectures, one tutorial (two hours); second term
Corequisite: CHEM ENG 2F04 or MATLS 2B06 or 2B03 or 2D03 and registration in a Chemical Engineering or Materials Engineering programme

CHEM ENG 2C02 TECHNICAL COMMUNICATIONS AND MEASUREMENTS
How to obtain, interpret, store, retrieve, manipulate and communicate information. T.V. tapes to improve verbal communication, searching the literature, organization, laboratory measurements and treatment of data.
One lecture, first term; one lab (three hours). both terms, alternate weeks
Prerequisite: Registration in Level II Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society

CHEM ENG 2D04 CHEMICAL ENGINEERING PRINCIPLES I
Steady-state mass balances in chemical processes and the first law of thermodynamics. The behaviour of gases and liquids, and their physical equilibria. Recycle in steady state operation.
Three lectures, one tutorial (three hours); first term
Prerequisite: Registration in Level II Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society or Honours Applied Chemistry

CHEM ENG 2F04 CHEMICAL ENGINEERING PRINCIPLES II
Combined mass and energy balances in the steady and unsteady state. The second law of thermodynamics and physical chemical equilibria. Introduction of process simulation packages.
Three lectures, one tutorial (three hours); second term
Prerequisite: Registration or credit in CHEM ENG 2D04

CHEM ENG 2G02 PROBLEM SOLVING
Developing awareness, strategies, creativity, analysis and interpersonal skills in the context of solving homework problems and projects.
Two tutorials (two hours); first term
Corequisite: CHEM ENG 2G02, 2D04

CHEM ENG 3D03 CHEMICAL ENGINEERING THERMODYNAMICS
Review of the total energy balance, mechanical energy balance and thermodynamics of one component system. Chemical reaction and phase equilibria of multicomponent systems, with emphasis on non-ideality.
Two lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 2F04

CHEM ENG 3E04 PROCESS MODEL FORMULATION AND SOLUTION
Formulation of models for various chemical processing units in the steady and unsteady states. Techniques for numerical solution of model equations, including algebraic and ordinary differential equations, both linear and non-linear.
Three lectures; one tutorial (one hour), every week; first term
Prerequisite: CHEM ENG 2F04
CHEM ENG 3G03 SIMULATION, MODELLING AND PROBLEM SOLVING
Chemical process simulation including models for heat exchangers, separators and reactors. Group skills, decision-making and self-directed, problem-based learning.
One lecture, two tutorials (two hours); second term
Prerequisite: CHEM ENG 2G02 and registration or credit in CHEM ENG 2A04, 3D03, 3E04, 3K04, 3M04

CHEM ENG 3K04 INTRODUCTION TO REACTOR DESIGN
Stoichiometry of multiple reactions, kinetics of homogeneous reactions, interpretation of batch data, design of ideal and non-ideal CSTR and plug flow reactors.
Three lectures; one tutorial (two hours); second term
Prerequisite: Registration or credit in CHEM ENG 3D03, 3E04 or registration in Level IV Honours Applied Chemistry

CHEM ENG 3L02 INTERMEDIATE LABORATORY SKILLS
Experiments and projects in heat transfer, thermodynamics, mass transfer and fluid mechanics with appropriate data analysis and report writing.
One lecture, one lab (three hours); second term
Prerequisite: CHEM ENG 2A04 and registration or credit in CHEM ENG 3D03, 3K04, 3M04

CHEM ENG 3M04 MASS TRANSFER AND STAGEWISE OPERATIONS
Stagewise operations, diffusion, mass transfer coefficients, distillation, differential contacting and absorption.
Three lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 2F04

CHEM ENG 3O04 FLUID MECHANICS
The laws of statics and dynamics in both compressible and incompressible fluids. Equations of conservation and modern turbulence and boundary layer theory applied to submerged and conduit flow. Similitude, unsteady flow, measuring devices and fluid machinery.
Three lectures, one tutorial (three hours); first term
Prerequisite: MATH 2M06, or MATH 2P04 and 2Q04, any of which may be taken concurrently and registration in a Chemical Engineering or Materials Engineering program.

CHEM ENG 3P03 PROCESS CONTROL
Transient behaviour of chemical processes. Theory and practice of automatic control. Introduction to computer process control.
Two lectures, one tutorial (two hours); second term
Prerequisite: MATH 2M06, and registration or credit in CHEM ENG 2A04, 3E04, 3K04, 3O04

CHEM ENG 3Q03 INTRODUCTION TO POLYMER SCIENCE
An overview of important synthetic and natural polymers with emphasis on polymer structure, the chemistry of polymer formation. An introduction to polymer characterization.
Three lectures; second term
Prerequisite: CHEM 2U06 or 2B06 or 2D03 or 2W04

CHEM ENG 3E03 POLYMER REACTION ENGINEERING
Three lectures; first term
Prerequisite: CHEM ENG 3K04 and 3Q03

CHEM ENG 4C03 STATISTICS FOR ENGINEERS
Linear regression analysis in matrix form, non-linear regression, multi-response estimation, design of experiments including factorial and optimal designs. Special emphasis on methods appropriate to engineering problems.
Three lectures; second term
Prerequisite: One of STATS 3M03, 3N03, 3Y03

CHEM ENG 4E03 MODELLING AND CONTROL OF CHEMICAL PROCESSES
Modelling, simulation and control of complex process structures (series, parallel, recycle, staged and multivariable) with consideration to applying control, including model-based algorithms, via digital computation.
Three lectures; first term
Prerequisite: CHEM ENG 3E04, 3G03, 3K04, 3M04, 3P03

CHEM ENG 4K03 REACTOR DESIGN FOR HETEROGENOUS SYSTEMS
Catalytic kinetics, mass transfer limitations, packed and fluidized bed reactors, two phase reactors.
Three lectures; second term
Prerequisite: CHEM ENG 3K04

CHEM ENG 4L02 ADVANCED LABORATORY SKILLS
Experiments and projects in transport phenomena, reaction kinetics, reactor design and process control with appropriate data analysis and report writing.
One lab (three hours), one lecture; first term
Prerequisite: CHEM ENG 3L02, and registration in Level IV Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society

CHEM ENG 4M03 SEPARATIONS
Distillation column design; transport phenomena, laminar, turbulent and unsteady state mass transfer; analogies; absorption, extraction, adsorption, ion exchange, drying, humidification, crystallization.
Three lectures; first term
Prerequisite: CHEM ENG 2A04, 3O04, 3M04

CHEM ENG 4N04 ENGINEERING ECONOMICS AND PROBLEM SOLVING
Three lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 3G03, 3M04, 3P03
Antirequisite: ENGINEER 2803 or 4803

CHEM ENG 4T03 APPLICATIONS OF CHEMICAL ENGINEERING IN MEDICINE
Applications of chemical engineering principles to biological systems and medical problems including examples from hemodynamics, blood oxygenation, artificial kidney systems, controlled drug release, biosensors and biomaterials.
Three lectures; first term
Prerequisite: CHEM ENG 3O04 or MECH ENG 3O04 or ENG PHYS 3O03

CHEM ENG 4W04 CHEMICAL PLANT DESIGN AND SIMULATION
Projects, often in cooperation with industry, usually involve steady-state computer simulation or the development of a new process. Plant equipment may be tested to develop simulation models.
Two lectures and two tutorials (two hours); second term
Prerequisite: Registration in Level IV Chemical Engineering or Level V Chemical Engineering and Management or Level V Chemical Engineering and Society

CHEM ENG 4X03 POLYMER PROCESSING
An introduction to the basic principles of polymer processing, stressing the development of models. Rheology of polymers, extrusion, molding, films, fibers, and mixing. Reactive processing.
Three lectures; first term
Prerequisite: One of CHEM ENG 2A04 or MECH ENG 3R03 or MATHS 3E04, and one of CHEM ENG 3O04 or MECH ENG 3O04

CHEM ENG 4Y04 SENIOR INDEPENDENT PROJECT
A research and design project with students working independently under the direction of a Faculty member.
Two labs (three hours); both terms. The hours assigned can be freely scheduled to suit those involved in a particular project and may include computation classes, laboratory work, discussions, or individual study.
Prerequisite: Registration in Level IV Chemical Engineering or Level V Chemical Engineering and Management or Level V Chemical Engineering and Society, and a CA of at least 9.5

CHEM ENG 4Z03 COLLOIDS, SURFACE PHENOMENA AND UNIT OPERATIONS
The properties of colloids and surfaces and their use in the design of reactors and separators. Includes stability of colloids, double layer phenomena, wetting, flocculation coagulation, surface equations of change, particle size measurements.
Three lectures; second term
Prerequisite: Registration in final level of an Engineering programme
### CHEMISTRY

**Faculty as of January 15, 1997**

**Chair**  
M.J. McGlinchey

**Associate Chair**  
W.J. Leigh

**Professors Emeriti**  
Russel A. Bell/B.Sc. (Wollongong), M.S. (Wisconsin), Ph.D. (Stanford), F.C.I.C.  
William A. John Yarwoodll.B.Sc., Ph.D.  
Joseph D. LaposalB.Sc.  
Gary J. Tomlinson/B.Sc., Ph.D.  
Adam P. Pelton/(Chemical Engineering)/M.Sc. (Guelph), Ph.D.  
Ronald F. Hileman, W.J. Leigh  
David B. MacLean/B.Sc., Ph.D. (McGill), F.C.I.C.  
Donald R. Eaton/M.A., D.Phil. (Oxford)  
Orville E. Hiliman, Jr./B.S.Ed. (Bowling Green State), Ph.D. (Case Institute of Technology), F.C.I.C.  
David A. Humphreys/B.Sc., M.Sc. (London), Ph.D. (McMaster), F.C.I.C.  
Ronald J. Humphreys/B.Sc., Ph.D. (McGill), F.C.I.C.  
Ronald J. H. Tomlinson/B.Sc. (Bishops), Ph.D. (McGill), F.C.I.C.  
Gary J. McInerney/B.Sc., M.Sc. (Manitoba), Ph.D. (Iowa State), F.C.I.C.  
John Warkentin/B.Sc., M.Sc. (Toronto), Ph.D. (McGill), F.C.I.C.  
John W. Winnik/B.Sc., Ph.D. (McGill), F.C.I.C.  
Ronald F. Hileman, W.J. Leigh  
David B. MacLean/B.Sc., Ph.D. (McGill), F.C.I.C.  
Donald R. Eaton/M.A., D.Phil. (Oxford)  
Orville E. Hiliman, Jr./B.S.Ed. (Bowling Green State), Ph.D. (Case Institute of Technology), F.C.I.C.  
David A. Humphreys/B.Sc., M.Sc. (London), Ph.D. (McMaster), F.C.I.C.  
Ronald J. H. Tomlinson/B.Sc. (Bishops), Ph.D. (McGill), F.C.I.C.  
John Warkentin/B.Sc., M.Sc. (Manitoba), Ph.D. (Iowa State), F.C.I.C.  
Henry G. Thode/C.C., M.B.E., B.Sc., LL.D. (Regina, Saskatchewan), Ph.D. (Chicago), D.Sc. (Toronto, British Columbia, Acadia, Laval, Royal Military College, McGill, Queens, McMaster, York), F.R.S., F.G.C.I.C.  
Richard H. Tomlinson/B.Sc. (Bishops), Ph.D. (McGill), F.C.I.C.  
John Warkentin/B.Sc., M.Sc. (Manitoba), Ph.D. (Iowa State), F.C.I.C.  

**Professors**  
Alexander D. Bair/B.Sc. (Toronto), M.Sc. (British Columbia), Ph.D. (Cambridge)  
Ronald F. Childs/B.Sc. (Bath University of Technology), Ph.D., D.Sc. (Nottingham)  
Peter T. Dawson/B.Sc. (Birmingham), Ph.D. (Cambridge)  
John E. Greidan/B.A. (Bucknell), Ph.D. (Tuffs), F.G.C.I.C.  
Adrian P. Hitchcock/B.Sc. (McMaster), Ph.D. (British Columbia), F.G.C.I.C.  
Joseph D. Laposa/B.Sc. (St. Louis), M.S. (Chicago), Ph.D. (Loyola)  
William J. Leitch/B.Sc., M.Sc., Ph.D. (Western Ontario), F.G.C.I.C.  
Brian E. McCarron/B.Sc. (British Columbia), Ph.D. (Stanford), F.G.C.I.C.  
Michael J. McInerney/B.Sc., Ph.D. (Manchester), F.G.C.I.C.  
Gary J. Schrobilgen/B.Sc. (Loras College, Iowa), M.Sc. (Brock), Ph.D. (McMaster)  
Johan K. Tertou/B.Sc., M.Sc., Ph.D. (Utrecht)  
Nick H. Wersluk/B.Sc. (Alberta), M.A., Ph.D. (Johns Hopkins), F.G.C.I.C.  

**Adjunct Professor**  
John R. Thorbecke/B.Sc., Ph.D. (London)

**Associate Professors**  
Jacques Barbe/B.Sc. (Toronto), Ph.D. (ANU)  
Michael A. Brock/B.Sc. (Toronto), Ph.D. (McGill)  
Randal D. Dumont/B.Sc. (Western Ontario), Ph.D. (Toronto)  
Harald H. Stover/B.Sc. (Darmstadt), Ph.D. (Ottawa)  
Francoise M. Winnik/Dipl. d'Ing. Chimie (Mulhouse), M.Sc., Ph.D. (Toronto)  
A. John Yanwood/B.Sc., Ph.D. (Birmingham)

**Assistant Professors**  
Pierre Brassard/B.Sc., M.Sc. (Concordia), Ph.D. (INRS)  
Paul H.M. Harrison/B.A. (Oxford), Ph.D. (Alberta)  
Ljian Luj/Sc., M.Sc. (Jillin), Ph.D. (McMaster)

**Associate Members**  
Richard M. Epan(Biochemistry) A.B (Johns Hopkins), Ph.D. (Columbia)  
Robert H. Peltori (Chemical Engineering)/M.Sc. (Guelph), Ph.D. (Bristol)  
Daniel S.C. Yang (Biochemistry)/B.Sc., M.Sc. (Alberta), Ph.D. (Pittsburgh)  

### Department Notes

1. Course codes ending with * indicate that course is not necessarily offered every session.
2. Students not in a Science programme should note that CHEM 1AA3 is a prerequisite for CHEM 2003 and CHEM 2003 is a prerequisite for BIOCHEM 2EE3.

### Courses

**CHEM 1A03 INTRODUCTORY CHEMISTRY I**

An introduction to inorganic chemistry, molecular structure and gaseous equilibria.

Three lectures, one tutorial, one lab (three hours) every other week; one term
Prerequisite: OAC Chemistry and either registration in one of Natural Sciences I, Engineering I, Arts & Science I, any programme above Level I; or a grade of at least 90% in OAC Chemistry
Corequisite: SCIENCE 1A00
Antirequisite: CHEM 1E03, 1A06

**CHEM 1A03 INTRODUCTORY CHEMISTRY II**

An introduction to equilibrium in solution, chemical kinetics and organic chemistry.

Three lectures, one tutorial, one lab (three hours) every other week; one term
Prerequisite: CHEM 1A03 or 1E03
Antirequisite: CHEM 1A06, 1F03

**CHEM 1E03 GENERAL CHEMISTRY FOR ENGINEERING I**

An introductory course for Engineering students, emphasizing molecular structure and equilibria. A laboratory provides experience in experimental techniques and accurate measurement.

Three lectures, one tutorial (one hour), one lab (three hours) every other week; first term
Prerequisite: OAC Chemistry; registration in an Engineering programme
Antirequisite: CHEM 1A06, 1A03

**CHEM 2A03 ANALYTICAL CHEMISTRY I**

An introduction to the basic principles of analytical chemistry, with particular emphasis on solution equilibria and classical methods of analysis.

Two lectures, two labs (three hours); one term
Prerequisite: Credit or co-registration in CHEM 2P06 or 2R03
Antirequisite: CHEM 2M05, 2N03

**CHEM 2B05 ORGANIC CHEMISTRY**

A systematic treatment of mono- and di-functional organic compounds and an introduction to spectroscopic techniques for structure determination.

Two lectures, one lab (three hours); two terms
Prerequisite: CHEM 1A03 (or 1A06); registration in an Honours Chemistry programme, B.Sc. Physical Science, or the Honours Science (Complementary Studies Option) Stream D programme
Antirequisite: CHEM 2D03, 2006

**CHEM 2C03 STRUCTURE AND REACTIONS OF THE MAIN GROUP ELEMENTS**

Comparative chemistry of the non-transition elements; introduction to symmetry.

Three lectures, one lab (three hours); one term
Prerequisite: Registration in a Biochemistry, Chemistry or B.Sc. Physical Science programme, or permission of the instructor
Antirequisite: CHEM 2F03, 2W03, 2WW4

**CHEM 2D03 INTRODUCTORY ORGANIC CHEMISTRY**

An introduction to the chemistry of monofunctional aliphatic and aromatic compounds.

Three lectures, one lab (three hours) every other week; one tutorial every other week; one term
Prerequisite: CHEM 1A03 (or 1A06) or registration in a Chemical Engineering programme
Antirequisite: CHEM 2B06, 2006

**CHEM 2D03 ORGANIC CHEMISTRY**

An introduction to classical and modern analytical techniques with an emphasis on applications in Engineering.

One lecture, one lab (three hours), first term; two lectures, one lab (three hours); second term
Prerequisite: Registration in a Chemical Engineering programme
Antirequisite: CHEM 2A03, 2N03
CHEM 2N03 ANALYTICAL CHEMISTRY
An introduction to the basic principles of analytical chemistry with application to selected classical and instrumental methods of analysis.
Two lectures, one lab (three hours); one term
Prerequisite: Registration or credit in CHEM 2P06 or 2R03; registration in an Honours Biochemistry programme or permission of the instructor
Antirequisite: CHEM 2A03, 2M05

CHEM 2006 ORGANIC CHEMISTRY
An introduction to organic chemistry with emphasis on the reactions of functional groups and an introduction to spectroscopic techniques for structure determination.
Three lectures, one lab (three hours) every other week; one tutorial (two hours) every other week; two terms
Prerequisite: CHEM 1A03 (or 1A06) with a grade of at least C+, or registration in an Honours Biochemistry, Honours Biology (Specialist Option), Honours Biology and Psychology, Honours Molecular Biology and Biotechnology, or Honours Science (Environmental Science Option)
Antirequisite: CHEM 2B06, 2D03

Students who receive special permission to register in this course after completing CHEM 2D03 will not retain credit for CHEM 2D03 on completion of this course.

CHEM 2P06 PHYSICAL CHEMISTRY I
An introduction to macroscopic and microscopic aspects of thermodynamics and kinetics and their application to chemical and physical transformations.
Three lectures, one lab (three hours) or tutorial; two terms
Prerequisite: CHEM 1A03 (or 1A06) and one of MATH 1A06, 1C06, 1A03
Antirequisite: CHEM 2R03, PHYSICS 2H03, 2H04

CHEM 2R03 GENERAL PHYSICAL CHEMISTRY
A survey of thermodynamic and kinetic principles and their application to biological systems.
Three lectures; one term
Prerequisite: CHEM 1A03 (or 1A06) and one of MATH 1A03, 1A06, 1C06, 1C06, ARTS & SCI 1D06
Antirequisite: CHEM 2P06, PHYSICS 2H03, 2H04

CHEM 2W4 INTRODUCTORY ORGANIC AND INORGANIC CHEMISTRY
An introduction to the chemistry of: monofunctional aliphatic and aromatic compounds, silicates, metals, their oxides and sulphides.
Two lectures; two terms
Prerequisite: CHEM 1A03 (or 1A06) or registration in a Ceramic, Chemical, Materials or Metallurgical Engineering programme
Antirequisite: CHEM 2B06, 2C03, 2D03, 2F06, 2W03, 3E06, 3G03

CHEM 3A03 ANALYTICAL CHEMISTRY II
An introduction to modern instrumental methods of analysis.
Three lectures, one lab (three hours); one term
Prerequisite: CHEM 2A03, or both CHEM 2N03 and CHEM 2P06 or 2R03

CHEM 3B06 PHYSICAL CHEMISTRY II
An introduction to quantum chemistry, group theory and spectroscopy. Theoretical and experimental aspects of the electronic structure of atoms and molecules. The role of spectroscopy in molecular structure determination.
Three lectures, one lab (three hours) or tutorial; two terms
Prerequisite: CHEM 2P06 (or 2R03) with a grade of at least B, and one of MATH 2A03, 2G03, 2N03 or 2P04
Antirequisite: CHEM 3B03, 3S03

CHEM 3D03 ORGANIC CHEMISTRY
A mechanistically oriented discussion of micro- and polyfunctional organic compounds with emphasis on applications to synthesis.
Three lectures, one lab (three hours); one term
Prerequisite: CHEM 2B06 or 2006
Antirequisite: CHEM 3F03

CHEM 3F03 BIO-ORGANIC CHEMISTRY
Topics in bio-organic chemistry; a sequel to Chemistry 2006.
Two lectures, one lab (three hours); one term
Prerequisite: CHEM 2B06 or 2006 registration in an Honours Biochemistry programme, Honours Molecular Biology and Biotechnology programme, or Honours Arts & Science and Biochemistry, or permission of the instructor
Antirequisite: CHEM 3D03

CHEM 3I03 INDUSTRIAL CHEMISTRY
A survey of the chemical industry. Products obtained from petroleum, natural gas and soda ash. Petrochemicals, synthetic and natural polymers.
Three lectures; one term
Prerequisite: One of CHEM 2B06, 2D03, 2W03, or CHEM 2W4, or registration in Level IV of a Chemical Engineering programme

CHEM 3P03 TRANSITION METAL CHEMISTRY
The chemistry of the heavier transition elements. An introduction to organometallic chemistry and bio-inorganic chemistry.
Two lectures, one lab (three hours); second term
Prerequisite: CHEM 3Q03
Antirequisite: CHEM 3E06

CHEM 3Q03 INORGANIC CHEMISTRY
The properties, structures and reactions of inorganic compounds with emphasis on transition metal chemistry.
Two lectures, one lab (three hours); first term
Prerequisite: CHEM 2C03; or one of CHEM 2W03, 2W4W with a grade of at least B-
Antirequisite: CHEM 3E06

CHEM 3Z03 PHYSICAL CHEMISTRY III
The linkage of microscopic and macroscopic descriptions of physical and chemical phenomena. Applications to molecules, macromolecules and solids.
Three lectures; second term
Prerequisite: CHEM 2P06 and registration or credit in CHEM 3B06
Antirequisite: CHEM 3K06

CHEM 4A03 ADVANCED ORGANIC CHEMISTRY
A discussion of the mechanisms of stepwise organic reactions, particularly concerted reactions, such as electrocyclic and sigmatropic processes, in ground and excited states of molecules.
Two lectures; one term
Prerequisite: CHEM 3D03 or 3F03

CHEM 4B03 CHEMICAL APPLICATIONS OF SPECTROSCOPY
Aspects of molecular spectroscopies and their application to the solution of chemical problems.
Two lectures; second term
Prerequisite: CHEM 3B06 or both CHEM 3B03 and 3S03

CHEM 4C03 SOLID STATE CHEMISTRY
Structure and properties of crystalline solids. Topics include crystal chemistry and crystal symmetry, introduction to space groups, defects in ionic crystals, non-stoichiometry, electronic structure and properties of semiconductors and metals.
Two lectures; one term
Prerequisite: CHEM 3E06 or 3C03

CHEM 4D03 ORGANIC STRUCTURE AND SYNTHESIS
Application of spectroscopic methods to structure determination. Synthetic methodology in organic chemistry.
Two lectures; one term
Prerequisite: CHEM 3D03 or 3F03

CHEM 4D03 MECHANISTIC BIOLOGICAL CHEMISTRY
Amino acid, nucleic acid, enzyme and coenzyme chemistry with emphasis on molecular reaction mechanisms.
Two lectures; one term
Prerequisite: CHEM 3D03 or 3F03

CHEM 4F03 SURFACE CHEMISTRY
Current topics in surface science; surface characterization, adsorption and heterogeneous catalysis.
Two lectures; one term
Prerequisite: CHEM 2P06

CHEM 4G06 SENIOR THESIS
A thesis based on a project under the direction of a Chemistry Department faculty member.
Prerequisite: Students registered in Level IV of any Honours Chemistry program (with the exception of Honours Chemistry (Complementary Studies Option)) with a CA of at least 6.0 do not need to apply for permission. Students who are registered in Level IV of Honours programmes in the Faculty of Science who have a CA of at least 6.0 must apply for permission of the Department and will be considered, subject to availability of suitable projects. See the heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

CHEM 4I03 INQUIRY IN CHEMISTRY
Seminars and directed readings dealing with the impact of Chemistry on society.
Two lectures; one term
Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry and permission of the Instructor. Students registered in Honours Chemistry (Complementary Studies Option) or Honours Chemistry (Co-op) will be given preference. Enrollment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.
CIVIL ENGINEERING

Faculty as of January 15, 1997

Chair
B. Baetz

Professor Emeritus
Gunhard, AE, Oravas/B.Eng., M.S., Ph.D. (Michigan)

Professors
Peter L. Doid/B.Sc.Eng., Ph.D. (Cape Town), WTC Chair, Environmental Systems Engineering
Ahmed Ghabrah/B.Sc. (Calg), M.Eng., Ph.D. (McMaster), P.Eng.
Frederick L. Hall/B.A. (Amherst), M.Sc. (M.J.T.), Ph.D. (Chicago)
Stan Pietruszczak/B.Sc. (Warsaw), Ph.D. (Polish Acad. Sc.)

Associate Professors
Brian L. Allen/B.Sc. (Alberta), M.S., Ph.D. (California, Berkeley), P.Eng.
Brian Baetz/B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Duke), P.Eng.

Adjunct Assistant Professor
Syed MoinB.S. (Osmania), M.S. (Nevada), Ph.D. (McMaster)

Associate Members
William P. Anderson/(Geography) M.A., Ph.D. (Boston)
Elizabeth A. Edwards/(Chemical Engineering) B.Eng., M.Eng. (McGill), Ph.D. (Stanford)

Department Note:
All civil engineering courses are open to students registered in a civil engineering programme, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other engineering departments and other faculties.

Courses
CIV ENG 2A02 SURVEYING AND MEASUREMENT
Introduction to measurement and computational techniques of surveying, the theory of measurement and errors, adjustment of observations. One lecture, one lab (three hours) or one tutorial (two hours); first term
CIV ENG 2C04 STRUCTURAL MECHANICS
Mechanics of materials; plastic deformations and residual stresses due to axial loading and bending; torsion of noncircular and thin-walled sections; unsymmetric bending and eccentric axial loading, shear stresses and unsymmetric loading of thin-walled members; transformation of stress and strain; yield and fracture criteria; energy methods; stability of columns. Three lectures, one lab (three hours); second term
Prerequisite: Credit or registration in ENGINEER 2P04
CIV ENG 2D03 GEOLOGY FOR ENGINEERS
Composition of earth; classification of rocks and minerals; weathering; geomorphology; subsurface exploration; groundwater; earth movements; case studies. Two lectures each week, one lab (three hours) or tutorial (two hours), every other week; second term
CIV ENG 2E03 COMPUTER APPLICATIONS IN CIVIL ENGINEERING
Computers in analysis and design; computer languages, numerical techniques including error analysis, root finding and interpolation; matrix manipulation, eigenvalues and differential equations. Two lectures, one tutorial (two hours); second term
Prerequisite: ENGINEER 1D04, and PHYSICS 1D03, and credit or registration in ENGINEER 2P04
CIV ENG 2F03 COMMUNICATIONS IN CIVIL ENGINEERING
Oral and written communication in context of civil engineering activity. A professional liaison program involving site visits. Two lectures, one lab or one tutorial; first term
CIV ENG 2G03 ECOLOGICAL ASPECTS OF ENVIRONMENTAL ENGINEERING
Natural systems, processes; mass balance. Global interactions of biosphere, element cycles, energy balances, climate. Ecological systems: community structure. Modelling of natural systems. Man's perturbations. Two lectures, one tutorial (two hours); second term
CIV ENG 2H03 FLUID MECHANICS
Fluid properties; hydrostatics; continuity, momentum and energy equations; potential flow; laminar and turbulent flow; flow in closed conduits; open channel flow. Two lectures, one tutorial (one hour), one lab (two hours), every other week; second term
Prerequisite: Credit or registration in ENGINEER 2P04 and MATH 2M06
CIV ENG 3A03 GEOTECHNICAL ENGINEERING I
Composition of soils, soil identification and classification; compaction; seepage theory; effective stress concept; stresses and displacements using elastic solutions; consolidation theory; numerical solutions. Two lectures, one lab (three hours) or one tutorial (two hours) every other week; first term
Prerequisite: CIV ENG 2003
CIV ENG 3B03 GEOTECHNICAL ENGINEERING II
Shear strength characteristics and failure criteria for soils; direct shear, triaxial, plane strain and field tests; earth pressure theory; bearing capacity theory; slope stability and embankment analysis. Two lectures, one lab (three hours) or one tutorial (two hours), every other week; second term
Prerequisite: Credit or registration in CIV ENG 3A03
CIV ENG 3G03  STRUCTURAL ANALYSIS
Structural analysis and modelling of linear elastic structures; stress
results and deformations of statically determinate trusses, beams, and
frames; force and displacement methods for analysis of indeterminate
beams and frames; introduction to stiffness matrix method; analysis of
cables and arches.
Two lectures, one lab (two hours); first term
Prerequisite: CIV ENG 2C04

CIV ENG 3J04  REINFORCED CONCRETE DESIGN
Introduction to concrete technology; design by limit states methods to
ensure adequate capacities for bending moment, shear and diagonal ten-
sion, axial force, bond and anchorage; and design to satisfy serviceability
requirements for deflection and cracking; practical design requirements;
interpretation of building code for behaviour of structures.
Three lectures, one lab (three hours); second term
Prerequisite: Credit or registration in CIV ENG 3G03

CIV ENG 3K03  INTRODUCTION TO TRANSPORTATION ENGINEERING
A transportation impact study serves as the focus for group projects, and
provides the context for application of material on traffic flow characteris-
tics, capacity and control; flow and congestion; signal timing and unsignalized intersec-
tions, and travel demand forecasting. Safety: flow on freeways.
Two lectures, one tutorial (two hours); second term

CIV ENG 3M04  MUNICIPAL HYDRAULICS
Analysis/design of water distribution networks. Analysis and design of
wastewater collection systems. Open channel flow: hydraulic cross-sections,
transients, pumps.
Three lectures, one lab (three hours); second term
Prerequisite: CIV ENG 2003 and credit or registration in MATH 3J04

CIV ENG 3Q03  WATER QUALITY MODELLING
Physical, chemical and biological characteristics of water. Stoichiometry,
reaction kinetics, and material balances. Mathematical modelling of physi-
Two lectures, one lab (three hours); third term
Prerequisite: CIV ENG 2J03, 2003 and MATH 2M06

CIV ENG 3S03  STEEL STRUCTURES
Introduction to design in steel, tension and compression members, plate buck-
ing aspects, beam stability, beam design, beam-columns, bolted and welded
connections. Applications employing steel structures building code.
Two lectures, one tutorial (two hours); second term
Prerequisite: Credit or registration in CIV ENG 3G03

CIV ENG 4A04  ENGINEERING HYDRAULICS AND HYDROLOGY
Hydrologic cycle; climate; hydrologic processes, precipitation; unit
hydrograph; hydrologic statistical modelling of hydraulic sys-
tems; unsteady free surface flow; hydrologic routing; groundwater flow.
Three lectures, one tutorial (three hours); first term
Prerequisite: CIV ENG 3M04

CIV ENG 4B03  ENGINEERING SYSTEMS
Mathematical models and systems; economic comparison of projects; opti-
mization; linear, non-linear and dynamic programming; simulation modelling.
Two lectures, one tutorial (two hours) or lab (three hours); first term
Prerequisite: Registration in final level of a Civil Engineering programme

CIV ENG 4C03  ENVIRONMENTAL IMPACT AND SUSTAINABILITY
Natural and urban ecosystems; environmental impact/assessment/legis-
lation; energy and environmental audits; life cycle analysis; solid and haz-
ardous wastes; air quality and control; sustainable infrastructure design.
Two lectures, one tutorial (two hours); first term

CIV ENG 4D04  GEOMETRIC HIGHWAY DESIGN
Design of various types and classes of streets and highways. Theory and
practice in design of intersections, interchanges, arterial highways, and
freeways. Design concepts.
Three lectures, one lab (two hours); first term
Prerequisite: CIV ENG 3K03

CIV ENG 4G03  PAVEMENT MATERIALS AND HIGHWAY DESIGN
Components of highway pavements; ground water and drainage for high-
way facilities; soil compaction and stabilization; aggregates; bituminous
and concrete materials, flexible pavement design; concrete pavement de-
sign; interlocking pavement structures.
Two lectures, one lab (three hours); second term
Prerequisite: CIV ENG 3B03

CIV ENG 4H03  LAND USE AND TRANSPORTATION
Methods for the analysis and prediction of transportation and land use pat-
terns in cities, with application to urban planning and pollution problems.
Three lectures; first term
Prerequisite: MATH 3J04
Cross-list: GEOG 4H03

CIV ENG 4K04  MODERN METHODS OF STRUCTURAL ANALYSIS
Stiffness method; development and applications in structural analy-
sis. Introduction to finite element method. Influence lines, elastic sta-

tility analyses of frames with and without sway effects. Application of computer programs.
Three lectures, one tutorial (two hours); second term
Prerequisite: CIV ENG 3G03 and MATH 3J04

CIV ENG 4L04  DESIGN OF WATER RESOURCES SYSTEMS
Investigation, planning, analysis and design of water resources systems.
Frequency analysis, design storms, urban drainage and analysis, floodplain
analysis and flood control.
Two lectures, one tutorial, one lab (three hours); second term
Prerequisite: CIV ENG 3M04

CIV ENG 4P04  STRUCTURAL SYNTHESIS
Structural design processes, gravity and lateral loading requirements, structural
performance criteria, choice of structural systems. Approximate analy-
sis of different structural systems, such as frames and shear walls and slabs. Analysis of actual buildings.
Three lectures, one lab (three hours); first term
Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4Q04  FOUNDATION ENGINEERING
Principles of foundation design; bearing capacity, settlement and location,
footings, deep foundations, piles, pile groups and drilled piers; geotechnical
techniques and case histories.
Three lectures, one tutorial (two hours); first term
Prerequisite: CIV ENG 3Q03

CIV ENG 4R04  DESIGN OF LOW RISE BUILDINGS
Structural systems and load distribution, design of masonry, wood, cold-
formed steel and braced and unbraced steel frames.
Three lectures, one tutorial (two hours); second term
Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4S04  BRIDGES AND OTHER STRUCTURAL SYSTEMS
Introduction to bridge engineering: design of post/tensioned prestressed
concrete structures; calculation of ultimate strength and serviceability. Plate
girders; composite construction. Applications to heavy civil structures.
Three lectures, one lab (three hours) or one tutorial (two hours); second term
Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4T04  INDEPENDENT STUDY
An experimental and/or analytical investigation related to any branch of
civil engineering, under the direction of a faculty member. Students may
choose a project for study from a list of department approved projects,
which will be circulated in February. The student may be required to
present a seminar, and will submit a final written report on the project
before April 1.
Two labs (three hours); both terms. The hours assigned can be freely sched-
uled to suit those involved in a particular project and may include compu-
tation classes, laboratory work, discussion or individual study.
Prerequisite: Registration in a final level of a Civil Engineering programme,
and a SA of at least 9.5. 
Enrollment is limited.
### CLASSICS

#### Professors
- Katherine M. D. Dunkabrin/M.A., D. Phil. (Oxford)
- Howard Jones/B.A. (London), M.A., Ph.D. (Indiana)
- William J. Slater/M.A., Ph.D. (St. Andrews)

#### Associate Professors
- Evan Haley/A.B. (Dartmouth), Ph.D. (Columbia)
- Peter Kingston/B.A., Ph.D. (London)

#### Assistant Professors
- Claude Ellers/B.A. (Sask.), M.A. (McMaster), D. Phil. (Oxford)
- Michelle G. George/B.A. (Toronto), M.A., Ph.D. (McMaster)
- Gretchen Umholtz/A.B. (Bryn Mawr), M.A. (Buffalo), Ph.D. (Berkeley)

#### Assistant Member
- D. Geagan (History) A.B. (Boston), Ph.D. (Johns Hopkins)

#### Department Note:
The following courses are available as electives to qualified students in any programme:

<table>
<thead>
<tr>
<th>Course</th>
<th>Prerequisites</th>
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<tr>
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</tr>
<tr>
<td>b) Ancient History and Society</td>
<td>CLASSICS 2K03, 2L03, 2LL3, 2203, 3L3, 3M3, 3UU3, 3V03</td>
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<td>c) Ancient Philosophy</td>
<td>CLASSICS 2P06, 4K03</td>
</tr>
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<td>d) Classical Literature in Translation</td>
<td>CLASSICS 2D03, 2H06, 3I03, 3I13</td>
</tr>
<tr>
<td>e) Greek Language and Literature</td>
<td>GREEK 1F03, 2A03, 2A3, 3R03, 3A03, 3BB3, 4A03, 4BB3</td>
</tr>
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<td>f) Latin Language and Literature</td>
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No language other than English is required for courses listed under Classics.

#### Courses

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CLASSICS 2H06 GREEK AND ROMAN THEATRE AND DRAMA
The social history of the theatre in the Classical world; readings from Greek and Roman tragedies and comedies.
Three lectures; two terms
Prerequisite: Registration in Level II and above
Cross-list: COMP LIT 2H06

CLASSICS 2K03 THE SOCIETY OF GREECE AND ROME
A description and analysis of selected aspects of the social life of Greece and Rome. Attention will be given to subjects such as work and leisure, slavery, marriage and family, and the role of women.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: CLASSICS 2G06 or 2V03

CLASSICS 2L03 HISTORY OF CLASSICAL GREECE
Greece from the rise of the city-states to Alexander, with particular attention to political, social and cultural development in the light of literary and archaeological evidence. (No Greek or Latin required.)
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: CLASSICS 2G06, HISTORY 2L06
Cross-list: HISTORY 2L03

CLASSICS 2L13 HISTORY OF CLASSICAL ROME
Rome from the middle Republic through the Empire, with particular attention to the political, military and social developments in the light of literary and archaeological evidence. (No Greek or Latin required.)
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: CLASSICS 2G06, HISTORY 2L06
Cross-list: HISTORY 2L13

CLASSICS 2P06 ANCIENT GREEK PHILOSOPHY
A study of Western philosophical thought from its earliest beginnings to the triumph of Christianity in the Roman Empire, with emphasis on Plato and Aristotle.
Three lectures; two terms
Prerequisite: Registration in Level II and above
Cross-list: PHILOS 2A06

CLASSICS 2203 GREEK AND ROMAN RELIGION
A study of the role of religion in Greek and Roman public and private life.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: RELIG ST 2203

CLASSICS 3G03 LATE ANTIQUE AND EARLY CHRISTIAN ART
The art and architecture of the later Roman Empire, and the birth of Christian art (A.D. 200-600).
Three lectures; one term
Prerequisite: CLASSICS 2G03 or ART HIST 2G03
Cross-list: ART HIST 3G03
Alternates with CLASSICS 3H03

CLASSICS 3H03 ARCHAIC GREEK ART
The formative period of Greek Art, from its rebirth after the Dark Ages to the Persian Wars (c. 1000-480 B.C.), and its relationship to the art of the Near East.
Three lectures; one term
Prerequisite: CLASSICS 2B03
Cross-list: ART HIST 3H03
Alternates with CLASSICS 3G03

CLASSICS 3I03 TOPICS IN GREEK AND ROMAN LITERATURE I
Previous topics include: Greek and Roman Elegiac and Lyric Poetry, The Legend of the Trojan War, Satire. Consult the Department concerning the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Classics
Cross-list: COMP LIT 3I03
Alternates with CLASSICS 3I13

CLASSICS 3I03 TOPICS IN GREEK AND ROMAN LITERATURE II
Topics include: Greek and Roman Epic. Consult the Department concerning the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Classics
Cross-list: COMP LIT 3I13
Alternates with CLASSICS 3I03

CLASSICS 3I13 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3I3 TOPICS IN GREEK AND ROMAN LITERATURE II
Topics include: Greek and Roman Epic. Consult the Department concerning the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Classics
Cross-list: COMP LIT 3I13
Alternates with CLASSICS 3I13

CLASSICS 3I13 may be repeated, if on a different topic, to a total of six units.
CLASSICS 3LL3 THE HELLENISTIC AGE
The successors of Alexander, the world of the monarchies and their absorption into the Roman Empire. Political, cultural and social achievements in the light of modern historical research will be emphasized. Three hours (lectures and discussion groups); one term
Prerequisite: One of CLASSICS 1L06, 2G06, 2L03, HISTORY 2L06, RELIG ST 2E06, or six units of Classics
Cross-list: HISTORY 3L3L

CLASSICS 3MM3 TOPICS IN ROMAN HISTORY
Studies of Roman history and institutions during the Republic or the Empire. Consult the Department for the topic to be offered. Three lectures; one term
Prerequisite: One of CLASSICS 1L06, 2G06, 2L03, 2R03, 2V03, 3V03
Cross-list: HISTORY 3MM3
CLASSICS 3MM3 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3R03 THE ARCHAEOLOGY OF GREEK CITIES
An examination of major Greek archaeological sites, focusing on selected sanctuaries and settlements from the Bronze Age to the Hellenistic period.
Three lectures; one term
Prerequisite: One of CLASSICS 2A03, 2B03, 3SC3
Alternates with CLASSICS 3S03.

CLASSICS 3S03 THE ARCHAEOLOGY OF THE CITY OF ROME AND ROMAN ITALY
The growth of the city of Rome, from its origins to the triumph of Christianity, and an examination of the archaeological remains of Pompeii, Ostia and other cities of Roman Italy.
Three lectures; one term
Prerequisite: One of CLASSICS 2A03, 2C03, 3R03
Alternates with CLASSICS 3P03.

CLASSICS 3UU3 GREEK SOCIETY
Advanced study of selected aspects of the social life of Greece, based on contemporary literature, documents and artifacts.
Three lectures; one term
Prerequisite: Six units of Classics, including 2K03; or CLASSICS 1L06 or 2G06 or 2L03
Cross-list: HISTORY 3UU3
Alternates with CLASSICS 3VV3.

CLASSICS 3VV3 ROMAN SOCIETY
Advanced study of selected aspects of the social life of Rome, based on contemporary literature, documents and artifacts.
Three lectures; one term
Prerequisite: Six units of Classics, including CLASSICS 2K03 or 1L06 or 2G06 or 2L03
Cross-list: HISTORY 3VV3
Alternates with CLASSICS 3UU3.

CLASSICS 4B03 SEMINAR IN CLASSICAL ARCHAEOLOGY
Consult the Department concerning the topic to be offered. Seminar (two hours); one term
Prerequisite: Six units from CLASSICS 2A03, 3P03, 3S03, and registration in Level III or IV of an Honours programme in Classics (A)
Enrolment is limited.
CLASSICS 4B03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4BB3 SEMINAR IN ANCIENT ART
Consult the Department concerning the topic to be offered. Seminar (two hours); one term
Prerequisite: CLASSICS 2BB3 and 2C03, and registration in Level III or IV of an Honours programme in Classics (A)
Cross-list: ART HIST 4BB3
Enrolment is limited.
CLASSICS 4BB3 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4DD06 SPECIAL TOPICS IN GREEK HISTORY
Investigations into Greek social history and its interpretation. Seminar (two hours); two terms
Prerequisite: Six units from CLASSICS 2G06, 2K03, 2L03, 3LL3, 3S03, 3SU3, and registration in Level III or IV of any Honours programme in Classics
Cross-list: HISTORY 4DD0
Enrolment is limited.

CLASSICS 4E03 SEMINAR IN GREEK AND ROMAN SOCIETY
Consult the Department for the topic to be offered. Seminar (two hours); one term
Prerequisite: Six units from Classics 2G06, 2K03, 2L03, 2LL3, 3UU3, 3VV3, and registration in Level III or IV of an Honours programme in Classics (A)
Enrolment is limited.
CLASSICS 4E03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4K03 ANCIENT PHILOSOPHY
A critical study of one or more ancient Greek philosophers such as Parmenides, Plato, Aristotle.
Seminar (two hours); one term
Prerequisite: CLASSICS 2P06, and registration in Level III or IV of any programme
Antirequisite: CLASSICS 4C03, 4J03
Cross-list: PHIOS 4K03
Offered in alternate years.

CLASSICS 4T06 THESIS
Reading and research in Classics supervised by a Department member. A major paper is required as well as a formal oral examination.
Tutorials; two terms
Prerequisite: Registration in Level IV of any Honours programme in Classics, and permission of the Department.

GREEK ...

Notes:
1. Students should note that the Department has classified its Greek language courses under the following categories:
   - Introductory Level Language Courses
     - GREEK 1Z06
   - Intermediate Level Language Courses
     - GREEK 2A03, 2AA3, 2R03
2. Students with OAC Ancient Greek should normally register in GREEK 2A03, but with special permission, may register in GREEK 1Z06.

Courses If no prerequisite is listed, the course is open.

GREEK 1Z06 BEGINNER'S INTENSIVE GREEK
A rapid introduction to the grammar of Classical Greek. Passages of simple Greek are read in the second term.
Five hours (lectures and tutorials); two terms
Prerequisite: Open except to graduates of OAC Ancient Greek, who must have special permission to register in the course
This course, with a grade of at least B-, is accepted as a prerequisite for admission to any Honours programme in Classics, or, with a grade of at least C-, for admission to the B.A. programme in Classics.

GREEK 2A03 INTERMEDIATE GREEK I
A study of selected passages from Greek authors designed to develop a student's proficiency in reading Greek.
Three lectures; one term
Prerequisite: OAC Ancient Greek or GREEK 1Z06. Students using this course as a Humanities I requirement will register for GREEK 2A03 and 2R03 or for GREEK 2A03 and 2A3.

GREEK 2A3A INTERMEDIATE GREEK II
A study of selected passages from Greek authors designed to further the development of the student's proficiency in reading Greek.
Three lectures; one term
Prerequisite: GREEK 2A03

GREEK 2R03 GREEK LANGUAGE
A study of Greek grammar and style based chiefly upon reading selected passages from the works of Xenophon and translation from English to Greek.
Two lectures; two terms
Prerequisite: OAC Greek or GREEK 1Z06. Students using this course as a Humanities I requirement will also register for GREEK 2A03.

GREEK 3A03 GREEK HISTORIANS
Selected readings from Greek historical authors, such as Herodotus and Thucydides. The course will also include grammatical exercises.
Three lectures; one term
Prerequisite: Six units of Level II Greek
Alternates with GREEK 4A03.
LATIN 3BB3  TOPICS IN LATIN LITERATURE I
Previous topics include: Homer, Aristophanes, Greek Tragedians. Consult the Department for the topic to be offered. Three lectures; one term
Prerequisite: Six units of Level II Greek
Alternates with GREEK 4BB3.
GREAT 3BB3 may be repeated, if on a different topic, to a total of six units.

GREAT 4A03  ATTIC ORATORS
Selected readings from the speeches of Attic orators, such as Lysias and Demosthenes. The course will also include grammatical exercises. Three lectures; one term
Prerequisite: Six units of Level II Greek
Alternates with GREAT 3A03.
GREAT 4BB3  TOPICS IN GREAT LITERATURE II
Consult the Department for the topic to be offered. Three lectures; one term
Prerequisite: Six units of Level II Greek
Alternates with GREAT 3A03.
GREAT 4BB3 may be repeated, if on a different topic, to a total of six units.

GREAT 4K03  GUIDED READING IN GREAT AUTHORS
Selected readings from Great authors supervised by a member of the Department. Tutorials; one term
Prerequisite: Six units of Level II Greek and registration in Level III or IV of any Honours programme in Classics, and permission of the Department.
GREAT 4K03 may be repeated, if on a different topic, to a total of six units.

LATIN 3R03  ADVANCED LATIN
Readings from Latin authors. The course will also include grammatical exercises. Three lectures; one term
Prerequisite: Six units of Level II Latin.
Alternates with LATIN 4R03.
LATIN 4BB3  TOPICS IN LATIN LITERATURE II
Consult the Department for the topic to be offered. Three lectures; one term
Prerequisite: Six units of Level II Latin
Alternates with LATIN 3BB3.
LATIN 4BB3 may be repeated, if on a different topic, to a total of six units.

LATIN 4K03  GUIDED READING IN CLASSICAL GREAT AUTHORS
Selected readings from Classical Great authors supervised by a member of the Department. Tutorials; one term
Prerequisite: Six units of Level II Latin and registration in Level III or IV of any Honours programme in Classics, and permission of the Department.
LATIN 4K03 may be repeated, if on a different topic, to a total of six units.

COMMERCE

Faculty as of January 15, 1997

Chair, Marketing, Business Policy and International Business Area
D. Wayne Taylor

Chair, Finance and Business Economics Area
Clarence C.Y. Kwan

Chair, Accounting Area
Y.C. Lilian Chan

Chair, Human Resources and Labour Relations Area
Rick D. Hackett

Chair, Management Science and Information Systems Area
Yufei Yuan

Professors Emeriti
Peter M. Bunting/B.A., M.B.A. (McMaster), Ph.D. (Michigan State)/Marking)
Robert C. Joyner/B.A., M.A., Ph.D. (Toronto)/Organizational Behaviour
Winston H. Mahafio/B.A. (London), B.Sc., M.Sc. (McGill), Ph.D. (Montreal)/Marketing)
Randolph E. Ross/B.A. (Waterloo Lutheran), M.B.A. (Michigan State),
S.B.A. (Indiana)/Marketing
Andrew Z. Zendorovis/M.A., Ph.D. (Kolozsvar)/Production and
Management Science
George W. Torrance/B.A.Sc., M.B.A. (Toronto), Ph.D. (SUNY—Buffalo),
P. Eng.(Management Science)

Professors
Prakash L. Abad/B.Tech. (Indian Institute of Technology), M.S., M.B.A.,
Ph.D. (Cincinnati)/(Management Science)
Roy J. Adams/B.A. (Pennsylvania State), M.A., Ph.D. (Wisconsin)/(Industrial Relations)
Nareh C. Aganwal/B.A., M.A. (Delhi), Ph.D. (Minnesota)/(Human Resources)
Norman P. Archer/B.Sc. (Alberta), Ph.D. (McMaster), M.S. (New York)/
(Management Science and Information Systems)
Min S. Basadur/B.Sc. (Toronto), M.B.A. (Xavier), Ph.D. (Cincinnati),
P.Eng./Organizational Behaviour (Half-time)
Trevor W. Chamberlain/B.Sc. (California, Berkeley), M.B.A. (McGill), Ph.D.
(Toronto), C.A./Finance)/Associate Dean (Academic)
COMMERCED 155

Courses

COMMERCE 1503 INTRODUCTION TO BUSINESS

This is a broad integrative course that introduces students to the basic principles and practices of business. Major topics include: business and economic systems, accounting, finance, marketing, human resources management, labour relations, management science and information systems. Special emphasis will be placed upon how these topics are interrelated, international and ethical considerations and the relationships among business, government and society.

Prerequisite: Registration in Business I or Engineering I

Antirequisite: BUSINESS 1A03, COMMERCE 1A03

COMMERCE 2A03 FINANCIAL ACCOUNTING I

This is an introduction to the basic principles and practices of financial accounting, which includes an examination of income measurement and the ethics of financial reporting.

Prerequisite: ECON 1A06 or 1B03 (See Note 2 above.)

Antirequisite: BUSINESS 3W08

COMMERCE 2B03 MANAGERIAL ACCOUNTING I

An introduction to concepts underlying the use of cost accounting information for managerial planning and control, and for inventory valuation. The nature and analysis of costs, and the usefulness and limitations of accounting data for decision-making, including ethical considerations, will be discussed.

Prerequisite: COMMERCE 2A03 (See Note 2 above.)

Antirequisite: COMMERCE 3A03

COMMERCE 2B03 ORGANISATIONAL BEHAVIOUR AND HUMAN RESOURCES

This course provides students with a knowledge of organizational behaviour and human resource issues and practices from a general management education perspective. Topics covered include organizational research processes, creative thinking, problem solving and decision making, systems approach and organizational effectiveness, motivation and reward systems, work reorganization (e.g., teams, quality circles, participative management) and organizational structures.

(See Note 2 above.)

Antirequisite: KINESIOLOG 3L03

Faculty Notes:

1. Commerce courses (except those listed in Note 2) are open only to students registered in Commerce or the Engineering and Management programme, and to students registered in degree programmes in Labour Studies when such courses are specified as part of the programme.

2. The following Commerce courses are open to students other than those specified in Note 1 subject to meeting the prerequisites: COMMERCE 2A03, 2B03, 2B3, 2F03, 2F13, 2P03, 3B03, 3F03, 3M03. Enrolment will be limited to forty additional students per course.

3. Level II and Level III Commerce courses are generally scheduled for three one-hour lectures per week; one term. Level IV Commerce courses are scheduled for two lectures per week (a two-hour lecture and a one-hour lecture); one term.

COMMERCE ...
COMMERC 2FA3 INTRODUCTION TO FINANCE
This course introduces the main instruments and institutions in the Canadian financial system. The basic concepts and models of modern financial theory are introduced through lectures and "hands-on" problem solving. Topics include the time value of money, capital budgeting, the trade-off between risk and return and security valuation.
Prerequisite: ECON 1A06, COMMERC 2A3 (See Note 2 above.)
Antirequisite: BUSINESS 3X03

COMMERC 2MA3 INTRODUCTION TO MARKETING
This course introduces the conceptual underpinnings and operational facets of marketing with a primarily consumer (as opposed to industrial) focus.
Prerequisite: ECON 1A06 or 1B03 (See Note 2 above.)
Antirequisite: BUSINESS 3Y03

COMMERC 2QA3 COMPUTER-AUGMENTED STATISTICAL ANALYSIS
An introduction to the application of statistical analysis in managerial decision-making. The concepts of statistical analysis are applied to a variety of topics, including decision-making, estimation by sampling, hypothesis testing, analysis of variance, simple linear and multiple regression and forecasting.
Prerequisite: OAC Finite Math or STATS 1L03, and one of MATH 1M03 or 1A03 and 1A03, and one of COMP SCI 1B03, 1SA3, 1Z03 (See Note 2 above.)

COMMERC 2QB3 INFORMATION SYSTEMS IN MANAGEMENT
This course emphasizes the strategic role of information systems in modern business. Topics include: the technical foundations of information systems, the impact of information systems on business operations and decision-making, and the processes that are required for successful implementation of business information systems.
Prerequisite: One of COMP SCI 1B03, 1SA3, 1Z03 (See Note 2 above.)
Antirequisite: COMMERC 3QB3

COMMERC 2S03 COMMUNICATION, THINKING AND GROUP SKILLS
Students will be introduced to the effective use of written and oral communication skills; thinking skills including convergent, divergent and creative thinking as well as logic and rhetoric; and group and interpersonal skills including leadership. Students practice these skills in exercises concerned with current business issues.

COMMERC 3AB3 FINANCIAL ACCOUNTING II
A first course in intermediate financial accounting dealing with the theory and practice of financial statement preparation and reporting. The emphasis will be on asset valuation and the related impact on income measurement.
Prerequisite: COMMERC 2A3

COMMERC 3AC3 FINANCIAL ACCOUNTING III
A second course in intermediate financial accounting dealing with reporting issues that relate to liabilities and owners' equity. In particular, the concepts of recognition, measurement and disclosure of such items as bonds, taxes, leases and pensions as well as the phenomenon of off-balance sheet financing are examined.
Prerequisite: COMMERC 3AB3
Antirequisite: COMMERC 4AB3

COMMERC 3BC3 HUMAN RESOURCE MANAGEMENT AND LABOUR RELATIONS
This course builds on COMMERC 2BA3, focusing on human resource management and labour relations issues and practices from a general management education perspective.
Prerequisite: COMMERC 2BA3 (See Note 2 above.)
Antirequisite: COMMERC 3BA3, 3BB3, BUSINESS 3203

COMMERC 3FA3 MANAGERIAL FINANCE
This course examines various aspects of the financial management of the firm including the sources and methods of financing, capital structure, dividend policy, leasing, mergers and acquisitions, working capital management, effects of taxation on financial decisions and international aspects of finance.
Prerequisite: COMMERC 2FA3 (See Note 2 above.)

COMMERC 3FB3 SECURITIES ANALYSIS
This course is concerned with the analysis of marketable securities, especially common stocks. Topics include the institutional characteristics and operation of financial markets, securities analysis and valuation, investment characteristics and strategies to increase return.
Prerequisite: COMMERC 2FA3

COMMERC 3FC3 INTERNATIONAL FINANCE
This course provides a framework for examining financial management decisions in an international setting. Issues examined include foreign exchange risk management, multinational working capital management, foreign investment analysis and financing foreign operations.
Prerequisite: COMMERC 3FA3
Antirequisite: COMMERC 4FX3

COMMERC 3MA3 COMPETITIVE AND MARKET INTELLIGENCE
This course covers the effective obtaining, communicating and using of competitive and market intelligence. Students work in groups with a company or public organization and receive training and experience in making business presentations.
Prerequisite: COMMERC 2MA3 and COMMERC 2OA3 or STATS 2Y03

COMMERC 3MB3 CONSUMER BEHAVIOUR
This course examines why people buy, ways of satisfying consumer needs more effectively, and the creation of communications that will influence consumers.
Prerequisite: COMMERC 2MA3

COMMERC 3MC3 APPLIED MARKETING MANAGEMENT
This course builds upon material in COMMERC 2MA3 but is more applied in nature and covers the 4 P's in greater depth. It also has a heavier industrial and service sector component, and relies more on practical, real world cases. A major field project (student teams working with companies) is a critical part of the course.
Prerequisite: COMMERC 2MA3 (See Note 2 above.)

COMMERC 3QA3 MANAGEMENT SCIENCE FOR BUSINESS
This course is a study of analytical approaches that assist managerial decision-making; it provides coverage of decision theory and an introduction to optimization methods, computer simulation and the general approach of management science.
Prerequisite: COMMERC 2QA3

COMMERC 3QC3 PRODUCTION/OPERATIONS MANAGEMENT
An introduction to the production/operations function with an emphasis on the use of quantitative analysis to assist decision-making. Topics include: layout of facilities, aggregate planning, scheduling, inventory control and quality control.
Prerequisite: COMMERC 3QA3, or registration in an Engineering and Management programme
Antirequisite: COMMERC 4QA3, MECH ENG 4C03

COMMERC 4AA3 MANAGERIAL ACCOUNTING II
A consideration of advanced topics in management planning and control including cost behaviour determination, production planning, innovation in costing, cost allocations, variance analysis and performance evaluation for responsibility centres.
Prerequisite: COMMERC 2AB3 or 3A3

COMMERC 4AC3 FINANCIAL ACCOUNTING IV
An advanced accounting course considering specific problems of accounting for the corporate entity, such as, business combinations, intercorporate investments, consolidated financial statements, accounting for foreign operations and foreign currency transactions, segment reporting.
Prerequisite: COMMERC 3AC3 or 4AB3

COMMERC 4AD3 INTRODUCTION TO AUDITING
An examination of the attestation function in accounting including ethical, legal, and statutory influences in the development of auditing standards. The nature of control structures and of audit evidence is examined. The nature, scope, and application of auditing procedures are examined through a selective analysis of asset, liability, revenue, and expense items.
Prerequisite: COMMERC 3AB3

COMMERC 4AE3 ACCOUNTING INFORMATION SYSTEMS
This course considers the principles underlying the role of accounting as an information system for planning and controlling business operations. The course emphasizes the importance of internal control in both manual and automated systems.
Prerequisite: COMMERC 3AB3

COMMERC 4AF3 ACCOUNTING THEORY
A review of accounting theory as a background for applying underlying concepts to current accounting problems. The course emphasizes current literature.
Prerequisite: COMMERC 3AC3 or 4AB3, may be taken concurrently.
COMMERCE 4AG3 ADVANCED ACCOUNTING TOPICS
This course extends the knowledge base of earlier accounting courses and deals with specific advanced accounting topics, such as the conceptual framework, standard setting, not-for-profit accounting and fiduciary accounting.
Prerequisite: COMMERCE 4AC3, 4AF3
Available Summers 1997-2002 subject to sufficient enrolments and availability of qualified instructors.
Continuing Students refer to School of Business: Continuing Students.

COMMERCE 4AH3 ADVANCED AUDITING
This course considers a number of advanced topics concerning both the auditor and the audit profession. It builds on the knowledge of the audit task derived in earlier courses as well as on the technical skills and breadth of knowledge obtained in earlier accounting courses.
Prerequisite: COMMERCE 4AC3, 4AD3
Available Summers 1997-2002 subject to sufficient enrolments and availability of qualified instructors.
Continuing Students refer to School of Business: Continuing Students.

COMMERCE 4AI3 COMPUTER CONTROL AND AUDITING
This course introduces the student to the field of EDP auditing through lectures, readings and hands-on experience with EDP audit software.
Prerequisite: COMMERCE 4AC3, 4AD3
Available Summers 1997-2002 subject to sufficient enrolments and availability of qualified instructors.
Continuing Students refer to School of Business: Continuing Students.

COMMERCE 4AJ3 SPECIAL TOPICS IN ACCOUNTING
Various topics in Accounting are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.
Prerequisite: Announced at the time of offering
Not offered in 1997-98.

COMMERCE 4BA3 BEHAVIOURAL ISSUES IN MANAGEMENT
Detailed analysis of employee motivation and reward systems; organizational structure; leadership and decision-making; group processes; and management of conflict and change.

COMMERCE 4BB3 PERSONNEL SELECTION
This course considers the strategies and problems in personnel decisions in the context of the Canadian environment. Topics include job analysis and manpower planning, methods of personnel recruitment and selection, human rights legislation in Canada and the U.S., the practice of recruitment and selection in Canada, decision-making strategies in personnel recruitment and selection, and assessment centres.
Prerequisite: COMMERCE 3BB3 or 3BC3

COMMERCE 4BC3 COLLECTIVE BARGAINING
A survey of the nature, determinants, and impact of collective bargaining in Canada. Both the procedural and substantive aspects of collective bargaining will be studied.
Prerequisite: COMMERCE 3BA3 or 3BC3, or LABR ST 2A03 or 2A06

COMMERCE 4BD3 SETTLEMENT OF INDUSTRIAL DISPUTES
The nature and the role of industrial conflict as well as the techniques which have been developed to control the incidence of conflict in union-management situations.
Prerequisite: COMMERCE 3BA3 or 3BC3, or LABR ST 2A03 or 2A06.
COMMERCE 4BC3 is recommended.

COMMERCE 4BE3 COMPENSATION ADMINISTRATION
Various aspects of the process of developing and administering a compensation plan for an organization are discussed. Considerable emphasis is placed on the applications of concepts and theories to actual organizational contexts. Topics include economic and behavioural theories of compensation, job evaluation, incentive systems, fringe benefits, and compensation plans for managerial and professional employees.
Prerequisite: COMMERCE 3BB3 or 3BC3

COMMERCE 4BF3 LABOUR LAW AND POLICY
An analysis of the concepts and fundamentals of Canadian labour law and analysis of Canadian labour policy.
Prerequisite: COMMERCE 3BA3 or 3BC3, and subject to space availability
Cross-list: LABR 3C03

COMMERCE 4BG3 PUBLIC SECTOR COLLECTIVE BARGAINING
This course examines unionization and collective bargaining for employees in the public and para-public sectors. The topics covered include the origin and growth of public sector unions, models of public sector bargaining, legal aspects of bargaining rights and impasse resolution, bargaining issues and bargaining outcomes, and empirical studies of the effectiveness of dispute resolution procedures.
Prerequisite: COMMERCE 4BC3 and subject to space availability
Cross-list: LABR ST 4C03

COMMERCE 4BH3 COMPARATIVE INDUSTRIAL RELATIONS
A discussion of industrial relations policies and practices in several selected countries. Topics will include the development, structure, objectives and strategies of labour and management organizations.
Prerequisite: COMMERCE 3BA3 or 3BC3 and subject to space availability
Cross-list: LABR ST 4D03

COMMERCE 4BI3 TRAINING AND DEVELOPMENT
This course provides a framework for establishing, revising and examining training programs in organizations. Topics include: needs assessment, development of training objectives, planning and delivery of instruction, learning principles and evaluation of training.
Prerequisite: COMMERCE 3BB3 or 3BC3
Antirequisite: COMMERCE 4BX3, if taken in January 1994

COMMERCE 4BX3 SPECIAL TOPICS IN HUMAN RESOURCES/LABOUR RELATIONS
1997-98: MANAGEMENT OF TECHNOLOGY
Various topics in Human Resources/Labour Relations are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.
Prerequisite: COMMERCE 2BA3

COMMERCE 4FA3 OPTIONS AND FUTURES
This course provides an integrated approach to understanding the relations between options, futures, and their underlying assets. The theory of pricing of options and futures and the application of the theory to instruments currently traded in financial markets are considered.
Prerequisite: COMMERCE 3FA3

COMMERCE 4FD3 FINANCIAL INSTITUTIONS
This course examines, from a managerial perspective, the major types of financial institutions in Canada: chartered banks, trust companies, insurance companies, investment banks and other institutional investors.
Prerequisite: COMMERCE 3FA3

COMMERCE 4FF3 PORTFOLIO THEORY AND MANAGEMENT
This course offers an advanced treatment of investment decision-making and the role of financial markets in pricing securities. Topics include portfolio selection models, the institutional environment of investment decisions, and investment and asset pricing theory.
Prerequisite: COMMERCE 3FA3
Antirequisite: COMMERCE 4FC3

COMMERCE 4FG3 FINANCIAL THEORY
This course explores the theoretical foundations of finance and their applications to corporate finance policy. Topics covered include rational investment decisions, asset pricing, efficient markets, financial decisions and the role of information in financial decision-making.
Prerequisite: COMMERCE 3FA3
Antirequisite: COMMERCE 4FB3

COMMERCE 4FX3 SPECIAL TOPICS IN FINANCE
1997-98: FINANCIAL STATEMENT ANALYSIS
Various topics in Finance are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.
Prerequisite: COMMERCE 3AB3, 3FA3
COMMERCE 4MC3 NEW PRODUCT MARKETING
This course covers the management of new products from the idea stage through to product launch with a strong practical orientation. A field project is a major component of the course.
Prerequisite: COMMERCE 3MC3

COMMERCE 4MD3 BUSINESS MARKETING
An overview of business marketing including derived demand, vendor analysis, the multiple buying unit, value analysis, competitive bidding, industrial design, key accounts, and trade shows.
Prerequisite: COMMERCE 3MC3

COMMERCE 4MX3 SPECIAL TOPICS IN MARKETING, POLICY AND INTERNATIONAL BUSINESS
Various topics in Marketing, Policy and International Business are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.
Prerequisite: Announced at the time of offering
Not offered in 1997-98.

COMMERCE 4PA3 BUSINESS POLICY: STRATEGIC MANAGEMENT
This case course focuses primarily upon the concept of corporate strategy formulation and implementation by exploring the functions and nature of general management and the role of the CEO within an organization. The course integrates and builds upon the learning experiences of previous functional area courses within a broader strategic analysis framework.
Prerequisite: Registration in fourth year of a Commerce programme or fifth year of an Engineering and Management programme

COMMERCE 4QB3 ANALYSIS OF PRODUCTION/OPEATIONS PROBLEMS
An examination of analytical approaches to problems in the field of production/operations. The course will provide in-depth coverage of a limited number of topics. These topics may be selected from among: layout and location of facilities, scheduling, inventory control and materials handling.
Prerequisite: COMMERCE 3QC3 or 4QA3, or MECH ENG 4003

COMMERCE 4QC3 OPTIMIZATION APPLICATIONS IN BUSINESS
An examination of the techniques of management science and their application to business problems. Topics include: linear programming, integer programming, and optimization problems on networks.
Prerequisite: COMMERCE 3QA3, or registration in an Engineering and Management programme

COMMERCE 4QD3 MANAGEMENT SUPPORT SYSTEMS
This course examines the database approach and model building, in supporting managerial decision making processes.
Prerequisite: COMMERCE 2QD3 or 3QD3

COMMERCE 4QX3 SPECIAL TOPICS IN MANAGEMENT SCIENCE/INFORMATION SYSTEMS
Various topics in Management Science/Information Systems are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.
Prerequisite: Announced at the time of offering
Not offered in 1997-98.

COMMERCE 4SA3 INTERNATIONAL BUSINESS
A survey of theories, concepts and corporate strategies relevant to the conditions and problems of international investment, trade, finance and other related areas. A strong emphasis is placed upon a multi-disciplinary understanding of international business. Topics include balance of payments, foreign exchange, political risk, joint ventures, global strategy, international personnel and international development.
Prerequisite: Registration in Level IV of a Commerce programme or Level V of an Engineering and Management programme
Antirequisite: COMMERCE 4PE3

COMMERCE 4SB3 INTRODUCTION TO CANADIAN TAXATION
The principles of Canadian federal income taxation are examined in considerable detail through a reading of both the statute law and the common law. Emphasis is placed on the application of the law to the situations of individuals and businesses. Topics include: administration, liability for income tax, computation of income, computation of taxable income and computation of tax.
Prerequisite: COMMERCE 3AB3 and 3FA3
Antirequisite: COMMERCE 4PB3

COMMERCE 4SC3 ADVANCED CANADIAN TAXATION
This course continues the study of Canadian federal income taxation with an in-depth coverage of selected provisions of the Income Tax Act pertaining to business activities, particularly the activities of corporations.
Prerequisite: COMMERCE 4SB3 or 4PB3
Antirequisite: COMMERCE 4PC3

COMMERCE 4SD3 COMMERCIAL LAW
This course emphasizes those areas of law which are most relevant to business activity. Particular attention is given to the law relating to contracts and business organizations. Other areas of study include sources of law, the judicial process, real and personal property, torts, agency, credit and negotiable instruments.
Antirequisite: COMMERCE 4PD3, BUSINESS 3V03

COMMERCE 4SE3 ENTREPRENEURSHIP
The problems and experiences encountered in starting and developing new enterprises will be studied. A cornerstone of the course is the development of a detailed business plan for a local entrepreneur.
Prerequisite: COMMERCE 3FA3 and one of COMMERCE 3MA3, 3MC3

COMMERCE 4SX3 SPECIAL TOPICS IN BUSINESS
Various topics in business are considered. They will vary depending upon recent developments in the field and upon the interests of the instructor. The topics to be included are announced at the time of the course offering.
Prerequisite: Announced at the time of offering
Not offered in 1997-98.

COMMERCE 4SY3 INDEPENDENT STUDY IN BUSINESS
A student wishing to pursue independent study in business may do so under the supervision of a faculty member from the School of Business. If successful, the student receives credit for one Level IV three unit elective course in Commerce. The student is expected to develop an original paper, research paper or project. It is the responsibility of the student to find a supervising faculty member and to gain approval for the study from the Associate Dean (Academic) in the term preceding the term in which the study will be done.
Prerequisite: To be determined by the supervising faculty member

COMPARATIVE LITERATURE

Comparative Literature courses are administered within the Department of Modern Languages of the Faculty of Humanities. Coordinator, Togo Salmon Hall, Room 611

Department Notes:
1. Comparative Literature is the study of literature from the point of view of more than one national literature and/or in conjunction with any other intellectual discipline. It is designed to meet the needs of those students who wish to study literary texts as an intercultural and often interdisciplinary phenomenon.
2. For additional courses which may be taken as part of a programme in Comparative Literature, see courses listed under Modern Languages.
3. No language other than English is required for courses listed under Comparative Literature.

Courses If no prerequisite is listed, the course is open.

COMP LIT 1A06 THE EUROPEAN LITERARY TRADITION
An introduction to the origins and continuity of the Western literary tradition from the Bible and classical literature to modern literature, as seen in representative texts. Attention is given to the development of critical skills in reading and writing.
Two lectures, one tutorial; two terms
Prerequisite: OAC English

COMP LIT 2A03 MODERN EUROPEAN LITERATURE I
A study of the central themes and ideas shaping the Enlightenment and Romanticism through the reading of representative works.
Three lectures; one term
Prerequisite: COMP LIT 1A06

COMP LIT 2A03 MODERN EUROPEAN LITERATURE II
A study of the central themes and forms of major literary movements from Romanticism to Postmodernism through the reading of representative works.
Three lectures; one term
Prerequisite: COMP LIT 1A06
COMP LIT 2D03  BIBLICAL TRADITIONS IN LITERATURE
A study of the influence of the Bible on Western literatures, especially English. Approaches may include the examination of symbolism, imagery, typology, doctrinal themes and narrative structures.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: ENGLISH 3J03

COMP LIT 2G03  BIBLE AS STORY
An examination of narratives from the Hebrew Bible, Intertestamental Literature, and New Testament, from a literary perspective. Attention is paid to narrative features such as character, plot, irony and symbolism, as well as to the dynamics of the reading experience.
Two lectures; one tutorial; one term
Prerequisite: Registration in Level II and above
Cross-list: RELIG ST 2VV3

COMP LIT 2H06  GREEK AND ROMAN THEATRE AND DRAMA
The social history of the theatre in the Classical world; readings from Greek and Roman tragedies and comedies.
Three lectures; two terms
Prerequisite: Registration in Level II and above
Cross-list: CLASSICS 2H06

COMP LIT 2M03  GREEK AND ROMAN MYTHOLOGY
A study of the myths of Greek and Roman gods and heroes, their explanation according to theories on the nature of myths and their use by Greek and Roman authors particularly Homer and Vergil.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: CLASSICS 2M03

COMP LIT 3C03  MODERN EUROPEAN DRAMA
FROM BRECHT TO THE PRESENT
A study of representative plays by ten major dramatists, including Garcia Lorca, Cocteau, Frisch, Sarthe, Weiss, Genet, Dario Fo. Seminar (two hours), plus play readings; one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
Cross-list: DRAMA 3C03
Alternates with COMP LIT 3E03

COMP LIT 3D03  TOPICS IN LITERARY GENRES I
Previous topics include: Lyric Poetry, The Novel. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: Registration in Level II and above of a Comparative Literature programme
COMP LIT 3D03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3D03  TOPICS IN LITERARY GENRES II
Previous topics include: Short Fiction, The Structure of Comedy. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: Registration in Level II and above of a Comparative Literature programme
COMP LIT 3D03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3E03  MODERN EUROPEAN DRAMA
FROM IBSEN TO PIARDELLO
A study of representative plays by eight major dramatists, including Strindberg, Chekhov, Gorki, Wedekind and Kaisar.
Seminar (two hours), plus play readings; one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
Cross-list: DRAMA 3E03

COMP LIT 3I03  TOPICS IN GREEK AND ROMAN LITERATURE I
Previous topics include: The Poet and Society, Greek and Roman Epic, Lyric Poetry, The Legend of the Trojan War, Satire. Consult the Department concerning topic to be offered.
Three lectures; one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
Cross-list: CLASSICS 3I03
Alternates with COMP LIT 3I13
COMP LIT 3I03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3I13  TOPICS IN GREEK AND ROMAN LITERATURE II
Topics include: Greek and Roman Epic. Consult the Department concerning topic to be offered.
Three lectures; one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
Alternates with COMP LIT 3I03
COMP LIT 3I13 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3J06  STUDIES IN SIXTEENTH-CENTURY LITERATURE
A critical study of the literature of the 1500s in England, particularly the second half of the century. The influence of continental writers will also be examined, and special attention will be paid to Spenser.
Three lectures; two terms
Prerequisite: Registration in a programme in Comparative Literature or permission of the Department of English
Antirequisite: COMP LIT 3J03, ENGLISH 3J03 or 3T03
Cross-list: ENGLISH 3J06

COMP LIT 3L03  LITERATURE AND FILM
An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.
Three lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
Cross-list: ART HIST 3C03, DRAMA 3L03 and ENGLISH 3C03

COMP LIT 3Q03  THE HISTORY AND THEORY OF CRITICISM
A survey of the main developments in the theory and practice of literary criticism from Plato to the early 20th century.
Three lectures; one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
Cross-list: ENGLISH 3Q03

COMP LIT 3R05  POSTCOLONIAL LITERATURES: THEORY AND PRACTICE
A study of postcolonial literary theory and practice. Texts written in English from a variety of formerly colonized regions will be studied; these may include Africa, the Caribbean, South and Southeast Asia, Australia and New Zealand. The focus will be on such topics as imperialism, race, gender, ethnicity, nation, language, and representation.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Department
Cross-list: ENGLISH 3R06

COMP LIT 4A03  TOPICS IN LITERARY MOVEMENTS
Previous topics include: European Romanticism. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4A03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 4B03  TOPICS IN LITERARY METHODOLOGY
Previous topics include: Narrative and Psychoanalysis, Feminist Theory, Formalism and Structuralism, Semiotics. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4B03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 4C03  LITERATURE AND OTHER DISCIPLINES
Previous topics include: Literature and Philosophy, Literature and Politics. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4C03 may be repeated, if on a different topic, to a total of six units.
COMPUTER SCIENCE AND SYSTEMS

Faculty as of January 15, 1997

Chair
William F. Smyth

Professor Emeritus
Gerald L. Keelch/B.A.Sc., (Toronto), M.Sc., Ph.D. (McMaster)

Professors
Ryszard Janicki/M.Sc. (Warsaw), Ph.D., D.Hab. (Polish Acad. Sci.)
Peter E. Lawton/B.A. (Alabama), M.A. (Emory), Ph.D. (Queen's, Belfast)
Patrick J. Ryan/B.Sc. (Toronto), Ph.D. (Brown)
William F. Smyth/C. Eng., B.A. (Toronto), M.Sc. (Ottawa), Ph.D. (Curtin),
F.B.C.S., F.I.C.A.

Associate Professors
Ivan Bruha/Dipl. Ing. (CVUT, Prague), RNDr (Charles, Prague), Ph.D. (CVUT, Prague)
Franziskus Frank/M.Sc., HNDr (Charles, Prague), Ph.D. (Toronto)
Robin E. Griffin/B.Sc., Ph.D. (McMaster)/part-time
Tao Jiang/B.Sc. (Univ. of Sci. and Tech. of China, Hefei), Ph.D. (Minnesota)
W.F. Skipper Posthuma/B.S. (Niagara), B.Sc. ( Brock), M.Sc., Ph.D. (McMaster), P.Eng.
Sanzheng Qiao/B.S., M.S. (Shanghai Teacher's College) M.S., Ph.D. (Cornell)
Nicholas Sointell/F.C. Eng., B.Sc., Ph.D. (Sydney), F.B.C.S./part-time
Jeffrey I. Zucker/B.Sc. (Witwatersrand), Ph.D. (Stanford)

Assistant Professors
David G. Jones/B.Sc. (Western Ontario), Ph.D. (Stanford)
Barbara E. Loy/B.Sc. ( Brock), M.Sc., Ph.D. (Toronto)/part-time

Associated Members
Norman P. Archer/Business) B.Sc. (Alberta), M.S. (New York), Ph.D. (McMaster)
Sue Beckol/Psychology) B.A., M.Sc. (Queen's), Ph.D. (Toronto)
T. Z-Q. Lu/Electrical and Computer Engineering) B.Sc. (Peking), Ph.D. (M.I.T.)
Daniel C. McCracken/Electrical and Computer Engineering) B.Eng., M.Eng, Ph.D. (McMaster), P.Eng.
David L. Paras/ Electrical and Computer Engineering) B.S., M.S., Ph.D. (Cambridge Inst. of Technology)
G. Rockwell/Humanities) B.A. (Haverford College), M.A., Ph.D. (Toronto)
Alexander Ross/Mathematics) M.S. (Kiev), Ph.D. (Slovak Acad. Sciences)
George Steiner/Business) Ph.D. (Waterloo)
Yufei Yuan/Business) B.S. (Fudan), Ph.D. (Michigan)

Department Notes:
1. The following are suggested Computer Science options for students not in Computer Science programmes:
   Science-oriented students: COMP SCI 1MC3 or 1SA3, 1MD3, 2MF3 and 2SB3, 2SC3, 3MG3, 3CB3, 3SD3, 3SE3
   Business-oriented students: COMPSCI 1B3A3, 1MC3 or 1SA3, 1MD3, 2ME3, 2SC3, 3SE3, 4EC3
   Social Sciences and Humanities students: COMP SCI 1SA3, 2SC3, 3SE3
2. Students wishing to pursue a Computer Science Minor are referred to the Department of Computer Science and Systems in the Faculty of Science section of this Calendar.
3. MATH 1A03, 1A06, 1E06, 1N06 or ARTS & SCI 1D06 can serve as an equivalent prerequisite for upper level Computer Science courses in which MATH 1A03, 1C03 or 1A03 is a prerequisite.
4. COMP SCI 1MA3 can be used as a substitute for 1MC3, COMP SCI 1MB3 can be used as a substitute for 1MC3, and COMP SCI 2MC3 can be used as a substitute for 2SC3.

Courses
If no prerequisite is listed, the course is open:

COMP SCI 1BA3 INTRODUCTION TO COMPUTING AND COMPUTER USE FOR BUSINESS
Organization of microcomputers; DOS and WINDOWS; problem solving using electronic spreadsheets, with business applications; basics of word processing/desktop publishing; elementary database concepts, computer communications.
Three lectures, one tutorial, one term.
Prerequisite: Registration in the School of Business and one OAC Mathematics credit, or one of MATH 1K03, 1M03, STATS 1L03

COMP SCI 1MC3 COMPUTER SCIENCE I
Essentials of Computer Science: machine architecture, data structures, operating systems, problem solving and programming paradigms; programming language features; software engineering; artificial intelligence.
Three lectures, one tutorial; one term.
Prerequisite: One of COMP SCI 1MA3, ENGINEER 1D04

COMP SCI 1SA3 COMPUTER SCIENCE II
A second course in Computer Science; abstract data models and data structures; virtual memory and memory allocation; advanced programming paradigms; recursion, functional programming, communication protocols; logic, finite-state machines and complexity.
Three lectures, one tutorial; one term.
Prerequisite: One of COMP SCI 1MC3, ENGINEER 1D04, or a grade of at least B in COMP SCI 1SA3 and credit or registration in one of MATH 1A03, 1B03, 1C03, 1M03
Antirequisite: COMP SCI 1MB3

COMP SCI 1SA3 COMPUTING FUNDAMENTALS
Overview of the computer as a tool for problem solving; introduction to programming concepts; software tools; application packages; communication and networks; the Internet; free speech and privacy.
Three lectures, one tutorial; one term.
Not open to students with credit or registration in COMP SCI 1MC3 or 1SA3.

COMP SCI 2MD3 ADVANCED DATA STRUCTURES AND ALGORITHMS
Commonly used abstract data types such as lists, stacks, queues, sets, and trees and their applications and efficient implementations; fast sorting, matching, and graph algorithms and complexity; emphasis on theoretical analysis.
Three lectures, one term.
Prerequisite: One of COMP SCI 1MD3, COMP ENG 2Y03

COMP SCI 2ME3 DESIGN OF INFORMATION SYSTEMS I
Introduction to structured system design, emphasizing the software development process in the business environment: management systems, system analysis, design, implementation, and maintenance. Features COBOL.
Three lectures; one term.
Prerequisite: COMP SCI 1MD3

COMP SCI 2MF3 INTRODUCTION TO COMPUTER ARCHITECTURE
Introduction to the structure of computer systems; organization of central processing units, memory subsystems and input/output devices; Introduction to machine language, assembler programming and system software.
Two lectures, one lab (two hours); one term.
Prerequisite: One of COMP SCI 1MC3, ENGINEER 1D04 or a grade of at least B in COMP SCI 1SA3
COMP SCI 2M3 : DISCRETE STRUCTURES
An introduction to the basic concepts of discrete mathematics and discrete structures needed in many areas of computer science. Logic, combinatorics, graph theory and their applications are included.
Three lectures; one term
Prerequisite: One of MATH 1B03, 1H05, STATS 1CC3

COMP SCI 2S3 : COMPUTATIONAL METHODS FOR SCIENCE AND ENGINEERING
Three lectures; one term
Prerequisite: One of COMP SCI 1MC3, 1SA3, ENGINEER 1D04 and either MATH 1H05 and 1N06 or MATH 1A03 and 1B03
Antirequisite: COMP ENG 2KA3
Offered in alternate years
Not offered in 1997-98.

COMP SCI 2SC3 : DESIGN AND IMPLEMENTATION OF C PROGRAMS
Data types, arithmetic/logical expressions, iterative constructs, pointers and pointer arithmetic. Modularization. Linked data structures and their applications. Program development and testing, programming style.
Three lectures, one tutorial; one term
Prerequisite: One of COMP SCI 1MC3, 1SA3, ENGINEER 1D04 and credit in one of MATH 1A03, 1B03, 1C03, 1H05, 1M03, 1N06

COMP SCI 3CB3 : SYSTEM ARCHITECTURE FOR INTERACTIVE APPLICATIONS
A second course in computer architecture with special emphasis on the implementation of virtual-machine language processors (e.g. Forth, Java) and their use for implementing server-client software architecture.
Three lectures; one term
Prerequisite: COMP SCI 2MF3
Offered in alternate years

COMP SCI 3EA3 : INTRODUCTION TO SOFTWARE ENGINEERING
Methodologies for the development and maintenance of large programs. Problem specification, program design, implementation, software reliability, testing and modularity. One large team project.
Three lectures; one term
Prerequisite: COMP SCI 2ME3, and either COMP SCI 2MD3 or COMP ENG 2S14 or 2YA3
Antirequisite: COMP ENG 3VA3

COMP SCI 3GA3 : INTRODUCTION TO COMPUTER GRAPHICS
Principles of computer graphics. Data structures and algorithms, hardware and software systems for graphics. Object modelling and display techniques: visual realism, perspective, visibility and shading.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or COMP ENG 2S14 or 2YA3 and either one of MATH 1B06, 2J06, 2K06, 2Q04 or MATH 2R03 and one of MATH 2S03, 2T03

COMP SCI 3IA3 : LIST PROCESSING AND LOGIC PROGRAMMING
Data and control structures for AI systems: symbolic expressions, lists, list processing functions, backtracking, matching procedures; LISP (including forms, arrays, loops); resolution principle; introduction to PROLOG.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or COMP ENG 2S14 or 2YA3

COMP SCI 3MG3 : COMPUTER SYSTEM ARCHITECTURE
Major components of a computer and their design issues; instruction set, data path, control, memory, and I/O. Principles of computer arithmetic, pipelining, memory hierarchy, and virtual memory.
Three lectures; one term
Prerequisite: COMP SCI 2MF3 or COMP ENG 2D14 or 2H1A3

COMP SCI 3MH3 : PRINCIPLES OF OPERATING SYSTEMS
Concepts of operating systems; process coordination, memory management, file systems; introduction to distributed systems and computer networks.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 and 3MG3 or COMP ENG 2S14 or 2YA3 and 3HB3
Antirequisite: COMP ENG 4WA3

COMP SCI 3MI3 : ORGANIZATION OF PROGRAMMING LANGUAGES
A comparative study of programming languages, emphasizing functional languages. Introduction to formal methods of language definition.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or COMP ENG 2S14 or 2YA3

COMP SCI 3S03 : COMPUTER SIMULATION TECHNIQUES
Techniques for the application of computer simulation software to scientific and engineering problems, especially queuing and network problems.
Three lectures; one term
Prerequisite: One of COMP SCI 1MD3, 2S03, COMP ENG 2S14 or 2YA3

COMP SCI 3SE3 : DESIGN OF VISUAL PROGRAMMING ENVIRONMENTS
A study of visual programming environments: events, procedures, objects and attributes; paradigms: event-driven, object-oriented; applications: graphical user interfaces, human factors, visualization techniques.
Two lectures, one lab; one term
Prerequisite: One of COMP SCI 1MC3, 1SA3, ENGINEER 1D04

COMP SCI 3TA3 : INTRODUCTION TO AUTOMATA AND FORMAL LANGUAGE THEORY
Three lectures; one term
Prerequisite: COMP SCI 2MD3

NEURCOMP 3W03 : NEURAL COMPUTATION
An introduction to the use of neural network computational models for understanding the neural bases of psychological processes, and for solving real-world problems.
Three lectures; one term
Prerequisite: COMP SCI 1MC3 (or 1MA3) and one of MATH 1A03, 1A06, 1A16, 1C03, 1C06, 1N06 or ARTSF&SCI 1D06. MATH 1B03 is strongly recommended.
Cross-list: PSYCH 3W03

COMP SCI 4CB3 : SUPERCOMPUTING SYSTEM ARCHITECTURES
Traditional performance enhancement techniques: pipelining, RISC, VLIW, predcache, cache; modern high performance systems: mini-, micro-, mainframe supercomputers, array processors; parallelization considerations and vectorization methods.
Two lectures; one lab; one term
Prerequisite: COMP SCI 3MG3 or COMP ENG 3HB3 or credit or registration in PHYSICS 4D06 or 4D13, 4D33

COMP SCI 4CC3 : ADVANCED OPERATING SYSTEMS
Modern operating systems: large-scale interactive to small real-time systems; microcomputer/mainframe interconnections; message passing techniques; networks; languages for implementation of distributed operating systems.
Three lectures; one term
Prerequisite: COMP SCI 3MH3 or COMP ENG 4WA3

COMP SCI 4CD3 : DISTRIBUTED SYSTEM ARCHITECTURES
Distributed systems: real-time, agent-oriented, heterogeneous, multi-computer, multiprocessor; coupling schemes: loose, tight networking; ATM, frame relay, clustering, software protocols; communication strategies, client/server approaches.
Two lectures; one lab; one term
Prerequisite: COMP SCI 3MG3 or COMP ENG 3HB3 or credit or registration in PHYSICS 4D06 or 4D13, 4D33

COMP SCI 4EB3 : DATABASE MANAGEMENT SYSTEM DESIGN
Concepts and structures for the design of database management systems. Topics include: data models, data normalization, data-description languages, query facilities, file organization and security.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or COMP ENG 2S14 or 2YA3

COMP SCI 4EC3 : DESIGN OF INFORMATION SYSTEMS II
Advanced software development in the business/industrial environment. Comparative analysis of alternatives to structured design, especially object-oriented techniques.
Three lectures; one term
Prerequisite: COMP SCI 2ME3, 3EA3 and registration in Level IV of a Computer Science programme

COMP SCI 4ED3 : SOFTWARE ENGINEERING APPLICATIONS
A continuation of COMP SCI 3EA3. Use of advanced software specification techniques and software tools to support program development. A large-scale team project produces high-quality production software.
Three lectures; one term
Prerequisite: COMP SCI 3EA3 or COMP ENG 3VA3
COMP SCI 4EE3  FORMAL TECHNIQUES IN SOFTWARE ENGINEERING
Software engineering principles: rigour and formality; separation of concerns, modularity, abstraction. Software design, specification and verification.
Three lectures; one term
Prerequisite: COMP SCI 3EA3 or COMP ENG 3VA3

COMP SCI 4GB3  COMPUTATIONAL GEOMETRY
Discrete geometry from an algorithmic point of view. Searching, subdivision, proximity and intersection. Applications to problems in object modelling, computer graphics, and computer vision.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or a grade of at least B- in COMP SCI 1MD3 or 2SB3

COMP SCI 4I83  ARTIFICIAL INTELLIGENCE AND KNOWLEDGE-BASED SYSTEMS
AI disciplines: perception, pattern recognition, machine learning, image processing, scene analysis, speech processing; problem solving, production systems, backtracking, graph search techniques, GPS, STRIPS, PLANNER, PROLOG. Architectures and applications of expert systems.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or COMP ENG 2YA3

COMP SCI 4MP6  PROJECT FOR COMBINED PROGRAMMES
Under the supervision of a faculty member, teams of two to three students implement, write up and defend a substantial project, in the area of the combined programme.
Occasional tutorials, no lectures; two terms
Prerequisite: Registration in Level IV of any combined Honours Computer Science programme. Completion of COMP SCI 3EA3 is strongly recommended.
Antirequisite: COMP SCI 4ZP6, COMP ENG 4JA4

COMP SCI 4TB3  COMPILER CONSTRUCTION
Lexical analysis; scanner construction; syntax analysis and syntax-directed translation; compiler compilers; intermediate code generation; code generation and optimization.
Two lectures, one lab or tutorial (three hours); second term
Prerequisite: Registration in Level IV of a Computer Science programme or Level IV of Computer Engineering
Cross-list: COMP ENG 4HF3

COMP SCI 4TC3  RECURSIVE FUNCTION THEORY AND COMPUTABILITY
Recursive and primitive recursive functions, decidability and undecidability, with applications to formal language theory, logic and algebra.
Three lectures; one term
Prerequisite: COMP SCI 2MD3; and either COMP SCI 2MJ3 or one of MATH 2MO6, 2MO4; or MATH 2RO3 and one of MATH 2SO3, 2TO3
Antirequisite: MATH 4S03
Offered in alternate years

COMP SCI 4TD3  DESIGN AND ANALYSIS OF ALGORITHMS
Techniques for the design and analysis of algorithms, especially divide-and-conquer, greedy, and dynamic programming algorithms. An introduction to computational complexity. Analysis of particular algorithms of practical or theoretical importance in computer science.
Three lectures; one term
Prerequisite: COMP SCI 2MD3, 2MJ3 and one of MATH 2B06, 2J06, 2M06, 2Q04, 2R03

COMP SCI 4Z13  COMPUTER SCIENCE INQUIRY
Research and directed readings dealing with the impact of computers and computer networks on society.
Three hours; one term
Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry
Enrolment is limited. See the heading "Limited Enrolment Courses in the Faculty of Science section of the Calendar.

COMP SCI 4ZP6  PROJECT
Under the supervision of a faculty member, teams of two to three students implement, write up and defend a substantial project in an area of computer science.
Occasional tutorials, no lectures; two terms
Prerequisite: Registration in Level IV of Honours Computer Science. Completion of COMP SCI 3EA3 is strongly recommended.
Antirequisite: COMP SCI 4MP6, COMP ENG 4JA4

Collaborative Course Offerings
The Department is participating in an experimental venture with the University of Guelph to provide courses over the Video Link. The courses provided via the link are:

COMP SCI 4EG3  ORGANIZATION AND MANAGEMENT OF COMPUTING ACTIVITIES
Strategic planning of computing and data resources in an organization; system management, estimating techniques, productivity issues; project management, quality assurance, configuration management.
Four hours (lectures and tutorials); one term
Prerequisite: COMP SCI 2MD3 and 3EA3
Enrolment is limited. See the heading "Limited Enrolment Courses in the Faculty of Science section of the Calendar.
Not offered in 1997-98.

COMP SCI 4G93  HUMAN COMPUTER INTERACTION
Methods for user software design, interface representations, testing; evaluation and design of sample application systems; impacts of computer-based information systems on individuals and organizations; implementation and testing tools.
Four hours (lectures and tutorials); one term
Prerequisite: COMP SCI 3EA3 and 3MI3
Enrolment is limited. See the heading "Limited Enrolment Courses in the Faculty of Science section of the Calendar.

DRAMA

Courses and programmes in Drama are administered within the School of Art, Drama and Music of the Faculty of Humanities.

Note:
Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.

Courses
If no prerequisite is listed, the course is open.

DRAMA 1A06  INTRODUCTION TO DRAMA
An exploration of theatrical media. Emphasis will be placed on the study of plays from major periods of Western drama. The relationship of theatre to film, opera and other performing arts will be introduced.
Two lectures, one tutorial; two terms

DRAMA 2A05  THE ART OF ACTING
An exploration of the theories and methods that inform the actor’s art, designed to expose the student to the range and complexity of performance styles used in the contemporary theatre. The class will be organized around the preparation of performances using Realist, Epic and Collective approaches.
Three studio (two hours); two terms
Prerequisite: DRAMA 1A06, with a grade of at least B-
Enrolment is limited. Priority is given to students enrolled in Drama programmes.

DRAMA 2D05  THE DRAMATIC TEXT
An examination of the different kinds of texts produced for dramatic purposes (both performance and reading) from the Greeks to the present, including plays, musical scores, texts for film and television, and other forms of production documents. Problems arising from the transmission of texts will be discussed, as well as how theatrical texts can be studied to yield maximum information.
Three hours (lectures and discussion groups); two terms
Prerequisite: DRAMA 1A06
DRAMA 2M06  HISTORY OF THEATRICAL PERFORMANCE IN THE WESTERN WORLD
A survey of the traditions of Western theatrical production from Classical Greece to the present, including architecture, design, stage machinery, the organization of production, the training and preparation of the actor, and the expectation of the audience. Some emphasis will be placed on the social context of theatre, and on research methods and problems.
Two lectures, plus evening lab; two terms
Prerequisite: DRAMA 1A06

DRAMA 2X06  THE ART OF THE FILM
An introduction to film style and technique through a detailed critical analysis of major works from the silent period to the present day.
Two lectures, plus one weekly film screening; two terms
Prerequisite: Six units from the Faculty of Humanities and registration in Level II and above
Cross-list: ART HIST 2X06

DRAMA 3A03  TOPICS IN ACTING
An exploration of the theory and methods that inform the actor's art, focusing on a specific historical period or creative model, through the study and performance of dramatic texts. Previous topics include Collective Creation, and Greek and Medieval Texts.
Two studio (three hours); one term
Prerequisite: DRAMA 2A06
Enrolment is limited.
Drama 3A03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3AA3  ACTING SHAKESPEARE
The study and performance of scenes from the works of William Shakespeare. Extension of acting skills through specific voice, body and language techniques.
Two studio (three hours); one term
Prerequisite: DRAMA 2A06
Enrolment is limited. Priority is given to students enrolled in Drama programs.

DRAMA 3B03  INDEPENDENT STUDY IN DRAMA I
Prerequisite: Registration in a programme in Drama and permission of the instructor.

DRAMA 3C03  MODERN EUROPEAN DRAMA FROM IBSEN TO PIRANDELLO
A study of representative plays by eight major dramatists, including Strindberg, Chekhov, Gorki, Weckkind and Kaiser.
One seminar (two hours), plus play readings; one term
Prerequisite: Six units of Level II Drama
Cross-list: COMP LIT 3E03
Offered in alternate years.

DRAMA 3CC3  MODERN EUROPEAN DRAMA FROM BRECHT TO THE PRESENT
A study of representative plays by ten major dramatists, including Garcia Lorca, Cocteau, Frisch, Sartre, Weiiss, Genet, Dario Fo.
One seminar (two hours), plus play readings; one term
Prerequisite: Six units of Level II Drama
Cross-list: COMP LIT 3C03
Offered in alternate years.

DRAMA 3D03  THEATRE PRODUCTIONS
A survey of the theory and practice of all the technical skills involved in a theatrical production: stage management, set design, set construction, lighting, sound, carpentry, properties, costumes. Technical assistance with Drama productions.
Two hours, first term; one hour (workshop), second term
Prerequisite: Registration in a programme in Drama
Students wishing to take this course must complete an application form in the School of Art, Drama and Music before March 31 to guarantee consideration.
Enrolment is limited.

DRAMA 3F03  OPERA II: ROMANTIC TO MODERN
An analysis of selected operatic works from 1850 to the present, tracing the evolution of opera as a theatrical and musical form.
Two lectures; one term
Prerequisite: Registration in Level II or above. DRAMA 3I03 is recommended.
Offered in alternate years.

DRAMA 3F3  STUDIES IN OPERA
Previous topics include: Giuseppe Verdi, The Gramaphone and the Voice. Consult the School of Art, Drama and Music concerning topic to be offered.
Three lectures; one term
Prerequisite: Registration in Level II or above. One of DRAMA 3F03, 3I03 is recommended.
Offered in alternate years.

DRAMA 3G03  PERFORMANCE HISTORY BEFORE 1800
An examination of issues in the study of Western theatrical tradition.
Three lectures; one term
Prerequisite: Six units of Level II Drama
Offered in alternate years.

DRAMA 3GG3  COMPARATIVE THEATRE
A comparison of two or more theatrical traditions.
Three lectures; one term
Prerequisite: Six units of Level II Drama
Offered in alternate years.

DRAMA 3H03  LITERATURE AND FILM
An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.
Three lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level III or IV of a programme in Drama or Literature or Art History. DRAMA 2X06 is recommended.
Cross-list: ART HIST 3CC3, COMP LIT 3L03, ENGLISH 3C03
Offered in alternate years.

DRAMA 3I03  OPERA I: RENAISSANCE TO ROMANTIC
An analysis of selected operatic works from 1600 to 1850, exploring the nature of opera as a theatrical and musical form.
Three lectures; one term
Prerequisite: Registration in Level II or above
Offered in alternate years.

DRAMA 3J03  TOPICS IN FILM
Previous topics include: Genre Studies, Film Comedy. Consult the School of Art, Drama and Music concerning topic to be offered.
Two lectures, plus one weekly film screening; one term
Prerequisite: DRAMA 2X06
Cross-list: ART HIST 4S03
DRAMA 3J03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3L03  MODERN EUROPEAN THEATRE HISTORY
A study of the major influences that have shaped the growth of modern theatre movements in Europe from the late nineteenth century to the present.
One seminar (two hours); one term
Prerequisite: Six units of Level II Drama
Offered in alternate years.

DRAMA 3L3  AMERICAN AND CANADIAN THEATRE HISTORY
A study of the development of theatrical performance in the United States and Canada.
Seminar (two hours); one term
Prerequisite: Six units of Level II Drama
Offered in alternate years.

DRAMA 3R03  THE AMERICAN CINEMA I
A survey of some of the predominant features of the American Cinema from its beginning to 1950. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.
Two lectures, plus one weekly film screening; one term
Prerequisite: DRAMA 2X06; or permission of the School of Art, Drama and Music
Cross-list: ART HIST 3F03

DRAMA 3RR3  THE AMERICAN CINEMA II
A survey of some of the predominant features of the American Cinema from 1950 to the present day. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.
Two lectures, plus one weekly film screening; one term
Prerequisite: DRAMA 2X06; or permission of the School of Art, Drama and Music
Cross-list: ART HIST 3F03
DRAMA 3T03 TOPICS IN NATIONAL CINEMAS I

Previous topics include: Soviet and East European Cinema. Consult School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

Cross-list: ART HIST 3T03 and Modern Languages 3T03

DRAMA 3T03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3T03 TOPICS IN NATIONAL CINEMAS II

Previous topics include: Canadian Cinema, French Cinema and Japanese Cinema. Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

Cross-list: ART HIST 3T03

DRAMA 3T03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3Z03 INDEPENDENT STUDY IN PRACTICAL THEATRE

Prerequisite: Registration in a programme in Drama and permission of the instructor

DRAMA 4A03 INDEPENDENT STUDY IN DIRECTING

The preparation and production of a play in the context of the historical and theoretical principles of directing.

Prerequisite: DRAMA 2A06 and one of 3A03, 3A03, 3D03; and registration in Level IV of an Honours programme in Drama

Students wishing to take this course must complete an application form in the School of Art, Drama and Music before March 31 to guarantee consideration.

Antirequisite: DRAMA 4A06

Enrolment is limited and is based on academic achievement.

DRAMA 4B03 INDEPENDENT STUDY IN DRAMA II

Prerequisite: Registration in a programme in Drama and permission of the instructor

DRAMA 4C03 STUDIES IN THEATRE AND FILM

Senior seminar: A comparative examination of the performance, visual, and narrative techniques of theatre and film, including specific examples of adaptation.

Seminar (two hours), plus weekly film screening; one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Cross-list: ART HIST 4C03

Offered in alternate years.

Enrolment is limited.

DRAMA 4C03 STUDIES IN THE THEORY AND PRACTICE OF DRAMA

Senior seminar: A close examination of a selected text, or selected texts, from the textual, historical and theatrical points of view, leading to a workshop production of that play by members of the seminar.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Offered in alternate years.

Enrolment is limited.

DRAMA 4E03 STUDIES IN THE THEORY OF DRAMA AND THEATRE

Senior seminar: An examination of theoretical documents from the Greeks to the present.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Offered in alternate years.

Enrolment is limited.

DRAMA 4E03 STUDIES IN CONTEMPORARY DRAMA

Senior seminar: An examination of selected plays from western drama written since 1956.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Offered in alternate years.

Enrolment is limited.

DRAMA 4F03 STUDIES IN FILM

Senior seminar: An examination of selected films.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama.

DRAMA 2X06/ART HISTORY 2X06 is recommended.

Cross-list: ART HIST 4F03

Offered in alternate years.

Enrolment is limited.

The following courses, offered by other departments, directly pertain to the study of Drama. These are recommended as electives. Up to nine units of courses from this list may be available as substitutions for Drama courses, and counted toward the fulfillment of a programme in Drama. Students are advised that there may be restrictions on enrolment in these courses.

CLASSICS 2H06 GREEK AND ROMAN THEATRE AND DRAMA

ENGLISH 2906 DEVELOPMENT OF ENGLISH DRAMA

ENGLISH 3K06 SHAKESPEARE

ENGLISH 3P03 MODERN DRAMA IN ENGLISH

ENGLISH 3XX3 TOPICS IN DRAMA

FRENCH 3B03 CONTEMPORARY QUEBEC THEATRE

FRENCH 3Q03 17TH-CENTURY FRENCH LITERATURE I

KINESIOL 4L03 DANCE IN CONTEMPORARY SOCIETY

MOD LANG 3D03 DRAMA SINCE 1800 (IN ENGLISH)

MOD LANG 3G03 GERMAN DRAMA (IN ENGLISH)

MOD LANG 3J03 METAMORPHOSES OF DON JUAN

MOD LANG 4L03 SURVEY OF SPANISH THEATRE (IN ENGLISH)

SADM 3A03 MUSIC AND THE OTHER ARTS

SADM 4A03 INTERDISCIPLINARY STUDY

WOMEN ST 3B03 TOPICS IN WOMEN AND THE ARTS: THEATRE AND FILM

ECONOMICS

Faculty as of January 15, 1997

Chair

Alan Harrison

Associate Chair

Stephen R.G. Jones

Professors Emeriti

Syed Ahmad/M.A., L.L.B. (Aligarh), M.Sc. (Econ.) D.Sc. (Econ.) (London)


William R. Scammell/B.Comm. (Queen's), B.A. (Belfast), Ph.D. (Wales)

Robert W. Thompson/B.A. (Toronto), M.A. (Queen's), Ph.D. (London)

James R. Williams/ M.A., Ph.D. (Minnesota)

David W. Butterfield/B.S., M.S., Ph.D. (Purdue)

Donalld A. Dawso/M.A. (Chicago), Ph.D. (Western Ontario), N.D.C.

ECONOMICS
ECONOMICS

Assistant Professors
Peter J. McCabe/A.B. (Boston College), Ph.D. (Northwestern)
Alok Johri/B.A. (Delhi), M.A. (Delhi School of Economics), Ph.D. (Boston)

Associate Members
M. Luke Chan (Business) B.Sc. (Prince Edward Island), M.A., Ph.D. (McMaster)
Jeremiah E. Huer/Juris/Clinical Epidemiology and Biostatistics) B.A. (John Carroll), M.A., Ph.D. (Wisconsin-Madison)
I. Krinsky (Business) B.A., M.A. (Tel-Aviv), Ph.D. (McMaster)
D.C. Mountain (Business) B.A., M.A., Ph.D. (Western Ontario)
Gregory L. Stoddart (Clinical Epidemiology and Biostatistics) B.A. (Western Ontario), Ph.D. (British Columbia)

Department Notes:
1. Not all the Economics courses listed in this Calendar are taught every year. Students are advised to consult the timetable published by the Office of the Registrar, or the Department handbook for information on current offerings.
2. Students with strong academic records, particularly those from other departments, may be permitted to enrol in courses for which they have not completed all prerequisites. In cases where prerequisites are incomplete, consultation with a departmental counsellor is required. If approval is granted, the counsellor will arrange for permission from the Department Chair.
3. Students with credit in ECON 2X03 who transfer into Economics from other programmes may substitute ECON 2X03 for ECON 2G03.
4. Students who transfer into Economics from other programmes may substitute ECON 1B03 and 1BB3 for ECON 1A06.

Courses

If no prerequisite is listed, the course is open.

ECON 1A06 INTRODUCTORY ECONOMICS
An introduction to the methods and theory of economics, and its application to the analysis of contemporary economic problems. Three hours; two terms
Prerequisite: Registration in an Engineering or Science programme
Antirequisite: ECON 1B03 and 1BB3

ECON 1B03 INTRODUCTORY MICROECONOMICS
An introduction to the methods and theory of microeconomics for engineering and science students. The analysis will involve mathematics and will be applied to contemporary problems. Three hours; one term
Prerequisite: Registration in an Engineering or Science programme
Antirequisite: ECON 1A06

ECON 1BB3 INTRODUCTORY MACROECONOMICS
An introduction to the methods and theory of macroeconomics for engineering and science students. The analysis will involve mathematics and will be applied to contemporary problems. Three hours; one term
Prerequisite: Registration in an Engineering or Science programme
Antirequisite: ECON 1A06

ECON 2A03 ECONOMICS OF LABOUR-MARKET ISSUES
This course applies economic analysis to issues of importance in the labour market. Topics vary and may include: women in the Canadian labour market; discrimination in hiring and promotion; unemployment; job loss and workplace closing; work sharing. Three hours; one term
Prerequisite: ECON 1A06, or 1B03 and 1BB3
Cross-list: LABR ST 3A03
Enrolment is limited.

ECON 2B03 ANALYSIS OF ECONOMIC DATA
Application of statistical concepts to the analysis of economic data, with attention to Canadian sources. Regression analysis and the use of spreadsheets are included. Topics may also include index numbers. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1BB3 and MATH 1K03 (or OAC Calculus) and one of STATS 1L03 or 2D03 (or OAC Finite Math)
Not open to students with credit or registration in ECON 3G06, CHEM ENG 4C03, COMMERCE 2G03, GEOG 2L3, 2N03, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, SOCIOLOGY 2Y03, 3H06, STATS 1CC3, 2MA3 or 2MB3, 2R06; or if COMMERCE 2QA3 is a programme requirement.

ECON 2C03 ASIAN-PACIFIC ECONOMIES
Economic conditions and factors influencing economic growth in selected countries in the Asian-Pacific region. Topics include government policies related to exchange rates and trade and development, as well as the Japanese style of management, the bonus system and job tenure. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1BB3
Cross-list: JAPAN ST 2C03

ECON 2D03 ECONOMIC ISSUES
Applications of economics to important public issues, from a general interests perspective. Since topics vary from year to year, interested students should consult the Economics Department for further details. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1BB3

ECON 2E03 DEFICIT REDUCTION AND THE NATIONAL DEBT
This course explores the ways in which monetary and fiscal policies affect national income and its distribution. Particular attention is paid to deficit reduction, tax reform, income-support measures and unemployment. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1BB3

ECON 2G03 INTERMEDIATE MICROECONOMICS I
Elements of consumer behaviour; production and cost, price and output determination under various market structures; employment of inputs. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1BB3
Antirequisite: ECON 2X03 or 2L06

ECON 2G03 INTERMEDIATE MICROECONOMICS II
Price and output determination under various noncompetitive market structures; factor input markets; general equilibrium; welfare; topics in consumer theory. Three hours; one term
Prerequisite: ECON 2G03 or 2X03
Antirequisite: ECON 2L06

ECON 2H03 INTERMEDIATE INCOME AND EMPLOYMENT THEORY I
National income accounting, determinants of national income, employment, the rate of interest and the price level; introduction to open economy. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and OAC Calculus or MATH 1K03 or equivalent. Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2G03.
Antirequisite: ECON 2X03 or 2L06

ECON 2H03 INTERMEDIATE INCOME AND EMPLOYMENT THEORY II
Selected topics from macroeconomics policies, issues in unemployment and inflation in open and closed economies, components of aggregate demand and supply and economic growth. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and OAC Calculus or MATH 1K03 or equivalent. Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2H03.
Antirequisite: ECON 2M06

ECON 2J03 ENVIRONMENTAL ECONOMICS
A detailed examination of environmental regulation in Ontario and elsewhere with emphasis on potential economic instruments and with specific attention to various forms of air and water pollution. Three hours; one term
Prerequisite: ECON 1A06 or 1B03
Antirequisite: ECON 2M06

ECON 2K03 ECONOMIC HISTORY OF CANADA
A survey of the changing structure of the Canadian economy from the colonial period to the present; early significance of primary production for export markets; emerging domestic markets and industrialization; government's role in promoting the development of the national economy. Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1BB3
ECON 2N03 PUBLIC POLICY TOWARD BUSINESS
The economic effects of federal competition policy and the regulation of business by all levels of government. The impacts of government ownership and bailout activity on the Canadian business environment are also analyzed.
Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and 1B3
Antirequisite: ECON 3N03

ECON 2P03 ECONOMICS OF PROFESSIONAL SPORTS
The application of economic principles to learn and individual professional sports. Theory of sports leagues, demand for sports, the market for athletes, broadcasting rights, competition policy issues, the public finance aspects of stadium financing.
Three hours; one term
Prerequisite: ECON 1A06 or 1B03

ECON 2T03 ECONOMICS OF TRADE UNIONISM AND LABOUR
Topics include the economics of the labour market, of trade unionism, of work, the impact of trade unions on the labour market, economic theories of strikes and trade unions and the state.
Three hours; one term
Prerequisite: ECON 1A06 or 1B03
Cross-list: LABR ST 3B03
Enrolment is limited.

ECON 2X03 APPLIED BUSINESS ECONOMICS
The economic analysis of the strategy of managerial decision-making. A variety of market structures are examined.
Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and OAC calculus or MATH 1K03 or equivalent. Students without credit in MATH 1K03 are strongly advised to take it concurrently with ECON 2X03
Antirequisite: ECON 2G03 or 2L06
Not open to students registered in Economics programmes.

ECON 3A03 ADVANCED ECONOMIC THEORY I
Mathematically oriented approaches to the analysis of the behaviour of individual consumers, workers and firms.
Three hours; one term
Prerequisite: MATH 1M03 and an average of at least 7.0 in ECON 2G03 or 2X03, 2G33 (or 2L06), 2H03, 2H33 (or 2V06) and ECON 3G03

ECON 3A03 ADVANCED ECONOMIC THEORY II
Analysis of dynamic macroeconomic models, including models of endogenous growth and other selected topics.
Three hours; one term
Prerequisite: MATH 1M03 and an average of at least 7.0 in ECON 2G03 or 2X03, 2G33 (or 2L06), 2H03, 2H33 (or 2V06) and ECON 3G03

ECON 3B03 PUBLIC SECTOR ECONOMICS: EXPENDITURES
Theory and practice of public finance. Topics are selected from growth of the public sector, market failure, theory of public goods, incentive mechanisms, logic of group decisions and the political process, theory of benefit-cost analysis, Intergovernmental fiscal relations, government budgeting.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06
Antirequisite: ECON 3C06

ECON 3C03 PUBLIC SECTOR ECONOMICS: TAXATION
Theory and practice of public finance: analysis and comparison of the efficiency, equity and distribution effects of the taxation of income, wealth and expenditure, analysis of social insurance, Intergovernmental fiscal relations.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06
Antirequisite: ECON 3C06

ECON 3D03 LABOUR ECONOMICS
Introduction to the economics of the labour market; demand for labour by the firm and industry; supply of labour by the individual; investment in human capital.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06

ECON 3E03 TOPICS IN LABOUR ECONOMICS
Topics will vary from year to year. The following are given as examples: econometric goals and effects of unions; labour mobility; labour force participation; wage differentials; discrimination; unemployment.
Three hours; one term
Prerequisite: ECON 3D03, and 2P03 or 3006 or an equivalent Statistics course

ECON 3F03 METHODS OF INQUIRY IN ECONOMICS
This course develops skills for investigating a research question in economics, through workshops (e.g., writing, library, Internet, data), and the subsequent application of the skills to an economic issue.
Three hours; one term
Prerequisite: Registration in Level III or Level IV of an Honours Economics programme

ECON 3G03 INTRODUCTION TO ADVANCED ECONOMIC THEORY
An introduction to the application of mathematics in economic theory.
Three hours; one term
Prerequisite: One of OAC Finite Math, MATH 1B03, or STATS 1L03; MATH 1M03 or equivalent; and an average of at least 7.0 in ECON 2G03 or 2X03, 2G33 (or 2L06), 2H03, 2H33 (or 2V06)

ECON 3H03 INTERNATIONAL MONETARY ECONOMICS
Balance of payments and economic problems of an open economy with special reference to Canada; the international financial system and proposals for its reform.
Three hours (lectures and seminars); one term
Prerequisite: ECON 2H03 or 2M06

ECON 3H33 INTERNATIONAL TRADE
Real theory of international trade; interregional and International specialization; effect of commercial and industrial policies.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06

ECON 3L03 ECONOMIC HISTORY OF THE UNITED STATES
Economic analysis of the development of the U.S. economy. Topics include the colonial economy, slavery, transportation, income distribution, foreign trade, technical and institutional change and the Great Depression.
Three lectures; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06. ECON 2H03 or 2M06 is recommended.

ECON 3L03 MARXIAN ECONOMICS
An examination of the foundations of Marxist economic thought; Marxism as a theory of the capitalist system; the place of Marxian doctrine in contemporary economic analysis.
Three lectures; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06

ECON 3L3 HISTORY OF ECONOMIC THEORY
Economic thought from earliest times, with emphasis on the major schools from Adam Smith to Alfred Marshall, selected modern trends and controversies.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

ECON 3M03 INTRODUCTION TO GAME THEORY
An introduction to the theory of games, including strategic, extensive and coalitional games. Applications in economics, political science and evolutionary biology are discussed.
Three hours; one term
Prerequisite: ECON 1A06 or 1B03 and MATH 1K03 (or equivalent)
Not open to students with credit in ECON 3Y03, if the topic was Introduction to Game Theory.

ECON 3P06 ECONOMIC STATISTICS
Statistical analysis as a basic research technique in economics, emphasizing estimation and statistical inferences, including linear regression models. Applications are drawn from micro- and macroeconomics. Computer-oriented exercises are employed throughout the course.
Three lectures; two terms
Prerequisite: Registration in an Honours Economics programme. One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06; one of OAC Finite Math, STATS 1L03 or 2D03
Antirequisite: STATS 3006
Not open to students with credit or registration in ECON 4G03.
ECON 3P03  LINEAR ECONOMIC MODELS
Application and interpretation in economics of linear programming, game theory and inter-industry analysis.
Three hours; one term
Prerequisite: One of OAC Finite Math, MATH 1B03, or STATS 1L03; at least C- in each of MATH 1M03, ECON 2G03 or 2X03 (or 2L06), and 2H03 (or 2M06). Credit in MATH 1A03 is accepted in place of C- in MATH 1M03.

ECON 3S03  INDUSTRIAL ORGANIZATION
A study of the structure, conduct and performance of industrial markets.
Three lectures; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06
Antirequisite: ECON 3N06

ECON 3T03  ECONOMIC DEVELOPMENT: AGRICULTURE AND POPULATION
Analysis of the economies of less developed countries. Topics include structural change and its measurement, dual economies, agriculture, technical change, institutional change, health, nutrition.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06
Antirequisite: ECON 3J06

ECON 3T03  ECONOMIC DEVELOPMENT: TRADE, FOREIGN INVESTMENT AND INTERNATIONAL FINANCE
Analysis of the economies of less developed countries. Topics include the role of exports, effective protection, commercial policy, financial development, direct investment, savings and income distribution.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06
Antirequisite: ECON 3J06

ECON 3U03  ANALYSIS OF ECONOMIC DATA II
Elaboration of regression techniques developed in ECON 2B03. Problems of inference and interpretation in the analysis of economic data. Introduction to forecasting in economics.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06, and ECON 2B03
Not open to students with credit or registration in ECON 3006 or 4G03.

ECON 3W03  NATURAL RESOURCES
Competitive and socially optimal exhaustion of non-renewable resources; market failure as illustrated by mineral cartels, fisheries and forestry.
Three hours (lectures and seminars); one term
Prerequisite: One of ECON 2G03, 2X03, 2L06, and MATH 1M03

ECON 3X03  URBAN MODELS AND POLICY ANALYSIS I
A survey of modern literature on urban social structure. Topics include morphology, adjustments to change, and such phenomena as sudden urban growth and the decline of central cities.
Two lectures (one hour), one tutorial (two hours); one term
Prerequisite: One of ECON 2G03, 2X03, 2L06, or GEOG 2B03
Cross-list: GEOG 3X03

ECON 3Y03  SELECTED TOPICS I
Topics will vary from year to year depending on student interests and faculty availability. Students should consult the Department on topics to be offered.
Three hours; one term
Prerequisite: Permission of the Department

ECON 3Y03  SELECTED TOPICS II
In 1997-98, the topic will be The Economics of Aging. A study of the demography of aging (including the effects of population aging on the labour force), the macroeconomic aspects of national pension and health plans in the context of an aging population, and the microeconomics of retirement and income security in old age.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06

ECON 3Z03  HEALTH ECONOMICS
Analysis of allocation of resources in health care. Topics include markets for health care, insurance, biomedical research, technology assessment, organization and public policy.
Three hours; one term
Prerequisite: One of ECON 2G03, 2X03, 2L06. ECON 2B03 or another course in statistics is recommended.

ECON 3A03  HONOURS SEMINAR IN ECONOMICS
Students prepare, present and discuss papers under supervision of a faculty member. Several sections will normally be offered. Topics for each section will be announced in January.
Three hours; one term
Prerequisite: ECON 2G03, 2H03, 3F03, 3L03 or 3U06

ECON 4E03  TOPICS IN MICROECONOMICS
Applications of advanced microeconomic theory. Consult the Economics Department for topics which will be examined.
Three hours; one term
Prerequisite: At least C- in ECON 3A03

ECON 4F03  TOPICS IN MACROECONOMICS
Applications of advanced macroeconomic theory. Consult the Economics Department for topics which will be examined.
Three hours; one term
Prerequisite: At least C- in ECON 3A03

ECON 4G03  ECONOMETRICS I
Development of regression models appropriate to economics. Illustrations from applied micro- and macroeconomics.
Three hours; one term
Prerequisite: ECON 2G03 or 2X03 or 2L06, and ECON 2H03 or 2M06, and at least C- in ECON 3006 or STATS 2D03 and 2M03 (or 2M06)

ECON 4G03  ECONOMETRICS II
Special topics in econometrics, including identification in simultaneous equations models in micro- and macroeconomics and topics in the analysis of time series.
Three hours; one term
Prerequisite: ECON 4G03

ECON 4M06  DIRECTED RESEARCH I
A reading and/or research programme supervised by a Department member. A major paper is required. Interested students should consult the Department concerning admission.
Prerequisite: Permission of the Department

ECON 4N03  DIRECTED RESEARCH II
As per ECON 4M06.
Prerequisite: Permission of the Department

ECON 4X03  URBAN MODELS AND POLICY ANALYSIS II
A survey of modern literature on urban issues. Topics include welfare criteria, externalities, public goods and fiscal policies.
Two lectures (one hour), one tutorial (two hours); one term
Prerequisite: ECON 3X03 or GEOG 3X03
Cross-list: GEOG 4X03

ELECTRICAL AND COMPUTER ENGINEERING

Faculty as of January 15, 1997

Chair
D.R. Conn

University Professor
Simon Haykin/B.Sc., Ph.D., D.Sc. (Birmingham), F.R.S.C., F.I.E.E.

Professors Emeriti
Arthur S. Gladwin/D.Sc. (Glasgow), Ph.D. (London)
Reuven Kital/M.Sc., D.Sc. (Watitwaterst), F.I.E.E.

Professors
Charles R. Carter/B.A.Sc., M.A.Sc., (British Columbia), Ph.D. (McMaster), P.Eng.
David R. Conn/G.Sc., M.Sc., Ph.D. (Queen's), NSERC Industrial Research Chair in Monolithic Microwave Integrated Circuits, BNR/NSERC Chair, P.Eng.
Courses

If no prerequisite is listed, the course is open.

**COMP ENG 2D4**  INTRODUCTION TO COMPUTER ENGINEERING
Binary numbers and codes; Boolean algebra; Combinatorial circuit design; Electrical properties of logic circuits; Sequential circuit design; Computer arithmetic; Organization and design of CPU.
Three lectures, one tutorial, one lab (three hours) every other week; second term.
Prerequisite: Registration in a programme in Computer Engineering, Electrical Engineering or Engineering Physics or Physics.

Antirequisite: COMP EN 2H4A3

**COMP ENG 2S4**  DATA STRUCTURES, ALGORITHMS AND DISCRETE MATHEMATICS
Application of logic and finite state machines programming: Data types (arrays, lists, stacks, queues, heaps, etc.); Data abstraction and algorithms for sorting and searching; Application of graph algorithms and combinatorics in programming; Estimating program resource utilization.
Three lectures, one tutorial (two hours); first term.
Prerequisite: ENGINEER 1D04
Antirequisite: COMP ENG 2Y4A3

**COMP ENG 3H4**  DIGITAL COMPUTER PRINCIPLES
Elements of digital computers; Register transfer logic; Memory, Operation, organization and control of central processor unit.
Two lectures, one tutorial, one lab (three hours) every other week; first term.
Prerequisite: COMP ENG 2H4A3
Antirequisite: ENGINEER 4C03, PHYSICS 4D0A, 4D0B

**COMP ENG 3HC3**  MICROPROCESSOR SYSTEMS
Microprocessor architecture, programming, timing, memory interfacing and interrupt handling using 8086; Peripheral interfaces including handshaking, PPI, UART, keyboards, CRT, timers and event counters; System bus structures.
Two lectures, one tutorial, one lab (three hours) every other week; second term.
Prerequisite: Registration or credit in COMP ENG 3H4B3

**COMP ENG 3KB3**  SIMULATION AND OPTIMIZATION I
Optimization-oriented computer-aided engineering; CAD systems; Optimization fundamentals and algorithms; Non-linear equations; Approximation practice; Adjacent network gradients; Sensitivities and tolerances.
Two lectures, one tutorial, one lab (three hours) every other week; second term.
Prerequisite: COMP ENG 2K2A3 and ELEC ENG 2DA3

**COMP ENG 3VA3**  SOFTWARE ENGINEERING
Software life-cycle; Planning; requirements analysis; The design process and methods; Design tools; Testing; Maintenance; Software reliability. Application of design methods in a group project.
Two lectures, one tutorial, one lab (three hours) every other week; first term.
Prerequisite: COMP ENG 2Y4A3 and registration in a Computer Engineering programme.
Antirequisite: COMP SCI 3E4A3

**COMP ENG 4H03**  ADVANCED COMPUTER DESIGN
Advanced topics in computer design: Processor control; I/O implementation; Processor and memory acceleration; Instruction set design for high level languages; Virtual machines; Multiprocessing.
Two lectures, one tutorial, one lab (three hours) every other week; first term.
Prerequisite: COMP ENG 3H4B3
Antirequisite: COMP SCI 3M3G3

**COMP ENG 4H43**  ADVANCED REAL TIME COMPUTING SYSTEMS
Real time systems, jobs and tasks; Disk management; Real time implementation; Multiprocessor systems.
Two lectures, one tutorial, one lab (three hours) every other week; second term.
Prerequisite: COMP ENG 3H4B3
ELECTRICAL ENGINEERING ...  

**Courses**

**ELEC ENG 2C14 INTRODUCTION TO ELECTRICAL ENGINEERING** Overview of Electrical Engineering; Electromagnetic fields, circuits, devices and systems. SI units, current, potential difference, Kirchhoff’s laws, single time constant circuits, active circuits, three phase circuits; semiconductor devices; Rotating machines; Analog/digital technology; Communication signals and systems.

Three lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: Registration in a Computer Engineering or Electrical Engineering programme

Antirequisite: ELEC ENG 2BA3

**ELEC ENG 2CJ4 CIRCUITS, SYSTEMS AND NUMERICAL METHODS** Mesh/Node analysis of Circuits; Laplace transforms/application to circuits; Responses of Linear Systems; Coupled circuits; Power relationships; Dependent sources; Nonlinear circuits; Numerical differentiation and integration.

Three lectures, one tutorial (two hours); second term

Prerequisite: ELEC ENG 2C14

Antirequisite: ELEC ENG 2DA3

**ELEC ENG 2E14 ELECTRONIC DEVICES AND CIRCUITS—AN INTRODUCTION** Introduction to semiconductor devices and electronic circuits; Diodes, field-effect and bipolar transistors, and operational amplifiers: their electrical characteristics, principles of operation, and circuit models; Analysis and design of basic application circuits.

Three lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisites: ELEC ENG 2C14, ENGINEER 2004

Corequisite: ELEC ENG 2C4J

Antirequisite: ELEC ENG 2FA3

**ELEC ENG 3AA3 TELECOMMUNICATIONS SYSTEMS I** Introduction to modern communication systems; Data networks, protocol architectures, switching methods, physical communications, amplitude modulation, angle modulation, generation of AM and FM, digital modulation.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 3DB3

**ELEC ENG 3BB3 ELECTROMAGNETIC FIELDS AND WAVES** Scalar and vector potential fields; Maxwell’s equations, boundary conditions, electromagnetic energy and Poynting’s theorem, transmission lines; Waves.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2BA3

**ELEC ENG 3CA3 FEEDBACK CONTROL SYSTEMS I** Models of physical systems: transfer functions and block diagrams, characteristics of feedback systems, frequency response, Nyquist criterion for stability.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ELEC ENG 2DA3 and registration or credit in ELEC ENG 3DB3

Antirequisite: MECH ENG 4R03

**ELEC ENG 3DB3 CIRCUITS AND SYSTEMS II** Introduction to discrete time signals and systems; z-transforms, discrete and continuous time convolution, frequency response in discrete time systems, Fourier series, Fourier transforms, two-port networks.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2DA3

**ELEC ENG 3FB3 ELECTRONICS II** Diodes, transistors, operational amplifiers; dynamic operation; Dynamic circuit models; Multitranator circuits; Frequency response and switching speed; Negative feedback; Computer software for electronic circuit analysis.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2FA3

**ELEC ENG 3FC3 ELECTRONICS III** Non-linear operational amplifier circuits; Signal generation; Active filters; Power amplifiers; Power supplies; A/D and D/A conversion; Analog multiplexers, sample and hold.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 3FB3

**ELEC ENG 3NA3 AC POWER CONCEPTS** Polyphase circuits; Transformers; Voltage control and regulation; Introduction to polyphase machines; Synchronous generators and motors; Squirrel cage induction motors; Applications to small industrial plants.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2BA3 and 2DA3

**ELEC ENG 3SA3 SMALL MOTORS AND DRIVES** Small motors; Direct current; Single phase induction, wound rotor induction, hysteresis, universal, stepper and permanent magnet motors; Elementary speed control techniques.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 3NA3

**ELEC ENG 4AB3 COMMUNICATION SYSTEMS II** Communication systems in noisy and imperfect channels; Random processes; Noise in CW modulation systems including AM, DSSBC and SSB; Digital signals and digital communications, multiplexing, Technology issues.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3AA3, 3BB3 and STATS 3X03

**ELEC ENG 4AC3 DIGITAL COMMUNICATIONS** Fundamental limits on performance; Detection and estimation; Digital modulation techniques; Error control coding.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ELEC ENG 3AA3, 4AB3 and MATH 3K03

**ELEC ENG 4CB3 FEEDBACK CONTROL SYSTEMS II** Design and compensation of control systems using frequency response as well as s-plane methods; Controllability and observability; State variable feedback; Asymptotic observers; Design of digital control systems; Nonlinear systems analysis.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3CA3
ELEC ENG 4EA3 DIGITAL SIGNAL PROCESSING
Discrete time systems; Z-transforms; Fourier transforms; Digital filters; Effects of finite register length; Least squares filters; Matched filters.
Two lectures, one tutorial, one lab (three hours) every other week; second term
Prerequisite: ELEC ENG 3A02 and 3D03

ELEC ENG 4FD3 ELECTRONICS IV
Integrated circuits: fabrication technologies; Design rules; Passive and active components; Analog and digital circuit design principles; Amplifier and logic circuit limitations; Computer software aids.
Two lectures, one tutorial, one lab (three hours) every other week; first term
Prerequisite: ELEC ENG 3FC3

ELEC ENG 4J4A THESIS PROJECT
An experimental investigation and design project to be carried out by the student, to test initiative, grasp of the subject, and capacity for independent work.
Both terms
Prerequisite: Registration in Level IV of Electrical Engineering or Level V of Electrical Engineering and Management or Electrical Engineering and Society

ELEC ENG 4NB3 POWER TRANSMISSION AND DISTRIBUTION
Transmission lines and cables; Transformers and distribution stations; Power flow control; Voltage control; Generation system economics; Simulations.
Two lectures, one tutorial, one lab (three hours) every other week
Prerequisite: ELEC ENG 3BB3 or 3A02

ELEC ENG 4PA3 TECHNICAL WRITING AND ORAL COMMUNICATION
Writing for, and speaking to, technical and management audiences: resumes, letters of inquiry, technical correspondence, technical description and definition; Writing instructions; Preparing audiovisual aids.
One lecture, one seminar, one tutorial (three hours); first term
Prerequisite: Registration in Level IV of Computer Engineering or Electrical Engineering, and registration in COMP ENG 3A04 or ELEC ENG 4J4A

ELEC ENG 4RA3 TRANSMITTING AND RADIATING SYSTEMS
Principles of transmission lines, matching and Smith charts; Waveguides and resonant cavities; Antenna radiation; Dipole antennas; Antenna arrays.
Two lectures, one tutorial, one lab (three hours) every other week; first term
Prerequisite: ELEC ENG 3FB3

ELEC ENG 4SB3 POWER ELECTRONICS
Power circuits with switches; Basic rectifier circuits; Commutation; Trijunctions; Inverters; Choppers; Inverter control.
Two lectures, one tutorial, one lab (three hours) every other week; first term
Prerequisite: ELEC ENG 3FB3

ELEC ENG 4UA3 BIOMEDICAL ELECTRONIC INSTRUMENTATION
Generation and nature of bioelectric potentials; Electrodes and other transducers; Principles of instrumentation; Electrical safety; Neuromuscular and cardiovascular instrumentation; Ultrasound and other medical imaging.
Two lectures, one tutorial, one lab (three hours) every other week; second term
Prerequisite: ELEC ENG 3FB3 or ENGINEER 3N03 or PHYSICS 3B06

ENGINEERING (GENERAL)

Department Note:
Enrolment in these courses by students in programmes other than Engineering, Engineering and Society or Engineering and Management may be limited.

Courses
If no prerequisite is listed, the course is open.

ENGINEER 1A00 SAFETY TRAINING
Introduction to safety guidelines at McMaster University, acceptable safety conduct and positive safety attitudes and practices in laboratories and Workplace Hazardous Materials Information System (WHMIS).
Two hours, first week; first term
Prerequisite: Registration in an Engineering programme
THIS COURSE MUST BE PASSED BEFORE REGISTERING IN LEVEL II ENGINEERING.

ENGINEER 1C04 ENGINEERING DESIGN AND COMMUNICATION
Graphical, written and oral communication in the context of engineering design. The engineer and society. Design projects by individuals and groups, design skills workshops.
Two lectures, one graphics lab (three hours), one design lab (two hours); first term
Prerequisite: Registration in an Engineering programme

ENGINEER 1D04 ENGINEERING COMPUTATION
Problem solving using computational techniques. The development of algorithms and their application using a structured computer language to solve problems in analysis, design and elementary optimization. Software packages.
Three lectures, one tutorial (two hours); second term
Prerequisite: Registration in an Engineering programme
Antirequisite: COMP SCI 1M03 or 1MC3

ENGINEER 2B03 ENGINEERING ECONOMICS
Two lectures, one tutorial; second term
Prerequisite: Registration in a Computer Engineering or Electrical Engineering programme
Antirequisite: CHEM ENG 4N04, ENGINEER 4B03
Not open to students registered in Engineering and Management programmes.

ENGINEER 2C03 ELECTRICITY, THERMOPHYSICS AND ENERGY
An exposure of electrical and thermophysics fundamentals having civil engineering applications. Topics: electrostatics, electric currents, circuits and transients, electrical power engineering, energy efficiency, heat transfer and materials.
Two lectures, one tutorial (two hours); second term
Prerequisite: PHYSICS 1E03, and registration in MATH 2M06

ENGINEER 2MM3 ELECTRICAL CIRCUITS AND POWER
Fundamentals of electromechanical energy conversion. Motors and generators, transformers, single and polyphase power circuits, synchronous and induction machines, power measurements.
Two lectures and one lab or tutorial; first term or second term
Prerequisite: PHYSICS 1E03, and registration in MATH 2M06 or MATH 2P04 and 2004
Antirequisite: ENGINEER 3M03

ENGINEER 2P04 ENGINEERING MECHANICS 'A'
Principles of statics as applied to deformable solid bodies. Stress and strain, elastic behaviour of simple members under axial force, bending and torsion. Principal stresses; deflection of beams; statical indeterminacy.
Three lectures, plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first term
Prerequisite: PHYSICS 1D03

ENGINEER 2P04 ENGINEERING MECHANICS 'B'
Kinematics and dynamics of particles and rigid bodies. Motion with respect to a rotating frame of reference. Work, energy and momentum principles.
Free, damped and forced vibrations of single degree of freedom systems.
Three lectures, plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first or second term
Prerequisite: Credit or registration in ENGINEER 2P04

ENGINEER 3D01 LEADERSHIP: PRINCIPLES AND PRACTICE I
Instruction and practice in basic skills of leadership through workshops and practicum in undergraduate engineering courses.
Three to four hours practicum; first or second term
Prerequisite: Registration in Level III or above of an engineering programme.
Two lectures; one tutorial (two hours) or one lab (three hours); second term

Prerequisite: ENGINEER 2M04 or 2M3M or 3M03

ENGINEER 3P03 MECHANICAL BEHAVIOUR OF MATERIALS

Three lectures, two 3-hour lab periods for concrete project; first term
Prerequisite: MATH 2M06, or MATH 2P04 and 2Q04, and ENGINEER 2P04
An prerequisite: ENGINEER 2G03, 2Q04, 3R03, MATLS 3P03

ENGINEER 4A03 ENGINEERING AND SOCIAL RESPONSIBILITY
The historical development of the engineering profession's concern for social responsibility. Engineering as a cultural activity. The scope and limitations of engineering ethics. The role of the engineering profession in the social control of technological change.

One lecture, one tutorial, one seminar; second term
Prerequisite: Registration in Level III or above in any Engineering programme except Engineering and Society

ENGINEER 4B03 ENGINEERING ECONOMICS

Two lectures, one tutorial; second term
Prerequisite: Registration in final level of an Engineering programme
An prerequisite: CHEM ENG 4N04, ENGINEER 2G03
Not open to students registered in an Engineering and Management programme.

ENGINEER 4C03 REAL-TIME COMPUTER INTERFACING
Organization of real-time computers; instrumentation and interfacing for data acquisition and control; computer communication and local area networks; diagnostics for real-time operations.

Two lectures, one lab (three hours); first term
Prerequisite: Registration in Level IV of Manufacturing Engineering
An prerequisite: COMP ENG 3H03 or PHYSICS 4D06

ENGINEER 4H03 ENGINEERING: ITS HISTORY, PHILOSOPHY AND INFLUENCE ON CIVILIZATION

Two lectures, one tutorial (two hours); second term
Prerequisite: Registration in Level III, IV, or V of any Engineering programme except Engineering and Society

ENGINEER 4J03 MATERIALS FABRICATION
Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. Processing methods for a wide range of materials, including metals, ceramics and plastics. The analytical basis for understanding and optimizing materials processes. Exercises in mathematical modelling and the use of software packages to optimize processes.

Three lectures; first term
Prerequisite: MECHE 3A03 or MATH 3P03

ENGINEER 4U03 UNIT OPERATIONS AND PROCESSES IN ENVIRONMENTAL ENGINEERING
The process capabilities, hardware and design equations, of the physical, chemical and biological processes used to improve water. Emphasis on processes such as bio-oxidation, clarification, coagulation, sludge dewatering and disinfection.

Two lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 3X04 or CIV ENG 3C03 or 3Q04, or MECHE 3G04, and registration in Level IV or above of any Engineering programme

ENGINEER 4X03 CONCEPTS IN BIOMEDICAL ENGINEERING
Engineering and physical science approach to human physiological systems; cardiovascular system, with specific organ circulations, respiratory systems, overall integration and control.

Three lectures; first term
Prerequisite: Registration in Level III or above of an Engineering programme or any Honours programme in the Faculty of Science
An prerequisite: BIOLOGY 3U03

Courses

If no prerequisite is listed, the course is open.

ENGN MGT 2A02 COMMUNICATION SKILLS
Writing and speaking; interpersonal communications and skills, team-work, brainstorming, writing memoranda and business letters, organizational strategies, visual elements, formal reports, oral communications, technical talks.

One lecture, one tutorial (two hours); first term
Prerequisite: Registration in an Engineering and Management programme

ENGN MGT 3A01 ISSUES IN TECHNOLOGY MANAGEMENT
Introduction to the field of Technology Management; the skills of writing position papers, presenting to a small group, and facilitating seminars are developed.

One seminar/class; one term
Prerequisite: Registration in an Engineering and Management programme

ENGN MGT 4A01 ENGINEERING AND MANAGEMENT REPORT
A written report and oral presentation based on summer work experience and written assessments of communications are required. Guidelines and procedures must be obtained from the Programme Director before the end of Level III.

One seminar, alternate weeks; both terms
Prerequisite: Registration in Level IV of an Engineering and Management programme

ENGN MGT 5B03 ENGINEERING AND MANAGEMENT PROJECTS
Projects that integrate the engineering and business disciplines, employing case studies provided by the members of the Industrial Advisory Council, or by industry.

One lecture, two tutorials (two hours); first or second term
Prerequisite: Registration in the final year of an Engineering and Management programme

Courses

If no prerequisite is listed, the course is open.

ENGSOCTY 2X03 INQUIRY IN AN ENGINEERING CONTEXT
Inquiry seminars are non-disciplinary courses that develop an approach to the study of issues of public concern. In terms of the design process, inquiry focuses on the problem definition stage, in which formulating questions, researching underlying issues, and analyzing opposing arguments are essential. The first seminar will involve teaching the students how to use the university and community resources in research, how to write a research paper, and how to express ideas orally.

One lecture, one tutorial, one seminar; first term
Prerequisite: Registration in an Engineering and Society programme
ENGSOCTY 2Y03 CASE STUDIES IN THE HISTORY OF TECHNOLOGY

History and philosophy of technology, from antiquity to modern times, with a special emphasis on the cultural aspects of technology, are addressed on a case study basis.

Two lectures, one tutorial; second term
Prerequisite: Registration in an Engineering and Society programme

ENGSOCTY 3X03 INQUIRY IN AN ENGINEERING CONTEXT II

This inquiry seminar builds on the skills developed in the first seminar, focusing on a specific issue related to the role of engineering and technology in society. The seminar will be devoted to the study of one topic such as: automation and employment, technology and the quality of life, the deteriorating environment, or the information society. Students will focus on specific aspects and share their findings in a seminar format.

Two lectures, one seminar; second term
Prerequisite: ENGSOCTY 2X03

ENGSOCTY 3Y03 THE CULTURE OF TECHNOLOGY

A study of the nature and structure of technology, the nature of culture, and the role and place of different groups, including engineers, in a culture dominated by technology.

One lecture, one tutorial, one seminar; first term
Prerequisite: ENGSOCTY 2Y03

ENGSOCTY 3203 ENVIRONMENTAL STUDIES

Course covers aspects of environmental studies such as: environmental assessment, energy and elemental cycles, sustainable development, solid and hazardous waste management, air and water quality control, and environmental legislation.

Two lectures, one tutorial; first term
Prerequisite: Registration in Level III of an Engineering and Society Programme or the Honours Geography and Environmental Science (B.Sc.) Programme

ENGSOCTY 4X03 INQUIRY IN AN ENGINEERING CONTEXT III

Under the supervision of a faculty member, students write an inquiry paper and present their findings orally. Topics for inquiry must bear on the relation of engineering and technology in society and have implications for the practising engineer.

Prerequisite: ENGSOCTY 3X03

ENGSOCTY 4203 THE SOCIAL CONTROL OF TECHNOLOGY

The dominant mechanisms of the social control of technology will be studied, with a specific emphasis on the role of the engineering profession. Includes an examination of assessment methods and the role of ethics as one approach to social responsibility in engineering.

One lecture, one tutorial, one seminar; first term
Prerequisite: ENGSOCTY 3203

ENGINEERING PHYSICS

Faculty as of January 15, 1997

Chair
P. Mascher

Professors Emeriti
Edward A. Ballik/B.Sc. (Queen’s), D.Phil. (Oxford), P.Eng.
John A. Davies/B.A., M.A., Ph.D. (Toronto), F.R.S.C., F.D.R.S.
Terence J. Kennett/B.Sc., M.Sc., Ph.D. (McMaster)
John S. Kirkaldy/B.Sc., M.A.Sc., (British Columbia), Ph.D. (McGill), F.R.S.C.,
BNR/NSERC Chair in Microelectronic and Optoelectronic Materials and Devices

Professors
Alexander A. Berzin/B.Sc., M.Sc., Ph.D. (Leningrad State)
Harold K. Haugen/B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)
Derek C. Houghton/B.Sc. (Birmingham), Ph.D. (Cambridge) part-time
David P. Jackson/B.Sc., M.A., M.Sc., Ph.D. (Toronto) part-time
Kish V.S. Krishnan/B.E., M.A., M.Sc., Ph.D. (Rochester) part-time
David A. Thompson/B.Sc., Ph.D. (Reading) C.Eng.

Associate Professors
Sylvain Charbonneau/B.Sc., M.Sc., Ph.D. (Ottawa), Ph.D. (Simon Fraser) part-time
James S. Forster/B.E., Ph.D. (Liverpool), part-time
J. D. Huizinga/B.Sc., M.Sc., Ph.D. (Groningen, The Netherlands) part-time
Thomas E. Jackman/B.Sc., M.Sc., Ph.D. (Guelph) part-time
Adrian H. Kita/B.E. (McMaster), Ph.D. (Cornell), P.Eng.
Hui Chun Liu/B.Sc. (Lanzhou), M.Sc., Ph.D. (Pittsburgh), part-time
Peter Mascher/M.Sc., Ph.D. (Technical University of Graz), P.Eng.
Michael S. Milgram/B.A.Sc., M.Sc., Ph.D. (Toronto) part-time
Klaus F. Schoepfl/Dipl. Phys. Ph.D. (Darmstadt) part-time

Courses

If no prerequisite is listed, the course is open.

ENG PHYS 2A03 ELECTRICAL SCIENCE I
An introduction to electricity and magnetism for Engineering Physics students.
Two lectures, one tutorial, one lab (three hours), every other week; first term
Prerequisite: PHYSICS 1E03, and credit or registration in MATH 2P04

ENG PHYS 2E04 ELECTRICAL SCIENCE II
Analysis of ac circuits and ac power. Maxwell’s equations and electromagnetic theory. Introductory modern physics.
Three lectures, one lab (three hours); second term
Prerequisite: ENG PHYS 2A03

ENG PHYS 2H04 THERMODYNAMICS
An introduction to thermodynamics and its statistical basis at the microscopic level, with applications to problems originating in a modern laboratory or engineering environment.
Three lectures, one tutorial; lab every other week; second term
Prerequisite: Registration in Level II Engineering Physics
Cross-list: PHYSICS 2H04
Antirequisite: ENGINEER 2V04

ENG PHYS 3D03 PRINCIPLES OF NUCLEAR ENGINEERING
Introduction to fission and fusion energy systems. Energetics of nuclear reactions, interactions of radiation with matter, radioactivity, design and operating principles of fission and fusion reactors.
Three lectures, (including demonstration experiments); first term
Prerequisite: Registration in Level III or above of any programme in Engineering or Physics

ENG PHYS 3E03 FUNDAMENTALS OF PHYSICAL OPTICS
Reflection and refraction; geometrical optics; interference and diffraction; optical constants of media; optical design software; introduction to design of optical systems.
Two lectures, one tutorial, one lab (three hours), every other week; first term
Prerequisite: ENG PHYS 2A03 and 2E04

ENG PHYS 3F03 FUNDAMENTALS OF SOLID STATE ELECTRONICS
Electrons in solids, emphasis on semiconductors, carrier drift and diffusion; doped semiconductors; non-equilibrium carrier effects; optical properties of semiconductors.
Two lectures, one tutorial, one lab (three hours), every other week; second term
Prerequisite: ENG PHYS 2A03 and 2E04 or PHYSICS 1E03 and either MATH 2M06 or MATH 2P04 and 2G04; or PHYSICS 2B06

ENG PHYS 3G03 INTRODUCTION TO FLUID MECHANICS AND HEAT TRANSFER
Fluid properties and statics are introduced. Basic equations of continuity, energy and momentum for internal and external flows are discussed. Similitude, dimensional analysis, measuring devices, fluid machinery and electromagnetic flow. Conduction and convection heat transfer.
Two lectures, one tutorial, one lab (three hours), every other week; second term
Prerequisite: MATH 2M06, or MATH 2P04 and 2G04, any of which may be taken concurrently.
ENG PHYS 3W04  ACQUISITION AND ANALYSIS OF EXPERIMENTAL INFORMATION
A systems approach to measurement in which synthesis of topics such as
Fourier transforms, signal processing and enhancement, data reduction,
data format and simulation is undertaken.
Two lectures; both terms
Prerequisite: Credit or registration in MATH 3C06 or 3C03 and 3D03

ENG PHYS 3X03  HUMAN PHYSIOLOGY
Basic introduction and working knowledge of the human body. Includes study of
the cellular level of organization.
Three lectures; second term
Prerequisite: Completion of a minimum of 30 units above Level I in any Engi­
neering or Science Programme
Antirequisite: BIOLOGY 3U03, 3U03, 3006 or 4G06

ENG PHYS 4A04  DESIGN AND SYNTHESIS PROJECT
Design and synthesis projects supervised by a faculty member in the Depart­
ment of Engineering Physics.
Two labs (three hours); both terms
Prerequisite: Registration in final level of an Engineering Physics programme.

ENG PHYS 4C03  INTEGRATIVE ENGINEERING
Aspects of engineering theory and practice, systems failure and catastrophe
avoidance, population/resource dynamics and interactive dynamics of driven
systems. The seminar/workshop part of the course will involve case studies of
technology society issues. A term paper is required.
Three lectures; first term
Prerequisite: Registration in Level IV or above in any Engineering programme

ENG PHYS 4D03  NUCLEAR REACTOR ANALYSIS
Introduction to nuclear energy; nuclear physics and chain reactions; reactor
statics and kinetics; multigroup analysis, core thermal hydraulics; reactor de­
sign.
Three lectures (including field trip); first term
Prerequisite: ENG PHYS 3D03

ENG PHYS 4E03  SOLID STATE DEVICES I
Electronic properties of semiconductors, contact phenomena, p-n junctions;
Schottky diodes, photodiodes, bipolar transistors, field effect transistors.
Three lectures; first term
Prerequisite: ENG PHYS 3F03 or ENGINEER 3Q03

ENG PHYS 4F03  SOLID STATE DEVICES II
Physical principles underlying operation of selected devices, and their char­
acteristics; optical devices, avalanche devices, Gunn Effect devices, Read
diodes, charge coupled devices, integrated circuits. Josephson junctions.
Three lectures; second term
Prerequisite: Credit or registration in ENG PHYS 4E03

ENG PHYS 4G03  OPTICAL INSTRUMENTATION
Design of optical equipment (including reflective and refractive optical sys­
tems, interferometers and spectrometers). Optical sources and power meas­
urements. Detectors (photographic, photoelectric, etc.), including use in the
infrared and ultraviolet, at low to high light intensities.
Three lectures; first term
Prerequisite: PHYSICS 3N03 or ENG PHYS 3E03

ENG PHYS 4H06  SPECIAL STUDIES IN ENGINEERING PHYSICS
A special programme of studies to be arranged by mutual consent of the
professor, departmental chair, and the student. A student elects to work with
a professor carrying out literature surveys, experiments, theoretical investi­
gations, etc. A written report is required.
Two tutorials, one lab (three hours); both terms
Prerequisite: Registration in final level of an Engineering Physics programme
and a CA of at least 9.5

ENG PHYS 4K03  OPTICAL COMMUNICATIONS SYSTEMS
Propagation of light in an optical fibre. Semiconductor lasers and detectors
for optical communications. Analogue and digital coding. Signal to noise consid­
erations. System design.
Three lectures; second term
Prerequisite: Registration in Level IV or V of any programme in Engineering or
Physics

ENG PHYS 4L03  NUCLEAR REACTOR THERMALHYDRAULICS
Introduction to two phase flow and nuclear reactor thermalhydraulics sys­
tems. Condensation and boiling phenomena and heat transfer mechanisms.
Two phase flow apparatus and diagnostics techniques. Modelling of two phase
flow by homogeneous and separated flow models.
Two lectures, one lab; second term
Prerequisite: CHEM ENG 3004 or ENG PHYS 3003 or MECH ENG 3004

ENG PHYS 4N03  PRINCIPLES OF FUSION ENERGY
Fusion phenomena and the plasma state; reaction analysis; Coulomb scat­
tering; field effect trajectories; magnetic field configurations; particle trans­
pport; energy viability; burn cycles; inertial confinement; muon catalyzed fu­
sion.
Three lectures; second term
Prerequisite: ENG PHYS 3D03

ENG PHYS 4S04  LASERS AND ELECTRO-OPTICS
Basic properties of electromagnetic radiation, Optical modulation and detec­
tion. Non-linear optics. Multiple-beam interference and coherence. Optical
resonators. Laser systems.
Two lectures; both terms
Prerequisite: PHYSICS 3N03 or ENG PHYS 3E03

ENG PHYS 4U04  MODERN AND APPLIED PHYSICS LABORATORY
Selected advanced experiments in two areas of applied physics, chosen from
among: lasers and electro-optics; solid state electronics; nuclear engineering.
Two labs (three hours); both terms
Prerequisite: Registration in Level IV or Level V of an Engineering Physics
Programme

ENGINEERING TECHNOLOGY (GENERAL)

Note
Engineering Technology courses are open only to students registered in
the Manufacturing Engineering Technology programme and are subject to
prerequisite requirements.

Courses

ENG TECH 1MA3  MATHEMATICS I
Ordinary and partial differential equations; Laplace transforms; Fourier se­
sries; vector calculus; integral theorems, with engineering applications.
Three lectures, one term

ENG TECH 1ML3  STRENGTH OF MATERIALS
Stresses under combined loads, generalized Hooke's Law; two and three
dimensional stresses, stress transformation, principal stresses, Mohr's cir­
cle; deflections by integration; energy methods, Castagliano's theorem; col­
umns; yield criteria.
Three lectures, one term
Corequisite: ENG TECH 1MA3

ENG TECH 1PG3  PROGRAMMING
An overview of C, C++ programming; variables, constants and operators;
program control statements, classes, arrays; virtual functions; I/O system, preprocessor.
One lecture, one tutorial; one term

ENG TECH 2CT3  SYSTEM ANALYSIS AND CONTROLS
Mathematical foundation: differential equations, Laplace transforms, trans­
form by partial-fraction expansion; transfer functions; modelling of physical
systems; stability, Routh criteria; time and frequency domain; Root-locus tech­
nique; design of control systems.
Three lectures, one term
Prerequisite: ENG TECH 1MA3 and 1PG3

ENG TECH 2FE3  FINITE ELEMENT ANALYSIS
Matrix techniques; eigenvalue problem: equations of elasticity; plane stress,
plane strain, 3D problems; variational methods; element types, element stiff­
ness, mass matrices and load vector; assembly of elements, boundary
conditions.
Two lectures, one tutorial; one term
Prerequisite: ENG TECH 1MA3 and 1ML3

ENG TECH 2MN3  MODELLING AND NUMERICAL SOLUTIONS
Number systems and errors; the solution of nonlinear equations; Interpolation
division; systems of linear equations, differentiation and integration; the solution of differential equations; applications to mechanical
systems.
Three lectures, one term
Prerequisite: ENG TECH 1MA3 and 1PG3
ENGLISH

Faculty as of January 15, 1997

Chair
Donald C. Goelnicht

University Professor
James King/B.A. (Toronto), M.A., Ph.D. (Princeton), F.R.S.C.

Professors Emeriti
Carl P.A. Ballstad/B.A., M.A. (Western Ontario), Ph.D. (London)
Aliwyn Belland/M.A. (Chicago), M.Litt. (Cambridge)
Andrew W. Brint/B.A., M.A. (Toronto), Ph.D. (London)
Thomas H. Cain/B.A., M.A. (Toronto), Ph.D. (Wisconsin)
Douglas J.M. Duncan/B.A. (Oxford), Ph.D. (Aberdeen)
Berners A.W. Jackson/B.A. (McMaster), D.Phil. (Oxford)
Alvin A. Lee/B.A., M.Div., M.A, Ph.D. (Toronto)
Mary Lorraine Yorkl/B.A, M.A., Ph.D. (Toronto)
Peter Walmsley/B.A, M.A. (Toronto)
Mary E. Brennan/B.A. (Queen's), M.A., Ph.D. (Toronto)
W.J.B. Owen/B.A. (New Zealand and Oxford), Ph.D. (Wales), D.Litt. (McMaster), F.R.S.C.
Graham Patrui M.A. (St. Andrews), B.Litt. (Oxford)
Halsall/B.A. (McMaster), M.A, Ph.D. (Toronto)

Professors
Maqbool Adz/B.A., M.A. (Punjab), D.Phil. (Oxford)
David Blewett/B.A. (Manitoba), Ph.D. (Toronto)
Anthony S. Brennan/B.A. (Oxford), M.A., Ph.D. (McMaster)
John Forna/B.A., M.A. (Oxford), Dipl.Ed. (Nottingham), M.A., Ph.D. (Western Ontario)
Donald C. Goelnicht/B.A. (Queen's), M.A., Ph.D. (McMaster)
W. Graham Roebuck/B.A. (Durham), M.A. (McMaster), Ph.D. (London)
Ronald W. Vincel/B.A. (McMaster), M.A. (Rice), Ph.D. (Northwestern)

Associate Professors
Joseph Adamson/B.A. (Trent), M.A., Ph.D. (Toronto)
Sylvia Bowerbank/B.A. (McMaster), B.Ed. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)
David L. Clark/B.A., M.A., Ph.D. (Western Ontario)
Jeffery Donaldson/B.A., M.A., Ph.D. (Toronto)
Ronald Granofsky/B.A. (Trent), M.A. (Canterbury), Ph.D. (Queen's)
Mary E. O'Connor/B.A. (McGill), M.A., Ph.D. (Toronto)
Helen M. Ostovich/B.A., M.A., Ph.D. (Toronto)
Anne Savage/B.A. (Calgary), Ph.D. (London)
Joseph T. Sigman/B.A. (King's College, Wilkes-Barre), M.A., Ph.D. (Pennsylvania)
Mary Sclux/B.A. (Western Ontario), M.A., Ph.D. (Queen's)
Peter Walmsley/B.A., M.A. (Toronto), Ph.D. (Cambridge)
Lorraine M. York/B.A., M.A., Ph.D. (McMaster)

Assistant Professor
Roger L. Hyman/B.A. (York), M.A., Ph.D. (Toronto)

Associate Member
John R. Roy/Director, Geriatric Psychiatry, Chedoke-McMaster Hospital
M.B., Ch.B., F.R.C.P. (Glasgow and Edinburgh), M.R.C.P.(Psychiatry), F.R.C.P. (C)

Department Notes:
1. The following are courses open as electives to students registered in Level II and above of any university programme.
   ENGLISH 2203 Contemporary Canadian Fiction
   ENGLISH 2205 Twentieth-Century British Literature
   ENGLISH 2206 Studies in American Literature

   ENGLISH 2203 Contemporary Popular Culture
   ENGLISH 2206 Shakespeare: Selected Plays
   ENGLISH 2603 Techniques of Expository Writing
   ENGLISH 3B03 Psychoanalytic Approaches to Literary Texts
   ENGLISH 3F03 Creativity and Human Interaction
   ENGLISH 3H03 Topics in Poetry
   ENGLISH 3I03 Topics in Prose
   ENGLISH 3P03 Modern Drama in English
   ENGLISH 3S03 Biblical Traditions in Literature
   ENGLISH 3X03 Topics in Drama
   ENGLISH 3Z03 Contemporary Canadian Poetry

   Please note that the Department is able to offer only a selection of elective courses each year.

2. Courses restricted to students registered in programmes in English may be available to qualified students in other programmes if space permits. Students interested in such courses should request permission from the departmental counsellor.

3. Level IV seminars are open only to Honours students registered in Level IV of an English programme. Enrolment will be limited to 15 students per seminar. A list of seminars to be offered will be available prior to registration.

Courses
If no prerequisite is listed, the course is open.

ENGLISH 1D06 ENGLISH LITERATURE:
FORMS AND APPROACHES
A selection of various areas of literary study (such as periods, genres, contexts, and approaches) will be examined, using texts from a wide variety of periods and forms of English literature. In this course considerable emphasis is placed on the development of critical skills in reading and writing.
Two lectures, one tutorial; two terms

ENGLISH 2B06 THE DEVELOPMENT OF ENGLISH DRAMA
English drama from the medieval period to the close of the 18th century (excluding Shakespeare).
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 2C03 CONTEMPORARY CANADIAN FICTION
A study of the themes and structure of the contemporary Canadian novel, usually with emphasis upon the relationship of Canada's cultural patterns and its literature.
Three lectures; one term
Prerequisite: Registration in Level II and above.

ENGLISH 2E03 TWENTIETH-CENTURY BRITISH LITERATURE
A study of selected works of twentieth-century British Literature with an emphasis on the historical, intellectual, ideological and aesthetic contexts.
Three lectures; one term
Prerequisite: Registration in Level II and above.
Not available to students with credit or registration in ENGLISH 2106 or 3H06.

ENGLISH 2F03 STUDIES IN AMERICAN LITERATURE
A study of some of the most important writers who developed American literature as a distinctive mode of writing in English.
Three lectures; one term
Prerequisite: Registration in Level II and above.
Not available to students with credit or registration in ENGLISH 2H06.

ENGLISH 2G06 CANADIAN LITERATURE
Major aspects of the development of Canadian literature from the late 18th century to the mid-20th century. French-Canadian work in translation will be used for comparative purposes.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 2H06 AMERICAN LITERATURE
A survey of significant American writers from the 17th century to the present, which emphasizes the interrelationship between the literature and its philosophical and historical background.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
ENGLISH 2I06 MODERN BRITISH LITERATURE
A study of representative literature by British writers of the 20th century. Through criticism of poems, plays and fiction, an attempt is made to relate modern British literature to its social, intellectual and cultural context.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 3I06

ENGLISH 2J03 CONTEMPORARY POPULAR CULTURE
Drawing on models of analysis from the field of cultural studies, this course will introduce students to methods of critically analyzing selected forms of popular culture. Areas of investigation may include: television, magazines, advertising, computer culture, film, popular fiction.
Three lectures; one term
Prerequisite: Registration in Level II and above

ENGLISH 2K06 STUDIES IN WOMEN WRITERS
A closely focused course on women’s writing in English. The topic for the course varies, sometimes concentrating on specific issues, sometimes on an historical period or national literature. Relevant feminist theory will be a component of the course.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Cross-list: WOMEN ST 2K06

ENGLISH 2L03 SHAKESPEARE: SELECTED PLAYS
A study of a representative selection of plays.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: ENGLISH 3E03
Not available to students with credit or registration in ENGLISH 3K06.

ENGLISH 2N03 TECHNIQUES OF EXPOSITORY WRITING
A course designed to provide practical training in the writing of clear, coherent, persuasive prose. Although there will be some study of contemporary prose models, the main work of the course will consist of brief but frequent writing assignments. (This is not a remedial course.)
Two hours (lecture), one hour (tutorial); one term
Prerequisite: Registration in Level II and above
Antirequisite: ENGLISH 3A03
Enrolment is limited to 15 students.

ENGLISH 3E03 PSYCHOANALYTIC APPROACHES TO LITERARY TEXTS
The basic assumptions and methods of psychoanalytic criticism will be studied with reference to selected texts in drama, fiction, and poetry from Shakespeare to the present.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: SOCIOL 2X03

ENGLISH 3C06 CHAUCER AND HIS CONTEMPORARIES
A critical, mainly literary, course in the poetry of later 14th-century England. It will study the writings of Chaucer in some depth, before taking up examples of medieval romance, allegory and drama.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 4E06

ENGLISH 3C06 LITERATURE AND FILM
An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays, and the films that have been based on them.
Three lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level III or IV of a programme in Drama or Literature or Art History. It is recommended that students should already have taken DRAMA 2X06.
Cross-list: ART HIST 3C03, DRAMA 3H03, and COMP LIT 3L03

ENGLISH 3F03 PSYCHOANALYSIS AND CREATIVITY
A study of unconscious fantasy as a source of creativity in selected literary texts. Psychoanalytic models will be applied to written and visual forms of aesthetic objects.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: SOCIOL 3S03

ENGLISH 3G06 ENGLISH LITERATURE (1660-1800)
A study of English literature during the period 1660-1800, with special attention to works by Dryden, Swift, Pope and Johnson.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 4B06

ENGLISH 3H03 TOPICS IN POETRY
Previous topics include: Contemporary British Poetry, Women Poets of the 20th century, Lesbian Poetry. Consult the Department concerning topic to be offered.
Three lectures; one term
Prerequisite: Registration in Level II and above
ENGLISH 3H03 may be repeated, if on a different topic, to a total of six units.

ENGLISH 3I06 STUDIES IN SIXTEENTH-CENTURY LITERATURE
A critical study of the literature of the 1500s in England, particularly the second half of the century. The influence of continental writers will also be examined, and special attention will be paid to Spenser.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 3I03 or 3T03
Cross-list: COMP LIT 3J06

ENGLISH 3J06 THE ENGLISH LANGUAGE
An analysis of the way the English language works, with particular reference to syntactic patterns. The following areas will be considered: English phonology, historical linguistics, morphology, transformational-generative grammar, vocabulary and word formation.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 2V06/2V06, LINGUIST 1A06

ENGLISH 3K06 SHAKESPEARE
An extensive critical reading and discussion of selected plays.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3L06 OLD ENGLISH LANGUAGE AND LITERATURE
The course will focus on translation from the beginner's level to a level at which students can read Old English poetry with the help of a glossary only. The introduction to Old English grammar will be by means of paradigms, drills and the translation of simple prose. Grammar sessions will be complemented by classes on Anglo-Saxon cultural history and critical approaches.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 3D03 or 3DD3

ENGLISH 3M03 ROMANTIC POETRY
A study of selected poems and, where appropriate, of the literary theory of the major Romantic poets. Special attention will be given to Blake, Wordsworth, Coleridge, Byron, Shelley, Keats.
Three lectures; one term
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 4L03

ENGLISH 3M33 VICTORIAN POETRY
A study of selected poems and, where appropriate, of the literary theory of the major Victorian poets. Special attention will be given to Tennyson, Browning, Arnold, Hopkins.
Three lectures; one term
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 4M03
ENGLISH 3N06 - THE BRITISH NOVEL
This course, in assessing and analyzing approximately 12 novels, will trace the history of English fiction to the 20th century. The course focuses on the varieties of narrative forms, while also exploring the intellectual, cultural, and psychological contexts of fiction.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: ENGLISH 4N06

ENGLISH 3P03 - MODERN DRAMA IN ENGLISH
A representative selection of plays by modern British, Irish and North American dramatists will be examined in order to study the relationship between drama and society in our age, as well as conventions and experiments in the contemporary theatre.
Three lectures; one term
Prerequisite: Registration in Level II and above

ENGLISH 3Q03 - THE HISTORY AND THEORY OF CRITICISM
A survey of the main developments in the theory and practice of literary criticism from Plato to the early 20th century.
Three lectures; one term
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Antirequisite: COMP LIT 2Q03

ENGLISH 3R06 - POSTCOLONIAL LITERATURE: THEORY AND PRACTICE
A study of postcolonial literary theory and practice. Texts written in English from a variety of formerly colonized regions will be studied; these may include Africa, the Caribbean, South and Southeast Asia, Australia and New Zealand. The focus will be on such topics as imperialism, race, gender, ethnicity, nation, language and representation.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor
Cross-list: COMP LIT 3P06

ENGLISH 3S03 - BIBLICAL TRADITIONS IN LITERATURE
A study of the influence of the Bible on Western literature, especially English. Approaches may include the examination of symbolism, imagery, typology, doctrinal themes and narrative structures.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: ENGLISH 2D03

ENGLISH 3V06 - STUDIES IN 17TH-CENTURY LITERATURE
A detailed examination of poets and prose-writers of the period, with emphasis on the poetry of Donne, the "metaphysical school", Jonson and Milton.
Three lectures; two terms
Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3X03 - TOPICS IN DRAMA
Previous topics include: British Drama: 1960 to the Present, Modern Canadian Drama. Consult the Department concerning topic to be offered.
Three lectures; one term
Prerequisite: Registration in Level II and above
ENGLISH 3X03 may be repeated, if on a different topic, to a total of six units.

ENGLISH 3Z03 - CONTEMPORARY CANADIAN POETRY
The development of Canadian poetry from the 1940's to the present. Parallel developments in French-Canadian poetry (studied in translation) will also be considered.
Three lectures; one term
Prerequisite: Registration in Level II and above

ENGLISH 4X03 - HONOURS ESSAY
In consultation with members of the English Department, students will prepare an essay on an approved topic. This course is normally substituted for three units of Level IV seminar work in the second term. Students who are interested in taking 4X03 should contact the faculty member chairing the 4X03 committee early in the first term.
Prerequisite: Registration in Level IV of an Honours programme in English; and permission of the Department. Departmental permission slip required. Enrolment is limited.

NOTE:
Level IV seminars are open only to Honours students registered in Level IV of an English programme. Enrolment will be limited to 15 students per seminar. The Department is able to offer only a selection of the seminars listed below every year. A list of seminars to be offered will be available prior to registration.

ENGLISH 4A93 - AFRICAN-AMERICAN WOMEN WRITERS
A study of a selection of African-American women writers, including Hurston, Walker, Morrison and Naylor, with a consideration of gender and race in literary theory.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4A9C - ARISTOPHANIC COMEDY AND LATER DRAMA
A study of Aristophanic comedy and of some later European drama which follows the Aristophanic model—from Aristophanes and Plautus to Ionesco, Orton and Stoppard.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4A9P - STUDIES IN AMERICAN POETRY
An in-depth study of some major figures in the tradition, with attention paid to changes in voice, form and preoccupation from poet to poet.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4AP3 - RHETORIC, CULTURE, CATASTROPHE: AIDS AND ITS REPRESENTATIONS
An examination of selected novels, films, autobiographical writings and theoretical texts about AIDS, with an emphasis on the cultural discourses surrounding the AIDS crisis. Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4AW3 - ASIAN AMERICAN WRITING
An examination of selected prose texts by American writers of Asian origin. Issues of immigration, multiculturalism, race, and gender will be given close attention.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4BC3 - MODERN BRITISH COMIC NOVELS
The course will deal with a number of representative comic novels within a broad theoretical context. It will investigate some of the ways in which humour is related to social attitudes toward such matters as class, ethnicity, gender and politics.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4BG3 - THE BLOOMSBURY GROUP
An examination of the literary and cultural phenomenon known as Bloomsbury, focusing on the novels of Virginia Woolf and E.M. Forster.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4BL3 - THE BIBLE AND LITERATURE
A critical discussion of the Bible's overall narrative structure, the typological correspondences between Old and New Testaments and the use made of the Bible by poets and other artists.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4BP3 - CROSS-CURRENTS IN CONTEMPORARY BRITISH POETRY
Close readings of selected works by three contemporary British poets - Philip Larkin, Ted Hughes and Charles Tomlinson.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.
ENGLISH 4CF3 CONTEMPORARY FICTION
A study of recent English and American fiction, with emphasis on metafiction as well as the relationship between contemporary literary theory and fiction.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4CM3 CHRISTOPHER MARLOWE
A consideration of Marlowe as poet, playwright, and as the subject of a study of recent English and American fiction, with emphasis on metafiction as a dimension of his critical readings of selected major works that reflect the international outlook of some Canadian writers.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4CN3 BEYOND CANADIAN NATIONALISM
Critical readings of selected major works that reflect the international outlook of some Canadian writers.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4CW3 FEMINIST LITERARY THEORY AND CANADIAN WOMEN POETS
A discussion of several contemporary Canadian women poets from the perspective of feminist literary theory.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4DE3 STUDIES IN VICTORIAN FICTION: CHARLES DICKENS AND GEORGE ELIOT
A critical reading of selected novels by Dickens and Eliot, with consideration of their development, their contribution to the novel as genre, and their insights into Victorian society and the modern world.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4DH3 D.H. LAWRENCE
A study of selected works by D.H. Lawrence, focusing upon several novels with some attention to his shorter fiction, poetry and non-fictional prose.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4DV3 DREAMS, VISIONS AND ALLEGORY IN MIDDLE ENGLISH LITERATURE
A study of the evolution of the modes of literary dreams, visions and allegory through texts inherited from classical culture and their development within the medieval world.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4EL3 ENVIRONMENTAL LITERATURE
A study of the ways in which literary texts mediate between culture and nature using traditional, scientific, environmentalist, eco-feminist, native American, and deep ecological approaches.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4KR3 SEX AND SOCIETY IN ENGLISH RENAISSANCE LITERATURE
A study of the institutionalization of sexuality during the English Renaissance as presented in the literary discourse of the age.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4ES3 18TH-CENTURY ENGLISH SATIRE
Close readings of the satiric writings of Dryden, Swift and Pope, with attention to the nature and function of satire and its development from classical literature.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4EW3 THE ART AND THOUGHT OF EVELYN WAUGH
An examination of the development of Waugh's fiction, with attention also given to his non-fictional prose in diaries and letters.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4FA3 FAUST IN DRAMA, OPERA, NOVEL AND FILM
A study of the Faust myth, its origins and different expressions in various periods and media.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4FT3 THE FAIRY TALE
A study of the fairy tale from the structuralist, psychoanalytic, and sociological points of view, concentrating on the tales of the Brothers Grimm in translation and considering the importance of fairy tales in acculturation and their symbolic significance.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4GF3 GENRE FICTION
A study of examples from three genres rarely considered academically respectable (children's fiction, science fiction and the detective novel) in an attempt to examine the nature of genre fiction.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4GH3 THE POETRY OF GEORGE HERBERT
Close readings of most of Herbert's English poems, with attention to the poetical and theological concerns of early 17th-century England.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4H3 HEMINGWAY AND FAULKNER
A study of selected novels of Hemingway and Faulkner, focusing primarily on psychological, racial and gender issues.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4JD3 JOHN DONNE'S ANATOMIE AND THE CRISES OF THE TIMES
The course explores Donne's witty, passionate contemplations on intellectual upheaval in the early modern world—the 'Anatomie' and 'Progres of the Soul'—and its contexts.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4LL3 THE LYRIC OF LOVE AND LOSS: SHAKESPEARE, DONNE, HARDY AND YEATS
Readings of sets of poems dealing with the experiences of human love and loss by two Renaissance and two Modern poets, with some study of the cultural backgrounds of such literature.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4ML3 MARGARET LAURENCE
The seminar will study the novels and short stories of Margaret Laurence. Also for comparative purposes, one work by each of Atwood and Munro will be studied.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4NH3 HAWTHORNE
This seminar will examine the works of Nathaniel Hawthorne, with special attention to structural and psychological aspects of his writings.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English
Antirequisite: ENGLISH 4IM3
Enrolment is limited. Departmental permission required.
ENGLISH 4PT3  PSYCHOANALYTIC AND OTHER CRITICAL APPROACHES TO FICTION
The application of psychoanalytic and other theories to several novels and short stories to explore the ways in which unconscious phantasy gives rise to and organizes such literary elements as conflict, character, symbol and form.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4QP3  19TH- AND 20TH-CENTURY QUÉBÉCOIS POETRY IN TRANSLATION
An examination of the work of the major québécois poets of the last two centuries, beginning with the poetry of the land and ending with "poets of the revolution".
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4TF3  TIMOTHY FINDLEY AND THE CONSTRUCTION OF MASCULINITIES
This seminar will allow for the intensive reading of Findley's seven novels (to date) and one of his (two) short story collections. The seminar will focus on Findley's study of the constructedness of masculinities in modern and contemporary Western societies.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4UT3  UTOPIAN LITERATURE
A study of the genre through English literature, from its roots in Plato's Republic, through the Middle Ages and the Renaissance to contemporary literature.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4WB3  WILLIAM BLAKE'S POETRY AND DESIGNS
A study of the work of William Blake, his prose tracts, letters, poems, illustrations and visual designs.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4WC3  THE WITCHCRAFT CONTROVERSY IN PRINT AND ON STAGE, 1565-1655
An exploration of conflicting attitudes toward witches in England and Scotland, questioning ideological assumptions about gender, class, education, health, social welfare, marriage, and sexuality.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4WH3  WRITERS IN HOLLYWOOD
The course will examine some of the relationships between literature and film by studying selected novels by William Faulkner, F. Scott Fitzgerald and Raymond Chandler, films based on these novels, and films for which these writers wrote the scripts.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4WN3  WOMEN AND NATURE IN CANADIAN LITERATURE
A study of fiction and poetry by Canadian women, exploring some of the issues raised by the long tradition of identifying nature as female.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4WP3  WAR AND PEACE IN LITERATURE
A close study of selected literary works in English that focus on the experience of war and the search for peace, especially in relation to the American Civil War, the First and Second World Wars and the Vietnam War.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4W3  SHAKESPEARE: CHANGING STYLES OF INTERPRETATION OF SELECTED PLAYS
An examination of significant alterations in this century of critical attitudes to several Shakespeare plays and the wide variation in their representation and reception.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENGLISH 4W3  WOMEN WRITERS OF THE EIGHTEENTH CENTURY
An exploration of poetry and fiction written by women in the 18th century, with particular attention to the social and philosophical concerns of these writers.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours programme in English. Enrolment is limited. Departmental permission required.

ENVIRONMENTAL SCIENCE

NOTE:
The three Level I courses listed are the basic courses required in the programmes in Geography, Geology and Honours Science (Environmental Science Option). To determine which to choose, please consult the programme admission requirements in the departmental listings.

Courses  If no prerequisite is listed, the course is open.

ENVR SC 1B03  THE BIOSPHERE
Characteristics of the biosphere and introduction to major environmental processes and issues.
Two lectures, one lab; one term
Pre requisite: ENVIR SC 1A06

ENVR SC 1G03  EARTH PROCESSES
An introduction to geology and geomorphology through the study of dynamic processes and cycles, particularly global plate tectonics and continental erosion.
Two lectures, one lab; one term
Pre requisite: ENVIR SC 1A06, GECG 1G03, GEOLOGY 1G03

ENVR SC 1H03  ATMOSPHERE AND HYDROSPHERE
An introduction to the controls on and behaviour of weather, climate and surface waters.
Two lectures, one lab; one term
Pre requisite: ENVIR SC 1A06, GECG 1G03

ENVR SC 3A03  ANALYTICAL ENVIRONMENTAL CHEMISTRY
An introduction to the basic principles of sampling for analysis; of sample handling and separations for analysis; and, of selected methods for the detection and determination of analyte species.
Two lectures, one lab (three hours); one term
Pre requisite: CHEM 2A03 or CHEM 2N03 and registration in Honours Science (Environmental Science Option) or a programme in Chemical Engineering.

ENVR SC 4103  MINERALS AND SOCIETY
Case studies of mineral structures and properties with implications of practical importance. Gem and other economic minerals; workplace and environmental hazards.
Two lectures, one tutorial; one term
Pre requisite: Registration in Level IV of Honours Science (Environmental Science Option)
Cross-list: GEOLOGY 4103

ENVR SC 4W03  ENVIRONMENTAL ANALYSIS: A CASE HISTORY APPROACH
Three lectures; one term
Pre requisite: Registration in Level IV of Honours Science (Environmental Science Option) or Honours Geography and Environmental Science.
Cross-list: GEOLOGY 4W03
FRENCH

Faculty as of January 15, 1997

Chair
Owen Morgan

Professors Emeriti
W. Norman Jeeves/M.A. (Cambridge), Lès L. (Bordeaux)
G. Derek West/M.A. (Oxford), Ph.D. (London)

Professors
Caroline Bayard/L. és L. (Toulouse), M.A., Ph.D. (Montreal)
Madeleine Jeay/L. és L. (Bordeaux), M.A., Ph.D. (Montréal)
Owen R. Morgan/B.A., M.A. (Nottingham)
César Rouben/L. és S. (Paris-Sorbonne), B.A. (Sir George Williams), M.A., Ph.D. (McGill)

Associate Professors

Assistant Professors
Michael Kliffer/B.A. (British Columbia), M.A. (Michigan), Ph.D. (Cornell)
Dominique Lepicq/L. és L. (Caen), M.A. (Ottawa), Ph.D. (Toronto)
Gabriel Moyal/B.A., M.A., Ph.D. (Toronto)
Eliane Nardocchio/B.A. (St. Francis-Xavier), M.A. (Middlebury), Ph.D. (Laval)

Programme Coordinator, Continuing Education

Instructors
Pierre Haillot/L. és L., M. és L. (Paris III), Ph.D. (Toronto)/part-time

Programmes

Courses

If no prerequisite is listed, the course is open.

FRENCH 1A06 INTRODUCTION TO FRENCH STUDIES: ADVANCED LEVEL
Review of grammar, oral and written practice, and introduction to literary analysis by the reading of selected French and/or French-Canadian texts.
Three lectures, one lab; two terms
Prerequisite: OAC French with a grade of at least 80 percent.
Antirequisite: FRENCH 2M06

FRENCH 1N06 INTENSIVE FRENCH GRAMMAR
This course is intended to be a review of basic grammar and will include intensive computer-aided drilling, vocabulary building and composition.
Three tutorials; two terms
Prerequisite: OAC French with a grade of less than 80 percent or FRENCH 1206 with a grade of at least A-
The Department reserves the right to place students in the course most appropriate to their abilities.

FRENCH 1Z06 BEGINNER'S INTENSIVE FRENCH I
An intensive course for developing basic skills in both written and spoken French. The normal sequel to this course is FRENCH 2Z06.
Five hours (including lab practice); two terms
Prerequisite: OAC French. Not open to Francophones. Students with prior knowledge of the language, as determined by a placement test, may be required to take an appropriate alternative.
Enrolment is limited.

FRENCH 2B03 FRENCH LANGUAGE PRACTICE I
A course designed to improve competence in oral and written expression.
Written proficiency includes the study of vocabulary, grammar and composition.
The oral component will stress listening, comprehension and conversational proficiency.
Three lectures, one tutorial; one term
Prerequisite: FRENCH 1A06 or 1N05 or 1N06 or 2M06
Antirequisite: FRENCH 2A03 or 2C03

FRENCH 2B04 FRENCH LANGUAGE PRACTICE II
Continuation of FRENCH 2B03.
Three lectures, one tutorial; one term.
Prerequisite: FRENCH 2B03 with a grade of at least C-
Antirequisite: FRENCH 2A03 or 2C03

FRENCH 2D03 INTRODUCTION TO THE CIVILIZATION OF FRENCH CANADA
The study of the socio-political, cultural, religious, and linguistic evolution of early French Canada, of modern Quebec, and of the French-Canadian diaspora.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N05 or 1N06 or 2M06

FRENCH 2E03 LITERATURE OF QUEBEC
Selected novels, plays, and poems representative of the main currents of Quebec Literature.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N05 or 1N06 or 2M06

FRENCH 2G03 FRENCH LANGUAGE PRACTICE: ELEMENTARY TRANSLATION
An introduction to translation techniques (French to English and English to French) and to the use of pertinent reference material.
Three lectures; one term
Prerequisite: A grade of at least B in FRENCH 1A06 or 2M06 or B+ in 1N06 or 1N06 and registration in a French programme
Enrolment is limited.

FRENCH 2H03 INTRODUCTION TO FRENCH LINGUISTICS I
A view of language as a system (Saussure, Jakobson, Martinet). Descriptive vs. prescriptive approaches to language studies will be considered, with stress on the French-speaking world. Speech sounds (phonetics) and their systematic patterning (phonology), mainly with application to French, will also be examined.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N06 or 1N06 or 2M06

FRENCH 2J03 19TH-CENTURY FRENCH LITERATURE I
Selected novels, plays and poems representative of the main currents of 19th-century French literature.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N06 or 1N06 or 2M06

ENTRY INTO LEVEL I COURSES AND FRENCH PROGRAMMES

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FRENCH 2J3 19TH-CENTURY FRENCH LITERATURE II
Selected themes appearing in the works of the major French writers of the 19th century.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2M06 INTRODUCTION TO FRENCH STUDIES: ADVANCED LEVEL
Review of grammar, oral and written practice, and introduction to literary analysis by the reading of selected French and/or French-Canadian texts.
Three lectures, one lab; two terms
Prerequisite: FRENCH 1A06 or 1NN6
Antirequisite: FRENCH 1A06

FRENCH 2N03 INTRODUCTION TO THE CIVILIZATION OF FRANCE
The study of contemporary France through a selection of texts and audio-visual materials.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2W03 20TH-CENTURY FRENCH LITERATURE I
Aspects of the development of 20th-century literature to the end of the Second World War.
Three lectures; one term
Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2Z06 BEGINNER'S INTENSIVE FRENCH II
A sequel to FRENCH 1Z06. Review of grammatical structures. Expansion of vocabulary. Conversation practice. Study of texts with class discussion. The normal sequel to this course is FRENCH 2M06. This course cannot be applied toward a Minor in Francophone Studies. Two tutorials, three computer labs; two terms
Prerequisite: FRENCH 1Z06
Enrollment is limited.

FRENCH 3A03 EVOLUTION OF THE FRENCH LANGUAGE
This course will be based on treatises of the French language dating from the Middle Ages to the present and will show how French has changed over the centuries. The subject matter is divided into four modules treating vocabulary, syntax, verb forms and spelling from a historical point of view.
Three lectures; one term
Prerequisite: FRENCH 2BB3
Alternates with FRENCH 3S53.

FRENCH 3A04 THE MODERN FRENCH-CANADIAN NOVEL
Representative novels by contemporary authors with emphasis upon the relationship between technique and meaning.
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06

FRENCH 3B03 CONTEMPORARY QUEBEC THEATRE
Contemporary experimental theatre, and representative playwrights such as Marcel Dubé and Michel Tremblay.
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06

FRENCH 3C03 FRENCH LANGUAGE PRACTICE: WRITTEN
Advanced grammar and composition; introduction to stylistics.
Three lectures; one term
Prerequisite: FRENCH 2A03 or 2BB3 with a grade of at least C. Students may repeat FRENCH 3C03 to improve their grade.

FRENCH 3C03 FRENCH LANGUAGE PRACTICE: INTERMEDIATE TRANSLATION
A course designed for the systematic translation of texts from English to French, including comparative stylistics, with special reference to problems in the translation of texts of a general nature.
Three lectures; one term
Prerequisite: One of either FRENCH 2A03 and 2G03 or FRENCH 2BB3 and 2G03
Enrollment is limited.

FRENCH 3F03 FRENCH LANGUAGE PRACTICE: FRENCH CIVILIZATION AND CULTURE
An introduction to contemporary French society through oral discussions and presentations.
Two tutorials; two terms
Prerequisite: FRENCH 2BB3. Not available to Francophone students with native fluency.
Enrollment is limited.

FRENCH 3G03 FRENCH LANGUAGE PRACTICE: TRANSLATION FROM FRENCH TO ENGLISH
The emphasis will be on inferring strategies and stylistic comparisons between the two languages. Translation materials will be drawn from contemporary magazines such as L'Express, Le Nouvel Observateur and L'Actualité.
Three lectures; one term
Prerequisite: FRENCH 2G03

FRENCH 3H03 INTRODUCTION TO FRENCH LINGUISTICS II
The study of word formation (morphology), sentence structure (syntax) and meaning (semantics). Contemporary French will be the primary data for all three components. Both functional and formal approaches will be examined.
Three lectures; one term
Prerequisite: FRENCH 2503; FRENCH 2H03 and/or LINGUIST 1A06 are recommended.

FRENCH 3N03 FRENCH SOCIOLINGUISTICS
The study of linguistic variations within French-speaking communities with special emphasis on sociolinguistic issues arising in multilingual societies (Africa, America, Europe...).
Three lectures; one term
Prerequisite: FRENCH 2H03

FRENCH 3Q03 18TH-CENTURY FRENCH LITERATURE I
The early 18th century with emphasis on Montesquieu, Malraux and Prévost, and on the early writings of Voltaire.
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06

FRENCH 3Q04 18TH-CENTURY FRENCH LITERATURE II
A consideration of selected themes as they appear in the works of major French writers of the 17th century.
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06

FRENCH 3Q05 17TH-CENTURY FRENCH LITERATURE I
A study of selected plays by Corneille, Molière and Racine.
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06

FRENCH 3Q06 17TH-CENTURY FRENCH LITERATURE II
An introduction to contemporary French society through oral discussions and presentations.
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06

FRENCH 3S53 STUDIES IN MEDIEVAL LANGUAGE AND CIVILIZATION
An exploration of the particular characteristics of Old French through a selection of Medieval texts representative of the civilization of the period (chivalry, courtly love, feasts and rituals).
Three lectures; one term
Prerequisite: FRENCH 2BB3
Alternates with FRENCH 3A03

FRENCH 3Z03 AFRICAN AND CARIBBEAN FRENCH LITERATURES
Three lectures; one term
Prerequisite: Six units of French beyond Level 1, excluding FRENCH 2M06 and 2Z06; or permission of the Department

FRENCH 4A03 FRENCH LANGUAGE PRACTICE
Advanced stylistics and composition.
Three lectures; one term
Prerequisite: A grade of at least B- in FRENCH 3C03 and registration in an Honours programme in French. Students must complete FRENCH 4A03 to graduate with an Honours or a Combined Honours B.A. in French.
FRENCH 4BB3 FRENCH LANGUAGE PRACTICE: ADVANCED TRANSLATION
Practice in the translation into French of texts of a specialized nature (e.g., administration, business, politics).
Three tutorials; one term
Prerequisite: FRENCH 3C03 and 3CC3
Enrolment is limited.

FRENCH 4E03 APPLIED LINGUISTICS AND SECOND-LANGUAGE LEARNING
An examination of various aspects of second language acquisition as applied to the teaching of French, with special emphasis on psycholinguistic factors.
Seminar (two hours); one term
Prerequisite: FRENCH 2H03

FRENCH 4F03 TOPICS IN 18TH-CENTURY FRENCH LITERATURE
Previous topics include: Voltaire. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4F03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4H03 TOPICS IN LINGUISTICS
Previous topics include: Lexicology, Pragmatics, Sociallinguistics. Consult the Department concerning topic to be offered.
Seminar (three hours); one term
Prerequisite: FRENCH 2H03
FRENCH 4H03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4I03 TOPICS IN FRENCH POETRY
Previous topics include: Twentieth-Century Poetry, Poets and Humour, Object Poetry. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4I03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4K03 THE 18TH-CENTURY FRENCH NOVEL
A study of the genesis and themes of representative 18th-century novels.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.

FRENCH 4L03 TOPICS IN FRENCH AND CARIBBEAN FRENCH LITERATURES
Previous topics include: Contemporary Writers. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4L03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4M03 THE 18TH-CENTURY FRENCH NOVEL
A study of the genesis and themes of representative 18th-century novels.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4M03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4N03 TOPICS IN THE FRENCH NOVEL
Previous topics include: Emile Zola. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4N03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4O03 20TH-CENTURY FRENCH THEATRE
A study of the ideas and dramatic techniques of the playwrights of the modern period who have influenced the development of today's theatre in France.
Three lectures; one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.

FRENCH 4P03 TOPICS IN 17TH-CENTURY FRENCH LITERATURE
Previous topics include: Corneille, Racine, Molière. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: FRENCH 3G03
FRENCH 4P03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4S03 MEDIEVAL LITERATURE
A study of selected texts of Medieval French Literature: songs and poetry of the troubadours and trouveres, Arthurian romance, comic and satiric narratives. Modern French translations will be used.
Three tutorials; one term
Prerequisite: FRENCH 2B83

FRENCH 4T03 INDEPENDENT STUDY
The student will prepare under the supervision of a faculty member a research paper involving independent research in an area of study in which the student has already demonstrated a high level of basic knowledge.
Prerequisite: Registration in Level IV of an Honours programme in French and permission of the FRENCH 4T03 Committee

FRENCH 4U03 TOPICS IN FRENCH-CANADIAN LITERATURE
Previous topics include: Folktales of French Canada, Acadia, Women Writers of Quebec. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4U03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4V03 LINGUISTICS AND MODERN FRENCH LITERARY CRITICISM (FROM STRUCTURALISM TO SEMIOTICS)
General linguistics applied to literary analysis. Includes narrative structures, pragmatics and sign theory.
Seminar (two hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.

FRENCH 4W03 TOPICS IN 20TH-CENTURY FRENCH LITERATURE
Previous topics include: Women's Writing, The essay. Consult the Department concerning topic to be offered.
Seminar (three hours); one term
Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2206.
FRENCH 4W03 may be repeated, if on a different topic, to a total of six units.

NOTE:
The following course, of interest to students of French, is offered by the School of Art, Drama and Music:
DRAMA 3TT3 TOPICS IN NATIONAL CINEMAS II (French Cinema will be a frequent topic of this course.)

GEOGRAPHY

Faculty as of January 15, 1997

Chair
S. Martin Taylor

Associate Chair
Pavlos S. Kanaroglou

Professors Emeriti
Andrew F. Burghardt/A.B. (Harvard), M.A., Ph.D. (Wisconsin)
Brian T. Bunting/A.B. (Shelﬁeld), Ph.D. (London)
John J. Drake/A.B. (L.H.E.), M.A., Ph.D. (Cambridge)/Professor
R. Lloyd G. Reeds/A.B. (Louvain), M.A. (Louvain), Ph.D. (McMaster)
Kao-Lee Liai/B.S. (National Taiwan), M.A., Ph.D. (Clark)
Martin Taylor/B.Sc., M.A., Ph.D. (McGill), M.C.P., Ph.D. (Ohio State), D.Sc. (Louvain)/Professor of Economics
Wayne R. Rouse/B.Sc. (McMaster), M.Sc., Ph.D. (McGill)
S. Martin Taylor/B.A. (Bristol), M.A., Ph.D. (British Columbia)
Ming-ko Woo/M.A. (Hong Kong), Ph.D. (British Columbia)

Associate Professors
Vera Chouinard/B.A. (Western Ontario), M.A. (Toronto), Ph.D. (McMaster)
Carolyh H. Eyles/B.Sc. (East Anglia), M.Sc., Ph.D. (Toronto)

Assistant Professor
Susan J. Elliott/M.A. Ph.D. (McMaster)

Department Notes:
1. Course codes ending with * indicate a Science course.
2. Students are advised that not all courses will be offered in every year.

Courses

ENVIR SC 1B03 THE BIOSPHERE
Characteristics of the biosphere and introduction to major environmental processes and issues.
Two lectures, one lab; one term
Antirequisite: ENVIR SC 1A06

ENVIR SC 1G03 EARTH PROCESSES
An introduction to geology and geomorphology through the study of major processes and cycles, particularly global plate tectonics and continental erosion.
Two lectures, one lab; one term
Antirequisite: ENVIR SC 1A06, GEOG 1G03, GEOLOGY 1C03

ENVIR SC 1H03 ATMOSPHERE AND HYDROSHERE
An introduction to the controls on and behaviour of weather, climate and surface waters.
Two lectures, one lab; one term
Antirequisite: ENVIR SC 1A06, GEOG 1C03

GEOG 1B06 HUMAN GEOGRAPHY
The spatial organization of people, their settlements and their activities. Topics range from global patterns of population and resources to individual spatial decisions.
Two lectures, one lab alternate weeks, one tutorial (one hour) alternate weeks; two terms
Prerequisite: GEOG 1B06

GEOG 2A03 LOCATIONAL ANALYSIS
Spatial location theory and spatial analysis methods as related to the siting of resource, manufacturing, and service activities.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 1B06

GEOG 2B03 URBAN ECONOMIC GEOGRAPHY
Economic-geographical analysis applied to urban problems at different scales of aggregation. Topics include urbanization, urban spatial structure, major urban externalities and urban size.
Three lectures; one term
Prerequisite: GEOG 1B06

GEOG 2C03 CHINA: PEOPLE AND LAND IN TRANSITION
Studies of the natural environment, cultural-historical setting, resources and economic development of China. Emphasis is placed on the changing relationship between the people and the environment.
Three lectures; one term

GEOG 2D03 URBAN HISTORICAL GEOGRAPHY
The historical development of cities with particular reference to old world origins, and focusing on North America since 1850.
Two lectures, one lab (two hours); one term

GEOG 2E03 CANADA
The geography of Canada emphasizing the economic and social geography of regions and current development issues.
Three lectures; one term

GEOG 2F03* EARTH’S SURFACE CLIMATES
The surface heat and water balance of natural and man-modified landscapes.
Two lectures; one lab (two hours); one term
Prerequisite: One of GEOG 1C03, ENVIR SC 1A06

GEOG 2L03* GEOGRAPHIC INFORMATION PROCESSING
An introduction to the use of the microcomputer for the illustration and statistical analysis of geographical data.
Prerequisite: Registration in a Geography programme
Antirequisite: STATS 1CC3
Not offered in 1997-98

GEOG 2M03* APPLIED SPATIAL STATISTICS
An introduction to the use of the microcomputer for geographical data analysis. Descriptive and inferential statistical methods specific to spatial data will be discussed.
Two lectures; one lab (two hours); one term
Prerequisite: One of GEOG 2L03, STATS 1CC3; registration in a Geography or Geology programme

GEOG 2P03 THE UNITED STATES OF AMERICA
The physical and economic geography of the United States.
Three lectures; one term

GEOG 2RR3 RESEARCH METHODS IN SOCIAL GEOGRAPHY
An introduction to research methods in social geography. Emphasis is placed on the application of various methods to understanding human spatial behaviour.
Two lectures; one lab (two hours); one term
Prerequisite: GEOG 1B06

GEOG 2T03* FLUVIAL GEOMORPHOLOGY
The effects of moving water on the earth's surface: principles of sediment entrainment, fluvial flow, stream transport, and analysis of resulting landforms, such as terraces and deltas.
Two lectures, one lab (two hours); one term
Prerequisite: One of GEOG 1C03, 1G03, ENVIR SC 1A06, GEOLOGY 1C03

GEOG 2W03* HYDROLOGY IN CANADA
A discussion of fresh water resources, including both surface and ground water.
Three lectures; one term
Prerequisite: One of GEOG 1C03, 1G03, ENVIR SC 1A06, GEOLOGY 1C03

GEOG 2Y03 URBAN AND REGIONAL DEVELOPMENT
Contemporary trends in urban and regional development, emphasizing debates on the causes of change and the policies used to address development problems.
Two lectures; one tutorial (one hour); one term
Prerequisite: GEOG 1B06

GEOG 3C03* ENVIRONMENTAL HAZARDS
Geological and man-induced hazards affecting settlements and the natural environment will be discussed.
Two lectures, one lab; one term
Prerequisite: One of STATS 1CC3, ENGSOCY 3Z03

GEOG 3D03 TRANSPORTATION GEOGRAPHY
Principles underlying the movement of goods and people in space with discussion of its economic, social and environmental impacts.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 1B06 or ECON 1A06

GEOG 3E03* FIELD METHODS IN PHYSICAL GEOGRAPHY
Field methods, including survey design, sampling, experiments, measurements, data collection, and presentation and the use and care of equipment.
One lecture, one lab (three hours); one term
Prerequisite: One of GEOG 2N03, STATS 1CC3 and a grade of at least C+ in one of ENVIR SC 1A06, GEOG 1C03, 1G03, ENVIR SC 1B03, 1G03, 1H03

GEOG 3T03 ELECTIVE COURSE
Courses offer topics in geography not covered in the above list.
GEOG 3EE3 FIEL D STUDY IN HUMAN GEOGRAPHY
Introduction to field research in Human Geography, usually in the Hamilton area.
Prerequisite: GEOG 2N03, 2R3

GEOG 3F03* PHYSICAL CLIMATOLOGY
The physical basis of large scale climate and mechanisms of climatic change.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 2F03, and either registration in a programme in the Faculty of Science or one of GEOG 2LL3, STATS 1CC3, COMP SCI 1MA3, 1MC3

GEOG 3G03 POPULATION GROWTH AND DISTRIBUTION
Facts, theories, and major issues about the growth and distribution of human population.
Three lectures; one term
Prerequisite: GEOG 1B06

GEOG 3J03* PLANETARY AND LUNAR GEOLOGY AND GEOMORPHOLOGY
The surface morphology of planets and moons of the solar system, with particular reference to the rocky bodies. Comparative studies are emphasized.
Three lectures; one term
Prerequisite: One of GEOG 1C03, 1G03, ENVIR SC 1A06, 1B03, 1G03, 1H03, GEOLOGY 1C03, and successful completion of at least 12 units of Level II (or above) Science courses
Cross-list: GEOLOGY 3J03

GEOG 3J03* RESOURCE MANAGEMENT
A discussion of natural resource scarcity, resource allocation, preservation/conservation issues, models of resource management and resource policies in Canada.
Two lectures, one lab; one term
Prerequisite: GEOG 2N03

GEOG 3J13 GEOGRAPHY OF JAPAN
Human and physical geography of Japan with emphasis on historical, international, demographic and economic aspects.
Three lectures; one term
Prerequisite: GEOG 1B06 or registration in Japanese Studies programme
Cross-list: JAPAN ST 3J13

GEOG 3L03* MULTIVARIATE ANALYSIS IN GEOGRAPHY
Management and analysis of multivariate data sets in human and physical geography, with an emphasis on multiple regression.
Two lectures, one lab (two hours); one term
Prerequisite: One of GEOG 2N03, ECON 2B03, SOCIOL 2Y03

GEOG 3M03* GLACIAL AND PERIGLACIAL GEOMORPHOLOGY
The nature and development of glaciers, glacial landform systems and periglacial processes.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 2T03

GEOG 3N03* GEOGRAPHICAL INFORMATION SYSTEMS
Functionality and application of both raster-based and vector-based geographical information systems.
Two lectures; one lab (two hours); one term
Prerequisite: GEOG 2N03

GEOG 3O03* EXPLANATION IN GEOGRAPHY
The history of modes of explanation in geography, focusing on the application of the scientific model, and with an emphasis on the formulation of a research proposal.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 2N03

GEOG 3P03* BIOGEOGRAPHY: ENVIRONMENTAL CHANGE AND THE BIOSPHERE
Past, present and future natural and anthropogenic changes in the environment are examined in terms of their impact on plant and animal communities.
Three lectures; one term
Prerequisite: One of GEOG 1C03, 1G03, ENVIR SC 1A06, 1B03, 1G03, 1H03, BIOLOGY 1A06, 1A06, 1AA3, GEOLOGY 1C03

GEOG 3R03 GEOGRAPHY OF A SELECTED WORLD REGION
The study of an area outside North America which will include topics in physical and human geography.
Three lectures; one term
Prerequisite: One of GEOG 1B06, 1C03, 1G03, ENVIR SC 1G03, 1H03.
Prerequisite: GEOG 3R03 may be repeated, if on a different topic, with permission of the Department.

GEOG 3T03 GEOGRAPHY OF PLANNING
A review of historical and contemporary approaches to city and regional planning problems.
Two lectures, one lab (two hours); one term
Prerequisite: One of GEOG 2A03, 2B03, 2R03, 2Y03

GEOG 3U03* ENVIRONMENTAL ISSUES: THE CANADIAN CONTEXT
The application of ecological principles and methods to the analysis of problems in the natural and built environments of Canada.
Two lectures, one lab; one term
Prerequisite: Registration in an Honours Geography, Biology, Geology, Engineering and Society, or the Honours Science (Environmental Science Option) programme

GEOG 3U03* ENVIRONMENTAL IMPACT ASSESSMENT
Technical and policy issues involved in the production and the appraisal of environmental impact assessments.
Two lectures, one lab; one term
Prerequisite: Registration in an Honours Geography, Biology, Geology, Engineering and Society, or the Honours Science (Environmental Science Option) programme

GEOG 3W03* HYDROLOGY
Principles of hydrology and their applications in physical geography.
Two lectures, one lab (two hours); one term
Prerequisite: Enrollment in Level III (or above) of a Science programme.
GEOG 2N03 and one of GEOG 1C03, 1G03, ENVIR SC 1G03, 1H03

GEOG 3X03 URBAN MODELS AND POLICY ANALYSIS
A survey of modern literature on urban spatial structure. Topics include morphology, adjustments to change, and such phenomena as sudden urban growth and the decline of central cities.
Two lectures; one lab (two hours); one term
Prerequisite: GEOG 2B03 or ECON 2G03 or 2L06
Cross-list: ECON 3X03

GEOG 3Z03 URBAN SOCIAL GEOGRAPHY
The social geography of North American cities. Topics include commuting, segregation, inner-city gentrification, suburban development.
Lectures and seminars; one term
Prerequisite: GEOG 2R03 or 2R3. GEOG 2Y03 and 2D03 are recommended.

GEOG 4A03* KARST GEOMORPHOLOGY AND HYDROGEOLOGY
Karst rocks, equilibria and kinetics of their aqueous dissolution; cavern genesis and porosity in aquifers; speleothem chronology; features of surface landforms; practical applications.
Three lectures; one term
Prerequisite: GEOG 2T03

GEOG 4B09* SENIOR THESIS FOR CO-OP STUDENTS
A thesis based upon a research project carried out under the direction of a member of the Geography Department.
Prerequisite: Registration in the Honours Geography and Environmental Science Co-op Programme. Approval of the project must be obtained from the Chair of the Department at least six weeks prior to the beginning of the research project.

GEOG 4CC3* REVIEW PAPER
The student will conduct a comprehensive review of a selected topic in Geography. The review paper is due before the final examination period.
One seminar (two hours); first term
Prerequisite: GEOG 3003 and registration in Level IV of an Honours programme in Geography
Antirequisite: GEOG 4V6 or 4C06

GEOG 4C06* SENIOR THESIS
A thesis based on a research project carried out under the direction of a Faculty member.
One seminar (two hours), every other week; two terms
Prerequisite: A grade of at least 85 in GEOG 3003, a Cumulative Average of at least 6.0 and permission of the course coordinator
Antirequisite: GEOG 4V6 or 4C03

GEOG 4D03* COASTAL GEOMORPHOLOGY
The dynamics and morphologies of the shore zone.
Three lectures; one lab; one term
Prerequisite: GEOG 2T03
GEOG 4E03* FIELD COURSE
Detailed study of a particular aspect of physical geography in the field. Held in the two weeks prior to Fall registration; report to be submitted before the end of first term. Various topics and locations: details announced in March. Students enrolling in this course must pay both the incidental fees, as prescribed by the department, and the regular tuition fees. Prerequisites: Permission of the instructor, which is given only if the appropriate Level II and Level III courses have been passed.

GEOG 4F03 URBAN DEVELOPMENT AND POLICY ISSUES
Current debates on urban development and policy issues. Emphasis on the political economy of urban change.
Three lectures; one term
Prerequisite: GEOG 2Y03, or permission of the instructor

GEOG 4H03* LAND USE AND TRANSPORTATION
Methods for the analysis and prediction of transportation and land use patterns in cities, with applications to urban planning and pollution problems.
Three lectures; one term
Prerequisite: GEOG 3N03
Cross-list: CIV 4H03

GEOG 4NN3* GEOGRAPHIC INFORMATION SYSTEMS MANAGEMENT AND APPLICATIONS
Analytical, operational, and institutional issues faced by the implementation of geographic information systems.
Two lectures; one lab (two hours) one term
Prerequisite: GEOG 3N03 with a grade of at least B-

GEOG 4P03* ADVANCED BIOGEOGRAPHY: METHODS OF ENVIRONMENTAL RECONSTRUCTION
Selected topics and methods of reconstructing past environmental conditions using evidence from historical records, tree-rings and plant fossils.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 3P03

GEOG 4Q03* CLIMATES IN HIGH LATITUDES
Aspects of the heat and water balance climatology of terrestrial ecosystems in northern areas, with emphasis on the Canadian sub-arctic and tundra.
Three lectures; one term
Prerequisite: GEOG 2F03

GEOG 4S03 GEOGRAPHY OF HEALTH CARE
The environmental determinants of health and the spatial dimensions of health care delivery.
Three lectures; one term
Prerequisite: Registration in Level IV of an Honours Geography programme or an Honours Geontology programme

GEOG 4T03 REGIONAL ANALYSIS AND PLANNING
Examination of processes and policies that influence urban form and the associated effects on natural environment.
Three lectures; one term
Prerequisite: GEOG 2B03 and 3T03

GEOG 4U03 SELECTED PROBLEMS IN URBAN PLANNING
An examination of planning as a public decision process, with emphasis on land use conflicts and their resolution in the Hamilton region.
Two seminars (two hours); one term
Prerequisite: GEOG 3T03

GEOG 4V6* THESIS IN ENVIRONMENTAL ISSUES
Students will select research topics in environmental science and prepare a thesis. Group work will be emphasized.
One seminar (two hours); two terms
Prerequisite: GEOG 3U03 and either GEOG 3U03 or 3U13
Antirequisite: GEOG 4C06, or 4CC3

GEOG 4W03* HYDROLOGIC MODELLING
A survey of deterministic and stochastic models in hydrology.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 3W03

GEOG 4X03 URBAN MODELS AND POLICY ANALYSIS II
A survey of modern literature on urban issues. Topics include welfare criteria, externalities, public goods and fiscal policies.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 3X03
Cross-list: ECON 4X03

GEOG 4Z03 THE LANDSCAPE OF URBAN HOUSING
Historical-geographical patterns in the way housing landscapes are produced, occupied and used. The effects of planning and housing policy on the landscape.
Lectures and seminars; one term
Prerequisite: GEOG 3203. GEOG 3T03 and 3N03 are recommended.

GEOLOGY

Faculty as of January 19, 1997

Chair
William A. Morris

University Professor

Henry P. Schwarz/B.A. (Chicago), M.S., Ph.D. (California Institute of Technology), F.R.S.C.

Professors Emeriti

Brian J. Burley/B.Sc. (London), M.Sc. (British Columbia), Ph.D. (McGill)
Paul M. Clifford/B.Sc. (Southampton), Ph.D. (London)
James H. Crockett/B.Sc. (New Brunswick, Oxford), Ph.D. (M.I.T.)
H. Douglas Gruny/B.Sc., Ph.D. (Manchester)
Gerard E.G. Westermann/B.Sc. (Braunschweig), Dipl. Geol., Dr. rer. nat. (Tubingen)

Professors

Alan P. Dickin/M.A. (Cambridge), D. Phil. (Oxford)
Robert H. McNutt/B.Sc. (New Brunswick), Ph.D. (M.I.T.) part-time
Michael J. Risk/B.Sc. (Toronto), M.Sc. (Western Ontario), Ph.D. (Southern California, L.A.)

Associate Professor

William A. Morris/B.Sc. (Leeds), Ph.D. (Open University)

Assistant Professors

Pierre Brassard/B.A., M.Sc. (Concordia), Ph.D. (INRS)
W. Jack Rink/B.Sc., Ph.D. (Florida State)

Associate Members

W. Brian Clark/(Physics) B.A. (Dublin), Ph.D. (McMaster)
Derek C. Ford/(Geography) M.A., D.Phil (Oxford), F.R.S.C.
Carolyn H. Eyles/(Geography) B.Sc. (East Anglia), M.Sc., Ph.D. (Toronto)
S. Brian McCann/(Geography) B.Sc. (Wales), Ph.D. (Cambridge)

Senior Demonstrator

Kenneth B. MacDonald/B.A., B.Ed. (Mount Allison)

Department Notes:

1. The Level I course designed for entry to the Geology program is ENVIR SC 1G03. In addition, students are strongly encouraged to take ENVIR SC 1C03 and 1H03 in Level I.
2. Geology is becoming increasingly specialized. As a result, preparation for employment and research work can involve some difficult decisions about courses. This is particularly true as work on environmental problems becomes steadily more important. As a guide and help to students, the Department of Geology has a pamphlet (available in the departmental office) which gives details of possible course streams leading towards careers in environmental science, as well as towards the more traditional areas of energy and mineral resources.
3. In certain cases students lacking the specific prerequisites listed for a course may be deemed, by the course instructor, to have equivalent qualifications. In such cases permission to register in the course may be requested from the instructor.
4. Some Level IV courses are available to students registered in Level III or IV of any programme provided the stated prerequisites have been met.

Courses

If no prerequisite is listed, the course is open.

ENVIR SC 1G03 EARTH PROCESSES
An introduction to geology and geomorphology through the study of dynamic processes and cycles, particularly global plate tectonics and continental erosion.
Two lectures, one lab; one term
Antirequisite: ENVIR SC 1A06, GEOG 1G03, GEOLOGY 1C03
GEOLOGY 2B04 \textit{OPTICAL CRYSTALLOGRAPHY} \textbf{AND MINERALOGY}

Elementary optical theory with applications to, and descriptive study of, the common rock-forming minerals. Introduction to crystal chemistry. The latter part of Geology 2B06.

Two lectures, one lab (two hours); in parts of both terms.

Prerequisite: Open only to students registered in Materials Engineering or Materials Science.

GEOLOGY 2B06 \textit{OPTICAL CRYSTALLOGRAPHY} \textbf{AND MINERALOGY}

Elementary crystallography prerequisite to optical crystallography. Elementary optical theory with applications to, and descriptive study of, the common rock-forming minerals. Introduction to crystal chemistry.

Two lectures, one lab (two hours); two terms.

Prerequisite: Registration in a Geology or B.Sc. Earth Science programme; or permission of the Department.

GEOLOGY 2C03 \textit{EARTH HISTORY}

Geological evolution of the Earth, emphasising North America, in the context of plate tectonics.

Two lectures, one lab (three hours); one term.

Prerequisite: Credit or registration in one of ENVIR SC 1A06, 1G03, GEOLOGY 1C03.

GEOLOGY 2D03 \textit{STRUCTURAL GEOLOGY}

A survey of the geometry of fractures and folds, their associated small-scale features, and their simple kinematic and dynamic analysis.

Two lectures, one lab (three hours); one term.

Prerequisite: One of ENVIR SC 1A06, 1G03, GEOLOGY 1C03.

GEOLOGY 2E01 \textit{HAND SPECIMEN PETROGRAPHY}

An introduction to the study of mineral and rock suites in hard specimen with emphasis on field associations.

One lab (two hours); one term.

Prerequisite: One of ENVIR SC 1A06, 1G03, GEOLOGY 1C03.

GEOLOGY 2E02 \textit{FIELD CAMP}

A field camp of about two weeks duration held immediately after the April-May Examinations, normally taken at the very end of Level II by students in all Geology and combined programmes. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: GEOLOGY 2E01 or permission of the Chair.

Antirequisite: GEOLOGY 2E02.

GEOLOGY 2F03 \textit{SOLID EARTH GEOPHYSICS}

Application of physical methods to understanding large-scale processes in the Earth. Plate tectonics, structure of Earth's interior, rock magnetism, seismology, gravitation, natural radioactivity, heat flow.

Two lectures, one tutorial; one term.

Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, 1B03, 1C03.

Cross-list: PHYSICS 2103.

GEOLOGY 2G03 \textit{INTRODUCTORY PALEONTOLOGY}

Uses of paleontology; importance in geologic time and organic evolution; origin of life; adaptation and functional morphology; major groups of ecologically important fossils; stratigraphy.

Two lectures, one lab (three hours); one term.

Prerequisite: One of ENVIR SC 1A06, 1G03, GEOLOGY 1C03; or permission of the instructor.

Antirequisite: CIV ENG 2403.

GEOLOGY 2H03 \textit{ENVIRONMENTAL SYSTEMS}

Biogeochemical cycles applied to the environment: consideration of toxicity, anthropogenic perturbations; use of simple partitioning models.

Two lectures, one tutorial (two hours); one term.

Prerequisite: Registration in B.Sc. Earth Science, any Honours programme in the Faculty of Science or any programme in the Faculty of Engineering; or permission of the instructor.

Antirequisite: CIV ENG 2403.

GEOLOGY 3A03 \textit{EXPLORATION GEOPHYSICS A: GEOPHYSICAL MAPPING METHODS}

Interpretation of geophysical survey data for regional geological mapping. Techniques covered are magnetics, gravity and radiometrics. Introduction to image processing and model interpretation.

Two lectures, one lab (two hours); one term.

Prerequisite: One of GEOLOGY 2B03, PHYSICS 2103; or permission of the instructor.

Alternates with Geology 3B03.

Not offered in 1997-98.

GEOLOGY 3B03 \textit{EXPLORATION GEOPHYSICS B: GEOPHYSICAL SURVEYS OF THE SUBSURFACE}

Introduction to seismic reflection and refraction, ground probing radar, EM; electrical methods for mapping rocks and fluids in the subsurface. Introduction to digital signal processing.

Two lectures, one lab (two hours); one term.

Prerequisite: One of GEOLOGY 2B03, PHYSICS 2103; or permission of the instructor.

Alternates with GEOLOGY 3A03.

GEOLOGY 3C03 \textit{IGNEOUS AND METAMORPHIC PETROLOGY}

Petrography of igneous and metamorphic rocks and discussion of their origin. Laboratory studies on rock suites.

Two lectures, one lab (two hours); one term.

Prerequisite: GEOLOGY 2B06.

Antirequisite: GEOLOGY 3C06.

GEOLOGY 3F03 \textit{SEDIMENTARY FACIES AND ENVIRONMENTS}

Sedimentology, stratigraphy and depositional environments of clastic and carbonate systems.

Three lectures, one term.

Prerequisite: GEOLOGY 2C03 or permission of the instructor.

GEOLOGY 3J03 \textit{PLANETARY AND LUNAR GEOLOGY AND GEOMORPHOLOGY}

The geology and surface morphology of planets and moons of the solar system with particular reference to the rocky bodies. Comparative studies are emphasized.

Three lectures; one term.

Prerequisite: One of GEOG 1C03, 1G03, ENVIR SC 1A06, 1G03, 1H03, GEOLOGY 1C03, and completion of at least 12 units of Level II (or above) Science courses.

Cross-list: GEOG 3103.

GEOLOGY 3K03 \textit{PALEOANTHROPOLOGY}

Marine habitats and possible changes through geologic time. Groups of fossils important in stratigraphy including microfossils; economic paleoanthropology.

Two lectures, one lab (three hours); one term.

Prerequisite: GEOLOGY 2J03.

GEOLOGY 3L03 \textit{GEOPHYSICS}

Geophysics of sedimentary and sedimentary rocks. Laboratory includes textural analysis of sediments and examination of sedimentary rocks suites in hand specimen and thin section.

Two lectures, one lab (two hours); one term.

Prerequisite: GEOLOGY 2B06.

Not offered in 1997-98.

GEOLOGY 4A03 \textit{ADVANCED FIELD COURSE IN GEOLOGY}

Advanced field studies generally held between May and August; report to be submitted by the end of September. A list of approved field camps will be published by the Department. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: One of GEOLOGY 2EE2, 3E02; or permission of the instructor.

Geology 4B03 \textit{IGNEOUS PETROLOGY}

Advanced theory of igneous rocks.

Three lectures, one term.

Prerequisite: Permission of the Chair.

See heading \textit{Courses Requiring Permission} in the Faculty of Science section of the Calendar.

GEOLOGY 4C06 \textit{PHYSICS 2103}

Not offered in 1997-98.

GEOLOGY 4D03 \textit{EXPLORATION GEOPHYSICS A: GEOPHYSICAL MAPPING METHODS}

Interpretation of geophysical survey data for regional geological mapping. Techniques covered are magnetics, gravity and radiometrics. Introduction to image processing and model interpretation.

Two lectures, one lab (two hours); one term.

Prerequisite: One of GEOLOGY 2B03, PHYSICS 2103; or permission of the instructor.

Alternates with Geology 3B03.

Not offered in 1997-98.
GEOL 4C03 CLIMATE CHANGE: A GEOLOGICAL PERSPECTIVE
Ancient and recent changes in the Earth's climate recorded in natural materials. Geological records of climatic catastrophe and cyclicity, natural causes of past change and human influences on climate. Three lectures; one tutorial; one term
Prerequisite: registration in level IV of an Honours Geology programme, Honours Geography and Environmental Science, or an Honours (Complementary Studies Option) programme in the Faculty of Science
Enrolment is limited. However, students enrolled in an Honours Geology programme will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

GEOL 4E03 GEOLOGY AND GEOLOGY OF CORAL REEFS
A survey of recent and ancient reef systems in Canada and elsewhere. Emphasis is on the economic and environmental importance of reefs to Third World countries.
Two lectures, one seminar; one term
Prerequisite: GEOLOGY 2J03 and 3J03 or completion of at least 12 units of Level III Biology.

GEOL 4F03 METALLIC MINERAL DEPOSITS
Geological factors and genesis of ore deposits; environmental and economic aspects.
Three lectures; one term
Prerequisite: Registration in a Level III or IV of a Geology programme Not offered in 1997-98.

GEOL 4G03 MINERALOGY
Advanced topics in mineralogy and crystal chemistry.
Two lectures, one tutorial; one term
Prerequisite: GEOLOGY 2G06.

GEOL 4H03 MINERALS AND SOCIETY
Case studies of mineral structures and properties with implications of practical importance. Gem and other economic minerals; workplace and environmental hazards.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level IV of an Honours Geology programme, Honours Geography and Environmental Science, or an Honours (Complementary Studies Option) programme in the Faculty of Science
Cross-list: ENVIR SC 4I03
Enrolment is limited. However, students enrolled in an Honours Geology programme will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

GEOL 4I03 DYNAMIC MODELS OF EARTH ENVIRONMENTS
Physical principles applicable to geological environments and hazards: the flow of air, water, mud and ice; bending, flow, and fracture of rocks. Models of sediment transport, landslides, volcanic eruptions, earthquakes, and meteorite impacts.
Three lectures; one term
Prerequisite: GEOLOGY 2I03 or PHYSICS 2I03 or permission of the instructor

GEOL 4K05 GEOL 4K05 GEOLOGY THESIS
Prerequisite: Registration in Level IV of a Geology programme and permission of the Chair of the Department
See heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

GEOL 4M03 BASIN ANALYSIS AND PETROLEUM GEOLOGY
Formation and development of sedimentary basins, with applications to fossil fuels. Seismic and sequence stratigraphy of basin fill, as controlled by tectonics, eustasy and climate; thermal and diagenetic history of basins and rocks.
Three lectures; one term
Prerequisite: GEOLOGY 3F03.

GEOL 4M33 SEDIMENTOLOGY: CHEMICAL PROCESSES
A review of equilibrium models and surface reactions. Topics covered are weathering, carbonate systems, evaporites, clays, iron minerals, phosphates, and diagenesis.
Three lectures; one term
Prerequisite: GEOLOGY 2C03, and CHEM 2P06 or 2R03
Not offered in 1997-98.

GEOL 4Q03 ENVIRONMENTAL GEOCHEMISTRY
Geochemistry of the Earth's surface. Weathering, atmospheric processes, soil processes, aqueous speciation, and global cycles are related to environmental quality and problems.
Three lectures; one term
Prerequisite: GEOLOGY 3Q03

GEOL 4Q04 PHYSICAL OCEANOGRAPHY
Energy budget of the ocean; optical oceanography, ocean dynamics. Examples for the Great Lakes.
Three lectures; one term
Prerequisite: Credit or registration in, at least 15 units of Level III Science courses
Not offered in 1997-98.

GEOL 4T03 PLATE TECTONICS AND ORE DEPOSITS
Synthesis of plate tectonics, with application to crustal evolution and genesis of ore deposits.
Three lectures; one term
Prerequisite: GEOLOGY 2C03; credit or registration in GEOLOGY 3C03 or 3C06.

GEOL 4W03 ENVIRONMENTAL ANALYSIS: A CASE HISTORY APPROACH
Three lectures; one term
Prerequisite: Registration in Level IV of an Honours Geology programme or an Honours (Complementary Studies Option) programme in the Faculty of Science.
Cross-list: ENVIR SC 4W03
Enrolment is limited. However, students enrolled in an Honours Geology programme will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

GERMAN
Courses and programmes in German are administered within the Department of Modern Languages of the Faculty of Humanities.

Department Notes:
1. Students should note that the Department has classified its German language courses under the following categories:
   - Introductory Level Language Course
   - Intermediate Level Language Courses
   - Advanced Level Language Courses
   - German 1B06, 2206

2. German programme students with native fluency are not permitted to enrol in GERMAN 2G03.

Courses
   If no prerequisite is listed, the course is open.

GERMAN 1B06 INTRODUCTION TO GERMAN STUDIES
An intensive review of the grammatical structures of German and an introduction to composition, together with oral practice. There will also be an introduction to the culture and civilization of the German-speaking peoples.
Four hours (including lab); two terms
Prerequisite: OAC German or permission of the Department

GERMAN 1Z06 BEGINNER'S INTENSIVE GERMAN
This course is designed to give students the ability to express themselves reasonably well in German. In addition, they will acquire the basics of German grammar and considerable reading skill. Small tutorial groups will ensure maximum participation by each student. This course is enhanced by a CALL (Computer-Aided Language Learning) module.
Five hours (including lab practice); two terms
Prerequisite: OAC German; German Enrolment is limited.

GERMAN 2A03 TWENTIETH-CENTURY LITERATURE
A discussion of works and authors from Naturalism to the 1980's, with emphasis on shorter prose texts.
Three lectures; one term
Prerequisite: GERMAN 1A03 or 1B06 or 2AA3, or permission of the Department
GERMAN 2AA3  INTRODUCTION TO GERMAN LITERATURE
Lectures outline the development of German literature against its cultural
background and readings of literary texts.
Three hours (one hour first term; two hours second term)
Prerequisite: GERMAN 1206 or 1B06
Antirequisite: GERMAN 1A03
GERMAN 2E03  GERMAN GRAMMAR
A systematic review of grammar; this knowledge will be applied to writing
short essays and translations.
Three hours; one term
Prerequisite: One of GERMAN 1A03, 1B06 or 2206
GERMAN 2G03  ORAL PRACTICE IN GERMAN
The course develops the skills of speaking, writing and listening comprehen-
sion. Emphasis will be on fluent and correct expression in dialog situations.
Three hours; one term
Prerequisite: GERMAN 1206
Priority is given to students in a programme requiring German.
Enrolment is limited.
GERMAN 2Z06  INTERMEDIATE GERMAN
A course designed to further proficiency in spoken and written German.
The course makes extensive use of unedited German materials for listen-
ing comprehension and reading. This course is enhanced by a CALL (Com-
puter-Aided Language Learning) module.
Four hours (including lab practice); two terms
Prerequisite: GERMAN 1206
Antirequisite: GERMAN 1A03, 1AA3 or 1806
GERMAN 3A03  BAROQUE AND ENLIGHTENMENT LITERATURE
Discussion of selected works from the beginning of the 17th to the end of
the 18th century within their historical and intellectual contexts.
Three lectures; one term
Prerequisite: Nine units of German above Level I
GERMAN 3B03  THE AGE OF GOETHE I
From Sturm und Drang to Weimar Classicism.
Three lectures; one term
Prerequisite: Nine units of German above Level I
Offered in alternate years.
GERMAN 3Z03  ADVANCED ORAL AND WRITTEN LANGUAGE PRACTICE I
A practically-oriented course designed to increase the student's facility in
using German as a means of oral and written communication. Students will
be required to express their views on a variety of topics in written assign-
ments and subsequent class discussions. Extensive reading will expand
the students' vocabulary and improve general language ability.
Three lectures; one term
Prerequisite: GERMAN 2E03
GERMAN 3Z23  ADVANCED ORAL AND WRITTEN
LANGUAGE PRACTICE II
A continuation of the approach used in GERMAN 3Z03.
Three lectures; one term
Prerequisite: GERMAN 3Z03
GERMAN 4C03  HISTORY OF THE GERMAN LANGUAGE
Selected texts from major works on the development of the German lan-
guage as well as selected texts from major writers of the Middle and Old
High German periods.
Three lectures; one term
Prerequisite: Nine units of German above Level I
Offered in alternate years.
GERMAN 4H03  INDEPENDENT STUDY
The student will prepare, under the supervision of a faculty member, a
research paper involving independent study in an area where the student
has already demonstrated competence.
Prerequisite: 18 units of German above Level I and permission of the
Department
GERMAN 4T03  SPECIAL TOPICS IN GERMAN LITERATURE
Previous topics include: German Symbolism and Expressionism; German
Literature 1833-45; The So-Called Inner Emigration. Consult with the De-
partment concerning topic to be offered.
Three lectures; one term
Prerequisite: Nine units of German above Level I
GERMAN 4T03 may be repeated, if on a different topic, to a total of six units.
GERMAN 4T03  MODERN LITERATURE AND THE ARTS
An examination of the German literary Symbolism, Expressionism, and
Surrealism in their wider artistic and European contexts, including painting,
music and film.
Seminar (two hours); one term
Prerequisite: Nine units of German above Level I
GERONTOLOGY
Faculty as of January 15, 1997
Director
C.J. Rosenthal
Professors
Michael J. MacLean/(Gerontology/Social Work) B.A. (St. Thomas), M.A.
(Sussex), Ph.D. (London) part-time
Carolyn J. Rosenthal/(Gerontology/Sociology) B.A. (Toronto), M.A., Ph.D.
(McMaster)
Ellen B. Ryan/(Psychiatry/Gerontology)/B.A., M.A. (Brown), Ph.D. (Michigan)
Associate Professors
Margaret Dentoni/(Gerontology/Sociology) B.A., M.A., Ph.D. (McMaster)
John Hirdes/(Health Studies & Gerontology) B.Sc., M.A., Ph.D. (Waterloo)
part-time
Assistant Professors
Sherry Dupuis/(Gerontology) B.Mus. (Queen's), M.A. (Waterloo)
Lecturer
Sherry Dupuis/(Gerontology) B.Mus. (Queen's), M.A. (Waterloo)
ASSOCiate Members
Larry W. Chambers/(Clinical Epidemiology and Biostatistics) B.A., MSc.
(McMaster), Ph.D. (Memorial)
James W. Gladstone/(Social Work) B.A. (McGill), M.S.W. (British Columbia),
Ph.D. (Toronto)
Alexander S. Macpherson/(Psychiatry) M.Sc., (McMaster), M.D. (Toronto)
Byron G. Spencer/(Economics) B.A. (Queen's), Ph.D. (Rice)
Notes:
1. Gerontology Programmes at McMaster University are administered by
the Faculty of Social Sciences through the Office of Gerontological Studies,
and are coordinated and supervised by an interdisciplinary Commit-
tee of Instruction.
2. Not all gerontology courses may be offered every year. Students are
advised to contact the Office of Gerontological Studies after May 1 to
determine which courses will be offered in the following academic year.
Committee of Instruction:
Chair
C. Rosenthal (Gerontology/Sociology)
J. Aronson (Social Work)
E. Badone (Religious Studies)
A. Beckingham (Nursing)
M. Denton (Gerontology/Sociology)
A. Hicks (Kinesiology)
J. Johnson (Dean) Ex-officio
A. Laver (Occupational Therapy)
B. Spencer (Economics)
J. Synge (Sociology)
I. Turpie (Medicine and Geriatric Medicine) (Student Representative)
GERONOLOGY

COURSES

If no prerequisite is listed, the course is open.

GERONTOLOGY 1A06 INTRODUCTION TO GERONTOLOGY
An introduction to gerontology as a multidisciplinary study of aging, focusing on the philosophical, historical, biological, physiological, psychological, economic, social and health care aspects, as well as social policies in respect to an aging population.
Three hours (lectures and tutorials) and 15 hours experiential learning component; two terms.

GERONTOLOGY 2A03 AGING, HEALTH AND SOCIETY
This course will examine aging and health including physical, mental, social and functional health, the social construction of aging and health, models of health care and the informal and formal systems of care.
Three hours (lectures and discussions); one term.
Prerequisite: Registration in a Gerontology programme.
Antirequisite: GERONTOLOGY 2A03.

GERONTOLOGY 2B03 BIOLOGICAL DIMENSIONS OF HUMAN AGING
An examination of age-related changes in biology and physiology of organisms with a special emphasis on human aging. Attention will be given to the gradual deterioration of function and homeostatic controls and the maintenance of optimal operation for various organs.
Three hours (lectures); one term.
Prerequisite: GERONTOLOGY 1A06.

GERONTOLOGY 2C03 RESEARCH METHODS IN SOCIAL GERONTOLOGY I
An introduction to quantitative and qualitative research methods in social gerontology. Topics covered include research design, measurement, techniques of data collection and data analysis. Special attention will be given to how research methods may be applied in the study of aging.
Three hours (lectures and practice); one term.
Prerequisite: Registration in any Gerontology programme.
Antirequisite: GERONTOLOGY 3C03, PSYCH 2Z03.

GERONTOLOGY 3A03 INTERNATIONAL ASPECTS OF GERONTOLOGY
Issues in gerontology in selected developed and developing countries. The course focuses on demographic changes, social, political and economic implications of population change, attitudes toward the aged, health care and social policies.
Three hours (lectures and discussions); one term.
Prerequisite: GERONTOLOGY 1A06 and enrolment in any programme in Gerontology, Social Work or Health Sciences.

GERONTOLOGY 3B03 GERONTOLOGY FIELD OBSERVATION
Directed observation of 36 hours in an approved field setting and a weekly seminar focusing on integration of theoretical knowledge and observation.
Three hours field observation per week, and two hours weekly seminar; one term.
Prerequisite: Registration in a Gerontology Second Degree programme; or Level III or IV of any Gerontology programme.

GERONTOLOGY 3D03 PSYCHOLOGICAL ASPECTS OF AGING
An examination of psychological aspects of aging: sensation, perception, attention, memory, intelligence, communication, personality, attitudes and mental health.
Three hours (lectures and discussion); one term.
Prerequisite: GERONTOLOGY 1A06 and PSYCH 1A06 or 1A3 and registration in a Gerontology or a Psychology programme.
Cross-list: PSYCH 3D03.

GERONTOLOGY 3E03 INDEPENDENT STUDY IN GERONTOLOGY
For first degree students.
The student will select a topic in gerontology for an in-depth investigation under the supervision of a faculty member and write a paper. This investigation could take several forms such as library research, field study, or a supervised experience in an applied setting.
The study will normally extend over two terms.
Prerequisite: Permission of the Course Coordinator or Programme Chair; and registration in Level III or IV of a Gerontology first degree programme.
GERONTOLOGY 3E03 may be repeated, if on a different topic, to a total of six units.

GERONTOLOGY 3F03 GERONTOLOGICAL PRACTICE
Principles and methods of gerontological practice. The students will take part in the McMaster Summer Institute of Gerontology as partial fulfillment of course requirements, when offered in Term 1 of the Spring/Summer Session.
One term.
Prerequisite: GERONTOLOGY 3B03 and registration in a Gerontology Second Degree programme or Level III or IV of any Gerontology programme.

GERONTOLOGY 3G03 RESEARCH METHODS IN SOCIAL GERONTOLOGY II
The focus of this course will be on data analysis and statistics in social gerontology. Students will be introduced to techniques of analyzing data using a statistical software package on a computer.
Three hours (lectures and labs); one term.
Prerequisite: GERONTOLOGY 2C03 or 3C03; and registration in a Gerontology Second Degree programme or Level III or IV of any Gerontology programme.

GERONTOLOGY 3J03 SPECIAL TOPICS IN GERONTOLOGY
Topics may vary from year to year. Students should consult the Chair of the Committee of Instruction prior to registration concerning topics to be examined.
Three hours (lectures and discussion); one term.
Prerequisite: Registration in a Gerontology programme.

GERONTOLOGY 3K03 AGING, WORK, RETIREMENT AND PENSIONS
An examination of the issues and concepts related to work, retirement and pensions and their implications for aging individuals and society.
Three hours (lectures and discussions); one term.
Prerequisite: Registration in a Gerontology Second Degree programme,
Level III or IV of any Gerontology programme; or with permission of the Instructor, registration in a Labour Studies programme.

GERONTOLOGY 3L03 ANTHROPOLOGICAL APPROACHES TO THE STUDY OF AGING
An examination of the contribution of anthropology to the study of aging with an emphasis on cross-cultural comparisons, and including an assessment of the anthropological literature relating to the biological basis of aging in modern and prehistoric populations.
Three hours (lectures and discussion); one term.
Prerequisite: Six units in Social/Cultural Anthropology or registration in any programme in Gerontology; and registration in Anthropology 3003.
Cross-list: ANTHROP 3003.

GERONTOLOGY 4A06 GERONTOLOGY THESIS
Research projects with individual faculty members.
Prerequisite: GERONTOLOGY 2C03 or 3C03 and GERONTOLOGY 3G03 or another approved three unit statistics course; and registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject.

GERONTOLOGY 4B03 COMMUNICATION AND COUNSELLING WITH OLDER ADULTS
This course introduces the student to issues in communication and counselling with older adults. Appropriate theories will be explored through lectures, discussions and supervised practice.
Three hours (lectures and discussion); one term.
Prerequisite: GERONTOLOGY 3B03; and registration in a Gerontology Second Degree programme or Level III or IV of any Gerontology programme. Enrolment is limited.

GERONTOLOGY 4C03 SPECIAL TOPICS IN GERONTOLOGY
Topics may vary from year to year. Students should consult the Committee of Instruction prior to registration, concerning topics to be examined.
Prerequisite: Registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme.

GERONTOLOGY 4D03 CURRENT ISSUES IN GERONTOLOGY
The content of the course will vary from year to year; please consult the Chair of the Gerontology Committee of Instruction for details.
Prerequisite: Registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme.

GERONTOLOGY 4E03 ADVANCED SEMINAR IN GERONTOLOGY
This course will focus on the process of research in gerontology. Presentations on different approaches to studying aspects of aging (such as feminist methodology, policy analysis, qualitative and quantitative methods) will be made by gerontological researchers about their research in progress.
Three hours (lectures and discussion); one term.
Prerequisite: GERONTOLOGY 2C03 or 3C03 and registration in Level IV of the Combined Honours programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme.
GERONTOL 4F06 DIRECTED RESEARCH FOR SECOND DEGREE STUDENTS

Directed study of a research problem through published materials and/or field inquiry and/or data analysis. Students will be required to write up the results of their inquiry in scholarly form.
Prerequisite: Registration in a Gerontology as a Second Degree programme

GERONTOL 4G03 DIRECTED STUDY FOR SECOND DEGREE STUDENTS

The student will select a topic in gerontology for an in-depth investigation under the supervision of a faculty member and write a paper. This investigation could take several forms such as library research, field study, or a supervised experience in an applied setting.
Prerequisite: Registration in a Gerontology as a Second Degree programme

GERONTOL 4S03 SOCIAL POLICY AND THE AGING POPULATION

Critical examination of the social and economic implications of the aging population and the nature of social welfare policy with respect to the elderly.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme
Cross-list: SOC WORK 4A03
Enrolment is limited.

Course List 1: Other Designated Gerontology Courses

Students should check the prerequisites for these courses in the Course Listings section of the Calendar.

ANTHROP 3203 Medical Anthropology: The Biomedical Approach
ECON 3D03 Labour Economics
ECON 3Y03 Selected Topics II: The Economics of Aging
ECON 3Z03 Health Economics
GEOG 4S03 Geography of Health Care
HTH SCI 3B03 Science, Health and Society
PHILOS 3C03 Advanced Bioethics
RELIG ST 2N03 Death and Dying: Comparative Views
RELIG ST 2W03 Health, Healing and Religion
SOC WORK 3C03 Social Aspects of Health and Disease
SOC WORK 4E03 Women and Social Welfare
SOCIOI 3CC3 Special Topics in Sociology of the Family and the Life Cycle
SOCIOI 3G03 Sociology of Health Care
SOCIOI 3H43 Sociology of Health
SOCIOI 3X03 Sociology of Aging
SOCIOI 4P03 Issues in the Sociology of Aging

Other courses may substitute for courses on this list. Students wishing to designate a course not in Course List 1 must consult the Chair of the Committee of Instruction, prior to registration.

GREEK

(SEE CLASSICS, GREEK)

HEALTH SCIENCES

Faculty Note:

Health Sciences courses are normally available only to students registered in Nursing (A, B and NP (O) Stream), Oncology or Midwifery, as applicable.

Courses

HTH SCI 1A06 HUMAN BIOCHEMISTRY

The biochemistry and nutrition of the human body in health and disease. Term I's major topic is production of energy from glucose and fat. Vitamins and minerals related to glucose and fat metabolism are also discussed.
Term II covers electrolyte balance, body pH, proteins, enzymes, protein malnutrition and nucleic acids. A final section deals with nutritional patterns for each stage of life.
Lectures/problem-based tutorial (three hours); two terms
Prerequisite: Registration in Level I of the B.Sc.N. (A) Stream, or Level III of the B.Sc.N. (B) Stream; or permission of the instructor

HHT SCI 1B07 HUMAN BIOLOGICAL SCIENCE I

Term I examines cell structure, function and communication mechanisms and musculo-skeletal structure and function.
Term II examines homeostasis of the digestive, cardiovascular, respiratory, renal systems and their integration in control of acid base balance.
Two lectures (two hours each), one tutorial (two hours), one lab (two hours), every other week; two terms
Prerequisite: Credit or registration in HTH SCI 1A06; registration in Level I of the B.Sc.N. (A) Stream or permission of the instructor

HHT SCI 1C06 SOCIAL AND CULTURAL DIMENSIONS OF HEALTH CARE

Designed to introduce students to midwifery issues related to midwifery practice. Using a multidisciplinary approach, the integrated analysis of race, class and gender will be discussed in relation to health and health care.
Lectures/tutorials; two terms
Prerequisite: Registration in the Midwifery Education programme

HHT SCI 1CC7 INTEGRATED BIOLOGICAL BASES OF NURSING PRACTICE I

Through a small group self-directed problem based learning format students will apply biological and biochemical principles essential to the assessment and management of health care problems.
Two problem based tutorials (three hours each), one lab (two hours); one term
Prerequisite: Registration in Level III of the B.Sc.N. NP (C) Stream or permission of the instructor

Antirequisite: HHT SCI 1Z24

HHT SCI 1D06 TOPICS IN BIOLOGICAL SCIENCES

This course covers basic concepts of human structure and function, genetics and embryology through lectures, demonstrations and appropriate laboratory assignments.
Lectures/tutorial; two terms
Prerequisite: Registration in the Midwifery Education programme

HHT SCI 1E04 HUMAN ANATOMY

Study of gross human anatomy providing an overview of tissues and organs of the major body systems. This course is available as an elective for students who have advanced credit for all of the required physiology.
Independent study: two hours lecture equivalent/four hours lab equivalent; one term
Prerequisite: Registration in the B.Sc.N. programme and permission of the instructor

HHT SCI 1Z24 INTRODUCTORY PHYSIOLOGY FOR POST DIPLOMA NURSING STUDENTS

This course focuses on integrative physiology of the gastrointestinal, cardiovascular, respiratory and renal systems and how these systems maintain acid base and ionic balance and homeostasis.
Lecture (two hours), tutorial/lab (three hours); one term
Prerequisite: credit or registration in HHT SCI 1A06, registration in Level III of the B.Sc.N. (B) Stream or permission of the instructor

Antirequisite: HHT SCI 1CC7

HHT SCI 2A02 TOPICS IN HUMAN BIOLOGICAL SCIENCES I

Study of reproductive anatomy and physiology, with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction.
Two lectures (two hours each), two tutorials (two hours each), one lab (two hours), every other week for six weeks; first term
Prerequisite: HHT SCI 1A06 and 1B07, or 1A06, 1Z04 and 1Z24, and registration in Level II of the B.Sc.N. (A) Stream; or HHT SCI 1A06 and 1Z24, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor

Antirequisite: HHT SCI 2B08

HHT SCI 2B08 HUMAN BIOLOGICAL SCIENCE II

First term examines reproductive anatomy and physiology in the first half and the central and peripheral nervous system, anatomy and physiology in the second half.
The first half of second term examines clinical microbiology and principles of pathology and the latter half of the second term examines pharmacological principles.
Two lectures (two hours each), two tutorials (two hours each), one lab (two hours), every other week; two terms
Prerequisite: HHT SCI 1A06 and 1B07, or 1A06, 1Z04 and 1Z24, and registration in Level II of the B.Sc.N. (A) Stream; or HHT SCI 1A06 and 1Z24, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor

Antirequisite: HHT SCI 2C07
HISPANIC STUDIES

HISPANIC 2BB2 TOPICS IN HUMAN BIOLOGY SCIENCE II
Study of the central peripheral nervous system, including the special senses and neuroendocrine relationships. Introductory skills in neurological assessment and drug actions on the nervous system are also considered.
Two lectures (two hours each), two tutorials (two hours each), one lab (two hours), every other week for six weeks; first term.
Prerequisite: HTH SCI 2BB2, or 2BB3, or 2BB4 and 2BB5, and registration in Level II of the B.Sc. (A) Stream; or HTH SCI 1A06 and 2BB5, and registration in Level IV of the B.Sc.N. (A) Stream; or permission of the instructor
Antirequisite: HTH SCI 2BB2

HISPANIC 2CC7 INTEGRATED BIOLOGICAL BASES OF NURSING PRACTICE II
Continued application of biological and biochemical principles essential to the management of health care problems. Particular emphasis will be placed on introduction to principles of pharmacology and mechanisms of drug action.
Two problem-based tutorials (three hours each), one lab (two hours), one term.
Prerequisite: HTH SCI 1CC7, registration in Level III of the B.Sc.N. (C) Stream or permission of the instructor
Antirequisite: HTH SCI 2CC7

HISPANIC 2C07 TOPICS IN HUMAN BIOLOGICAL SCIENCES II
Medical microbiology and principles of pathology are considered, including structure and function of infectious agents, control measures and host defenses.
Two lectures (two hours each), two tutorials (two hours each), one lab (two hours) every other week for six weeks; second term.
Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1204 and 1224, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1224, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor
Antirequisite: HTH SCI 2C07

HISPANIC 2DD2 TOPICS IN HUMAN BIOLOGICAL SCIENCES IV
Principles of pharmacology and mechanisms of drug action are considered.
Lecture (two hours), tutorial (six hours), every other week for six weeks.
Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1204 and 1224, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1224, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor
Antirequisite: HTH SCI 2DD2

HISPANIC 3A03 CRITICAL APPRAISAL
A reinforcement of the principles of clinical research and statistical inference, with particular emphasis on critical assessment of evidence as presented in the health sciences literature related to the care of patients.
Problem-based tutorial (two hours), guided self-study (two hours); one term.
Prerequisite: Normally HTH SCI 3L02 and registration in Level III of the B.Sc.N. (A) Stream or (B) Stream or permission of the instructor; or registration in the Paediatric or Adult Oncology programme; or registration in Level I of the Midwifery Education programme
Antirequisite: HTH SCI 3A04

HISPANIC 3B03 HEALTH, SCIENCE AND SOCIETY
This course provides an introduction to a number of macrohealth issues including determinants of health and political, economic and social factors that influence the organization of health care systems.
Nine lecture/problem-based tutorials (three hours each), guided self-study (two hours); 13 weeks
Prerequisite: Registration in Level III of the B.Sc.N. (A) Stream, or the NP (C) Stream, or Level IV of the B.Sc.N. (B) Stream, or registration in Level II of the Midwifery Education programme; or permission of instructor
Antirequisite: HTH SCI 3B04

HISPANIC 3L02 INTRODUCTION TO THE RESEARCH PROCESS
Introduction to the principles of the clinical research processes and research methodologies as they are applied to health and health care research. Research concepts and methods are applied and reinforced with relevant examples from the field of health and health care.
Lectures, tutorials (two hours); one term
Prerequisite: Registration in Level III of the B.Sc.N. (A) Stream or (B) Stream, or registration in the Paediatric or Adult Oncology programme; or permission of the instructor
Antirequisite: HTH SCI 3L03

HISPANIC 3L03 PRINCIPLES AND METHODS OF RESEARCH
Advanced analysis of principles of research design, with an emphasis on quantitative and qualitative methodologies. A combination of self-directed and distance learning techniques will be used. Students will participate in an ongoing research project for a portion of their term.
Self-study/tutorial; two terms
Prerequisite: HTH SCI 3A03 and registration in the Midwifery Education programme; or permission of the instructor
Antirequisite: HTH SCI 3L04, 3L05

HISPANIC 3R03 INDEPENDENT STUDY IN A HEALTH SCIENCE TOPIC
Special topics will be considered in depth under the supervision of a faculty member. The plan of study must be negotiated with the supervisor.
Lecture or equivalent (three hours); one term
Prerequisite: Registration in Level II or above of the B.Sc.N. programme; permission of the instructor and permission of the Coordinator of Studies (Nursing)
Students will not normally be permitted to apply more than one independent study course in the Health Sciences toward their elective requirements for the B.Sc.N. degree.
Antirequisite: HTH SCI 3R03

HISPANIC 4E06 INTRODUCTION TO HEALTH CARE LEADERSHIP/ MANAGEMENT
Theories and principles of leadership and management are applied to the health care disciplines. Given in both problem based tutorial format and through distance education. Enrolment in tutorial format is limited.
Problem-based tutorial or equivalent (four hours); independent study at a clinical site (six hours); one term
Prerequisite: A minimum of one year clinical work experience in a health care profession or permission of the instructor
Antirequisite: NURSING 4E06

HISPANIC 4L02 RESEARCH PROJECT
Students participate in a research study. Concepts of research design, implementation and analysis and dissemination of results are studied.
Approximately two hours per week, two terms
Prerequisite: HTH SCI 3A03, HTH SCI 3L02 and registration in Level IV of the B.Sc.N. (A) Stream or (B) Stream or (C) Stream; or permission of the instructor
Antirequisite: HTH SCI 4L04

HEALTH AND SOCIETY

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

HEBREW

(SEE RELIGIOUS STUDIES, HEBREW)

HISPANIC STUDIES

Courses and programmes in Hispanic Studies are administered within the Department of Modern Languages of the Faculty of Humanities.

Department Note:
Students should note that the Department has classified its Hispanic language courses under the following categories: Introductory Level Language Course

HISPANIC 1A06

Intermediate Level Language Courses

HISPANIC 1A06, 2A03, 2Z06

Advanced Level Language Courses

HISPANIC 2A03, 3D03, 3D03, 4D03

Courses

If no prerequisite is listed, the course is open.

HISPANIC 1A06 INTERMEDIATE SPANISH
A course designed to further the student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be upon composition, expansion of vocabulary, and the more advanced aspects of the language.
Three hours; two terms
Prerequisite: OAC Spanish or permission of the Department
Antirequisite: HISPANIC 2Z06

Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

HISPANIC 1Z06 BEGINNER'S INTENSIVE SPANISH
A course designed to cover the rudiments of the language in both written and oral forms. This course also provides preparation for more advanced work in Spanish. This course is enhanced by a CALL (Computer-Aided Language Learning) module.
Four hours (including lab practice); two terms
Antirequisite: OAC Spanish or equivalent
Enrolment is limited.

Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.
HISPANIC 2A03 LANGUAGE PRACTICE I
A course devoted to the expansion of vocabulary, the improvement of comprehension, and the achievement of greater confidence and versatility in the language by using different and creative forms of communication.
Three hours; one term
Prerequisite: HISPANIC 1A06 or permission of the Department
Not available to students who have native fluency in Spanish.

HISPANIC 2B03 INTRODUCTION TO SPANISH LITERATURE AND CIVILIZATION I
A survey of Spanish literature from the Middle Ages to the present. Discussions will bring into focus the historical, intellectual and aesthetic context in which this literature flourished.
Three lectures; one term
Prerequisite: HISPANIC 1A06 or 1Z06

HISPANIC 2L03 SPANISH AMERICAN LITERATURE AND CIVILIZATION I
A survey of Spanish American literature from the fifteenth to the nineteenth century. The most significant cultural currents and representative writers will be studied with the purpose of understanding the development of literary genres and the cultural, political and social context in which they flourished.
Three lectures; one term
Prerequisite: HISPANIC 1A06 or 1Z06
Antirequisite: HISPANIC 2C03

HISPANIC 2L3 SPANISH AMERICAN LITERATURE AND CIVILIZATION II
A survey of Spanish American literature from Modernism (1880) to the present. The most significant periods and representative writers will be studied with the purpose of understanding both the development of the literary genres and the cultural, political and social context in which they flourished.
Three lectures; one term
Prerequisite: HISPANIC 2L03
Antirequisite: HISPANIC 2C03

HISPANIC 2Z06 INTERMEDIATE SPANISH
A course designed to further the student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be upon composition, expansion of vocabulary, and the more advanced aspects of the language.
Three hours; two terms
Prerequisite: HISPANIC 1Z06
Antirequisite: HISPANIC 1A06

HISPANIC 3A03 ADVANCED SPANISH
A course devoted to the expansion of vocabulary, the improvement of comprehension, and the achievement of greater confidence and versatility in the language by using different and creative forms of communication.
Three hours; one term
Prerequisite: HISPANIC 2A03

HISPANIC 3D03 LANGUAGE PRACTICE II
The emphasis is on precision, conciseness and other pertinent aspects of the language. Students will prepare business documents such as letters, memos, application forms and résumés and will develop related vocabulary.
Three lectures; one term
Prerequisite: HISPANIC 2A03

HISPANIC 3D23 ADVANCED LANGUAGE PRACTICE
The main objective is to develop the students' abilities in the 'kinds of writing they are expected to do at university level such as outlines, book reviews and essays.
Three hours; one term
Prerequisite: HISPANIC 3D03

HISPANIC 3D23 SYNTAX
A course which provides opportunities to develop a deeper awareness of style through the study of syntax. Elements of syntax and translation will be included.
Three hours; one term
Prerequisite: HISPANIC 3D23

HISPANIC 4I3 INDEPENDENT STUDY
The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area in which the student has demonstrated competence.
Tutorials; one term
Prerequisite: 18 units of Hispanic Studies above Level I and permission of the Department

HISPANIC 4L3 SPANISH AMERICAN NOVEL
A study of the novel of the Twentieth Century with emphasis on the Bosch generation.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I
Offered in alternate years.

HISPANIC 4M3 THE SPANISH NOVEL OF THE 20TH CENTURY
Representative Spanish novels of the post-civil war period.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I
Offered in alternate years.

HISPANIC 4M3 CERVANTES AND HIS TIMES
An analytical study of the Quixote and of some of Cervantes' other works within the context of the intellectual history of the 16th century.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I
Offered in alternate years.

HISPANIC 4N3 THE SPANISH NOVEL OF THE 19TH CENTURY
A study of the novel of the second half of the 19th century in the context of the stylistic trends and intellectual history of the period.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I

HISPANIC 4S3 THE SPANISH-AMERICAN SHORT STORY
A study of the evolution of the Spanish-American short story from Quiroga to Garcia Marquez.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I
Offered in alternate years.

HISPANIC 4T3 TOPICS IN HISPANIC LITERATURE
Previous topics include: The Enlightenment in Spain, The Spanish American Essay, Consult the Department concerning topic to be offered.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I

HISPANIC 4T3 SPANISH NOVEL OF THE 20TH CENTURY
A study of the novel of the Twentieth Century with emphasis on the Boom generation.
Three lectures; one term
Prerequisite: Nine units of Hispanic Studies above Level I
Offered in alternate years.
Department Notes:

1. The Department of History offers two Level I courses, each of which is designed to introduce the student to the study of History at the university level through the examination of an important aspect of the development of Western civilization. HISTORY 1A06 is recommended for those students who anticipate entering B.A. or Honours programs in History, but students will be admitted to programs in History from HISTORY 1L06 (cross listed as CLASSICS 1L06). Students may take only one of these Level I History courses.

2. Enrolment in any Level IV History seminar will be limited to twelve students. Students must be registered in an Honours History program to enrol in any Level IV History seminar. Preference will be given in order to students according to the following categories: Level IV Honours History and Combined Honours in History; Level III Honours History and Combined Honours in History; Level II B.A. History and others (with special permission of the Department).

3. Students interested in Ancient History are advised to examine the courses in Classics offered by the Department of Classics.

The following course may be applied towards degree requirements in History at Level II:

HUMAN 2F03 SELECTED INTERDISCIPLINARY TOPICS IN MEDIEVAL LIFE AND CULTURE

Courses

If no prerequisite is listed, the course is open.

HISTORY 1A06 EUROPE SINCE THE RENAISSANCE
An examination of the principal themes and issues of European history from the Renaissance to 1945.
Three hours (lectures and discussion groups); two terms

HISTORY 1L06 HISTORY AND ARCHAEOLOGY OF THE ANCIENT WORLD
The history of the Ancient Near East, Greece, and Rome based on documentary sources and archaeological evidence.
Two lectures, one tutorial; two terms
Cross-list: CLASSICS 1L06

HISTORY 2A06 EARLY MODERN EUROPE 1400-1715
A study of the transition from late medieval to early modern civilization, with emphasis upon the breakdown of feudal society and the consequent changes in the character of Europe.
Three lectures; two terms
Prerequisite: Registration in Level II and above

HISTORY 2C06 MODERN EUROPE
An examination of major themes in 19th- and 20th-century European history up to the early 1900s.
Three lectures; two terms
Prerequisite: Registration in Level II and above

HISTORY 2EA3 ISLAM AND MEDITERRANEAN SOCIETY, 600-1300
An introduction to Islamic civilization from its beginnings in Arabia to the period of the Crusades, with an emphasis on Mediterranean culture of the period.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: HISTORY 2E06, RELIG ST 2006
Cross-list: RELIG ST 2EA3

HISTORY 2EB3 ISLAM IN THE WORLD, 1300-1800
A survey course which emphasizes the role of Islam in the global setting in the period of the great Islamic empires.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: HISTORY 2E06, RELIG ST 2006
Cross-list: RELIG ST 2EB3

HISTORY 2GG3 CHINA: HISTORICAL FOUNDATIONS
Political, social and cultural background to the modern age, with emphasis on the late imperial period (1500-1900).
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: HISTORY 2B06

HISTORY 2H06 UNITED STATES HISTORY
The history of the United States from the Colonial Era to the Second World War.
Three lectures; two terms
Prerequisite: Registration in Level II and above

HISTORY 2I06 EUROPE IN THE MIDDLE AGES
A survey of European History from A.D. 400-1400. Particular attention will be given to the attempts at political and social organization which led to the birth of Europe.
Three lectures; two terms
Prerequisite: Registration in Level II and above

HISTORY 2J06 THE HISTORY OF CANADA
A study of the major social and political forces that have contributed to the development of modern Canada.
Three lectures; two terms
Prerequisite: Registration in Level II and above

HISTORY 2L03 HISTORY OF CLASSICAL GREECE
Greece from the rise of the city-states to Alexander, with particular attention to the political, social and cultural development in the light of both literary and archaeological evidence. (No Greek or Latin required).
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: HISTORY 2L06, CLASSICS 2G06
Cross-list: CLASSICS 2L03

HISTORY 2L13 HISTORY OF CLASSICAL ROME
Rome from the middle Republic through the Empire, with particular attention to the political, social and cultural development in the light of both literary and archaeological evidence. (No Greek or Latin required).
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: CLASSICS 2G06, HISTORY 2L06
Cross-list: CLASSICS 2L13

HISTORY 2N06 BRITISH HISTORY, 1500-1950
Emphasis will be placed on the main political, religious, economic and social developments.
Three hours (lectures and discussion groups); two terms
Prerequisite: Registration in Level II and above

HISTORY 3A03 IMPERIAL ISLAM: THE OTTOMANS
A study of the political, economic and social history of the Ottoman Empire, with an emphasis on its influence on the cultures of both Asia and Europe.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II and above

HISTORY 3A3 THE MODERN MIDDLE EAST
A survey of the political and social history of the Middle East from 1800 to the present, with an emphasis on contemporary issues, such as the Islamic impulse and the Arab-Israeli conflict.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II and above

HISTORY 3B03 MODERN JAPAN
A survey of 19th and 20th century Japan, with emphasis on political developments, social change, and Japan's relations with East Asia and the West.
Three lectures; one term
Prerequisite: Registration in Level II and above

HISTORY 3B83 THE TOWN IN UNITED STATES HISTORY
A study of the political, economic, social, cultural and intellectual aspects of town life, as well as an examination of the relationship of the town to American society as a whole.
Three lectures; one term
Prerequisite: Six units of History above Level I

HISTORY 3D03 THE FRENCH REVOLUTIONARY ERA
A study of the origins, nature and impact of the French Enlightenment and Revolution, and of the legacy of the Revolutionary-Napoleonic period.
Three hours (lectures and discussion); one term
Prerequisite: Six units of History and registration in Level II or above

HISTORY 3F03 MEDIEVAL SOCIETY
An examination of the aristocratic, monastic, urban and rural communities of the Middle Ages. Attention will be given to patterns of social organization as well as to such specific themes as gender, popular piety, justice and warfare.
Three hours (lectures and discussion group); one term
Prerequisite: One of HISTORY 2I06, 2L03, 2L06, 2L13
HISTORY 3Z03 JUDAISM, THE JEWISH PEOPLE AND THE BIRTH OF THE MODERN WORLD
On the tares and threats of the modern world from the early eighteenth to the early twentieth century. Topics include: Jewish philosophy in the Age of Reason, new Jewish denominations, assimilation, early Zionism, Yiddish socialism, the beginnings of modern anti-Semitism movements of cultural renewal.
Two lectures, one tutorial; one term.
Prerequisite: Open to students in Level II and above
Cross-list: RELIG ST 3Z03

HISTORY 3ZZ3 JUDAISM AND THE JEWISH PEOPLE IN THE TWENTIETH CENTURY
Jews and Judaism in a century of catastrophe and renewal. The progress of Emancipation; Jews in Canada and the U.S.; the Jewish catastrophe in Europe; the Jewish identities in literature and the arts.
Two lectures, one tutorial; one term.
Prerequisite: Open to students in Level II and above
Cross-list: RELIG ST 3ZZ3

HISTORY 4A06 SPECIAL STUDIES IN THE HISTORY OF TUDOR AND STUART ENGLAND
Studies in the political, religious, intellectual and social life of Tudor and Stuart England.
Seminar (two hours); two terms.
Prerequisite: One of HISTORY 2H06, 3Q03, 3SS3, or 3TT3, and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4B06 MODERN CANADA, 1896-1968: AN INTELLECTUAL AND CULTURAL HISTORY
An intensive study of the shaping of the twentieth-century outlook in English-speaking Canada. Topics will include the growth of the welfare state, ideologies (liberalism, conservatism, socialism, feminism), the cultural impact of depression and the two world wars, and the role of religion in shaping the Canadian community.
Seminar (two hours); two terms.
Prerequisite: HISTORY 2J06 or 3L03 and 3M03, and registration in Level III or IV of any Honours programme in History
Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06.
Enrolment is limited. Departmental permission required.

HISTORY 4B66 SPECIAL TOPICS IN THE HISTORY OF MODERN JAPAN
Japan from the Meiji Restoration to the post-war resurgence, with emphasis on political developments and social change.
Seminar (two hours); two terms.
Prerequisite: HISTORY 3803 and registration in Level III or IV of any Honours programme in History or JAPAN ST 3803 (HISTORY 3803) with a grade of at least B- and registration in Level III or IV of the Japanese Studies programme
Enrolment is limited. Departmental permission required.

HISTORY 4C06 SPECIAL TOPICS IN THE SOCIAL AND CULTURAL HISTORY OF VICTORIAN CANADA
An examination of the social and cultural development of English Canada between 1837 and 1901.
Seminar (two hours); two terms.
Prerequisite: HISTORY 2J06 and registration in Level III or IV of any Honours programme in History
Students may take only two of HISTORY 4C06, 4CC6, 4H06, 4T06 and 4W06.
Enrolment is limited. Departmental permission required.

HISTORY 4D06 SPECIAL TOPICS IN GREEK HISTORY
Investigations into Greek social history and its interpretation.
Seminar (two hours); two terms.
Prerequisite: Six units from HISTORY 2L03, 2L06, 3L03, 3U03, CLASSICS 2K03, and registration in Level III or IV of any Honours programme in History
Cross-list: CLASSICS 4D06
Enrolment is limited. Departmental permission required.

HISTORY 4E06 SPECIAL TOPICS IN THE HISTORY OF VICTORIAN BRITAIN
An examination of such themes as the two-party system, the Irish question, working-class life, religious and literary movements, evolving industrialism, imperialism and social reform.
Seminar (two hours); two terms.
Prerequisite: HISTORY 2N06 and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4G06 SPECIAL TOPICS IN THE HISTORY OF MODERN CHINA
Aspects of the political, social, and cultural history of nineteenth- and twentieth-century China.
Seminar (two hours); two terms.
Prerequisite: One of HISTORY 2B06, 2G03 or 3G03 and registration in Level III or IV of any Honours programme in History
Alternates with HISTORY 4B06.
Enrolment is limited. Departmental permission required.

HISTORY 4G08 TOPICS IN MIDDLE EASTERN AND ISLAMIC HISTORY
Aspects of the social history of the Middle East and Islamic world, such as the Muslim-Christian encounter, gender and ethnicity.
Seminar (two hours); two terms.
Prerequisite: One of HISTORY 2E06, 2E83, 3A03, 3A04, and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4H06 CANADIAN WOMEN’S HISTORY
An examination of historical changes in women’s roles in Canadian society, particularly since Confederation. This includes investigation of family dynamics, women’s work and women’s political involvement.
Seminar (two hours); two terms.
Prerequisite: HISTORY 2F06 or 3X03 and registration in Level III or IV of any Honours programme in History
Students may take only two of HISTORY 4H06, 4CC6, 4H06, 4T06 and 4W06.
Enrolment is limited. Departmental permission required.

HISTORY 4J06 SPECIAL TOPICS IN THE HISTORY OF THE UNITED STATES IN THE 20TH CENTURY
Seminar (two hours); two terms.
Prerequisite: One of HISTORY 2H06 or 3E06 and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4L06 SPECIAL TOPICS IN THE HISTORY OF THE UNITED STATES BEFORE 1865
Seminar (two hours); two terms.
Prerequisite: HISTORY 2L06 and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4M06 RUSSIA AND REVOLUTION
The impact of modernization upon the Soviet state and society.
Seminar (two hours); two terms.
Prerequisite: HISTORY 3H06 and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4P06 CONTEMPORARY EUROPE
Topics in the history of Europe during the 20th Century.
Seminar (two hours); two terms.
Prerequisite: Six units from HISTORY 2M06, 3F03, 3H03, 3L03, 3S03, 3W03, and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4Q06 SPECIAL TOPICS IN THE HISTORY OF LATE ANTIQUITY AND BYZANTIUM
An examination of the shift from pagan to Christian paradigms in the Mediterranean world, beginning with the conversion of Constantine in 313 and ending with the fall of Constantinople in 1453.
Seminar (two hours); two terms.
Prerequisite: Six units from HISTORY 2I06, 2L03, 2L06, 2L13, 3F03, 3L13, 3M03, 3U03, 3V03 and registration in Level III or IV of any Honours programme in History
Alternates with HISTORY 4S06
Enrolment is limited. Departmental permission required.

HISTORY 4S06 SPECIAL TOPICS IN THE HISTORY OF THE MIDDLE AGES
Selected themes in the history of England and the Continent.
Seminar (two hours); two terms.
Prerequisite: Six units from HISTORY 2I06, 2L03, 2L06, 2L13, 3F03, 3L13, 3M03, 3U03, 3V03 and registration in Level III or IV of any Honours programme in History
Alternates with HISTORY 4Q06
Enrolment is limited. Departmental permission required.
HISTORY 4T06 THE PROGRESSIVE IMPULSE IN CANADA AND THE UNITED STATES
An examination of the social and political reform movements which swept across North America from the 1890's to the 1920's, as various social groups responded to the emergence of the modern corporate economy. Seminar (two hours); two terms
Prerequisite: One of HISTORY 2H06, 2J06, 3G03, 3K03, 3L03 and registration in Level III or IV of any Honours programme in History
Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06. Enrolment is limited. Departmental permission required.

HISTORY 4U06 INDEPENDENT RESEARCH
A reading and/or research programme under the supervision of one member of the Department. A major paper is required, as well as a formal oral examination. Prerequisite: Registration in Level IV of any Honours programme in History and the attainment of a CA of at least 9.0, and permission of the Department. Enrolment is limited. Departmental permission required.

HISTORY 4W05 THE NORTH AMERICAN CITY, 1760 TO THE PRESENT
An examination of: founders' designs; practices and influence of business communities; the impact of technology and architecture; spatial organization of class and ethnicity; shelter and urban services; differences between Canadian and American cities. Seminar (two hours); two terms
Prerequisite: HISTORY 2H06 or 2J06, and registration in Level III or IV of any Honours programme in History. HISTORY 3BB3 is recommended. Antirequisite: HISTORY 4C06
Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06. Enrolment is limited. Departmental permission required.

HISTORY 4Y06 THE SECOND WORLD WAR
Emphasis will be placed on the military and diplomatic aspects of the subject. Seminar (two hours); two terms
Prerequisite: HISTORY 3I03 or 3J06 and registration in Level III or IV of any Honours programme in History. Enrolment is limited. Departmental permission required.

HUMANITIES (GENERAL)

Lecturers
Jill LeBlanc/B.A. (McMaster), M.A., Ph.D. (Toronto)
Geoffrey Rockwell/B.A. (Haverford College), M.A., Ph.D. (Toronto)

Courses
If no prerequisite is listed, the course is open.

HUMAN 2C03 CRITICAL THINKING
This course aims to improve skills in analyzing and evaluating arguments and presentations found in everyday life and academic contexts, and to improve critical judgement.
Two lectures; one tutorial; one term
Prerequisite: Registration in Level II and above
Antirequisite: ARTS/SCI 1806, PHILOS 2R03
HUMAN 2C03 is administered by the Department of Philosophy

HUMAN 2E03 INTRODUCTION TO COMPUTERS IN THE HUMANITIES
An Introduction to issues in Humanities Computing. Students will study the history and present state of computing and information technology with particular attention given to issues around communication and human interaction. In this context, students will also learn skills such as how to use MS-DOS, word processing, electronic mail, how to browse the Internet, and how to search a database. No previous experience with computers is necessary. Prerequisite: Registration in Level II or above of a programme in the Faculty of Humanities. HUMAN 2E03 is administered by Dr. G. Rockwell, TSH, Room 312. Enrolment is limited.

HUMAN 2F03 SELECTED INTERDISCIPLINARY TOPICS IN MEDIEVAL LIFE AND CULTURE
The course will focus on themes to promote discussion and analysis of the roles played by women and men in the Middle Ages. It will explore some of the following topics: the history of health care and life cycles; the depiction of women by Latin and vernacular writers; female/male roles in the realm of spirituality; women as patrons and performers, authors, musicians and artists in medieval society; gender issues in legislation and law enforcement. Three lectures; one term
Prerequisite: Registration in Level II or above
HUMAN 2F03 is administered by the Department of History for 1997-98.

HUMAN 3F03 QUANTITATIVE METHODS IN THE HUMANITIES
An introduction to the fundamentals of quantitative research in the humanities. In the context of humanities research, students will learn to use text-analysis tools and how to design and program a database. Students will be expected to use these tools to work on projects related to their specific discipline.
Prerequisite: HUMAN 2E03
Alternates with HUMAN 3G03.
HUMAN 3F03 is administered by Dr. G. Rockwell, TSH, Room 312. Enrolment is limited.

HUMAN 3G03 MULTIMEDIA IN THE HUMANITIES
This course is for students in the humanities who want to study computer-based multimedia and create multimedia works. Students will discuss how to evaluate multimedia works, create such works, and consider the application of multimedia technology to the humanities.
Prerequisite: HUMAN 2E03
Alternates with HUMAN 3F03.
HUMAN 3G03 is administered by Dr. G. Rockwell, TSH, Room 312. Enrolment is limited.

HUMAN 3W03 APPLIED HUMANITIES I
An opportunity for students to gain applied experience in a field related to a Humanities discipline. A student will apply skills and knowledge acquired in undergraduate studies in practical areas such as research projects, pedagogy and work placements. Students participate in defining learning goals and experiences.
Prerequisite: Registration in Level III or IV of any Honours programme offered by the Faculty of Humanities. Students must contact the Dean's Office, CNH-112, for information on opportunities that are available for the coming year. Enrolment is limited.

HUMAN 3W03 APPLIED HUMANITIES II
An opportunity for students to gain applied experience in a field related to a Humanities discipline. A student will apply skills and knowledge acquired in undergraduate studies in practical areas such as research projects, pedagogy and work placements. Students participate in defining learning goals and experiences.
Prerequisite: Registration in Level III or IV of any Honours programme offered by the Faculty of Humanities. Students must contact the Dean's Office, CNH-112, for information on opportunities that are available for the coming year. Enrolment is limited.

INDIGENOUS STUDIES
An interdisciplinary minor in Indigenous Studies is offered. Please refer to the Interdisciplinary Minors and Thematic Areas section of this Calendar.

Courses
If no prerequisite is listed, the course is open.

INDIGENOUS STUDIES ...

INDIGENOUS STUDIES 1A06 INTRODUCTION TO INDIGENOUS STUDIES
A study of the world views of Indigenous peoples, including the Inuit, First Nations and the Metis, and of contemporary Indigenous societies' social systems, political organization and economic development. Three hours (lecture and seminars); two terms

INDIGENOUS STUDIES 2A06 INTRODUCTION TO INDIGENOUS PEOPLES' SPIRITUALITY
A review of the Indigenous peoples' views of the world, particularly as they relate to the natural world, their spirituality and their social systems. Three hours (lecture and seminars); two terms
Prerequisite: INDIGENOUS STUDIES 1A06

INDIGENOUS STUDIES 2B03 INTRODUCTION TO INDIGENOUS PEOPLES' HISTORY
An examination of the forces which shaped the history of the Indigenous peoples of Canada since the pre-contact period with Europeans, with special emphasis on eastern woodland peoples, the Iroquois Confederacy, and the Council of Three Fires. Three hours (lecture and seminar); one term
Prerequisite: INDIGENOUS STUDIES 1A06

INDIGENOUS STUDIES 2C03 INTRODUCTION TO CONTEMPORARY INDIGENOUS SOCIETIES
A review of the geographic, cultural and demographic composition of Inuit, First Nations and Metis, and of the major current developments on land, cultural integrity, treaties, economic development, community social development and self-government. Three hours (lecture and seminars); one term
Prerequisite: INDIGENOUS STUDIES 1A06
INDIG ST 3A03  THE SPIRITUAL TEACHINGS OF ELDERS
An examination of the Great Law of the Iroquois people, the teachings of the
Council of Three Fires, and other similar teachings of other groups.
Three hours (lecture and seminar); one term
Prerequisite: INDIG ST 2A06

INDIG ST 3B03  HISTORY OF THE EASTERN WOODLAND PEOPLE
A detailed study of the heritage of the main tribal groups from the Atlantic
Coast to North-western Ontario, with an examination of social, political and
economic systems.
Three hours (lecture and seminar); one term
Prerequisite: A Level II Indigenous Studies course

INDIG ST 3B03  HISTORY OF CONTEMPORARY
INDIGENOUS PEOPLES
An intensive examination of the history of aboriginal groups selected from the
Northern Peoples (Cree, Inuit, Dene), the western peoples, or the Melis. The
exact groups selected and range of topics will vary depending on the instructor.
Three hours (lecture and seminar); one term
Prerequisite: A Level II Indigenous Studies course

INDIG ST 3C03  STUDY OF IROQUOIS FIRST NATIONS
IN CONTEMPORARY TIMES
An intensive examination of the Iroquois First Nations Confederacy and its
attempts to maintain its culture, socio-political systems and economic
independence.
Three hours (lecture and seminar); one term
Prerequisite: A Level II Indigenous Studies course

INDIG ST 3C03  CONTEMPORARY INDIGENOUS SOCIETIES:
SELECTED TOPICS
An intensive examination of selected political, economic, or social prob-
lemas faced by selected indigenous peoples.
Three hours (lecture and seminar); one term
Prerequisite: A Level II Indigenous Studies Course

INDIG ST 3D03  CONTEMPORARY NATIVE
LITERATURE IN CANADA
A study of significant works by Native writers who give voice to their experi-
ce in Canada. Issues examined include appropriation of voice, native
identity, women in indigenous societies, and stereotyping.
Three hours (lecture and seminars); one term
Prerequisite: INDIG ST 1A06

INDIG ST 3E03  CONTEMPORARY NATIVE
LITERATURE IN THE UNITED STATES
A study of contemporary works by Native writers in the United States within the
Three hours (lecture and seminars); one term
Prerequisite: INDIG ST 1A06

CAYUGA ...

CAYUGA 1Z06  BEGINNERS' INTENSIVE CAYUGA
This course will emphasize the spoken Cayuga language, including correct pro-
nunciation, word formation, verb analysis and an introduction to the written form.
Three hours (lecture and seminars); two terms

CAYUGA 2Z06  INTERMEDIATE CAYUGA
This course expands on the vocabulary and the oral skills for the Cayuga lan-
guage. In addition, the course reviews the written component of the language.
Three hours (lecture and seminars); two terms
Prerequisite: CAYUGA 1Z06

CAYUGA 3Z06  ADVANCED CAYUGA
An in-depth study of the structure and literature of the Cayuga language and a
comparision of the different Cayuga dialects.
Three hours (lecture and seminars); two terms
Prerequisite: CAYUGA 2Z06

MOHAWK ...

MOHAWK 1Z06  BEGINNERS' INTENSIVE MOHAWK
This course will emphasize the spoken Mohawk language, including cor-
rect pronunciation, word formation, verb analysis and an introduction to the
written form.
Three hours (lecture and seminars); two terms

MOHAWK 2Z06  INTERMEDIATE MOHAWK
This course expands on the vocabulary and the oral skills for the Mohawk lan-
guage. In addition, the course reviews the written component of the language.
Three hours (lecture and seminars); two terms
Prerequisite: MOHAWK 1Z06

MOHAWK 3Z06  ADVANCED MOHAWK
An in-depth study of the structure and literature of the Mohawk language and a
comparision of the different Mohawk dialects.
Three hours (lecture and seminars); two terms
Prerequisite: MOHAWK 2Z06

OJIBWA ...

OJIBWA 1Z06  BEGINNERS' INTENSIVE OJIBWA
This course will emphasize the spoken Ojibwa language, including correct pro-
nunciation, word formation, verb analysis and an introduction to the written form.
Three hours (lecture and seminars); two terms

OJIBWA 2Z06  INTERMEDIATE OJIBWA
This course expands on the vocabulary and the oral skills for the Ojibwa lan-
guage. In addition, the course reviews the written component of the language.
Three hours (lecture and seminars); two terms
Prerequisite: OJIBWA 1Z06

OJIBWA 3Z06  ADVANCED OJIBWA
An in-depth study of the structure and the literature of the Ojibwa language and a
comparision of the Central dialect with other Ojibwa dialects.
Three hours (lecture and seminars); two terms
Prerequisite: OJIBWA 2Z06

INTERNATIONAL JUSTICE
AND HUMAN RIGHTS

(SEE THEME SCHOOL ON INTERNATIONAL JUSTICE AND
HUMAN RIGHTS)

ITALIAN

Courses and programmes in Italian are administered within the Depart-
ment of Modern Languages of the Faculty of Humanities.

Department Note:

Students should note that the Department has classified its Italian language
courses under the following categories:
Introductory Level Language Courses
ITALIAN 1Z06, 2Z06
Intermediate Level Language Courses
ITALIAN 1A06, 2A06
Advanced Level Language Courses
ITALIAN 2A03, 3D03, 4M03

Courses  If no prerequisite is listed, the course is open.

ITALIAN 1A06  INTERMEDIATE ITALIAN
An intensive review of the grammatical structures of Italian and an intro-
duction to composition, together with oral practice.
Four hours; two terms
Prerequisite: OAC Italian or permission of the Department
Antirequisite: ITALIAN 2Z06

ITALIAN 1Z06  BEGINNER'S INTENSIVE ITALIAN
An intensive beginner's course designed for students with no prior knowledge
of the language. The course gives the student a basic knowledge of Italian
grammar and the opportunity to practise the spoken language. This course is
enhanced by a CALL (Computer-Aided Language Learning) module.
Four hours (including lab practice); two terms
Antirequisite: OAC Italian, or ITALIAN 1Z06
Students who speak or understand an Italian dialect or Standard Italian
may not register in this course.

ITALIAN 1Z26  BEGINNER'S INTENSIVE ITALIAN
FOR DIALECT SPEAKERS
An intensive beginner's course designed for students who understand an Italian
dialect or Standard Italian. The course gives the student a basic knowledge of
Italian grammar and the opportunity to practise the spoken language. This course is
ehanced by a CALL (Computer-Aided Language Learning) module.
Four hours (including lab practice); two terms
Antirequisite: OAC Italian, or ITALIAN 1Z26
Enrolment is limited.
Students with prior knowledge of the language as determined by a place-
ment test may be required to take an appropriate alternative.
ITALIAN 2A03  INTENSIVE PRACTICE IN ITALIAN
A conversation course designed to improve oral and aural proficiency in Italian.
Three hours; one term
Prerequisite: ITALIAN 1A06 or 2206

ITALIAN 2F03  CONTEMPORARY ITALIAN LITERATURE AND CULTURE
This course will study Italian literature from Fascism and the Second World War, focusing on Neorealism in literature and film, and on major contemporary authors, from Moravia to Calvino.
Three lectures; one term
Prerequisite: ITALIAN 1A06, or registration or credit in ITALIAN 2206

ITALIAN 2206  ITALIAN GRAMMAR PRACTICE
An intensive review of the grammatical structures of Italian and an introduction to composition, together with oral practice.
Four hours; two terms
Prerequisite: ITALIAN 1206 or 1Z26
Antirequisite: ITALIAN 1A06

ITALIAN 3D03  ITALIAN STYLISTICS
An introduction to the study of Italian stylistics through an intensive and systematic analysis of Italian clause, sentence and discourse structure.
Three hours; one term
Prerequisite: ITALIAN 2A03

ITALIAN 3N03  EARLY TWENTIETH-CENTURY ITALIAN LITERATURE AND CULTURE
This course will study Italian literature and drama with emphasis on D'Annunzio, Svevo, Pirandello and the Hermetic school of poetry.
Three lectures; one term
Prerequisite: Nine units of Italian above Level I
Offered in alternate years.

ITALIAN 3R03  DANTE
This course will focus on the Divina Commedia, with special reference to its historical and literary significance.
Three lectures; one term
Prerequisite: Nine units of Italian above Level I
Antirequisite: MOD LANG 3B03
Offered in alternate years.

ITALIAN 3RR3  BOCCACCIO AND PETRARCH
A study of Petrarch's Canzoniere and Boccaccio's Decameron.
Three lectures; one term
Prerequisite: Nine units of Italian above Level I
Antirequisite: MOD LANG 3B03
Offered in alternate years.

ITALIAN 4G03  NINETEENTH-CENTURY ITALIAN LITERATURE AND CULTURE
This course will study Italian poetry, fiction and drama, with special emphasis on the works of Foscolo, Manzoni, Leopardi, Carducci, Verga, Fogazzaro and Pascoli.
Three lectures; one term
Prerequisite: Nine units of Italian above Level I
Antirequisite: MOD LANG 3B03
Offered in alternate years.

ITALIAN 4I03  INDEPENDENT STUDY
The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.
Tutorials; one term
Prerequisite: 16 units of Italian above Level I and permission of the Department

ITALIAN 4M03  INTENSIVE COMPOSITION, STYLISTICS AND ORAL PRACTICE IN ITALIAN
An advanced language study course designed to develop the student's skills in composition, stylistics and conversation. Practice materials will be drawn from 20th-century literary works for the purpose of language study.
Three hours; one term
Prerequisite: ITALIAN 3D03

ITALIAN 4R03  RENAISSANCE
A study of the literature of the Renaissance.
Three lectures; one term
Prerequisite: Nine units of Italian above Level I
Antirequisite: MOD LANG 3S33
Offered in alternate years.

ITALIAN 4T03  TOPICS IN ITALIAN LITERATURE
Previous topics include: Italian Criticism, Utopian Genres, Italian Theatre. Consult the Department concerning topic to be offered.
Three lectures; one term
Prerequisite: Nine units of Italian above Level I
Offered in alternate years.
ITALIAN 4T05 may be repeated, if on a different topic, to a total of six units.
JAPAN ST 3B03 MODERN JAPAN
A survey of 19th- and 20th-century Japan, with emphasis on political developments, social change, and Japan's relations with East Asia and the West.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: HISTORY 3B03

JAPAN ST 3E03 JAPANESE RELIGION
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above. One of RELIG ST 1906 or 2M06 or JAPAN ST 2P06 is recommended.
Cross-list: RELIG ST 3E03

JAPAN ST 3H03 STORYTELLING IN EAST ASIAN RELIGIONS
An in-depth study of selected examples of story literature in China and Japan with attention to the way religion is represented in them.
Two lectures, one tutorial; one term
Cross-list: RELIG ST 3H03

JAPAN ST 3J03 GEOGRAPHY OF JAPAN
Human and physical geography of Japan with emphasis on historical, international, demographic and economic aspects.
Three lectures; one term
Prerequisite: GEOG 1806 or registration in a Japanese Studies programme
Cross-list: GEOG 3J03

JAPAN ST 3S03 ISSUES IN ASIAN RELIGIOUS THOUGHT: EAST ASIA
Readings in East Asian religious texts in translation will centre around themes such as culture vs. nature, virtue vs. power, social responsibility vs. personal cultivation, bookish learning vs. meditation.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level III and above
Cross-list: ARTS&SCI 3S03, RELIG ST 3S03

JAPAN ST 3U03 CH'AN AND ZEN BUDDHISM
An examination of Ch'an and Zen Buddhist myth, history, doctrine, monastic culture, and ritual practice.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above
Cross-list: RELIG ST 3U03

JAPAN ST 4A06 GUIDED READING IN JAPANESE STUDIES
Independent study on an approved topic. A major essay and/or final examination will be required.
Two terms
Prerequisite: Registration in Level III or IV of a Japanese Studies programme and permission of the Director

JAPAN ST 4B03 GUIDED READING IN JAPANESE STUDIES
Independent study on an approved topic. A research essay and/or final examination will be required.
One term
Prerequisite: Registration in Level III or IV of a Japanese Studies programme and permission of the Director

JEWISH STUDIES
(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

KINESIOLOGY

Faculty as of January 15, 1997

Chair
Janet L. Starkes

Professors Emeriti
Frank J. Hayden/B.A. (Western Ontario), M.A., Ph.D. (Illinois)
Alan J. Smith/B.S.A., M.Ed. (Toronto), D.Ed. (SUNY, Buffalo)

Professors
Peter Donnelly/Dip.Ed. (City of Birmingham College), B.A. (Hunter College, N.Y.), M.S., Ph.D. (Massachusetts)
Dilip Elliott/B.Sc., M.Sc., Ph.D. (Waterloo)
Timothy D. Lee/B.H.K., M.A. (Windsor), Ph.D. (Louisiana State)
D. J. MacDougall/B.A., B.P.H.E. (Queen's), M.S., (Oregon), Ph.D. (Wisconsin)
Nell McClinton/B.Ed. (Exeter), Ph.D. (McMaster)
Dilip G. Saleem/B.P.H.E. (Toronto), M.A. (Western Ontario), Ph.D. (McMaster)
Janet L. Starkes/B.A. (Western Ontario), M.Sc., Ph.D. (Waterloo)

Associate Professors
Cameron J. Bimlace/B.A., B.P.E. (McMaster), M.A., Ph.D. (Western Ontario)
Nicola Cipriano/B.P.H.E., M.Sc. (Lakeshead)
James J. Dowling/B.H.K., M.H.K. (Windsor), Ph.D. (Waterloo)
Robert J. Henderson/B.P.E. (McMaster), M.A., Ph.D. (Alberta)
Audrey Hicks/B.P.E., M.Sc., Ph.D. (McMaster)
Susan E. Inglis/B.P.E., M.A. (Alberta), Ph.D. (Ohio State)
Mary E. Keyser/B.B.A., M.A. (Western Ontario), Ph.D. (Ohio State)
Cindy Khalifa/B.A., B.P.H.E., B.Ed., M.Sc. (Queen's), Ph.D. (Waterloo)
Phil G. White/B.Sc. (London), Cert. Ed. (Carneal), M.Sc., Ph.D. (Waterloo)
David C. Wilson/B.Ed. (Bristol), M.A. (York)

Assistant Professors
Nancy B. Bouchier/B.A., M.A., Ph.D. (Western Ontario)
Mark A. Tamakoshi/S.P.E., M.D., Ph.D., F.R.C.P. (C), (McMaster)

Associate Members
Oded Bar-Ori/(Pediatrics) M.D. (Hebrew Un., Jerusalem)
Vicki Galeai/(Rehabilitation Science) B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)
A.J. McComas/(Medicine) B.Sc., M.B., B.S. (Durham), F.R.C.P.(C)
Robert S. McKelvie/(Medicine) B.Sc., M.Sc., M.D. (Western Ontario), Ph.D. (McMaster)
Michael Pierrynowski/(Rehabilitation Science) B.Sc., M.Sc. (Waterloo), Ph.D. (Simon Fraser)
Laurie Swannar/(Rehabilitation Science) Dip.P&OT, B.Sc. (Toronto), M.Sc. Ph.D. (McMaster)

Department Notes:
1. Not all Level III and IV Kinesiology courses are taught every year.
2. To facilitate Kinesiology students who wish to pursue a minor in Sociology, the Kinesiology courses cross-listed with Sociology (KINESIOL 3P03/SOCIOl 3D03 and KINESIOL 3Q03/SOCIOl 3E03) may be taken as elective credit. However, such students must meet the Sociology prerequisites (SOCIOl 1A06).
3. With the permission of the instructor, the following courses may be taken as elective credit by undergraduates not in Kinesiology: KINESIOL 3E03, 3F03, 3Q03, 4L03, 4M03, 4Q03, 4Y03. No permission is required for KINESIOL 3J03, 3S03, 4JJ3 and 4T03 which may also be taken as elective credit by undergraduates not in Kinesiology. However, enrolment may be limited. All other Kinesiology courses are open only to students registered in the B. Kin. programme.
4. Enrolment in some Level III and IV elective Kinesiology courses is limited and some require a prerequisite or permission of the instructor.
5. Former Level III and IV Physical Education courses may not take the corresponding course under the Kinesiology designation.

Courses
KINESIOL 1A06 ANATOMY/PHYSIOLOGY
Macroscopic and microscopic anatomy and physiology of the skeletal, muscular, nervous, cardiovascular, and respiratory systems. The basic anatomy of the integumentary, immune, digestive, endocrine, and urogenital systems will also be presented.
Three hours (lectures, labs); two terms

KINESIOL 1B03 INQUIRY IN KINESIOLOGY
An introduction to inquiry in Kinesiology including qualitative and quantitative research methods.
Three hours (lectures, tutorials, computer labs); one term
Antirequisite: KINESIOL 1B06

KINESIOL 1D03 THE HISTORY AND PHILOSOPHY OF KINESIOLOGY
A study of the origins and development of modern Kinesiology including an examination of the evolution of Kinesiology subdisciplines and areas of allied professional practice such as physical education and sports medicine.
Three hours (lectures, tutorials); one term
Antirequisite: KINESIOL 1B06

KINESIOL 1E03 PSYCHOMOTOR BEHAVIOUR
The behavioural and psychological principles underlying motor control and motor learning.
Three hours (lectures, labs); one term
Antirequisite: KINESIOL 1E06
KINESIOL 2A03 BIOMECHANICS
Study of kinematics and kinetics of human movement, including electrophysiology, fluid and tissue mechanics with applications.
Three hours (lectures, lab); one term
Antirequisite: KINESIOL 2A06
First offered in 1998-99.

KINESIOL 2A06 BIOMECHANICS
An introduction to the concepts of kinematics and kinetics of the musculoskeletal system in humans, and an exploration of the concepts of motor control of human movement with a focus on muscular contraction and the technique of electromyography.
Three hours (lectures, lab); two terms
Last offered in 1997-98.

KINESIOL 2B03 SOCIOLOGY OF SPORT
Critical examination of contemporary issues and problems of sport in Canadian society.
Three hours; one term
Antirequisite: KINESIOL 2B06
First offered in 1998-99.

KINESIOL 2B06 SOCIO-HISTORICAL APPROACHES TO SPORT AND HUMAN MOVEMENT IN CANADA
An examination of the origins and development of sport and recreational human movement in Canada, together with a consideration of the background and processes associated with various issues in sport and physical recreation.
Three hours (lectures); two terms
Last offered in 1997-98.

KINESIOL 2C06 PHYSIOLOGY OF EXERCISE
The effects of exercise on the physiological systems, and the application of physiological principles to human exercise performance.
Three hours (lectures, labs); two terms

KINESIOL 3A03 HISTORY OF PHYSICAL CULTURE AND SPORTS MEDICINE
Selected topics in the social and cultural history of physical culture and sports medicine in the Western World, with a particular emphasis on nineteenth and twentieth century developments in North America.
Three hours (lectures); one term
Enrolment is limited.

KINESIOL 3B03 PHYSICAL ACTIVITY FOR CHALLENGED POPULATIONS
Physical activity and movement designed to meet the needs, interests, and abilities of individuals referable to special physical activity programmes.
Three hours (lectures); one term
Corequisite: Registration in PR 89

KINESIOL 3C03 STATISTICS AND RESEARCH DESIGN
Research design and descriptive and inferential statistics in Kinesiology.
Three hours (lectures); one term

KINESIOL 3D03 GROWTH, MATURATION AND PHYSICAL ACTIVITY
Growth, development and maturation changes underlying morphologic and functional development of selected physiological systems which influence human exercise capacity during childhood.
Two lectures, one poster presentation; one term

KINESIOL 3E03 NEURAL CONTROL OF HUMAN MOVEMENT
Neuromuscular control underlying human movement. Topics include basic neurophysiology, mechanisms of sensation, reflexes, voluntary movement and theories of motor control.
Three hours (lectures); one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.
Antirequisite: KINESIOL 4E03

KINESIOL 3F03 MANAGEMENT CONCEPTS AND PROGRAMME DELIVERY IN HUMAN MOVEMENT WORK ENVIRONMENTS
A macro perspective of administration concepts, tasks and related issues in the delivery of programmes and services within human movement contexts of work, play, sport and athletics, rehabilitation, education and aesthetics.
Three hours (lectures, seminars); one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.

KINESIOL 3H03 HISTORICAL INTERPRETATIONS OF SPORT AND PHYSICAL ACTIVITY
Critical inquiry into the development of physical activity and sport from ancient to modern civilizations in the perspective of cultural change.
Two lectures, one seminar; one term
Enrolment is limited.

KINESIOL 3J03 HISTORY OF MODERN DANCE
A survey of trends in modern dance including modern dance forerunners, pioneers, and second generation, post-moderns, new dance in Canada. Students attend performances and participate in workshops.
Three hours (lectures, practical); one term
This course may be taken as elective credit by undergraduates not in Kinesiology.
Antirequisite: KINESIOL 4J03

KINESIOL 3K03 SPORTS INJURIES
Common athletic injuries will be discussed under the following headings: mechanism of injury, prevention, preliminary assessment, tissue healing, basic taping techniques, and emergency care.
Two lectures, one lab; one term
Enrolment is limited. Priority will be given to Level IV Kinesiology students.

KINESIOL 3L03 ORGANIZATIONAL BEHAVIOUR AND THE APPLICATION TO HUMAN MOVEMENT WORK ENVIRONMENTS
An examination of concepts and issues of organizational behaviour in a variety of work environments. Topics include communications, leadership, conflict management, individuals and groups at work.
Three hours (lectures and seminars); one term
Prerequisite: KINESIOL 3P03 and with permission of the instructor this course may be taken as elective credit by undergraduates not in Kinesiology.
Antirequisite: COMMERCE 2B13
Enrolment is limited.

KINESIOL 3M03 FOUNDATIONS OF ATHLETIC COACHING
An examination of the coaching process with emphasis placed on the behavioural aspects. Topics include leadership styles and decision making, motivation in sport, group cohesion, psychological considerations for youth in sport and psychological techniques for optimizing performance.
Three hours (lectures); one term

KINESIOL 3P03 SPORT AND SOCIAL DEVELOPMENT
Macro-analysis of sport and culture, considering the place of sport and leisure in cultural transmission and cultural change.
Three hours (lectures and discussion); one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.
Cross-list: SOCIOL 3D03
Only Kinesiology students who are working towards a minor in Sociology may, if they meet the Sociology prerequisite and with permission of the instructor, register for this course as SOCIOL 3D03. All other Kinesiology students must register for this course as KINESIOL 3P03.

KINESIOL 3Q03 SPORT AND SOCIALIZATION
Analysis of the process of becoming involved in sport, sustaining and changing that involvement, and retirement.
Three hours (lectures and discussion); one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.
Cross-list: SOCIOL 3E03
Only Kinesiology students who are working towards a minor in Sociology may, if they meet the Sociology prerequisite and with permission of the instructor, register for this course as SOCIOL 3E03. All other Kinesiology students must register for this course as KINESIOL 3Q03. Not offered in 1997-98.

KINESIOL 3S03 BODY, MIND, SPIRIT
An exploration of the relationship between body, mind and spirit from the standpoint of eastern and western religious and philosophical thought with special reference to current perspectives on human potential. Course work includes experiential workshops.
Three hours (lectures and seminars); one term
This course may be taken as elective credit by undergraduates not in Kinesiology.
Enrolment is limited.

KINESIOL 199
KINESIOL 3Z03 HUMAN MOVEMENT PRACTICUM
Experiential learning in three movement activities selected from team games, individual sports, indoor and outdoor recreational activities, body awareness, and dance.
Students may not select any practicum for which they have already received previous Practicum (PR) credit.

KINESIOL 4A03 LEISURE IN SOCIETY
Investigation of modern leisure with particular emphasis on the social construction of leisure, democratization and commercialization of leisure, and failure to achieve the promised “leisure society”.
Three hours (lectures, group work); one term
Not open to students who have taken KINESIOL 4F03 if the topic was Sociology of Leisure

KINESIOL 4A06 ADVANCED BIOMECHANICS
In-depth study of the mechanics of human movement including the topics of multi-linked segment analysis in 3-D, fluid resistance, optimization, movement simulation and individual muscle force estimation with applications to occupational biomechanics, injury and rehabilitation.
Three hours (lectures, labs); two terms
Prerequisite: Registration in Level III or IV Kinesiology and permission of the instructor
Enrolment is limited.

KINESIOL 4B03 PHYSICAL ACTIVITY AND CORONARY HEART DISEASE
An examination of the role of physical activity in the prevention and rehabilitation of coronary heart disease.
Three lectures; one term

KINESIOL 4C03 CARDIO-RESPIRATORY AND METABOLIC ASPECTS OF HUMAN PHYSICAL PERFORMANCE
Cardio-respiratory factors affecting human physical performance with emphasis upon procedures for maximizing sport performance.
Two lectures, one lab; one term
Prerequisite: Registration in Level IV Kinesiology and permission of the instructor
Antirequisite: KINESIOL 4C06
Enrolment is limited.

KINESIOL 4C06 NEUROMUSCULAR ASPECTS OF HUMAN PHYSICAL PERFORMANCE
Neuromuscular factors affecting human physical performance with emphasis upon procedures for maximizing sport performance.
Two lectures, one lab; one term
Prerequisite: Registration in Level IV Kinesiology and permission of the instructor
Antirequisite: KINESIOL 4C06
Enrolment is limited.

KINESIOL 4D03 OUTDOOR EDUCATION
An introduction to skills, pedagogy and perspectives of outdoor education. This course involves a 9 day canoe/camping field component before classes start.
Three hours (lectures, tutorials, field experiences); one term (Approximate cost of field component is $320.00)
Enrolment is limited.

KINESIOL 4E03 ADVANCED PLACEMENT
Students take part in a supervised practical experience that links classroom knowledge to professional practice. Placements are offered in special needs populations, management, teaching and coaching, cardiac rehabilitation and outdoor education.
Placement experience equivalent to one day per week, seminars; one term
Prerequisite: One of KINESIOL 3B03, 3F03, 3M03, 4B03 and 4D03 including completion of the corresponding practicum; registration in Level IV Kinesiology and permission of the instructor

KINESIOL 4F03 SELECTED TOPICS IN KINESIOLOGY
Each year the Department of Kinesiology offers a number of different courses under this category reflecting topics of contemporary interest with emphasis upon current theory and research. Students are advised to contact the Department of Kinesiology, Undergraduate Office, for descriptions of the courses offered during the current academic year.
Three hours (lectures, seminars); one term
Enrolment is limited for some topics.

KINESIOL 4G03 PEDAGOGY OF CONTEMPORARY AND TRADITIONAL WILDERNESS TRAVEL
An introduction to Canadian winter travel skills (traditional and contemporary), travel literature and pedagogy of travel guiding. Part of the course requirement is a mandatory five-day traditional winter travel experience during the February mid-term recess.
Three hours (lectures, tutorials, field experiences); one term
Prerequisite: KINESIOL 4D03
(Approximate cost of field component is $50.00)
Enrolment is limited.

KINESIOL 4H03 PHYSICAL ACTIVITY AND LIFESTYLE INFLUENCES ON CHRONIC DISEASE
The relationship between physical activity and associated lifestyle influences on selected chronic diseases is examined from a biological perspective.
Three hours (two lectures, poster presentation); one term
This course may be taken as elective credit by undergraduates not in Kinesiology.
Antirequisite: KINESIOL 4J03
Enrolment is limited.

KINESIOL 4I03 PERCEPTUAL-MOTOR BEHAVIOUR
An advanced examination of current topics regarding perceptual-motor behaviour with particular reference to everyday experiences.
Three hours (lectures, labs); one term
Enrolment is limited.

KINESIOL 4L03 COMPARATIVE SPORT (SELECTED TOPICS)
Contemporary physical education and sport in selected countries, with special attention given to international sports competition and the study of government sport systems.
One lecture, one two-hour seminar; one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.
Enrolment is limited.

KINESIOL 4M03 SPORT PSYCHOLOGY
Principles of sport psychology are applied to individual and team performance issues. Research is emphasized and topics include: personality, motivation, arousal, perception, biofeedback, the process of competition, children in sport, and ethics in sport psychology.
Two lectures, one lab; one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.
Enrolment is limited.

KINESIOL 4N03 ATHLETIC COACHING: TRAINING AND PLANNING PERSPECTIVES
An analysis of factors that facilitate sport performance at the elite level. Topics include periodization, talent identification models, environmental factors, optimal arousal levels and scouting.
Three hours (lectures); one term
Prerequisite: KINESIOL 3M03

KINESIOL 4P03 PAEDIATRIC EXERCISE PHYSIOLOGY
Physiologic aspects of physical activity in children and adolescents in health and disease.
Two lectures, one lab; one term
Prerequisite: KINESIOL 3D03
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.
Enrolment is limited.

KINESIOL 4R03 INDEPENDENT RESEARCH COURSE
Investigation of a selected theoretical or applied problem mutually acceptable to instructor and student.
Prerequisite: Registration in Level IV Kinesiology and permission of the Undergraduate Coordinator and supervising instructor

KINESIOL 4S03 PHYSICAL ACTIVITY IN CHRONIC HEALTH IMPAIRMENTS
Focus on current issues in adaptives, including sections on aging, chronic health impairments, and the role of physical activity.
Three hours (two lectures, one seminar); one term
Prerequisite: KINESIOL 3B03, PR66
Enrolment is limited.
KINESIOL 4T03  GENDER, SPORT AND LEISURE
The influence of sport and leisure on the social construction of masculinity and femininity.
Three hours (seminars); one term
This course may be taken as elective credit by undergraduates not in Kinesiology.
Enrolment is limited.

KINESIOL 4U03  ADVENTURE BASED LEARNING
Adventure based learning foundations, philosophy, and pedagogy will be examined through a combination of practices and theories relevant to contemporary educational issues.
Lectures, tutorials, and field experiences; one term
(Approximate component cost is $120.00.)

KINESIOL 4V03  HUMAN FACTORS AND ERGONOMICS
The abilities and limitations of human performance are examined with respect to how individuals interact with objects in their environment.
Three hours (lectures, labs); one term
Enrolment is limited.

KINESIOL 4W03  POSTURE AND GAIT
An examination of neural and mechanical factors in posture and gait control in normal and special populations. The format will be lectures, labs and group discussion of case studies. The first part of the course will include neuroanatomy labs.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 3E03 or 4E03
Not open to students with credit in KINESIOL 4F03 if the topic was Posture and Gait.
Enrolment is limited.

KINESIOL 4X03  CONSUMERISM AND HEALTH
Skills necessary to critically evaluate health-related research will be developed with student investigations of topical controversies in health care.
Three hours (lectures and seminar presentations); one term
Not open to students with credit in KINESIOL 4F03 if the topic was Consumerism and Health
Enrolment is limited.

KINESIOL 4Y03  NUTRITION AND METABOLISM
This course focuses on the interactions between metabolic pathways and their regulation and the impact of nutrition on human performance in health and disease.
Three hours (lectures); one term
With permission of the instructor, this course may be taken as elective credit by undergraduates not in Kinesiology.

KINESIOL 4Z03  SELECTED TOPICS IN ADMINISTRATIVE STUDIES
A senior level seminar course which explores selected topics related to administrative theory and practice in human movement work environments.
Three hours (seminars and presentations); one term
Prerequisite: KINESIOL 3F03 and 3L03
Enrolment is limited.

KINESIOLOGY EXPERIENTIAL NON-CREDIT COURSES...

For Students Who Enter Kinesiology in 1997-98:
KINESIOL 1CA0 (Standard First Aid/CPR) and KINESIOL 2FL0 (Aspects of Fitness, Lifestyle Management and Recreation) are non-credit courses and must be completed by the end of Level II. Level I students who meet the exemption requirement for KINESIOL 1CA0 may take KINESIOL 2FL0 in Level I. To qualify for this exemption a student must have completed Standard First Aid from either the Red Cross or St. John's and two person rescuer CPR ("C" qualification) or hold a current NLS certification.

KINESIOL 1CA0  STANDARD FIRST AID/CPR
The Standard First Aid course meets Industry, business and government requirements (13 hours). The CPR, Level C, is designed for individuals with specific health care responsibilities and is taught to the standard of the Heart and Stroke Foundation of Canada (12 hours).
Two hours; one term
Prerequisite: Registration in Level I Kinesiology
This is a non-credit course and must be completed in Level 1.

KINESIOL 2FL0  ASPECTS OF FITNESS, LIFESTYLE AND RECREATIONAL ACTIVITIES
An experiential-based course emphasizing participation in structured and unstructured physical activity sessions. Factors influencing personal fitness and living an active lifestyle will be explored. Students will design a personal fitness programme and take part in a variety of recreational activities.
Two hours; two terms
Prerequisite: Registration in Level II Kinesiology or registration in Level I Kinesiology and exemption from KINESIOL 1CA0.
This is a non-credit course and must be completed before the end of Level II.

PRACTICUM COURSES...
For Students Who Entered Kinesiology Prior to 1997-98
For students who entered Level I Kinesiology prior to 1997, up to 12 units of practicum may be taken in addition to the 120 units of theory courses required for the programme. The practica requirements are as follows:
Level II: Three units (Last offered in 1997-98).
Dance (2P01), Body Awareness (2E01), and Play (2P01).

Levels III and IV: Six units
One unit of practicum will normally comprise 24 hours; these hours may be compressed into one week (Camp or Orientation Week), spread over a term (Field Work Placement) or, more usually, extend over a six-week period of four hours per week. Students may also choose to take practicum courses offered in the form of fieldwork or leadership experiences, e.g. Cardiac Rehabilitation, Outdoor Education, Administration, Adapted Physical Activity and Athletic Coaching. These fieldwork practicums are typically worth one unit.

LABOUR STUDIES

Faculty as of January 15, 1997

Director
V. Walters

Professors
W. Lewchuk/B.A., M.A. (Toronto), Ph.D. (Cambridge)
V. Walters/B.A., M.A. (Sheffield), Ph.D. (McGill)

Associate Professors
R. Storey/B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)
C. Yates/B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)
D. Wells/B.A. (Western Ontario), M.A. (British Columbia), Ph.D. (Toronto)

Assistant Professors
O. Rafterty/ B.A. (Western Ontario), M.A., Ph.D. (McMaster)

Associate Members
R. Adams/ (Business) B.A. (Pennsylvania State), M.A., Ph.D. (Wisconsin)
P. Daenzer/(Social Work) B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)
A. Robb/(Economics) B.A., M.A. (British Columbia), Ph.D. (Essex)
P. Sugiman/(Sociology) B.A., M.A., Ph.D. (Toronto)

Note:
The following courses may be taken for elective credit by qualified students registered in any programme; however, enrolment in these courses is limited and permission of the instructor is required.

LABR ST 2A03  Trade Unions
LABR ST 2C03  Theoretical Foundations of the Labour Movement
LABR ST 2D03  Different Labours, Different Voices
LABR ST 3A03  Economics of Labour Market Issues
LABR ST 3A3  Economic Restructuring and Work Organization
LABR ST 3C03  Labour Law and Policy
LABR ST 3D03  Occupational Health and Safety
LABR ST 3E03  Women, Work and Trade Unionism
LABR ST 3F03  Selected Topics in Labour Studies

The Honours B.A. Programme and the B.A. Programme in Labour Studies are supervised and coordinated by an interdisciplinary Committee of Instruction.
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Committee of Instruction

Chair
V. Walters (Sociology)
R. Adams (Business)
B. Basadur (Business)
P. Daonzer (Social Work)
J. Johnson (Dean) ex officio
W. Lewchuk (Economics/Labour Studies)
J. Rose (Business)
R. Storey (Labour Studies/Sociology)
P. Sugiman (Sociology)
D. Wells (Labour Studies/Political Science)
C. Yates (Labour Studies/Political Science)

Courses

If no prerequisite is listed, the course is open.

LABR ST 1A03 AN INTRODUCTION TO THE CANADIAN LABOUR MOVEMENT
An examination of the impact of economic, social, cultural and political factors on the historical evolution, structure and actions of the Canadian working class and labour movement. Lectures and discussions; one term
Antirequisite: LABR ST 1AA3

LABR ST 2A03 TRADE UNIONS
An examination of trade unions and their economic and social environment. Topics may include collective bargaining, labour-state relations, internal union decision-making processes and public sector unions. Lectures and discussion; two terms
Prerequisite: Registration in a Labour Studies programme or permission of the instructor
Antirequisite: LABR ST 2A06

LABR ST 2B03 SOCIAL WELFARE I
An examination of social welfare policy and the income security system in Canada in historical perspective. Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies programme
Cross-list: Term I of SOC WORK 2B06, Students in a Labour Studies programme must register for this course as LABR ST 2B03.

LABR ST 2B03 SOCIAL WELFARE II
An examination of particular social problems and the institutional arrangements intended to address them. Lectures and discussion; one term
Prerequisite: LABR ST 2B03 and registration in a Labour Studies Programme
Corequisite: Must be taken in the same academic session as LABR ST 2B03.
Cross-list: Term II of SOC WORK 2B06

LABR ST 2C03 THEORETICAL FOUNDATIONS OF THE LABOUR MOVEMENT
An examination of political, sociological and economic explanations of labour behaviour in industrial society. The focus will be on attempts to explain why labour has tended to organize as well as the different strategies which labour has pursued to achieve its goals. Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies programme or permission of the instructor
Antirequisite: LABR ST 1B03

LABR ST 2D03 DIFFERENT LABOURS, DIFFERENT VOICES
An overview of the ways in which people's changing experiences of work are shaped by gender, race, class and culture in Canada and the wider global context. Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies programme or permission of the instructor.

LABR ST 2E03 LABOUR MOVEMENTS IN SOCIAL HISTORY
Lectures and discussions; one term
Prerequisite: LABR ST 2D03 and registration in a Labour Studies programme

LABR ST 2F03 LABOUR MOVEMENTS IN THE TWENTY-FIRST CENTURY
This course examines major issues facing the labour movement in the 21st century, including globalization, economic restructuring, and the rise of new forms of organizing. Lectures and discussion; one term
Prerequisite: LABR ST 2D03 or registration in a Labour Studies programme

LABR ST 2G03 LABOUR MOVEMENTS IN INTERNATIONAL RELATIONS
An examination of the role of labour movements in international affairs, focusing on key issues such as globalization, trade agreements, and international labour standards. Lectures and discussion; one term
Prerequisite: LABR ST 2D03 or registration in a Labour Studies programme

LABR ST 3A03 ECONOMICS OF LABOUR MARKET ISSUES
This course applies economic analysis to issues of importance in the labour market. Topics vary and may include: women in the Canadian labour market; discrimination in hiring and promotion; unemployment; job loss and workplace closing; work sharing. Prerequisite: ECON 1A06 or 1B03 and 1BB3; registration in a Labour Studies programme or permission of the instructor
Cross-list: ECON 2A03

LABR ST 3B03 ECONOMICS OF TRADE UNIONISM AND LABOUR
Topics will include the economics of the labour market, the impact of trade unions on the labour market, economic theories of strikes, trade unions and the state.
Lectures and discussion; one term
Prerequisite: ECON 1A06 or 1B03 and LABR ST 2B03

LABR ST 3C03 LABOUR LAW AND POLICY
An analysis of the concepts and fundamentals of Canadian labour law and an analysis of Canadian labour policy.
Lectures; one term
Prerequisite: LABR ST 2A06 or 2A03; registration in a Labour Studies programme or permission of the instructor
Cross-list: ECON 2T03

LABR ST 3D03 OCCUPATIONAL HEALTH AND SAFETY
An analysis of issues and problems associated with occupational health and safety in Canada and other industrialized countries. Topics will be examined from social, political, economic, legal and medical perspectives.
Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies programme or permission of the instructor
Generally offered in alternate years.

LABR ST 3E03 WOMEN, WORK AND TRADE UNIONISM
An examination of the historical and contemporary relations between women and work, and women and trade unionism. Topics will include the evolution and structure of the gender division of labour, women and the labour market, and the relationship of women to the labour movement.
Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies programme or permission of the instructor
Generally offered in alternate years.

LABR ST 3F03 SELECTED TOPICS IN LABOUR STUDIES
Topics of current interest to students in Labour Studies, with emphasis on current theory and research. Students should consult the Labour Studies Office concerning the topics to be examined.
Three hours (seminar); one term
Prerequisite: LABR ST 2A03 or 2A06; registration in a Labour Studies programme or permission of the instructor
May be repeated, if on a different topic, to a total of six units.
Generally offered in alternate years.

LABR ST 3G03 ECONOMIC RESTRUCTURING AND WORK ORGANIZATION
Analysis of transformations in work organization and labour markets in selected advanced capitalist societies; evaluation of labour strategies in the context of neoliberalism and globalization.
Lectures and discussion; one term
Prerequisite: LABR ST 2A03 or 2A06; registration in a Labour Studies programme or permission of the instructor
Antirequisite: LABR ST 3A03
LABR ST 4A09 FIELD EXPERIENCE
Combined field experience and seminars to develop practical and research skills relating to labour issues. Students spend a minimum of one equivalent of one day per week in a labour union, government agency or other appropriate organization. This course includes formal and directed study of research methodology appropriate for the field placement seminar.
Two terms
Prerequisite: Registration in Level IV of any Honours programme in Labour Studies.

LABR ST 4C03 PUBLIC SECTOR COLLECTIVE BARGAINING
This course examines unionization and collective bargaining for employees in the public, and para-public sectors. The topics covered include the origin and growth of public sector unions, models of public sector bargaining, legal aspects of bargaining rights and impasse resolution, bargaining issues and bargaining outcomes, and empirical studies of the effectiveness of dispute resolution procedures.
Lectures and discussion; one term
Prerequisite: COMMERCE 4BC3 and registration in Level III or IV of a Labour Studies programme.
Cross-list: COMMERCE 4BG3

LABR ST 4D03 COMPARATIVE INDUSTRIAL RELATIONS
A discussion of industrial relations, policies and practices in several selected countries. Topics will include the development, structure, objectives and strategies of labour and management organizations.
Lectures and discussion; one term
Prerequisite: Registration in Level III or IV of a Labour Studies programme.
Cross-list: COMMERCE 4BG3

LATIN

(SEE CLASSICS, LATIN)

LINGUISTICS

The courses are administered within the Department of Modern Languages of the Faculty of Humanities.

Courses If no prerequisite is listed, the course is open.

LINGUIST 1A06 THE STUDY OF LANGUAGE
An introduction to the study of linguistics—the scientific study of language and communication. The main topics covered in the course are: background concepts in linguistics; the traditional sub-fields (phonetics/phonology, morphology, syntax and semantics); historical linguistics; linguistic typology; sociolinguistics; psycholinguistics and language acquisition.
Two lectures, one tutorial; two terms
Antirequisite: ENGLISH 3J06

LINGUIST 2A03 THE MAKING OF THE EUROPEAN LINGUISTIC LANDSCAPE
The history of language use in Europe from antiquity to the present day. The course will illustrate the different functions of language in social life and the growth of national, standardized idioms. It will also serve as an introduction to the history of linguistics as a discipline.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: ANTHROP 2A23

LINGUIST 2A3 THE ORIGIN AND DEVELOPMENT OF THE EUROPEAN LANGUAGES
The phonetic, morphological, syntactic and lexical structures of Indo-European languages and the role of these features in the genesis and development of English, German, French, Russian, Italian and Spanish and other Indo-European-based languages of Europe.
Three lectures; one term
Prerequisite: LINGUIST 1A06 or 2A03
Antirequisite: ANTHROP 2A3, LINGUIST 2B03

LINGUIST 2LL3 LANGUAGES OF THE WORLD
An introduction to linguistic typology. The course considers the diversity of the languages of the world. It discusses three major classifications of languages (genetic, areal and typological) and concentrates on linguistic typology. It deals with language universals, cross-linguistic analysis of grammatical systems and methods of typological descriptions of languages.
Three hours (lectures and discussion); one term
Prerequisite: LINGUIST 1A06 or permission of the Department
Antirequisite: ANTHROP 2LL3

LINGUIST 3I03 SYNTAX
A study of the human capacity to form words into sentences. The emphasis will be upon generative transformational grammar.
Three lectures; one term
Prerequisite: LINGUIST 1A06
Antirequisite: ANTHROP 3I03

LINGUIST 3I13 SEMANTICS
The study of the patterns of meaning in language; a critical survey of theories and issues.
Three lectures; one term
Prerequisite: LINGUIST 1A06
Antirequisite: ANTHROP 3I13

LINGUIST 3M03 MORPHOLOGY
The study of word formation in languages of the world; a critical survey of current theories and issues.
Three lectures; one term
Prerequisite: LINGUIST 1A06 or FRENCH 2H03
Antirequisite: ANTHROP 3P03
Offered in alternate years.

LINGUIST 3X03 SOCIOLINGUISTICS
An introduction to sociolinguistics with particular emphasis on the social situation of the major European languages. Topics covered include linguistic variation (geographic, social, situational), social and ethical issues (language and sex/gender, language and disadvantage/power) and pragmatics.
Three lectures; one term
Prerequisite: LINGUIST 2A03
Antirequisite: ANTHROP 3X03

LINGUIST 4B03 APPLIED LINGUISTICS
The course is designed to acquaint the student with the contributions that the linguist, psycholinguist, sociolinguist can make to the planning, organization and implementation of a language-teaching methodology. CAI/CALL will be one of the methodologies investigated with particular emphasis.
Three lectures; one term
Prerequisite: Registration in Level III or IV of a Linguistics programme; or permission of the Programme Coordinator.
Antirequisite: ANTHROP 4BL3

LINGUIST 4I13 INDEPENDENT STUDY
The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.
Tutorials; one term
Prerequisite: 18 units of Linguistics above Level I and permission of the Department.

LINGUIST 4XX3 TOPICS IN SOCIOLINGUISTICS
Topics include: Languages in Contact; Standard Languages; Gender and Language.
Seminar (two hours); one term
Prerequisite: LINGUIST 3X03
LINGUIST 4XX3 may be repeated, if on a different topic, to a total of six units.

LINGUIST 4XX3 TOPICS IN THEORETICAL LINGUISTICS
Topics include: Advanced Computational Linguistics; Linguistic Typology; Advanced Philology.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a Linguistics programme; or permission of the Programme Coordinator.
LINGUIST 4XX3 may be repeated, if on a different topic, to a total of six units.

MANUFACTURING ENGINEERING

(SEE MECHANICAL ENGINEERING, MANUFACTURING ENGINEERING)
Note:
Manufacturing Technology courses are open only to students registered in the Manufacturing Engineering Technology programme and are subject to prerequisite requirements.

Courses

MAN TECH 1CD3 ADVANCED CADD
Design cycle; graphics workstations and UNIX; representation methods; Brep, CSG; shape then size modelling-profiles, relational dimensioning; libraries; assemblies; mechanism design; IGES STEP; hardware, software, graphics, networking.
Two lectures, laboratory (two hours), one term
Corequisite: ENG TECH 1PG3

MAN TECH 1ID3 INDUSTRIAL ENGINEERING
Production and operations management: decision making tools; forecasting; strategies and capacity; location, operations layout and aggregate planning; inventory management and JIT tactics; material requirements; project management.
Three lectures, one term

MAN TECH 1TF3 THERMO FLUIDS I
Thermodynamic principles; steam plant cycles; heat engines; gas and steam turbine cycles; refrigeration and heat pumps; air conditioning; conduction; transient systems; convection; radiation; heat exchangers.
Three lectures, one tutorial; one term
Corequisite: ENG TECH 1MA3

MAN TECH 2MD3 MACHINE DYNAMICS
Transient and steady state vibrations of single degree-of-freedom systems, natural and forced vibrations; lumped mass systems—multi degree of freedom; vibrations of continuous systems; balancing and critical speeds of shafts.
Three lectures, one term
Prerequisite: ENG TECH 1MA3

MAN TECH 1MT3 MACHINING TECHNOLOGY
Metal removal; chip formation; tool life; cutting temperature, fluids and forces, power, optimization, finish, tolerances; CNC machine tools; structures and drives; control; machining; complex tools; non-traditional processes.
Three lectures, one laboratory (one hour); one term
Prerequisite: ENG TECH 1MA3

MAN TECH 2FT3 THERMO FLUIDS II
Fluid statics; pressure, manometry, hydrostatic forces, forces on submerged and floating bodies; kinematics of flow, control volume approach, continuity, momentum, energy and Bernoulli's equations; dimensional analysis and similarity; flow in closed conduits.
Three lectures, laboratory (one hour); one term
Prerequisite: ENG TECH 1MA3 and MAN TECH 1TF3

MAN TECH 3FB3 FABRICATION TECHNOLOGY
Welding: fuel gases, cutting and brazing; arc welding methods; welding joints, types of welds; laser beam welding and electron beam welding; general safety. Casting: pattern and mould types design, die casting, centrifugal casting, defects, heat treatment; steel ingots, continuous casting, wrought structure, furnaces.
Two lectures, laboratory (one hour); one term
Prerequisite: ENG TECH 1MA3

MAN TECH 3FM3 CIM AND FLEXIBLE MANUFACTURING
Linear and circular interpolation, manual NC programming-G codes; CAM software; computer vision; coordinate measuring machines (CMM), touch probes; manipulator kinematics, dynamics and trajectory generation; robot programming.
Two lectures, laboratory (two hours); one term
Prerequisite: ENG TECH 1PG3 and MAN TECH 2MT3

MAN TECH 3FT3 FORMING TECHNOLOGY
Plasticity theory, yield surfaces, kinematic hardening, anisotropic plasticity and slip line field models; forming processes: plasticity models, process optimization; fabrication for metal and non-metallic materials including composites and polymers.
Three lectures, laboratory (one hour); one term
Prerequisite: ENG TECH 1MA3

MAN TECH 3MT3 MECHATRONICS
Sensors; actuators: DC, AC and stepper motors, actuators; programmable controllers: modelling of dynamic systems. System identification; computer simulation and control; computer interfacing. Analog to digital conversion. Communication interfaces; case studies.
Three lectures, laboratory (one hour); one term
Prerequisite: ENG TECH 2CT3

MAN TECH 3ST3 STATISTICAL PROCESS AND QUALITY CONTROL
Statistical methods; statistical process control; control charts for variables, rational sampling and attributes; experimental design, two level factorial designs; Taguchi's approach to quality of design; ISO 9000; reliability and life testing; management of quality.
Three lectures; one term
Prerequisite: ENG TECH 1MA3 and 1PG3

MATERIALS SCIENCE AND ENGINEERING

Faculty as of January 15, 1997

Chair
M.B. Ives

Professors Emeriti
John D. Alan Kay/B.Sc., Ph.D. (Glasgow), F.C.I.M.

Associate Professors

Assistant Professors
David H. McIvor/B.A.Sc. (Queen's), Ph.D. (Columbia), P.Eng.

Courses

If no prerequisite is listed, the course is open.

MATS 1A03 INTRODUCTION TO MATERIALS
Introduction to the world of modern materials science. The relationship of the fundamental concepts of bonding and atomic, molecular, and macroscopic structure of condensed materials, to the properties of silicate minerals, glasses, polymeric materials, and metals and alloys.
Two lectures, one tutorial; second term
Prerequisite: Registration In or completion of Natural Sciences I
Antirequisite: Registration in the Faculty of Engineering, or ENGINEER 2003, 2004
MATERIALS SCIENCE AND ENGINEERING

MATLS 2B03 THERMODYNAMICS OF MATERIALS I
Thermodynamics of gases and critical phenomena. The three laws of thermodynamics applied to materials processing; reactions in gases and condensed phases; Clasingham Diagrams. An introduction to kinetics.
Three lectures, one tutorial; first term
Prerequisite: MATLS 1A06 or 1A03 or 1E03
Antirequisite: MATLS 2B06

MATLS 2D03 THERMODYNAMICS OF MATERIALS II
Solution thermodynamics, reactions and equilibria, Gibbs phase rule; phase diagrams of binary systems; aqueous electrochemistry and Pourbaix diagrams.
Three lectures, one tutorial; second term
Prerequisite: CHEM 1A06 or 1A03 or 1E03
Corequisite: MATLS 2B03
Antirequisite: MATLS 2B06

MATLS 2H03 MEASUREMENTS AND COMMUNICATION
Methods of technical communication, involving oral and written practice; basic experimental methods of acquiring, analyzing and presenting data.
Two labs (three hours); first term: one lab (three hours); second term
Prerequisite: COMP SCI 1MA3 or 1MC3 or ENGINEER 1D04, and CHEM 1A06, 1A03 or 1E03, and registration in a programme administered by the Department of Materials Science and Engineering.
Antirequisite: MATLS 21102

MATLS 2X02 CRYSTALLINE STRUCTURE OF MATERIALS
Crystal geometry, x-ray diffraction methods for the determination of crystalline structures and chemical compositions, electron and neutron diffraction methods, microanalysis, crystalline defects.
One lecture, one lab (two and one half hours); second term
Prerequisite: ENGINEER 2003

MATLS 3B03 MATERIALS PROCESSING I
Surface science and technology related to the preparation of particles and slurries of minerals for metals and ceramics production. Hydrometallurgy and electrometallurgy.
Two lectures, one lab (three hours); second term
Prerequisite: MATLS 2B06, or MATLS 2B03 and 2D03; or MATLS 2C04 and CHEM 2P06

MATLS 3E04 MASS TRANSFER
Phenomenological and mechanistic approaches to diffusion; boundary conditions; diffusion in fluids and solids; point defects in solids.
Three lectures, two tutorials; first term
Prerequisite: MAT 2M06; or MATH 2D03 and one of MATH 2A03, 2G03
Antirequisite: MATLS 3E06

MATLS 3I05 THERMODYNAMICS OF MATERIALS III
Introduction to chemical kinetics. Solution thermodynamics and its relationship to binary and ternary equilibrium diagrams. Surface energy; aqueous and high temperature electrochemistry; use of computerized thermodynamics data bases.
Two lectures, one laboratory (three hours) alternating weeks, first term:
Two lectures: one tutorial; second term
Prerequisite: MATLS 2B06 or 2D03
Antirequisite: MATLS 3D06

MATLS 3P03 MECHANICAL BEHAVIOUR OF MATERIALS
Elastic and plastic deformation, creep, fatigue and fracture of engineering materials. Basic concepts of fracture mechanics, materials selection by use of computer based databases of material properties.
Two lectures, one tutorial and/or laboratory; first term
Prerequisite: ENGINEER 2003 or MATLS 1A03 or 2A02 and ENGINEER 2P04
Antirequisite: ENGINEER 3P03, 3R03

MATLS 3T04 PHASE TRANSFORMATIONS
Review of thermodynamics, binary phase diagrams and solid state diffusion. Role of interfaces; solidification, diffusional and martensitic transformations; welding; oxidation. Materiallographic examination will be featured in laboratory work.
Three lectures or tutorial; one lab (three hours); one term
Prerequisite: MATLS 2X02 and MATLS 2A02 or ENGINEER 2003
Corequisite: MATLS 3E04 (or 3E06), 3I05 (or 3D06)
Antirequisite: MATLS 4E03

MATLS 4A02 SEMINARS AND PLANT VISITS
Seminars and discussions by technical personnel from industry. Corresponding plant visits made by the class and reported both in written and oral form. Presentations and workshops on: Statistical process control; ISO 9000; industrial health and safety.
One seminar/tutorial/plant visit (three hours); both terms.
Prerequisite: Registration in the final level of a programme administered by the Department of Materials Science and Engineering

MATLS 4B04 MATERIALS PROCESSING II
Fundamentals of processing, building on a knowledge of heat and mass transfer. High temperature processing of materials, focussing on heat sources, solid state processing of powders and liquid state processing. Three lectures, one lab or tutorial (three hours); first term
Prerequisite: MATLS 3A03 or CHEM ENG 2A04, and MATLS 3B03, 3E04

MATLS 4C03 MODERN IRON AND STEELMAKING
Theory and practice of iron making. Heat and material balances, iron making reactors, raw materials, direct reduction and new processes. Thermodynamics and kinetics of steel making. Hot metal treatment; static and dynamic process control; deoxidation; casting; specialty steel making: inclusion engineering.
Three lectures; second term
Prerequisite: MATLS 3A03 or CHEM ENG 2A04, and MATLS 3E04
Corequisite: MATLS 4B04

MATLS 4D03 CORROSION
The oxidation of metals and alloys; electrochemical principles and methods applied to aqueous corrosion and its control.
Three lectures; one term
Prerequisite: CHEM ENG 2F04 or MATLS 3I05
Not offered in 1997-98.

MATLS 4K04 SENIOR THESIS
Individual experimental research problem with a selected supervisor. A preliminary written and oral report is required at the end of the first term. The thesis is defended orally. A minimum of six unscheduled hours each week, both terms.
Prerequisite: A CA of at least 6.0 and registration in the final level of a program administered by the Department of Materials Science and Engineering

MATLS 4L02 METHODS OF CHARACTERIZATION
One lecture, one lab (three hours); first term
Prerequisite: MATLS 3I05 (or 3D06), 3E04 (or 3E06), 3T04 (or 3G03)
Antirequisite: MATLS 4L04

MATLS 4P03 PROPERTIES OF POLYMERIC MATERIALS
Structure of amorphous and crystalline polymeric materials; mechanical, electrical and optical properties, and their modification through processing.
Three lectures; first term
Prerequisite: CHEM 2W04, ENGINEER 2003, MATH12M06 or equivalent

MATLS 4R04 CERAMIC SCIENCE
Microstructural development and properties of traditional ceramics. Acidic, basic, neutral and nonoxidizing refractories; ferro-electric, piezo-electric and ferromagnetic ceramics; superionic and structural ceramics.
Three lectures, one laboratory; one term
Prerequisite: GEOLOGY 2B04, MATLS 3B03, 3I05, any of which may be taken concurrently
Antirequisite: CERAMICS 4R03
Offered in alternate years.
Offered in 1997-98.

MATLS 4S04 GLASS SCIENCE
Theoretical and experimental aspects of silicates, metallic glasses, and glass ceramics. Modern concepts, and application of non-crystalline solids in optical communication, electrical conductor, and as high strength materials.
Three lectures, one laboratory; first term
Prerequisite: MATLS 3B03, 3I05 which may be taken concurrently
Antirequisite: CERAMICS 4S03
Offered in alternate years.
Not offered in 1997-98.

MATLS 4T03 PROPERTIES AND PROCESSING
OF COMPOSITES
Intrinsic properties of matrix materials and fibres; mechanics and thermodynamics of interfaces; mechanical properties and fabrication of engineering composites.
Two lectures, one tutorial; one term
Prerequisite: ENGINEER 3P03 or MATLS 3P03

MATLS 4Z04 INDUSTRIAL PROJECTS
Projects, in cooperation with industry, involving materials design in manufacturing, complemented by lectures in group problem solving and design methodology.
One lecture, one lab (three hours); first term: Two labs (three hours); both terms
Prerequisite: Registration in Level IV or V of Materials Engineering
Assistant Professors
Andrew S. Dancer/B.A., D.Phil. (Oxford)
Miroslav Lovrić/B.S. (Zagreb), M.S., Ph.D. (Ohio State)
S. Feng/B.A.Sc., M.Sc. (Beijing), Ph.D. (Carleton)
Anton M. Jopko/B.Sc., M.Sc., Ph.D. (McMaster), Dipl. Educ. (Althouse) part-time

Associate Members
Frantisek Franke/(Computer Science and Systems) B.Sc., M.Sc. (Manitoba), Ph.D. (N.Carolina)
Patrick J. Ryan/(Computer Science and Systems) B.Sc. (Toronto), Ph.D. (Brown)

Department Note:
Course codes ending with * indicate that course is not necessarily offered every session; consult the Chair of the Department or the Associate Dean of Science (Studies).

MATH 1A03  CALCULUS I
Differential calculus, the definite integral, techniques of integration, differential equations with applications.
Three lectures, one tutorial/tome
Prerequisite: OAC Calculus or MATH 1K03
Antirequisite: MATH 1A06, 1A05, 1C03, 1C06, 1N03, 1N06, ARTS&SCI 1D06

MATH 1A13  CALCULUS II
The continuation of MATH 1A03. Topics will include applications of the integral, sequences and series, power series, differential equations, partial derivatives.
Three lectures, one tutorial/tome
Prerequisite: MATH 1A03 or 1C03
Antirequisite: MATH 1A06, 1A05, 1C06, 1N05, 1N03, ARTS&SCI 1D06

MATH 1B03  LINEAR ALGEBRA I
Vectors, matrices, determinants, vector spaces, complex numbers, with applications.
Three lectures, one tutorial; one term
Prerequisite: OAC Calculus or MATH 1K03
Antirequisite: MATH 1H05

MATH 1H05  ENGINEERING MATHEMATICS I
Matrices and determinants, vectors and vector spaces, linear transformations, complex numbers, eigenvalues and eigenvectors, with applications.
Two lectures, one tutorial; first term; Three lectures, one tutorial; second term
Prerequisite: Registration in Engineering I
Antirequisite: MATH 1B03

MATH 1K03  INTRODUCTORY CALCULUS FOR BUSINESS, HUMANITIES AND THE SOCIAL SCIENCES
An introduction to differential and integral calculus.
Three lectures, one tutorial; one term
Prerequisite: Grade 12 Mathematics (Advanced)

Students transferring to the Faculty of Science do not retain credit for this course.

MATH 1M03  CALCULUS FOR BUSINESS, HUMANITIES AND THE SOCIAL SCIENCES
Differential and integral calculus.
Three lectures, one tutorial; one term
Prerequisite: MATH 1K03, or OAC Calculus
Not open to students with credit or registration in MATH 1A03, 1A06, 1A05, 1C03, 1C06, 1N03, 1N06, ARTS&SCI 1D06.

Students transferring to the Faculty of Science do not retain credit for this course.

Students considering upper year mathematics courses should take MATH 1A03.

MATH 1N03  CALCULUS FOR ENGINEERING I
Differential calculus, the definite integral, techniques of integration, applications.
Three lectures, one tutorial; one term
Prerequisite: Registration in Engineering I
Antirequisite: MATH 1A03, 1N06
MATH 1NN3  CALCULUS FOR ENGINEERING II
Applications of integration, differential equations, sequences and series, differential calculus of several variables, applications.
Three lectures, one tutorial; one term
Prerequisite: MATH 1N03
Antirequisite: MATH 1A03, 1N06

MATH 2A03  CALCULUS III
Functions of several variables, chain rule, Taylor's formula, extremal problems, Lagrange multipliers; multiple integrals, change of variables formula, line and surface integrals, Green's, Gauss' and Stokes' theorems.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS&SCI 1D06 and credit or registration in one of MATH 1B03, 1H05
Antirequisite: MATH 2A06, 2G03, 2L03, 2N03

MATH 2A03  ADVANCED CALCULUS
Topics will include: Inverse and implicit function theorems, vector fields and their flows, linear systems of differential equations with constant coefficients, exponentiation of matrices, differential forms and Stokes' theorem with applications to physics and geometry.
Three lectures; one term
Prerequisite: MATH 2A03 and 1B03
Antirequisite: MATH 2A06

MATH 2C03  DIFFERENTIAL EQUATIONS
Ordinary differential equations, Laplace transforms, series solutions, partial differential equations, separation of variables, proofs of existence and uniqueness theorems.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS&SCI 1D06, and one of MATH 1B03, 1H05
Antirequisite: MATH 2003

MATH 2E03  INTRODUCTION TO MODELLING
General features of modelling. Examples from chemistry, physics, biology and economics are treated by a variety of elementary methods. Computer packages are used when appropriate.
Three lectures, one lab (one hour); one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C06, 1M03, 1N03, 1NN3, ARTS&SCI 1D06, and credit or registration in one of MATH 1B03, 1H05
Enrolment is limited. However, all students in programmes requiring this course will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

MATH 2K03  FINANCIAL MATHEMATICS
Nominal and effective rates of interest and discount, forces of interest and discount, compound interest, annuities certain; amortization, sinking funds; bonds, security evaluation, determination of yields.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1M03, 1N03, 1NN3, ARTS&SCI 1D06

MATH 2L03  INTERMEDIATE CALCULUS AND DIFFERENTIAL EQUATIONS FOR BUSINESS AND THE SOCIAL SCIENCES
Functions of several variables, partial differentiation, chain rule, and extremal problems. First and second order differential equations, difference equations.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1M03, 1N03, 1NN3, ARTS&SCI 1D06, and one of MATH 1B03, 1H05, of MATH II, 1H05, of MATH 1B03, 1H05
Antirequisite: MATH 2A03, 2A06, 2G03, 2N03
Not open to students registered in Science or Engineering programmes.

MATH 2M06  ENGINEERING MATHEMATICS II
Ordinary differential equations, Laplace transforms, Fourier series, vector calculus, orthogonal curvilinear coordinates, integral theorems, with engineering applications.
Three lectures; two terms
Prerequisite: MATH 1H05 and one of 1N06 or 1NN3

MATH 2O03  DIFFERENTIAL EQUATIONS
Ordinary differential equations with constant coefficients, series solutions, special methods; Laplace transforms, Fourier series; Introduction to partial differential equations.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS&SCI 1D06, and one of MATH 1B03, 1H05
Antirequisite: MATH 2C03

MATH 2P04  DIFFERENTIAL EQUATIONS FOR ENGINEERING
Three lectures and two tutorials; one term
Prerequisite: One of MATH 1H05 and MATH 1N06, or 1N03 and 1NN3 or registration in Honours Neural Computation

MATH 2Q04  ADVANCED CALCULUS FOR ENGINEERING
Vector algebra, curves, partial differentiation, multiple integrals, Green's Theorem, line and surface integrals, integral theorems, scalar and vector potentials, orthogonal curvilinear coordinates, introduction to partial differential equations.
Three lectures and two tutorials; one term
Prerequisite: Either MATH 1H05 and one of 1N06, or 1N03 and 1NN3; or registration in Honours Neural Computation and credit or registration in MATH 1B03

MATH 2R03  LINEAR ALGEBRA II
Abstract vector spaces, basis and dimension, linear transformations, linear equations, inner product spaces, eigenvalues, spectral theorems, Jordan canonical form.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS&SCI 1D06 and one of MATH 1B03, 1H05
Antirequisite: MATH 2B06, 2J06

MATH 2S03  LINEAR ALGEBRA III
Canonical forms, determinants, bilinear forms, groups of linear transformations, other topics selected by the instructor.
Three lectures; one term
Prerequisite: MATH 2R03
Antirequisite: MATH 2B06, 2J06, 2T03

MATH 2T03  APPLIED LINEAR ALGEBRA
Canonical forms, norms, matrix decomposition theorems, sensitivity analysis, Markov chains, iterative methods, applications selected by the instructor.
Three lectures; one term
Prerequisite: MATH 2R03
Antirequisite: MATH 2B06, 2J06, 2S03

MATH 3A03  REAL ANALYSIS I
The real number system, metric spaces, compactness, sequences and series, continuity, differentiability, the Riemann-Stieltjes integral, uniform convergence.
Three lectures; one term
Prerequisite: MATH 2C03, and one of MATH 2A03, 2A06, and one of MATH 2R03, 2S03
Antirequisite: MATH 3A06

MATH 3A03  REAL ANALYSIS II
Equicontinuous functions, functions of several variables, the inverse function theorem, the implicit function theorem, the rank theorem, Stokes' Theorem, the Lebesgue integral.
Three lectures; one term
Prerequisite: MATH 3A03 and credit or registration in one of MATH 2B06, 2S03, 2T03
Antirequisite: MATH 3A06

MATH 3B03  INTRODUCTION TO DIFFERENTIAL GEOMETRY
Curves and surfaces, Gaussian curvature, geodesics, parallel transport, Gauss-Bonnet theorem, selected topics by the instructor.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2A06, 2G03 and one of MATH 2B06, 2J06, 2S03, 2T03
Not open to students with credit or registration in MATH 3FF3, 3J04.

MATH 3C03  MATHEMATICAL PHYSICS I
Linear algebra and eigenvalue problems; partial differential equations, orthogonal functions, Fourier series, Legendre functions, spherical harmonics.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2B06, 2G03, 2P04; and one of MATH 2C03, 2H03, 2P04. One of PHYSICS 2B06, 2C03, 2D03, 2G03, or 2K03 is recommended.
Antirequisite: MATH 3V06
Not open to students with credit or registration in MATH 3FF3, 3J04.

MATH 3D03  MATHEMATICAL PHYSICS II
Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.
Three lectures; one term
Prerequisite: MATH 3C03
Antirequisite: MATH 3K03, 3V06
Not open to students registered in Honours Mathematics and Physics.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3E03</td>
<td>ALGEBRA I</td>
<td>An introduction to group theory, including Sylow theorems and structure of finitely generated Abelian groups; applications of group theory.</td>
</tr>
<tr>
<td>MATH 3EE3</td>
<td>ALGEBRA II</td>
<td>Topics in ring and module theory, in particular principal ideals, unique factorization domains, Euclidean rings; field theory and Galois theory.</td>
</tr>
<tr>
<td>MATH 3F03</td>
<td>ADVANCED DIFFERENTIAL EQUATIONS</td>
<td>Systems of ordinary differential equations, autonomous systems in the plane, phase portraits, linear systems, stability, Lyapunov's method, Poincare-Bendixon theorem, applications.</td>
</tr>
<tr>
<td>MATH 4B03*</td>
<td>COMPLEX ANALYSIS I</td>
<td>Analytic functions, Cauchy's theorem, Cauchy's integral formula, residues, zeroes of analytic functions; Laurent series, the maximum principle.</td>
</tr>
<tr>
<td>MATH 4C03*</td>
<td>COMBINATORICS</td>
<td>Inversion formulae, systems of distinct representatives, block designs and other configurations; and other topics.</td>
</tr>
<tr>
<td>MATH 4D03*</td>
<td>DIFFERENTIAL GEOMETRY</td>
<td>Riemannian metrics, connections, curvature, topological and analytical properties of Riemannian manifolds.</td>
</tr>
<tr>
<td>MATH 4E03</td>
<td>ALGEBRA III</td>
<td>Selected topics in algebra, such as an introduction to algebraic number theory, commutative algebra or algebraic geometry.</td>
</tr>
<tr>
<td>MATH 4F03*</td>
<td>SET THEORY</td>
<td>Ordinal and cardinal arithmetic, equivalents of the axiom of choice, the Zermelo-Frankel axiomatic system, the continuum hypothesis, independence.</td>
</tr>
<tr>
<td>MATH 4G03</td>
<td>DYNAMICAL SYSTEMS</td>
<td>Well-posedness for initial-value problems, linear systems theory, linearization, asymptotic and structural stability, introduction to nonlinear analysis and bifurcation theory.</td>
</tr>
<tr>
<td>MATH 4H03*</td>
<td>BANACH AND HILBERT SPACES</td>
<td>An introduction to Lp, Banach and Hilbert spaces, bounded linear operators, functionals, open mapping and closed graph theorems, duality, Riesz representation theorems, and other topics.</td>
</tr>
</tbody>
</table>

**Prerequisite:** Credit in at least 12 units of Level II Mathematics or Statistics.
MATH 4J03  GRAPH THEORY
Graphs, trees, bipartite graphs, connectivity, graph colouring, matrix representations, applications.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2A06, 2G03 and one of MATH 2B06, 2J06, 2S03, 2T03

MATH 4K03  MEASURE THEORY AND PROBABILITY
Introduction to the theory of measure and integration with applications to probability theory.
Three lectures; one term
Prerequisite: One of MATH 3AA3, 3A06 or a grade of at least A- in MATH 3006

MATH 4Q03  NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS
Three lectures; second term
Prerequisite: Credit or registration in MATH 3FF3 or 3D03, or permission of the instructor

MATH 4RR3*  OPTIMIZATION
Three lectures; one term
Prerequisite: MATH 3R03 and one of MATH 2A03, 2A06, 2G03, 2L03, 2N03

MATH 4S03*  THE THEORY OF COMPUTABILITY
Automata and regular languages, Turing machines, recursive functions, decidability, Godel's incompleteness theorems.
Three lectures; one term
Prerequisite: One of MATH 2B06, 2J06, 2S03, 2T03
Antirequisite: COMP SCI 4T03
Alternates with MATH 4P03.
Not offered in 1997-98.

MATH 4T03  INTRODUCTION TO TOPOLOGY
Topological spaces, connectedness, compactness, metric spaces, separability, fundamental groups and covering spaces, topics selected by the instructor.
Three lectures; one term
Prerequisite: MATH 3A03, 3E03
Antirequisite: MATH 3P03

MATH 4V03  APPLIED MATHEMATICAL ANALYSIS
Lebesgue integration, distribution theory, Fourier Analysis, partial differential equations, integral equations, calculus of variations; additional topics.
Three lectures; one term
Prerequisite: One of MATH 3D03, 3FF3, 3F06
Antirequisite: MATH 4V06

MATH 4W03  DIRECTED READING
Directed reading in areas of mathematics of interest to the student and the Instructor.
Prerequisite: Permission of the Chair of the Department
See the heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

MATH 4X03  COMPLEX ANALYSIS II
Conformal maps, analytic continuation, harmonic functions, the Riemann mapping theorem, Riemann surfaces.
Three lectures; one term
Prerequisite: MATH 3X03
Antirequisite: MATH 4A06

MATH 4Z03  INQUIRY IN MATHEMATICS
Research, problem solving, group discussion and directed readings relating to one of a variety of mathematical themes ranging from pure mathematics to life science and earth science applications.
Three hours; one term
Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry.
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

STATISTICS ...

Department Note:
Students wishing to enrol in Honours Statistics must take MATH 1A03 and 1B03.

Courses
If no prerequisite is listed, the course is open.

STATS 1A03  STATISTICAL REASONING
The basic ideas of graphical displays, sampling methodology and probability are developed through diverse examples from a wide range of disciplines.
Three lectures, one tutorial; one term
Prerequisite: Grade 12 Mathematics
Not open to students registered in the Faculty of Science.
Not open to students with credit or registration in COMMERCE 2Q03, ECON 2R03, 2RR3, STATS 2C03, 2D03, 2M03, 2B06, STATS 2R06

STATS 1CC3  Introductory Computer-Aided Statistics
Applied statistics including simple probability calculations based on binomial, Poisson and normal distributions, with emphasis on inferential methods and linear regression using computer statistics packages.
Two lectures, one lab (two hours); one term
Prerequisite: MATH 1A03 or 1M03
Not open to students with credit in any Level II or above Statistics course. See Department Note above.

STATS 1L03  PROBABILITY AND LINEAR ALGEBRA
The algebra of probability, conditional probability and independence, discrete and continuous random variables, mean and variance, matrices, determinants, Gammers' rule, solution of linear equations.
Three lectures; one tutorial; one term
Prerequisite: Grade 12 Mathematics
Not open to students with credit in 1CC3, 2D03, 2M03, 2B06.
Not open to students registered in Science or Engineering programmes.
Students transferring to the Faculty of Science do not retain credit for this course.

STATS 2A03*  Advanced Statistical Reasoning
Statistical inference procedures and methods for describing the relationships between variables are explained through a variety of examples from different fields.
Three lectures; one term
Prerequisite: STATS 1A03
Not open to students with credit or registration in STATS 1CC3, 2D03, 2M03, 2B06.
Not open to students registered in the Faculty of Science.

STATS 2D03  Probability Theory
Combinatorics, independence, conditioning; Poisson-process; discrete and continuous distributions with statistical applications; expectation, transformations, order statistics. Distribution of sample mean and variance, moment-generating functions, central limit theorem.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1A46, 1C03, 1C06, 1M03 and credit or registration in MATH 1B03
Not open to students with credit or registration in STATS 2A03, 2M03, 2B06.
Students with credit in STATS 1L03 may not retain this credit if STATS 2D03 is taken.

STATS 2M03  Probability and Statistical Methods for Science
Combinatorics; discrete and continuous probability distributions; expectations; central limit theorem; point and interval estimation; hypothesis testing; regression and correlation; analysis of variance.
Three lectures; one term
Prerequisite: STATS 1CC3; one of MATH 1A03, 1A06, 1C03, 1C06, 1M03
Antirequisite: ECON 2B03, PSYCH 2R03
Not open to students with credit or registration in COMMERCE 2A03, 2R06, 2D03, 2M03.

STATS 2MB3  Statistical Methods
Estimation; sampling distributions; confidence intervals; hypothesis testing; power; robustness; analysis of variance for one and two factor designs; linear regression; graphical methods; statistical computing.
Three lectures; one term
Prerequisite: STATS 2D03
Antirequisite: ECON 2B03, PSYCH 2R03, 2RR3, STATS 2R06
Not open to students with credit or registration in COMMERCE 2A03, STATS 2A03, 2M03.
STATS 3D06  MATHMATICAL STATISTICS
The multivariate normal distribution, point and interval estimation, sampling distributions, tests of hypotheses, elementary linear regression, and other topics.
Three lectures; two terms
Prerequisite: STATS 2D03 and one of MATH 2A03, 2A06, 2G03, 2L03, 2N03, 2T03, 2W03

STATS 3G03* ACTUARIAL MATHEMATICS I
Survival distributions, life tables, life insurance, life annuities, net premiums and reserves.
Three lectures; one term
Prerequisite: STATS 2D03 and credit or registration in MATH 2K03
Offered in alternate years.
Not offered in 1997-98.

STATS 3H03* ACTUARIAL MATHEMATICS II
Multiple life functions, multiple decrement models, valuation theory for pension plans.
Three lectures; one term
Prerequisite: STATS 3G03
Offered in alternate years.
Not offered in 1997-98.

STATS 3N03 STATISTICAL METHODS FOR ENGINEERING
Introduction to statistical methods and applications: data analysis and statistical methods.
Three lectures; one term
Prerequisite: Registration or credit in Levels III, IV or V Engineering or registration in Level III or IV of a programme in the Department of Materials Science and Engineering
Antirequisite: STATS 3Y03

STATS 3S03 SURVEY SAMPLING
Survey design; simple random sampling; stratified sampling; proportional allocation; ratio estimation; cluster sampling; systematic sampling and sample size determination. A project associated with current research is required.
Three lectures; one term
Prerequisite: STATS 2D03 and 2M3

STATS 3U03 STOCHASTIC PROCESSES
Random walk, Markov chains, discrete and continuous parameter Markov processes, branching processes, birth and death processes, queuing processes.
Three lectures; one term
Prerequisite: STATS 2D03 and one of MATH 2A03, 2A06, 2G03, 2N03

STATS 3X03 INTERMEDIATE PROBABILITY THEORY
Construction of probability spaces and random variables, integration, conditional expectation, law of large numbers, convergence of series, weak convergence, characteristic functions and central limit theorems, martingales.
Three lectures; one term
Prerequisite: Registration in an Engineering and Management programme or a programme in the Departments of Materials Science and Engineering or Mechanical Engineering, and credit in either MATH 2M06 or MATH 2P04 and MATH 2K04; or permission of the instructor
Antirequisite: STATS 3N03, 4R03

STATS 3Y03 STATISTICAL ANALYSIS FOR ENGINEERING
Introduction to probability, statistical inference, regression, correlation and decision making.
Three lectures; one term
Prerequisite: Registration in an Engineering and Management programme or a programme in the Departments of Materials Science and Engineering or Mechanical Engineering, and credit in either MATH 2M06 or MATH 2P04 and MATH 2K04; or permission of the instructor
Antirequisite: STATS 3N03, 4R03

STATS 3Z03 ELEMENTAL STATISTICS
Network models and algorithms, dynamic models, queuing models and other topics.
Three lectures; one term
Prerequisite: Credit or registration in STATS 3D06

STATS 4M03 MULTIVARIATE ANALYSIS
Multivariate distributions: Normal, Wishart, T2 and others; regression, correlation, factor analysis, general linear hypothesis.
Three lectures; first term
Prerequisite: STATS 3D06, and one of MATH 2B06, 2J06, 2S03, 2T03

STATS 4R03* REGRESSION ANALYSIS
Linear and non-linear models; least squares theory; analysis of residuals; stepwise regression; weighted least squares; prediction and calibration; selected topics in regression.
Three lectures; one term
Prerequisite: STATS 3D06
Antirequisite: STATS 3Y03

STATS 4T03 DESIGN OF EXPERIMENTS
Statistical computing; statistical software packages; working with large data sets; exploratory data analysis; graphical methods; statistical consulting practice.
Three lectures, second term
Prerequisite: STATS 3D06 and 4M03. Credit or registration in STATS 4T03 and one of STATS 5S03, 4H03, 4R03

MECHANICAL ENGINEERING

Faculty as of January 15, 1997

Chair
M.A. Elbestawi

Professors Emeriti

Professors
Mohammed A. Dokainish/B.Sc. (Cairo), M.A.Sc., Ph.D. (Toronto), P.Eng.
Brian Latto/B.Sc. (London), Ph.D. (Glasgow), P.Eng., C.Eng.
Mamdouh Shoukri/B.Sc. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.
David S. Weaver/M.A.Sc. (Toronto), Ph.D. (Waterloo), P.Eng.

Associate Professors
Albert M.C. Chan/B.Sc. (Alberta), M.Eng., Ph.D. (McMaster)/part-time
Mateusz P. Sklad/M.Sc., Ph.D. (Warsaw)

Assistant Professors
Gary Bone/B.Sc. App. Sc. (Queens), M.Eng., Ph.D. (McMaster)
Vincent M. Sowa/B.Sc. (Illinois), M.A. (Purdue), Ph.D. (Waterloo)/part-time

Associate Members
MECHANICAL ENGINEERING 211

All-Reza Montazemi/(Business) H.N.D. (Teesside Polytechnic, U.K.), M.Sc. (Southampton), Ph.D. (Wanderlo)
W.F. Skipper Poehlman/(Computer Science and Systems) B.S. (Niagara), B.Sc. (Brook), M.Sc., Ph.D. (McMaster), P.Eng.
Philip E. Wood/(Chemical Engineering) B.A.Sc. (Wanderlo), Ph.D. (California Institute Tech.), P.Eng.

Department Note:
Enrolment in Mechanical Engineering courses by students in programmes other than those administered by the Department may be limited.

MANUFACTURING ENGINEERING ...

Courses
If no prerequisite is listed, the course is open.

MANUFACT 2C03 MECHANICAL ENGINEERING DESIGN I
One individual and one small team project involving modelling, analysis, synthesis, computing and drawing graded on the basis of an individual report and contribution to a group report.
One tutorial (two hours), one lab (three hours); both terms
Prerequisite: ENGINEER 1C04, 1D04, 2P04

MANUFACT 3M02 MANUFACTURING LABORATORY I
Laboratory exercises in metalworking practices, measurements and solid mechanics.
Two labs (three hours); both terms
Prerequisite: Registration in Manufacturing Engineering

MANUFACT 4A03 COMPUTER AIDED MANUFACTURING
Two lectures, one lab (three hours); second term
Prerequisite: Registration in Level III or Level IV of a programme administered by the Department of Mechanical Engineering.

MANUFACT 4M04 PROJECT
A major project in the area of manufacturing engineering. It may be of a design or experimental nature.
One lab (three hours), first term, three labs (three hours); second term
Prerequisite: Registration in Level IV of Manufacturing Engineering or Level V of Manufacturing Engineering and Management or Manufacturing Engineering and Society

MANUFACT 4P02 MANUFACTURING LABORATORY II
Laboratory exercises in metalworking practices, solid mechanics and controls.
One lab (three hours); both terms
Prerequisite: MANUFACT 3M02

MECHANICAL ENGINEERING ...

Courses
If no prerequisite is listed, the course is open.

MECH ENG 2A03 KINEMATICS OF MECHANISMS
Computations and projects in mechanical engineering. Introduction to the design of mechanisms. Analysis and synthesis of chains, gears and planar mechanisms. Force analysis of machine members.
Two lectures, one lab (three hours); first term
Prerequisite: MATH 1H05, 1N06 or 1N03 and 1N13, and PHYSICS 1D03

MECH ENG 2B03 MECHANICAL ENGINEERING MEASUREMENTS
Introduction to the theory and practice of engineering measuring techniques. Theory of measurements, precision shop measurements and laser metrology; measurements of pressure, flow, temperature and power; combustion analysis and gas analysis, measurement of strain and force; elementary statics.
One lecture, one lab (three hours), first term, one lab (three hours); second term
Prerequisite: MATH 1H05, PHYSICS 1D03

MECH ENG 2C03 MECHANICAL ENGINEERING DESIGN I
One individual and one small team project involving modelling, analysis, synthesis, computing and drawing graded on the basis of an individual report and contribution to a group report.
One tutorial (two hours), one lab (three hours); second term
Prerequisite: ENGINEER 1C04, 1D04, 2P04

MECH ENG 2W04 ENGINEERING THERMODYNAMICS
Introduction to the principles of thermodynamics, and its application in engineering. Basic concepts: energy systems, cycles, properties of pure substances, entropy. Laws of thermodynamics, power and refrigeration cycles.
Three lectures, one tutorial; second term
Prerequisite: CHEM 1E03 and registration in MATH 2M06, or MATH 2P04 and 2004
Antirequisite: ENGINEER 2W04

MECH ENG 3A03 ENGINEERING MECHANICS
Singularity functions, generalized Hooke’s law; shear stress, shear flow in beams; shear centre. Biaxial and unsymmetrical bending, analysis of indeterminate beams and frames using energy methods, impact loads. Buckling of compression members.
Three lectures; first term
Prerequisite: ENGINEER 2P04

MECH ENG 3C03 MANUFACTURING ENGINEERING
A general introduction, encompassing the wide field of activities from iron and steel making through casting, rolling, forging, to solid forming, metal cutting, welding, bonding, electrical machining, surface treatment, mechanical handling, assembly, cleaning, packaging.
Three lectures; second term
Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

MECH ENG 3D03 MECHANICAL ENGINEERING THERMODYNAMICS
The thermodynamic laws, as developed in MECH ENG 2W04, are re-examined. Applied thermodynamics including advanced engineering thermodynamic processes, psychometry, and an introduction to combustion, compressible flow and environmental problems are considered.
Three lectures; first term
Prerequisite: MECH ENG 2W04

MECH ENG 3E04 MECHANICAL ENGINEERING DESIGN II
Uncertainties, statistical considerations. Design of machine components. The laboratories consist of problems, case studies and the use of computer graphics and CAD packages for machine design problems.
Three lectures, one lab (three hours); second term
Prerequisite: ENGINEER 2P04, 2Q04, MECH ENG 3A03

MECH ENG 3F04 MODELLING AND NUMERICAL SOLUTIONS
An introductory course in numerical analysis covering such topics as solution of differential and non-linear equations, matrices and systems of linear equations. One lecture period, every other week, devoted to the modelling of mechanical systems.
Three lectures; first term
Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

MECH ENG 3M02 COMPOSITE LABORATORY
Laboratory exercises in fluid mechanics, thermodynamics and solid mechanics.
One lab (three hours); both terms
Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

MECH ENG 3P04 MECHANICAL ENGINEERING THERMODYNAMICS
Fluid properties and statics, conservation laws, applications of the continuity, momentum and energy equations, dimensional analysis and similarity, boundary layer flow, internal and external flows.
Three lectures, one tutorial (two hours); first term
Prerequisite: MATH 2M06, or MATH 2P04 and 2Q04

MECH ENG 3R03 HEAT TRANSFER
Three lectures; second term
Prerequisite: MECH ENG 2W04, MATH 2M06, MECH ENG 3M04

MECH ENG 4C03 INDUSTRIAL ENGINEERING
Three lectures; second term
Prerequisite: STATS 3Y03
MECH ENG 4D03 MANUFACTURING PROCESSES
(METAL REMOVAL)
Fundamentals of metal removing processes. Characteristics of the various
types of operations. Optimizing working conditions for best economy, best
precision and surface quality. Characteristics of corresponding production
equipment. Accuracy of machine tools, stability, life, reliability. Numerical
control and adaptive control of machine tools.
Three lectures; second term
Prerequisite: MECH ENG 3C03

MECH ENG 4H03 MECHATRONICS
Integration of mechanical engineering with electronics and computer
control. Sensors, actuators (including pneumatic and hydraulic), modelling
using building block and state space methods, model-based control, pro-
gramming of PLCs with practical demonstrations.
Three lectures; second term
Prerequisite: MECH ENG 4R03 or ELEC ENG 3CA3

MECH ENG 4K03 INTRODUCTION TO ROBOTIC MECHANICS
Spatial descriptions and transformations, manipulator kinematics, inverse
kinematics, Jacobians, dynamics.
Three lectures; second term
Prerequisite: MECH ENG 2A03, 4Q03, 4R03

MECH ENG 4L03 INDUSTRIAL DESIGN
Introduction for engineering students to the techniques of industrial design,
case studies and introduction to illustration techniques.
Three lectures; second term
Prerequisite: MANUFACT 2C03 or MECH ENG 2C03

MECH ENG 4M04 PROJECT
A major project related to any option or branch of engineering which may
be of a design or experimental nature.
One lab (three hours), first term; three labs (three hours); second term
Prerequisite: Registration in Level IV Mechanical Engineering, or in Level
V Mechanical Engineering and Management or Mechanical Engineering
and Society

MECH ENG 4P02 COMPOSITE LABORATORY
Laboratory exercises in vibration analysis, machine structures, controls,
heat transfer, gas dynamics, fluid mechanics and thermodynamics.
One lab (three hours); both terms
Prerequisite: MECH ENG 3M02, and registration in a programme
administered by the Department of Mechanical Engineering

MECH ENG 4Q03 MECHANICAL VIBRATIONS
Transient and steady state vibration of single- and multi-degree of freedom
systems. Dynamic vibration absorber. Vibrations of continuous beams. Bal-
ancing and critical speeds of shafts.
Two lectures, one tutorial (two hours); first term
Prerequisite: ENGINEER 2Q04, MATH 3I03, MECH ENG 3A03

MECH ENG 4R03 CONTROL SYSTEMS
Control systems in a design context with emphasis on digital computer
control techniques. Continuous linear systems with analog control, discrete
time systems, digital control and the use of microcomputers.
Three lectures; first term
Prerequisite: MATH 3I03 and STATS 3Y03
Antirequisite: ELEC ENG 3CA3

MECH ENG 4S03 FLUID MECHANICS II
Introduction to potential flows, internal and external laminar and turbulent
incompressible flows. Introduction to compressible flows and hydraulic
machines.
Two lectures, one lecture/tutorial; first term
Prerequisite: MECH ENG 3Q04

MECH ENG 4T03 FINITE ELEMENT APPLICATIONS
The finite element method and its application to mechanical systems in-
cluding static and dynamic analysis.
Three lectures; second term
Prerequisite: MECH ENG 4Q03

MECH ENG 4U03 ADVANCED THERMODYNAMICS
Compressible flows: Fanno and Rayleigh flows, normal and oblique shocks.
Turbomachines: Axial and radial flow gas and steam turbines, axial and
radial flow compressors and fans.
Three lectures; second term
Prerequisite: MECH ENG 3D03

MECH ENG 4V03 THERMO-FLUIDS SYSTEMS
DESIGN AND ANALYSIS
The analysis and synthesis of thermo-fluid systems. Approaches to model-
ing including numerical simulation techniques for the design and analysis
of the performance of thermo-fluid systems.
Three lectures; second term
Prerequisite: MECH ENG 3D03, 3R03, 4S03

MECH ENG 4X03 CODIFIED DESIGN AND FAILURE ANALYSIS
Application of mechanical design to engineering practice. Topics include
codified design of steel structures and the analysis of common failures
occurring in service.
Three lectures; second term
Prerequisite: MECH ENG 3A03

MECH ENG 4Z03 COMPUTER AIDED DESIGN
Project-oriented CAD course. 3-D modelling and graphics, design by fea-
tures. I-DEAS and mechanical design application packages (kinematics
and stress analysis) used on SUN workstations.
Two lectures, one lab (three hours); first term
Prerequisite: Registration in Level IV of a programme administered by the
Department of Mechanical Engineering

MIDWIFERY

Faculty as of January 15, 1997

Chair
Karyn Kaufman

Professor
Karyn Kaufman/B.S.N. (Michigan), M.S. (New York), Dr.P.H./North Caro-
lina), R.M.

Assistant Professors
Eileen Hutton/B.S.Nc. (Queens), M.N.Sc. (Toronto), R.M.
Helen McDonald/M.H.Sc. (McMaster), R.M.
Patria McNiven/M.Sc. (Toronto), Ph.D. (Toronto), R.M.

Courses

MECH ENG 1A05 INTRODUCTION TO MIDWIFERY
Orientation to the midwife's role and the philosophy of practice in Ontario
will be covered. Includes two terms of following clients after a one-week
intensive workshop as well as a weekly three-hour small group tutorial.
Two terms
Prerequisite: Registration in the Midwifery Education Programme

Antirequisite: MIDWIF 1A03

MECH ENG 1C03 LIFE SCIENCE FOR MIDWIFERY
This course provides an overview of basic concepts relating to chemistry,
biochemistry and microbiology. Content areas will include practical appli-
cations of clinical chemistry, specimen collection, related disease entities
and pathologies, and the significance of laboratory values.
One term
Prerequisite: Registration in the Midwifery Education Programme
Co-requisite: HTH SCI 1D06

MECH ENG 2A03 MIDWIFERY CARE I-CLINICAL
SKILLS INTENSIVE
Structured learning experiences are completed to prepare for MIDWIF 2E12.
Students will learn fundamental clinical skills and theoretical information.
Four weeks
Prerequisite: MIDWIF 1A06
Antirequisite: MIDWIF 1B12, 1B03

MECH ENG 2B12 MIDWIFERY CARE II
Students are provided with an extended period of clinical experience within
a midwifery practice. The course begins with a seven to ten day intensive
workshop. A weekly tutorial based on case situations and self-study materials
will cover topics in preconception, antepartum, intrapartum, postpartum and
newborn care.
One term
Prerequisite: MIDWIF 1B03, 1E09
Antirequisite: MIDWIF 2B15
Last offered in 1997-98.
This course provides an in-depth understanding of human reproduction. This course is a continuation of clinical practice which will further develop the knowledge and skills related to topics in preconception, antepartum, intrapartum, postpartum and newborn care.

One term
Prerequisite: MIDWIF 2E12
Antirequisite: MIDWIF 2B12
First offered in 1998-99.

This course is a continuation of clinical practice which will further develop the knowledge and skills related to topics in preconception, antepartum, intrapartum, postpartum and newborn care.

One term
Prerequisite: MIDWIF 2B12
Antirequisite: MIDWIF 2C15
Last offered in 1997-98.

This course provides an in-depth understanding of human reproduction with particular emphasis on intrinsic control mechanisms and extrinsic influence of medical conditions on reproductive processes.

One term
Prerequisite: MIDWIF 2C15
Antirequisite: MIDWIF 2C12
First offered in 1998-99.

This course provides an in-depth understanding of human reproduction with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction. This course will also provide the basis for understanding alterations from normal mechanisms including the influence of medical conditions on reproductive processes.

One term
Prerequisite: HTH SCI 1D06

A clinical placement is completed which focuses on assessment skills of prenatal and postnatal clients and observation of births. Included is a weekly situation-based, small group tutorial which will focus on thorough assessment of situations and integration of basic knowledge with clinical observations.

Eight weeks
Prerequisite: MIDWIF 2A03
Antirequisite: MIDWIF 1B12, 1E09

This course is an overview of basic concepts in pharmacy, pharmacology and therapeutics relevant to the practice of midwifery in Ontario. Content areas include pharmacokinetics, toxicology, adverse drug reactions during pregnancy and in the neonate.

One term
Prerequisite: HTH SCI 1D06

Two placements of one month each will be organized with a family physician and an obstetrician. The third placement will be an elective chosen by the student. International experiences are possible.

One term
Prerequisite: One of MIDWIF 2B12 or 2B15

This clinical course integrates theoretical and clinical content progressively. The weekly tutorial situations will increasingly focus on the recognition of indications for consultation and referral and the relationships with other health care providers.

One term
Prerequisite: MIDWIF 2C12
Antirequisite: MIDWIF 3B15

This clinical course integrates theoretical and clinical content progressively. The weekly tutorial situations will increasingly focus on the recognition of indications for consultation and referral and the relationships with other health care providers.

One term
Prerequisite: MIDWIF 2C15
Antirequisite: MIDWIF 3B12

Not offered in 1997-98.

This reading self-study course will incorporate concepts and principles from areas that contribute to the understanding of human behaviour in health related situations. A variety of topics will be covered.

One term
Prerequisite: One of MIDWIF 3B12 or 3B15
Co-requisite: MIDWIF 3C12

This reading self-study course will incorporate concepts and principles from areas that contribute to the understanding of human behaviour in health related situations. A variety of topics will be covered.

One term
Prerequisite: One of MIDWIF 3B12 or 3B15
Co-requisite: MIDWIF 3C12

Each student will submit an academic paper concerning an aspect of midwifery within the wider social context. External readers with relevant expertise will be used to assist in the evaluation of papers.

One term
Prerequisite: Registration in Level III of the Midwifery Education Programme

MODERN LANGUAGES 213

MODERN LANGUAGES

Faculty as of January 15, 1997

Chair
Nina Kolesnikoff

Professors Emeriti
Antonio G. Alessio/D.Litt.(Genoa)
Stello Croll/L en L. (Buenos Aires), Dott. Ling. e Lett. (Venice)
Karl Denner/M.A. (Kentucky), Ph.D. (Joines Hopkins)

Professors
John D. Browning/B.A., Phil. (London), Ph.D. (Essex)
Samuel D. Clevan/B.A. (McMaster), Ph.D. (Toronto)
Nina Kolesnikoff/M.A. (Moscow State), Ph.D. (Alberta)
Walter Smyrnios/B.A. (McMaster), Ph.D. (Toronto)
Gerhart Touche/Dipl. -Uebersetzer (Mainz-Germersheim), M.A. (Toronto), Ph.D. (SUNY, Buffalo)
George Thomas/B.A., Ph.D. (London)

Associate Professors
Joseph Adamson/B.A. (Trent), M.A., Ph.D. (Toronto)
Maria del C. Cerezo/B.A. (Puerto Rico), M.A. (McGill), Ph.D. (Toronto)
Gabriele Eismann/B.A. (Yale), M.A., Ph.D. (Minnesota)
Fiorigio Minelli/B.A., M.A. (Western Ontario), Ph.D. (Brown)
Hans H. Schulte/Assessor (Munich), D. Phil., Augsburg
Maria M. Stroinski/M.A. (Warsaw), Ph.D. (Edinburgh)
M. Jean Wilson/B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto)

Assistant Professors
Vittoria Cecchetto/B.A., M.A., Ph.D. (Toronto)
Geoffrey Rockwell/B.A. (Haverford College), M.A., Ph.D. (Toronto)

Senior Language Preceptors
Nobuko Adachi/M.A. (Illinois)
Eiko Virginia Ariga/M.A. (Toronto), M.A. (Texas)
Ping-Mei Law/B.A., M.A. (Toronto)
Anna L. Moro/M.A. (Toronto)
Ruth Thomas/Staatsexamen (Bochum), M.A. (McMaster)

Research Associates
Inga Dolinski/M.A., Ph.D. (Leningrad)
Branka Popovic/M.A., Ph.D. (Belgrade)

Associate Members
William M. Chandler/Political Science) B.A. (Cornell), Ph.D. (North Carolina)
Cyril H. Levitt/Sociology) B.A., M.A. (Waterloo), Dr. Phil. (Free Univ. Berlin)
Courses

If no prerequisite is listed, the course is open.

MOD LANG 2A03 INTRODUCTION TO LITERARY STUDIES
An examination of the fundamental questions about the nature of literature and the purpose and methodology of literary studies, focusing on the interdisciplinary and cultural aspects of literature.
Three lectures; one term
Prerequisite: Registration in Level II and above

MOD LANG 2B03 SURVEY OF ITALIAN LITERATURE (IN ENGLISH)
This course will study the development of Italian literature from its beginnings to the present with emphasis on major authors and works. This will include some account of its influence upon other European literatures.
Three lectures; one term
Prerequisite: Registration in Level II and above

MOD LANG 2H03 MASTERWORKS OF GERMAN LITERATURE (IN ENGLISH)
A survey of major works from a variety of genres, by Goethe, Kleist, Heine, Büchner, Mann, Rilke, Brecht and others.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOD LANG 3A03 LITERATURE AND POLITICS IN GERMANY 1914-45 (IN ENGLISH)
A study of the literary responses to the social, political and cultural upheaval from the beginning of the First World War to the end of the Second. The course will involve a close scrutiny of the forms and functions of political rhetoric, manifestoes and literature engaged.
Three lectures; one term
Prerequisite: Registration in Level II and above

MOD LANG 3B03 TRECENTO (IN ENGLISH)
This course will study the literature of 14th-century Italy.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: ITALIAN 3F03 and 3R03
Offered in alternate years.

MOD LANG 3D03 RUSSIAN DRAMA SINCE 1800 (IN ENGLISH)
An introduction to the major works of Russian theatre, in translation.
Three lectures; one term
Prerequisite: Registration in Level II and above

MOD LANG 3G03 GERMAN DRAMA (IN ENGLISH)
A study of representative plays by major dramatists of the German-speaking world, from the 18th century to the present.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOD LANG 3J03 THE METAMORPHOSES OF DON JUAN (IN ENGLISH)
The development of the myth of Don Juan from its origins to the present.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOD LANG 3J33 THE LITERATURE OF THE DELINQUENT (IN ENGLISH)
A study of the picaresque mode in European literature from 1550 to 1800. This is tantamount to a study of the origins and early development of the novel as a genre.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOD LANG 3K03 20TH-CENTURY RUSSIAN LITERATURE (IN ENGLISH)
A study of Russian literature of the 1920s and 1930s with special attention to Akhmatova, Bulgakov and Sholokhov.
Three lectures; one term
Prerequisite: Registration in Level II and above
Alternates with MOD LANG 3R03.

MOD LANG 3K33 CONTEMPORARY RUSSIAN LITERATURE (IN ENGLISH)
A study of contemporary Russian literature since 1955, with special attention to Pasternak, Solzhenitsyn and Yevtushenko.
Three lectures; one term
Prerequisite: Registration in Level II and above
Alternates with MOD LANG 3R03.

MOD LANG 3P03 LITERATURE AND POLITICS IN SPANISH AMERICA (IN ENGLISH)
An exploration of the ways in which politics and aesthetics combine in Spanish American literature. Emphasis will be on the 20th-century works, but writings from previous centuries will also be included.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOD LANG 3R03 19TH-CENTURY RUSSIAN LITERATURE I (IN ENGLISH)
A study of the major prose of Gogol and Turgenev.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: MOD LANG 2R03
Alternates with MOD LANG 3K03.

MOD LANG 3RR3 19TH-CENTURY RUSSIAN LITERATURE II (IN ENGLISH)
A study of the major novels by Dostoevsky and Tolstoy.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: MOD LANG 3R03
Alternates with MOD LANG 3K03.

MOD LANG 3SS3 THE RENAISSANCE EPIC (IN ENGLISH)
A study of Orlando Furioso and Tasso's Jerusalem Delivered.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: ITALIAN 4R03
Offered in alternate years.

MOD LANG 3T03 TOPICS IN NATIONAL CINEMAS I (IN ENGLISH)
Previous topics include: Soviet and East European Cinema. Consult Department concerning topic to be offered.
Two lectures, plus one weekly film screening; one term
Prerequisite: DRAMA 2K06
Cross-list: ART HIST 3T03 and DRAMA 3T03
MOD LANG 3T03 may be repeated, if on a different topic, to a total of six units.

MOD LANG 3W03 GERMAN WOMEN WRITERS (IN ENGLISH)
A study of selected works by German women writers from the eighteenth century to the present.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOD LANG 4113 INDEPENDENT STUDY
The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.
Tutorials; one term
Prerequisite: Registration in Level IV of a programme in Literary Studies or Modern Languages and permission of the Department

MOD LANG 4L03 SURVEY OF SPANISH THEATRE (IN ENGLISH)
A study of the development of Spanish drama and stage from Lope to Lorca.
Three lectures; one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

MOHAWK

(See Indigenous Studies)
MOLECULAR BIOLOGY AND BIOTECHNOLOGY

The Molecular Biology and Biotechnology courses are administered within the Faculty of Science through a Committee of Instruction, and draw on the Departments of Biochemistry, Biology and Pathology and the McMaster Institute for Molecular Biology and Biotechnology. Information and counselling may be obtained from the Programme Coordinator.

Courses

If no prerequisite is listed, the course is open.

MOL BIOL 4F03 MOLECULAR ASPECTS OF DEVELOPMENT
Mammalian embryonic development will be examined at the cellular and molecular level. Topics include genetic control of cell determination, pattern formation, morphogenesis, and neurogenesis.

Three lectures; one term
Prerequisite: One of BIOCHEM 3A03, 3AA3, 3B03, 3BB3, 3G03, 3GG3, and BIOLOGY 3N3N or permission of the instructor

MOL BIOL 4H03 MOLECULAR BIOLOGY OF CANCER
Cancer at the cellular and molecular level. Topics include: properties of cancer cells, activation of proto-oncogenes, function of oncoproteins, transgenic mouse models, and tumour viruses.

Two lectures; one tutorial; one term
Prerequisite: One of BIOLOGY 3H03, 3H13, BIOCHEM 3A03, 3B03, 3G03; or permission of instructor

MOL BIOL 4J03 MOLECULAR IMMUNOLOGY
This advanced course applies small group based learning to immunological problems. Problems concern development of immunosassays, resistance to infection and immunity in health and disease.

One session (two hours) per week, one tutorial; one term
Prerequisite: One of BIOLOGY 4I03, 3X03 and one of BIOLOGY 3H03, BIOCHEM 3A03, 3B03, 3G03; or permission of instructor

RELATED COURSES

BIOCHEM 2A06 Principles of Biochemistry
3A03 Nucleic Acid Structure and Function
3B03 Protein Structure and Enzyme Mechanism
3C03 Cellular Biochemistry
3L03 Biochemistry Laboratory
4A03 Recent Advances in Biochemistry and Molecular Biology
4B06 Senior Thesis
4D03 Biotechnology and Genetic Engineering

BIOCHEM 4E03 Gene Expression
4G03 Biotechnology and Genetic Engineering Laboratory
4I03 Structural and Mechanistic Aspects of Macromolecules
4M03 Membrane Structure and Function
4P03 Research Project
4Q03 Biochemical Pharmacology

BIOLOGY 2B03 Cell Biology
2C03 Genetics
2D03 The Plant Kingdom
2E03 The Animal Kingdom
3C03 Microbial Physiology and Regulation
3E03 Introductory Microbiology
3H03 Molecular Biology of the Nucleus
3H13 Molecular Organization of the Eukaryotic Cytoplasm
3I03 Eukaryotic Genetics
3N3N Developmental Biology
3Q03 Microbial Genetics
3V03 Techniques in Molecular Genetics
3X03 Introductory Immunology
3Y03 Plant Responses to the Environment
4B03 Plant Metabolism and Molecular Biology
4C09 Senior Thesis
4F06 Senior Project
4I13 Advanced Topics in Immunology
4M03 Molecular Aspects of Eukaryotic Chromosomes
4R03 Human Genetics
4V03 Virology

CHEM 2N03 Analytical Chemistry
2O06 Organic Chemistry
2P03 General Physical Chemistry
3D03 Organic Chemistry
3F03 Bio-Organoic Chemistry

MUSIC

Courses and programmes in Music are administered within the School of Art, Drama and Music of the Faculty of Humanities.

Notes:
1. All Music courses except 1A06, 1B06, 2A03, 2AA3, 2B03, 2BB3, 2B06, 3T03, 3U03, 3Y03, and 4X03 have limited enrolments. Priority in limited enrolment courses is given to Music students.
2. The following courses may be taken by undergraduates not in a Music programme. Those with an asterisk (*) have limited enrolment. Non-music students interested in asterisked courses should consult the School of Art, Drama and Music and take the qualifying tests (if necessary) as early as possible. These are modelled on the Royal Conservatory of Music (Toronto) Grade 2 test in rudiments of music theory and the Grade 9 performance-level ear-training test. Courses with a double asterisk (**) require payment of a lesson fee in addition to tuition, and may not be accepted for credit in all programmes. Students are advised to consult their own Faculties.

MUSIC 1A06 Introduction to Music
MUSIC 1B06 History of Western Music (c. 500-1800)
MUSIC 1CC3* Harmony
MUSIC 1D03* General Musicianship
MUSIC 1E06* Solo Performance
MUSIC 2AA3 Popular Music
MUSIC 2B03 History of Western Music (c. 1600-1914)
MUSIC 2BB3 History of Music (c. 1750-1914)
MUSIC 2BB3 History of Western Music (c. 1914-present)
MUSIC 2CC3* Modal Counterpoint
MUSIC 2D03* General Musicianship
MUSIC 2E06** Solo Performance
MUSIC 2H03* Analysis
MUSIC 3A03 Kodaly and Orff Methods
MUSIC 3B03 Topics in Music History: Medieval and/or Renaissance Music
MUSIC 3BB3 Topics in Music History: Music of the Romantic Era
MUSIC 3E03** Solo Performance
MUSIC 3E06** Solo Performance
MUSIC 3T03 Canadian Music
MUSIC 3U03 Jazz
MUSIC 3V03 History of Music (c. 1914 to the Present)
MUSIC 4B03 Topics in Music History: Baroque and/or Classical Music
MUSIC 4BB3 Topics in Music History: Music of the 20th Century
MUSIC 4E03** Solo Performance
MUSIC 4E06** Solo Performance
MUSIC 4X03 Music of the World's Cultures
SADM 3A03 Music and the Other Arts

Lessons fees are charged to students taking MUSIC 1E06, 2E06, 3E03, 3E06, 4E06 or 4F06.

Courses

If no prerequisite is listed, the course is open.

MUSIC 1A06 INTRODUCTION TO MUSIC
An introductory survey of Western art music from ancient times to the present. The historical development of styles and genres within major music periods. Instruction in elementary theory. No previous musical knowledge required.

Three lectures; two terms
Antirequisite: Registration in Honours Music

MUSIC 1B06 HISTORY OF WESTERN MUSIC (c. 500-1800)
A survey of medieval, renaissance, baroque and classical music. Includes consideration of performance practices, and influences of the other arts and of socio-political developments.

Three lectures; one tutorial; two terms
Prerequisite: Registration in a Music programme; or MUSIC 1A06 and permission of the School of Art, Drama and Music

MUSIC 1CC3 HARMONY
The analysis and writing of functional harmony. Includes study of music by J.S. Bach and others.

Two lectures; two terms
Prerequisite: Registration in a Music programme, or qualifying tests
MUSIC 1D03 AURAL SKILLS
Sight-singing and dictation.
Two lectures, one lab; two terms
Prerequisite: Registration in a Music programme, or qualifying tests

MUSIC 1E06 SOLO PERFORMANCE
Intensive study of the technique and repertoire of any orchestral instrument, piano, organ, harpsichord, voice, recorder, saxophone, or guitar.
12 one-hour meetings per term; two terms
Prerequisite: Registration in a Music programme or permission of the School of Art, Drama and Music
Antirequisite: MUSIC 1E03
Lesson fees are charged to students taking MUSIC 1E06 if the course is not a specific requirement for their programme.

MUSIC 1G03 ENSEMBLE PERFORMANCE
McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.
Prerequisite: Successful audition required. Academic credit available only to students registered in a Music programme.

MUSIC 1AA3 POPULAR MUSIC
A study of 20th-century popular music from the late 1940's to the present.
Topics include: rhythm and blues (Chuck Berry), hard rock (Led Zeppelin), and punk (Sex Pistols).
Three lectures; one term

MUSIC 1B03 HISTORY OF WESTERN MUSIC (c. 1800-1914)
A survey of romantic and postromantic music.
Three lectures; one term
Prerequisite: MUSIC 1B06
Antirequisite: MUSIC 1B06
First offered in 1998-99.

MUSIC 2A03 HISTORY OF WESTERN MUSIC (c. 1914 to the present)
A survey of 20th-century music.
Three lectures; one term
Prerequisite: MUSIC 2B03 or 2B06
Antirequisite: MUSIC 3B04
First offered in 1998-99.

MUSIC 2B03 MODAL COUNTERPOINT
The writing and analysis of modal counterpoint in the style of the late renaissance. Includes study of music by composers such as Palestrina and Lassus.
Two lectures, term one; one lecture, term two
Prerequisite: Registration in a Music programme, or qualifying tests

MUSIC 2C03 HARMONY
A continuation of MUSIC 1C03. Chromatic harmony and the completed major-minor system.
One lecture, term one; two lectures, term two
Prerequisite: MUSIC 1C03

MUSIC 2D03 KEYBOARD HARMONY
Keyboard Harmony.
Two lectures; two terms
Prerequisite: Registration in a Music programme, or qualifying tests

MUSIC 2E03 SOLO PERFORMANCE
A continuation of MUSIC 1E06.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 1E03 or 1E06, registration in a Music programme or permission of the School of Art, Drama and Music.
Lesson fees are charged to students taking MUSIC 2E06 if the course is not a specific requirement for their programme.

MUSIC 2F03 ENSEMBLE PERFORMANCE
McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.
Prerequisite: MUSIC 1G03 and successful audition. Academic credit available only to students registered in a Music programme.

MUSIC 2H03 ANALYSIS
The traditional forms of Western art music as found in works by composers such as Bach, Mozart, Beethoven, and Brahms.
Three lectures; one term
Prerequisite: MUSIC 1C02

MUSIC 2I03 KODALY AND ORFF METHODS
A survey of the Kodály and Orff methods of music education.
Three lectures; one term
Prerequisite: MUSIC 1A06 or 18 units of Music

MUSIC 2J03 TOPICS IN MUSIC HISTORY:
MEDIEVAL AND/OR RENAISSANCE MUSIC
Previous topics include: Gregorian chant, The Renaissance Madrigal. Consult the School of Art, Drama and Music concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: MUSIC 2B03 or 2B06, registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3BB3.

MUSIC 2K03 HISTORY OF WESTERN MUSIC (c. 1200-1450)
A survey of medieval music.
Three lectures; two terms
Prerequisite: MUSIC 1B06
Antirequisite: MUSIC 2A03

MUSIC 2L03 HARMONY II
Techniques of analysis of tonal counterpoint in Baroque style.
Seminar (two hours); one term
Prerequisite: MUSIC 2C03, registration in Honours Music, and permission of the School of Art, Drama and Music

MUSIC 2M03 SOLO PERFORMANCE
A continuation of MUSIC 2E06.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 2E03 or 2E06
Antirequisite: MUSIC 2E05

MUSIC 2N03 ENSEMBLE PERFORMANCE
McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.
Prerequisite: MUSIC 1G03 and successful audition. Academic credit available only to students registered in a Music programme.

MUSIC 3A03 ANALYSIS
Techniques of analysis applied to selected works of the 20th century.
Seminar (two hours); one term
Prerequisite: MUSIC 2G03 and 2H03, registration in Honours Music, and permission of the School of Art, Drama and Music

MUSIC 3B03 ORCHESTRATION AND ARRANGING
A study of the orchestra/band instruments, scoring of music for various ensembles.
Two lectures; two terms
Prerequisite: MUSIC 2C03 and 2D03, and registration in a Music programme

MUSIC 3C03 BRASS METHODS
A study of the basic techniques of playing brass instruments. Brass literature for various educational levels. No previous study of brass required.
The instruments studied differ from those studied in MUSIC 4K03.
Two lectures, one lab; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 4K03.
MUSIC 3L03  WOODWIND METHODS
A study of the basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. No previous study of woodwinds required. The instruments studied differ from those studied in MUSIC 4L03.
Two lectures; one lab; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 4L03.

MUSIC 3M03  STRING METHODS
A study of the basic techniques of playing string instruments. String literature for various educational levels. No previous study of strings required.
The instruments studied differ from those studied in MUSIC 4M03.
Two lectures; two terms
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 4M03.

MUSIC 3N03  VOCAL METHODS
A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral literature. No previous study of voice required. Techniques and materials focus on the primary and junior levels.
Two lectures; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 4N03.

MUSIC 3O03  CONDUCTING
Fundamental conducting techniques applied to works selected from the standard repertoire.
Three lectures; one term
Prerequisite: MUSIC 2O03, registration in Honours Music, and permission of the School of Art, Drama and Music

MUSIC 3P03  PERCUSSION METHODS
A study of the basic techniques of playing percussion instruments. Percussion literature for various educational levels. No previous study of percussion required.
Two lectures; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

MUSIC 3Q03  RESEARCH METHODS AND BIBLIOGRAPHY
An examination of the major reference and bibliographic sources. Historical, analytical, and critical methods of research.
Two lectures; one term
Prerequisite: MUSIC 2Q06, registration in Honours Music, and permission of the School of Art, Drama and Music
Offered in alternate years.

MUSIC 3T03  CANADIAN MUSIC
A historical survey of music in Canada, in the context of social and political developments, from c. 1600 to the present.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above.
Offered in alternate years.

MUSIC 3U03  JAZZ
An historical survey of jazz, focusing on selected performers and arrangers.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above

MUSIC 3V03  MUSIC EDUCATION SEMINAR
A study of the philosophical, psychological and sociological foundations of music education, leading to the formation of a personal philosophy of music education.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours Music programme, and permission of the School of Art, Drama and Music
Offered in alternate years.

MUSIC 3Y03  HISTORY OF MUSIC (C. 1914 TO THE PRESENT)
A survey of 20th-century music.
Three lectures; one term
Prerequisite: MUSIC 2B06

MUSIC 4B03  TOPICS IN MUSIC HISTORY:
BAROQUE AND/OR CLASSICAL MUSIC
Previous topics include: Choral music of Bach and Handel, Beethoven's Piano Sonatas. Consult the School of Art, Drama and Music concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: MUSIC 2B03 or 2B06, registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4BB3.
MUSIC 4B03 may be repeated, if on a different topic, to a total of six units.

MUSIC 4B03  TOPICS IN MUSIC HISTORY:
MUSIC OF THE 20TH CENTURY
Previous topics include: The Evolution of the Avant-garde, Shostakovich and the Soviet Union. Consult the School of Art, Drama and Music concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: MUSIC 2B03, 2BB3, 2B06 or 3Y03, registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4BB3.
MUSIC 4BB3 may be repeated, if on a different topic, to a total of six units.

MUSIC 4C03  HARMONY AND COUNTERPOINT
Advanced studies in the writing an analysis of classical and romantic music.
Seminar (two hours); one term
Prerequisite: MUSIC 3C03, registration in Honours Music, and permission of the School of Art, Drama and Music
Offered in alternate years.

MUSIC 4E03  SOLO PERFORMANCE
A continuation of MUSIC 3E03 or 3E06.
12 one-hour meetings; one term
Prerequisite: MUSIC 3E03 or 3E06
Antirequisite: MUSIC 4E06
Lesson fees are charged to students taking MUSIC 4E03 if the course is not a specific requirement for their programme.

MUSIC 4E06  SOLO PERFORMANCE
A continuation of MUSIC 3E06 or 3E03.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3E03 or 3E06
Antirequisite: MUSIC 4E03
Lesson fees are charged to students taking MUSIC 4E06 if the course is not a specific requirement for their programme.

MUSIC 4G03  ENSEMBLE PERFORMANCE
McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.
Prerequisite: MUSIC 3G03 and successful audition. Academic credit available only to students registered in a Music programme.

MUSIC 4H03  ANALYSIS
Advanced studies in analysis.
Seminar (two hours); one term
Prerequisite: MUSIC 2B06, 2C03, 2H03, registration in Honours Music, and permission of the School of Art, Drama and Music
Offered in alternate years.

MUSIC 4I03  AESTHETICS AND CRITICISM
Philosophies of music. A discussion of major theories from the ancient Greeks to the present.
Seminar (two hours); one term
Prerequisite: MUSIC 2B03, 2B06, 2BB3, 3Y03, registration in Honours Music, and permission of the School of Art, Drama and Music
Offered in alternate years.

MUSIC 4K03  BRASS METHODS
A study of the basic techniques of playing brass instruments. Brass literature for various educational levels. No previous study of brass required.
The instruments studied differ from those studied in MUSIC 3K03.
Two lectures, one lab; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 3K03.
MUSIC 4L03 WOODWIND METHODS
A study of the basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. No previous study of woodwinds required. The instruments studied differ from those studied in MUSIC 3L03.
Two lectures, one lab; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 3M03.

MUSIC 4M03 STRING METHODS
A study of the basic techniques of playing string instruments. String literature for various educational levels. No previous study of strings required. The instruments studied differ from those studied in MUSIC 3M03.
Two lectures; two terms
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 3M03.

MUSIC 4N03 VOCAL METHODS
A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral literature. No previous study of voice required. Techniques and materials focus on the intermediate and senior levels and beyond.
Two lectures; one term
Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music
Alternates with MUSIC 3N03.

MUSIC 4P03 PERCUSSION METHODS
A continuation of MUSIC 3P03.
Two lectures; one term
Prerequisite: MUSIC 3P03, registration in Honours Music, and permission of the School of Art, Drama and Music

MUSIC 4Q03 PIANO LITERATURE AND PEDAGOGY
Study of piano repertoire and teaching methods for various age groups.
Three lectures; one term
Prerequisite: Registration as a piano major in Level IV of an Honours Music programme, and permission of the School of Art, Drama and Music

MUSIC 4S03 SPECIAL STUDIES
Advanced supervised study in any area offered and approved by the School of Art, Drama and Music.
Times to be arranged between the student and instructor; one term
Prerequisite: Registration in Level IV of an Honours Music programme, and permission of the School of Art, Drama and Music. Students requesting this course must submit a written proposal to the School of Art, Drama and Music by April 15th.

MUSIC 4U03 JAZZ IMPROVISATION
Study and performance of jazz improvisations in various styles.
Two hours; one term
Prerequisite: MUSIC 3U03 and permission of the instructor
Offered in alternate years.

MUSIC 4X03 MUSIC OF THE WORLD'S CULTURES
A survey of music traditions of non-European cultures, e.g., far Eastern, Indian, African.
Three lectures; one term
Prerequisite: Registration in Level II or above.
Offered in alternate years.

MUSIC 4Z03 COMPOSITION
The composition of various instrumental or vocal works. Times to be arranged between the student and instructor; one term
Prerequisite: Registration in Level III or IV of an Honours Music programme, and permission of the instructor

MUSIC 4Z23 ADVANCED COMPOSITION
The composition of various instrumental or vocal works. Times to be arranged between the student and instructor; one term
Prerequisite: MUSIC 4Z03, registration in an Honours Music programme, and permission of the instructor

NEURCOMP 3W03 NEURAL COMPUTATION
An introduction to the use of neural network computational models for understanding the neural bases of psychological processes, and for solving real-world problems.
Three lectures; one term
Prerequisite: COMP SCI 1MC3 (or 1MA3) and one of MATH 1A03, 1A06, 1A16, 1C03, 1C06, 1N06 or ARTS&SCI 1D06. MATH 1B03 is strongly recommended.
Cross-list: PSYC 3W03

NEURCOMP 4D09 NEURAL COMPUTATION THESIS
Students conduct research projects with individual faculty members.
Prerequisite: Registration in Level IV of Honours Neural Computation.

Related Courses
BIOCHEM 2EE3 Metabolism and Physiological Chemistry
BIOLOGY 2D03 Cell Biology
2C03 Genetics
4T03 Neurobiology

CHEM 2D03 Organic Chemistry

COMP SCI 3GA3 Introduction to Computer Graphics
3SD3 Computer Simulation Techniques
3TA3 Introduction to Automata and Formal Language
4IB3 Artificial Intelligence and Knowledge-Based Systems
4TC3 Recursion Function Theory and Computability

MATH 2E03 Introduction to Modelling
2P04 Differential Equations for Engineering
4S04 Theory of Computation

PSYCH 2E03 Sensory Processes
2F03 Fundamentals of Neuroscience
2H03 Human Learning and Cognition
3FA3 The Neurobiology of Learning and Memory
3J03 Neuropsychology of Vision
3WW3 Measuring The Mind
4W03 Models in Brain and Cognitive Sciences

STATS 3D06 Mathematical Statistics

NEW MATERIALS AND THEIR IMPACT ON SOCIETY
(SEE THEME SCHOOL ON MATERIALS AND THEIR IMPACT ON SOCIETY)

NURSE PRACTITIONER
(SEE NURSING, NURSE PRACTITIONER (C) STREAM)

NURSING

Faculty as of January 15, 1997

Associate Dean of Health Sciences (Nursing) and Director of the School of Nursing

Andrea Baumann

Professors Emeriti

E. Mary Buzzo/R.N. (McGill), M.Sc.N., M.Ed. (Boston), R.N.
Alma Reid/R.A. (Toronto), R.N.
Karin von Schilling/B.Sc.N. (Toronto), M.Sc.N. (California), R.N.
Note:
The School of Nursing has a large number of part-time faculty appointed from community health-care agencies. A complete list is available from the office of the Associate Dean of Health Sciences (Nursing).

School Notes:
1. This course listing is divided into 8 parts:
   - Basic (A) Stream: Those courses taken only by students registered in the B.Sc.N. programme, (A) Stream.
   - Post-Diploma R.N. (B) Stream: Those courses taken only by students registered in the B.Sc.N. programme, (B) Stream.
   - (A) and (B) Stream: Those courses taken by students registered in the B.Sc.N. programme, (A) or (B) Stream.
   - Nurse Practitioner (C) Stream: Those courses taken only by students registered in the Northern Nursing programmes.
   - Northern Nursing Courses: Those courses taken only by students registered in the Northern Nursing programmes.
   - Nursing Leadership/Management Courses: Those courses taken by nurses enrolled in the Nursing Management programme or by Diploma R.N (B) stream students with permission of the coordinator.
   - Paediatric Oncology Courses: Those courses taken by nurses enrolled in the Paediatric Oncology programme.
   - Adult Oncology Courses: Those courses taken by nurses enrolled in the Adult Oncology programme.
   - Normally, registration in all courses above Level I will require satisfactory completion of the prerequisite Nursing courses with a grade of at least C- in graded courses or a 'pass' in clinical practice courses. (See the Faculty of Health Sciences, School of Nursing, Academic Regulations section in this Calendar.)
   - Normally, Level I, II, III, and IV courses are available to Level I, II, III, and IV B.Sc.N. (A) and (B) Stream students respectively.
   - The Northern Nursing courses are open to nurses who have been selected by Health Canada. Medical Services Branch and McMaster University as qualified to enrol in the Northern Nursing programmes. A candidate must be currently registered as a nurse in a province or territory in Canada and must be employed by Health Canada, Medical Services Branch or a Band council.
   - The Nursing Leadership/Management courses are open to students registered in the Nursing Leadership/Management programme, which was previously administered and is currently endorsed by the Canadian Nurses Association. Students in the Diploma R.N. (B) stream may apply to the coordinator of the Nursing Leadership/Management programme for permission to take these courses.
   - The Paediatric and Adult Oncology courses are respectively open to nurses working in a province or territory in Canada. A candidate must be currently registered as a nurse in a province or territory in Canada.

**BASIC (A) STREAM ...**

Courses

**NURSING 1F04 INTRODUCTION TO NURSING AND HEALTH**

An introduction to definitions of nursing and health. Emphasis is on the relevance of context in determining health and illness and on caring as a focal concept of professional nursing. Understanding of the nursing process and beginning level skills in assessment, communication and nursing care behaviours are stressed.

Two and one half hours (lecture/problem-based tutorials); four hours (clinical lab); one term

Prerequisite: Registration in Level I of the B.Sc.N. (A) Stream
NURSING 1G04 INTRODUCTION TO NURSING AND HEALTH II
Study of concepts and theories related to specific priority health issues. Introduction to basic principles of population health. Study of skills in health assessment, including physical examination. A clinical practice component comprises one-half of the term. A continuation of NURSING 1F04. Two and one-half hours (lecture/problem-based tutorials); four hours (clinical lab); one term
Prerequisite: NURSING 1F04
NURSING 2L03 GUIDED NURSING PRACTICE I
Nursing concepts basic to health and illness are examined across the continuum of individual and family growth and development. Planned and guided experiences are provided in acute care institutions, including adult medical and surgical, paediatric and maternal newborn settings. This course is evaluated on a “Pass/Fail” basis.
Nine hours (clinical lab); one term
Prerequisite: NURSING 1F04, 1G04
Normally to be taken concurrently with NURSING 2M03.
NURSING 2N03 NURSING CONCEPTS IN HEALTH AND ILLNESS I
Integration of nursing, biological, psychological and social sciences theory is developed through work in problem-based tutorials, in which students apply concepts related to nursing, teaching-learning and group processes through application to a variety of patient situations.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 1F04, 1G04
Normally to be taken concurrently with NURSING 2L03.
NURSING 2N03 NURSING CONCEPTS IN HEALTH AND ILLNESS II
Integration of nursing, biological, psychological and social sciences theory in problem-based tutorials. A continuation of Nursing 2N03.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 2N03
Normally to be taken concurrently with NURSING 2P03.
NURSING 2P03 GUIDED NURSING PRACTICE II
Planned and guided clinical practice in institutional settings. A continuation of Nursing 2L03. This course is evaluated on a “Pass/Fail” basis.
Nine hours (clinical lab); one term
Prerequisite: NURSING 2L03
Normally to be taken concurrently with NURSING 2N03.
NURSING 2Q02 POPULATION HEALTH
An introduction to the major factors that determine the health of populations. Approaches to the assessment of the health status of communities will be considered. This course also provides experience in conducting a community assessment.
Three hour (clinical lab) and one hour (lecture); one term
Prerequisite: NURSING 1G04
NURSING 3L02 INTEGRATIVE NURSING PRACTICE SEMINAR
This course is an in-depth analysis of the scientific basis of nursing practice. Selected scientific mechanisms are studied and inferred to nursing practice.
Two hours (lecture/student presentations); one term
Prerequisite: NURSING 2P03; HTH SCI 2B08 (or HTH SCI 2AA2, 2B32, 2CC2 and 2DD2); registration in Level III of the B.Sc.N. (A) Stream
Normally to be taken concurrently with NURSING 3X04 or 3Y04.
NURSING 3X04 GUIDED NURSING PRACTICE III
Planned and guided clinical practice in a variety of institutional and community settings emphasizing that nursing is contextual and relational. Nursing practice roles and selected theories/models are tested with individuals and groups, emphasis is given to formulating nursing interventions. This course is evaluated on a “Pass/Fail” basis.
Twelve hours (clinical lab); 13 weeks
Prerequisite: NURSING 2P03
Normally to be taken concurrently with NURSING 3S03.
Antirequisite: NURSING 3X07
NURSING 3Y04 GUIDED NURSING PRACTICE IV
A continuation of Nursing 3X04 with emphasis on integration of scientific mechanisms.
Twelve hours (clinical lab); 13 weeks
Prerequisite: NURSING 3X04
Normally to be taken concurrently with NURSING 3T03 and NURSING 3U02.
Antirequisite: NURSING 3Y07
NURSING 4J07 GUIDED NURSING PRACTICE V
This course focuses on the application of theory and concepts to clinical practice, including the introduction to the leadership role in patient care. Students are individually placed in a variety of health-care settings. This course is evaluated on a “Pass/Fail” basis.
Twenty-four hours (clinical lab, including tutorials); 12 weeks
Prerequisite: NURSING 3Y04, 3Y07
Normally to be taken concurrently with NURSING 4E03.
NURSING 4K07 GUIDED NURSING PRACTICE VI
A continuation of Nursing 4J07. This course is evaluated on a “Pass/Fail” basis.
Prerequisite: NURSING 4J07
Normally to be taken concurrently with NURSING 4F03.

DIPLOMA RN (B) STREAM ...
NURSING 3L05 THEORIES AND SKILLS FOR PRIMARY HEALTH CARE
Advanced theories and skills in client assessment and therapeutic communication relevant to community-based primary health care are developed through small group tutorials, self-study packages, skills practice in the clinical skills lab and use of standardized patients. This course is evaluated on a “Pass/Fail” basis.
Five hours (problem-based tutorials); one term
Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream
Normally to be taken concurrently with NURSING 3S03.
Antirequisite: NURSING 3L04, 3L02, 3M03
NURSING 3L02 ADVANCED CLIENT ASSESSMENT SKILLS
Advanced skills in history-taking and client assessment relevant to community-based primary health care are developed through small group tutorials, self-study packages, skills practice in the clinical skills lab and use of standardized patients. This course is evaluated on a “Pass/Fail” basis.
Two hours (problem-based tutorials); one term
Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream
Normally to be taken concurrently with NURSING 3S03.
Antirequisite: NURSING 3L04, 3L05, 3V05
NURSING 3M05 GUIDED NURSING PRACTICE I
An applied nursing practice experience in a community-based health care setting with emphasis on the development of expanded role skills in areas such as health promotion, health education, and community assessment. This course is evaluated on a “Pass/Fail” basis.
Eight hours (clinical lab), 2 hours (tutorial); one term
Prerequisite: NURSING 3L05, or NURSING 3L02 and 3M03
Normally to be taken concurrently with NURSING 3T03.
NURSING 3M33 ADVANCED COMMUNICATION SKILLS
Advanced therapeutic communication skills relevant to community-based primary health care are developed through small group tutorials and use of standardized patients. This course is evaluated on a “Pass/Fail” basis.
Three hours (problem-based tutorials); one term
Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream
Normally to be taken concurrently with NURSING 3S03.
Antirequisite: NURSING 3L04, 3L05, 3V05
NURSING 4S06 GUIDED NURSING PRACTICE III
An applied nursing practice course in which the focus is on the integration of theory and concepts in a variety of interdependent health care settings. This course will allow the development of independent decision-making capacity in a selected area of clinical practice. This course is evaluated on a “Pass/Fail” basis.
Twelve hours (clinical lab), two hours (tutorial); 13 weeks
Prerequisite: NURSING 3M05
Normally to be taken concurrently with NURSING 4E03.
NURSING 4T06 GUIDED NURSING PRACTICE IV
A continuation of Nursing 4S06. This course is evaluated on a “Pass/Fail” basis.
Twelve hours (clinical lab), two hours (tutorial); 13 weeks
Prerequisite: NURSING 4S06
Normally to be taken concurrently with NURSING 4F03.
NURSING 3S03 NURSING CONCEPTS IN HEALTH AND ILLNESS III
Biological, physical, psychological, social sciences, and nursing theory are integrated and applied to health care situations through problem-based learning.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 2N03 and 2P03 for B.Sc.N. (A) Stream students or registration in Level III of the B.Sc.N. (H) or NP (C) Stream students
Normally to be taken concurrently with NURSING 3X04 (for (A) Stream students) or NURSING 3L05 (for (B) Stream students).
Antirequisite: NURSING 3S04

NURSING 3T03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV
A problem-based course in which students integrate theories from biological, physical, psychological, social and nursing sciences and apply them to health care situations. A continuation of Nursing 3S03.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 3S03 or registration in Level III of B.Sc.N. NP (C) Stream
Normally to be taken concurrently with NURSING 3Y04 (for (A) Stream students) or NURSING 3L05 (for (B) Stream students).
Antirequisite: NURSING 3C03, 3T04

NURSING 4A02 CURRENT TRENDS AND ISSUES IN NURSING
Issues facing the profession, and the implications of current changes in the health field for future nursing practice.
Two hours (lecture/student presentations) every week; one term
Prerequisite: Registration in Level IV of the B.Sc.N. (A) or (B) Stream or Level III of the B.Sc.N. NP (C) Stream, or permission of the instructor

NURSING 4E03 ADVANCED NURSING CONCEPTS I
A problem based course in which students focus on theories and concepts related to client/patient care e.g., leadership and management, education of clients/patients, students, and staff. Student participation includes selecting appropriate situations and related theories for study, and identifying interventions and evaluation strategies.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 3T03 (for (A) and (B) Streams) and NURSING 3Y04 (for (A) Stream)
Normally taken concurrently with NURSING 4J07 (for (A) Stream) or NURSING 4S08 (for (B) Stream).

NURSING 4F03 ADVANCED NURSING CONCEPTS II
A problem-based course in which students integrate concepts and theories related to clinical practice issues. A continuation of NURSING 4E03.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 4E03
Normally taken concurrently with NURSING 4K07 (for (A) Stream) or NURSING 4T06 (for (B) Stream).

NURSING 4G03 SELECTED TOPICS IN NURSING
Topics of contemporary interest in nursing. Emphasis may be upon theory, research or clinical application. Consult the School regarding the topics to be examined.
Three hours, problem-based tutorial or equivalent; one term
Prerequisite: Permission of the instructor

NURSE PRACTITIONER (C) STREAM ...

Note:
Distance education modalities are employed in all courses. Students must attend McMaster for the clinical laboratory components of the programme.

NURSPRAC 4A05 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS
This course assists the students to determine and monitor health status and disease symptomology of individuals and families throughout the age spectrum. Students will conduct a full range of health assessment towards the goals of providing comprehensive primary health care based on advanced clinical decision making and diagnostic reasoning skills.
Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: Registration in Level IV of the B.Sc.N. NP (C) Stream; registration in or completion of NURSING 4P03

NURSPRAC 4A05 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS II
Continued application of advanced clinical decision making and diagnostic reasoning skills related to the care of individuals across their lifespan, families and the needs of diverse communities.
Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: NURSPRAC 4A05; registration in Level IV of the B.Sc.N. NP (C) Stream

NURSPRAC 4C10 NURSE PRACTITIONER INTEGRATIVE PRACTICUM
This course will build on students' knowledge and experience gained in previous courses and will focus on methods to integrate theory and clinical practice.
29 hours; 13 weeks
Prerequisite: NURSPRAC 4A05, 4A05, 4P03, 4T05, 4TT5; registration in Level IV of the B.Sc.N. NP (C) Stream
Corequisite: NURSPRAC 4S03

NURSPRAC 4P03 REQUIRED SELECTED TOPICS (PATHOPHYSIOLOGY FOR NURSE PRACTITIONERS)
This course uses a systems approach to examine concepts in pathophysiology as a basis for advanced nursing practice in primary health care. The course will provide a comprehensive overview of etiology, pathogenesis and clinical manifestation of diseases in adults and children found in primary care.
Three hours (tutorial); one term
Prerequisite: HTH SCI 1C07, 2C07; registration in Level IV of the B.Sc.N. NP (C) Stream

NURSPRAC 4R03 NURSE PRACTITIONER ROLES AND RESPONSIBILITIES
Historical development, legal and ethical considerations, scope of practice, interdisciplinary teams, primary health policy formation are addressed.
Three hours (tutorial); one term
Prerequisite: NURSPRAC 4A02 and registration in Level III or IV of the B.Sc.N. NP (C) Stream

NURSPRAC 4S03 NURSE PRACTITIONER SEMINAR
This course is taken with NURSPRAC 4C10 and allows the students to discuss and apply theories regarding the management of clients' clinical manifestations, and to critically examine how theory integrates with practice.
Six hours; 13 weeks
Prerequisite: NURSPRAC 4A05, 4A05, 4B03, 4R03, 4T05, 4TT5; registration in Level IV of the B.Sc.N. NP (C) Stream
Corequisite: NURSPRAC 4C10

NURSPRAC 4T05 THERAPEUTICS IN PRIMARY HEALTH CARE I
The course is designed to develop the knowledge, skill and competencies required of a nurse practitioner in managing health and injury through a variety of clinical therapeutic strategies, including counselling, pharmacology and complementary modalities.
Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: HTH SCI 1C07, 2C07; registration in Level IV of the B.Sc.N. NP (C) Stream; registration in or completion of NURSPRAC 4A05, 4P03

NURSPRAC 4TT5 THERAPEUTICS II
This course continues to develop advanced counselling skills and pharmacologic modalities and to examine the effectiveness and efficiency of non-traditional approaches to healing and general well being.
Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: NURSPRAC 4T05; registration in Level IV of the B.Sc.N. NP (C) Stream and registration in or completion of NURSPRAC 4A05

NORTHERN CLINICAL COURSES ...

Note:
Students who are admitted to the Post Diploma Stream of the B. Sc. N. programme will be granted credit for the following courses.

NURSING 3A01 PRIMARY HEALTH CARE IN NORTHERN COMMUNITIES
An introductory course to examine principles of primary health care, the concept of health and transcultural issues as the foundation for a holistic assessment which is relevant to First Nations people.
Twelve hours (lecture/problem-based tutorial) in seven weeks
Prerequisite: Registration in the Northern Clinical programme
To be taken concurrently with NURSING 3B07.
When taken with NURSING 3B07, equivalent to NURSING 3T03 and 3L05.
NURSING 3B07 ASSESSMENT AND MANAGEMENT OF HEALTH AND ILLNESS ACROSS THE LIFESPAN
A comprehensive approach to nursing practice through advanced interviewing, history taking, physical assessment, and clinical decision-making skills will be developed with the focus on the newborn, child, pregnant female, adult, and family.
78 hours (lecture/problem-based tutorial), 36 hours (clinical lab) in seven weeks
Prerequisite: Registration in the Northern Clinical programme
Equivalent to NURSING 3M03.

NURSING 3C03 ADVANCED CLINICAL SKILLS FOR EMERGENCY CARE
The student will develop the advanced clinical and decision-making skills necessary to provide emergency care to the child and adult. Advanced knowledge and skills in the assessment and management of injuries, emergency conditions, and acute episodic illnesses will be developed throughout the course.
42 hours (lecture) in seven weeks
Prerequisite: Registration in the Northern Clinical programme
Equivalent to NURSING 4G06.

Note:
Students who are admitted to the Post Diploma Stream of the B. Sc. N. programme will be granted credit for these courses.

NURSING 3E03 ASSESSING THE HEALTH OF COMMUNITIES
Conceptual models of community health nursing will be explored, with a focus on the community-based component of the role and the process of community assessment.
60 hours (lecture/problem-based tutorial) in two weeks
Pre-requisite: Registration in the Northern Community Nursing programme
Equivalent to NURSING 3T03.

NURSING 3F03 HEALTH EDUCATION: A COMMUNITY HEALTH STRATEGY
Health education for the promotion and protection of health will be the focus of this course. The application of health education models within First Nations and Northern Communities will be explored.
60 hours (lecture/problem-based tutorial) in two weeks
Prerequisite: Registration in the Northern Community Nursing programme
Equivalent to NURSING 3S03.

NURSING 3G03 PROMOTING HEALTHY COMMUNITIES: THE COMMUNITY DEVELOPMENT PROCESS
This course focuses on the process of community development and the planning and implementation of community-based programmes designed to enhance the health of populations.
60 hours (lecture/problem-based tutorial) in two weeks
Pre-requisite: NURSING 3F03
Equivalent to NURSING 3G03.

NURSING 3H03 EXPLORING SOLUTIONS FOR COMMON ISSUES IN FIRST NATIONS AND NORTHERN COMMUNITIES
The focus of the course will be the role of the community health nurse in the application of primary and tertiary interventions aimed at reducing the problems, preventing recurrence, and enhancing community health.
60 hours (lecture/problem-based tutorial) in two weeks
Pre-requisite: NURSING 3G03
Equivalent to NURSING 3H03.

NURSING 3K03 COMMUNITY HEALTH NURSING PRACTICUM
The purpose of this course is to provide nurses with the opportunity to consolidate the knowledge and skills of community health nursing in their own communities.
Prerequisite: Registration in the Northern Community Nursing programme.
Work Study practicum to be completed in the nurses' home community over the nine-month programme.

PAEDIATRIC ONCOLOGY COURSES...

NURSING 3P03 NURSING CONCEPTS IN HEALTH AND ILLNESS III
Bio-psycho-social sciences and nursing theory are integrated and applied to health care situations through problem-based learning. Concepts and theories will focus on assisting the child, family, and community in responding to the oncological process.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: Registration in Paediatric Oncology programme
Equivalent to NURSING 3S04.

NURSING 3Q03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV
A problem-based course in which students integrate theories from biological, physical, psychological, social, and nursing sciences and apply them to paediatric haematology-oncology situations. A continuation of Nursing 3P03.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 3P03; registration in the Paediatric Oncology programme
Equivalent to NURSING 3L05.

NURSING 3V05 GUIDED NURSING PRACTICE I
An applied nursing practice experience in a hospital or community-based paediatric haematology-oncology setting with an emphasis on the development of expanded role skills in areas such as illness-response, health maintenance and promotion, client education, client assessment, and client treatment and support. This course is evaluated on a "Pass or Fail" basis.
Eight hours (clinical lab), two hours (tutorials); one term
Prerequisite: NURSING 3V05; registration in the Paediatric Oncology programme
Equivalent to NURSING 3M05.

ADULT ONCOLOGY COURSES...

NURSING 3C03 CONCEPTS AND THEORIES IN ADULT ONCOLOGY NURSING I
Biological, psychological, physical, social sciences, and nursing theory are integrated and applied to selected health care situations related to adult oncology through the problem-based format.
Three hours (problem-based tutorials), lectures, self-directed study; one term
Prerequisite: Registration in the Adult Oncology programme
Equivalent to NURSING 3M05.

NURSING 3D03 CONCEPTS AND THEORIES IN ADULT ONCOLOGY NURSING II
A problem-based course where students integrate and apply theories from the biological, physical, psychological, social, and nursing sciences to selected adult oncology situations. Within the cancer care continuum, the health care situations will focus on assisting clients, families, and the community related continuation of 3C03.
Three hours (problem-based tutorials, lectures, self-study); one term
Prerequisite: NURSING 3C03; registration in the Adult Oncology programme
Equivalent to NURSING 3T03.

NURSING 3G05 ADULT ONCOLOGY NURSING PRACTICE I
An applied nursing practice course with a focus on the application of advanced theories and skills in client assessment and communication situations. This course is evaluated on a "Pass/Fail" basis.
Five hours (small group, clinical skills labs, standardized patients, self-directed study)
Prerequisite: NURSING 3C03; registration in the Adult Oncology programme
Equivalent to NURSING 3L05.
NURSING 3H5S ADULT ONCOLOGY NURSING PRACTICE II
A continuation of 3G5S; the focus of this course is a theory-based nursing practice experience in a primary or tertiary health care setting. The emphasis is on cancer and the well being of adult clients, families, and the community including: health education, cancer prevention, early detection, client and family assessment, treatment and support. This course is evaluated on a "pass/fail" basis.

Eight hours (clinical practice setting, clinical lab)
Two hours (small group tutorials, self-directed study)

Prerequisite: NURSING 3G5S; registration in the Adult Oncology programme
Equivalent to NURSING 3M05.

NURSING LEADERSHIP / MANAGEMENT COURSES ...

NURSING 4B06 INTRODUCTION TO NURSING LEADERSHIP/ MANAGEMENT
Introduction to theories and methods of leadership and management integrated into the nursing and management disciplines. Given in both distance education and problem-based tutorial formats. A document of recognition is granted on course completion. Enrolment in tutorial format is limited.

Four hours (problem-based tutorial or equivalent); six hours (independent study at a clinical site); one term

Prerequisite: Registered Nurse with a minimum of one year clinical experience or permission of the instructor
Antirequisite: HTH SCI 4E06
Equivalent to NURSING 4S06, 4Y06.

NURSING 4C01 NURSING BUDGETING
Introduction to sources of health care funding in Canada and the principles of decentralized financial management. Given in distance education and problem-based tutorial formats. This course is evaluated on a "Pass/Fail" basis.

One hour (lecture or equivalent); one term

Prerequisite: Registered Nurse or permission of the instructor

NURSING 4D01 TOTAL QUALITY MANAGEMENT IN NURSING
Introduction to total quality management, quality assurance, quality improvement, risk management and utilization management. Given in distance education. The course is evaluated on a "Pass/Fail" basis.

One hour (lecture or equivalent); one term

Prerequisite: Registered Nurse or permission of the instructor

OCCUPATIONAL THERAPY AND PHYSIOTHERAPY

Faculty as of January 15, 1997

Acting Associate Dean (OT/PT)
M. Westmorland

Chair, Bachelor of Health Sciences (OT) Programme
P. Salvatori

Chair, Bachelor of Health Sciences (PT) Programme
P. Solomon

Associate Professors
Barbara A. Cooper/Dip. P&OT (Toronto), B.A. Honours, M.H.Sc. (McMaster), Ph.D. (Wisconsin-Milwaukee)
Carolyne A. Gowland/Dip. P&OT (Toronto), M.H.Sc. (McMaster)
Haile M. Groves/Dip. RT (British Columbia), B.Sc. (British Columbia), M.Sc., Ph.D. (McMaster)
Michael R. Pierynowski/B.Sc. (Waterloo), M.Sc. (Waterloo), Ph.D. (Simon Fraser)
Mary C. Law/B.Sc. OT (Queen's), M.Sc. (McMaster), Ph.D. (Waterloo)
Mary K. Tremblay/DIP. P&OT (Toronto), M.H.Sc. (McMaster), Ph.D. (SUNY, Buffalo)

Assistant Professors
Susan E. Baptiste/Dip. OT (England), M.H.Sc. (McMaster)
Beverley M. Clarke/Dip. PT (Montreal), B.A. M.Sc. (McMaster)
Jean M. Crowe/Dip. PT (Australia), B.Sc. PT (Toronto), M.H.Sc. (McMaster)
Mary Edwards/B.Sc.OT (Toronto), M.H.Sc. (McMaster)
Elspeth Finch/B.Sc. P&OT (McGill), M.H.Sc. (McMaster)
Vicki Galea/B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)
Helene Larin/B.Sc. PT (Montreal), M.Sc. (North Carolina), M.Ed., Ph.D. (Toronto)
Alison Laver/Dip. COT (Oxford), Ph.D. (Surrey)
Lori Lealta/B.Sc. OT (Western Ontario), M.A. (Waterloo)
Julia A. Lockhart/B.Sc. OT (Queen's), M.Ed. (Brook)
Cheryl Missatuna/B.Sc. OT (Western Ontario), M.Sc. (Calgary), Ph.D. (Toronto)
Ellenore M.J. Palmer/B.Sc. OT (Western Ontario), B.Sc. PT (Toronto), M.Sc. (Toronto)
Janice M. Perkins/Dip. PT (England), B.Sc., M.Sc. (Nova Scotia)
Nancy A. Pollock/B.Sc. OT (Queen's), M.Sc. (McGill)
Penny S. Salvador/Dip. P&OT (Toronto), M.Sc. OT (McMaster)
Patricia E. Solomon/Dip. PT (Manitoba), M.H.Sc. (McMaster), Ph.D. (Waterloo)
Paul Stratford/Dip. PT, M.Sc. (McMaster)
Laurie R. Swanson/Dip. P&OT (Toronto), B.Sc. (Toronto), M.Sc. (McMaster)
Joyce Tryssenaar/B.Sc. OT (Western Ontario), M.Ed. (Brook)
Muriel W. Westminster/Dip. OT (England), M.H.Sc. (McMaster)
Seanne Wilkins/Dip.P&OT, B.Sc. OT (Toronto), M.Sc. (Toronto)
Renée M. Williams/Dip. P&OT (Toronto), M.Sc. (McMaster)

Lecturers
Laura Babiski/B.Sc. OT (Toronto), M.H.Sc. (McMaster)
Linda Brett/B.A. (Toronto), B.Ed. (Queen's), B.H.Sc. PT (McMaster)
Maryan Dancsak/B.Sc. PT (McGill), M.Sc. PT (Western Ontario)
Lynne Geddes/B.Sc.PT (Western Ontario), M.R.E. (Toronto)
Bonny F.M. Jung/B.Sc. OT (Toronto), M.Ed. (Brook)
Joan MlynarczyklB.A. (York), B.Sc.PT (Toronto), M.A. (Indiana)

In addition, a number of part-time faculty teaching in the B.H.Sc. (O.T. and P.T.) programmes have appointments in the School of Rehabilitation Science. If further information is requested, please contact the School at (905) 525-9140, ext. 22867.

Note:

Occupational Therapy and Physiotherapy courses are open only to students who are registered in the Bachelor of Health Sciences Second Degree Programme in Occupational Therapy or Physiotherapy.

OCCUPATIONAL THERAPY ...

Courses

Unit I - Occupation and Health Across the Life Span

OCCUP TH 1T15 PROBLEM-BASED TUTORIAL I
Students are introduced to small groups and problem-based learning using a variety of health problems in order to explore the biological, psychological, and social determinants of health. The role of the Occupational Therapist in a wide range of settings is explored.

Five hours (tutorial); 14 weeks

OCCUP TH 1L17 SKILLS LAB I
Students develop basic communication skills, physical assessment skills, an understanding of normal human movement and activity analysis, within the framework of current models of OT practice.

Seven hours (lab); 14 weeks

OCCUP TH 1S13 INQUIRY SEMINAR I
Students in both the Occupational Therapy and Physiotherapy Programmes investigate issues of importance to both professions. Themes for exploration include determinants of health, health policy, the history, development, and future directions of the professions.

Three hours (lecture/seminar); 14 weeks

Unit II - Occupation and Health in Childhood and Adolescence

OCCUP TH 1T23 PROBLEM-BASED TUTORIAL II
Students explore various clinical problems encountered in the practice of paediatric occupational therapy.

Five hours (tutorial); eight weeks

OCCUP TH 1L24 SKILLS LAB II
Students develop skills in assessment, program planning, and intervention with children and adolescents.

Seven hours (lab); eight weeks
### OCCUPATIONAL THERAPY AND PHYSIOTHERAPY

#### TH 1S23 INQUIRY SEMINAR II
Students investigate various conceptual issues related to child health during infancy, childhood and adolescence, from a developmental perspective.
Five hours (lecture/seminar); eight weeks

#### TH 1C26 FIELDWORK EDUCATION
Students integrate knowledge and skills into clinical practice in a paediatric setting under supervision of a qualified therapist.
35-40 hours (fieldwork); six weeks

### Unit III - Occupation and Physical Health in Adulthood

#### TH 2T33 PROBLEM-BASED TUTORIAL III
Students explore clinical problems encountered in the field of adult rehabilitation. Functional, vocational and ethical management issues are discussed.
Five hours (tutorial); eight weeks

#### TH 1J34 SKILLS LAB III
Students develop skills in assessment, program planning and intervention related to adult physical health.
Seven hours (lab); eight weeks

#### TH 1S33 INQUIRY SEMINAR III
Students investigate various conceptual issues related to adult physical health.
Five hours (lecture/seminar); eight weeks

#### TH 1C36 FIELDWORK EDUCATION
Students integrate knowledge and skills into clinical practice in an adult rehabilitation setting under the supervision of a qualified therapist.
35-40 hours (fieldwork); six weeks

### Unit IV - Occupation and Mental Health in Adulthood

#### TH 2T43 PROBLEM-BASED TUTORIAL IV
Students explore various clinical problems encountered in the practice of adult mental health.
Five hours (tutorial); eight weeks

#### TH 2L44 SKILLS LAB IV
Students develop engagement, assessment and treatment skills for mentally ill populations.
Seven hours (lab); eight weeks

#### TH 2S43 INQUIRY SEMINAR IV
Students investigate various conceptual issues related to adult mental health.
Five hours (lecture/seminar); eight weeks

#### TH 2C46 FIELDWORK EDUCATION
Students integrate knowledge and skills into clinical practice in a mental health setting under the supervision of a qualified therapist.
35-40 hours (fieldwork); six weeks

### Unit V - Occupation and Health in Older Adulthood

#### TH 2T53 PROBLEM-BASED TUTORIAL V
Students explore and develop understanding of various health and social problems encountered in the practice area of aging and health.
Five hours (tutorial); eight weeks

#### TH 2L54 SKILLS LAB V
Students implement the CAOT client centered guidelines for occupational therapy practice with older persons, and develop clinical competence in specific assessment, treatment, care and management processes and techniques.
Seven hours (lab); eight weeks

#### TH 2S53 INQUIRY SEMINAR V
Students explore and develop understanding of various theoretical, methodological, and substantive issues in the area of aging and health.
Five hours (lecture/seminar); eight weeks

#### TH 2C56 FIELDWORK EDUCATION
Under the supervision of a qualified occupational therapist, students integrate and apply their knowledge and skills in clinical practice with older persons.
35-40 hours (fieldwork); six weeks

### Unit VI - Occupation and Health Across the Lifespan: Advanced Study and Integration

#### TH 2T64 PROBLEM-BASED TUTORIAL VI
Priority health problems are explored in-depth through contact with resource people and clients in the community, using a population health/community health perspective. Issues involving quality assurance and economics are also included.
Six hours (tutorial); ten weeks

#### TH 2L63 EXPLORING HEALTH CARE SYSTEMS, ORGANIZATIONS AND PROFESSIONAL ROLES
In this interprofessional course, occupational therapy (OT) and physiotherapy (PT) students will apply systems theory and principles of organizational analysis to explore issues facing the OT and PT professions in today’s rapidly changing health care environment.
Fourteen hours; three weeks

#### TH 2185 INDEPENDENT STUDY I
Student study focuses on scientific inquiry through research related to occupational therapy/physiotherapy. Such research may involve literature searches, simple research design or proposal preparation, or participation in ongoing research with a faculty member.
Ten-twelve hours; four weeks

#### TH 2S63 HUMAN OCCUPATION
Students will have the opportunity to choose an area of human occupation for in-depth study. The students will design individual projects in consultation with faculty and clinical experts. The course format consists of weekly work-in-progress seminars and a final symposium on human occupation organized by students and faculty.
Four hours; ten weeks

#### TH 2C66 FIELDWORK ELECTIVE
The placement provides students with the opportunity to integrate knowledge, skills and professional behaviours in a setting that addresses areas of professional practice that can include clinical practice, administration, research, or consultation. Opportunities for international placements are available.
35-40 hours (fieldwork); six weeks

Antirequisite: TH 2C76

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### PHYSIOTHERAPY

#### Unit I - Musculoskeletal I

#### TH 1T15 PROBLEM-BASED TUTORIAL
The problem-based tutorials in Unit 1 are designed to introduce the student to the anatomy, physiology, pathology, and physiotherapy assessment and treatment of peripheral musculoskeletal systems. In addition, students acquire a basic level of knowledge of psychological and sociological determinants of health.
Five hours (tutorial); fourteen weeks

#### TH 1L17 CLINICAL SKILLS LAB I
The clinical skills lab focuses on the clinical assessment, diagnosis and introduction to treatment of joint problems. The lab integrates relevant human biology, biomechanics, clinical skills and measurement concepts. Students are responsible for completing modules in the clinical setting.
Seven hours (lab); fourteen weeks

#### TH 1S13 INQUIRY SEMINAR I
Students in the Occupational Therapy and Physiotherapy Programmes investigate issues of importance to both professions; history, determinants of health, health policy, and profession-specific concepts.
Three hours (lecture/seminar); fourteen weeks

#### Unit II - Musculoskeletal II

#### TH 1T23 PROBLEM-BASED TUTORIAL
Students continue studying the musculoskeletal system in the problem-based tutorials by focusing on the anatomy, pathology, assessment and treatment of spinal conditions. Skills in musculoskeletal differential diagnosis are developed further.
Five hours (tutorial); eight weeks

#### TH 1L24 CLINICAL SKILLS LAB II
Students acquire basic level competencies in the assessment and treatment of spinal conditions. Students are responsible for completing further electrotherapy modules. Effectiveness of physiotherapy interventions in spinal and musculoskeletal conditions are considered.
Seven hours (lab); eight weeks

#### TH 1S23 INQUIRY SEMINAR II
Seminars focus on ergonomics, the physiology, evaluation and management of pain, and considerations related to differential diagnosis of pain in the spine.
Five hours (seminar); eight weeks

#### TH 1C26 CLINICAL EDUCATION
Students practice in a variety of clinical facilities to integrate knowledge and skills in providing care for episodic musculoskeletal problems.
35-40 hours (fieldwork); six weeks
PHYSIOTH 2M53  EXPLORING HEALTH CARE SYSTEMS, ORGANIZATIONS AND PROFESSIONAL ROLES
Students will apply systems theory and principles of organizational analysis to explore issues facing the OT and PT professions in today's rapidly changing health care environment.
Ten hours; 3 weeks

PHYSIOTH 2P62  GROWING UP WITH ABILITIES
Students explore a variety of multi-system, complex clinical scenarios relevant to the practice of paediatric physiotherapy, within a broad psychosocial framework and continuum of care. Students have the opportunity to practice skills in the management of children with disabilities and their families, in various environments.
Ten hours; 3 weeks

PHYSIOTH 2A63  ADULT HEALTH
Students explore a variety of multi-system, complex problems encountered within a broad psychosocial framework and continuum of care. Students have the opportunity to practice advanced skills in the physiotherapy management of adults.
Ten hours; 4 weeks

PHYSIOTH 2G62  AGING AND HEALTH
Students explore a variety of multi-system, complex problems encountered in the practice of physiotherapy with older adults. These problems are viewed within a broad psychosocial framework and continuum of care. Students have the opportunity to practice advanced skills in the health management of older adults.
Ten hours; 3 weeks

PHYSIOTH 2C66  CLINICAL EDUCATION
Students select an area of professional practice for a 6-week elective. Areas of practice might include clinical practice, administration, research or consultation. An appropriate setting will be selected by the student in consultation with the Clinical Education Co-ordinator.
35-40 hours (fieldwork); six weeks

Antirequisite: PHYSIOTH 2T64, 2L63

PHARMACOLOGY 225

PHARMACOLOGY 3A06, 3B06, 4A03, 4A03, 4C03, 4D03 and 4E03 will be based on self-directed problem based learning.

Department Note:
PHARMAC 3A06, 3B06, 4A03, 4A03, 4C03, 4D03 and 4E03 will be based on self-directed problem-based learning.

Courses:

PHARMAC 3A06  INTRODUCTION TO PHARMACOLOGY
Receptor theory and classification, receptor response coupling, mechanisms of drug absorption, distribution, metabolism and excretion and their roles in drug selectivity.
One tutorial (one hour), one tutorial (two hours); two terms
Prerequisite: Registration in the Honours Biology and Pharmacology programme.

PHARMAC 3B06  METHODS IN PHARMACOLOGY
Methods to study effects of drugs in vitro (such as organ baths, ligand binding, and electrophysiological actions) and analysis of pharmacological data.
One lab (nine hours); two terms
Prerequisite: Credit or registration in PHARMAC 3A06
PHARMAC 4A03 DRUG AND SIGNAL TRANSMISSION I
Introduction to the effects of drugs on communication by chemical signals in biological systems.
One tutorial (one hour), one tutorial (two hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4A03 DRUG AND SIGNAL TRANSMISSION II
The continuation of Pharmacology 4A03.
One tutorial (three hours); one term
Prerequisite: PHARMAC 4A03

PHARMAC 4B03 DRUGS AND BEHAVIOUR
Behavioural measures to study drug action and the use of drugs to study the organization and physiochemical mechanisms in normal and abnormal behaviour.
One tutorial (three hours); one term
Prerequisite: PHARMAC 3A06 or BIOLOGY 3AA3

PHARMAC 4C03 PRINCIPLES OF TOXICOLOGY
General principles of toxicology, adverse effects of selected agents on man and other organisms.
One tutorial (one hour), one tutorial (two hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4D03 DRUG DESIGN
Principles of drug design based on drug transport, metabolism and selectivity of action at the target sites with emphasis on quantitative structure-activity relationships.
One tutorial (one hour), one tutorial (two hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4E03 EPIDEMIOLOGY OF EFFECTS OF DRUGS AND TOXICANTS
Methods for collection of data and its analysis regarding action of drugs, toxicants and environmental chemicals in animal and human populations.
One tutorial (one hour), one tutorial (two hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4F09 SENIOR THESIS
A thesis based upon a research project carried out under the direction of a member of the Faculty.
Prerequisite: PHARMAC 3A06

PHILOS 1B06 PHILOSOPHY AND SOCIETY
An introduction to philosophy, through the social-political thought of up to four of Plato, Hobbes, Rousseau, Mill, Marx, and Nietzsche, focusing on rival views of human nature and the state, social conflict, inequality and justice.
Two lectures, one tutorial; two terms
Antirequisite: PHILOS 1D06

PHILOS 1D06 PROBLEMS IN PHILOSOPHY
A critical investigation of philosophical arguments concerning God, politics, morality, human nature, knowledge and art.
Two lectures, one tutorial; two terms
Antirequisite: PHILOS 1B06

PHILOS 2A06 ANCIENT GREEK PHILOSOPHY
A study of Western philosophical thought from its earliest beginnings to the triumph of Christianity in the Roman Empire, with emphasis on Plato and Aristotle.
Three lectures; two terms
Prerequisite: Registration in Level II and above
Cross-list: CLASSICS 2P06

PHILOS 2B03 INTRODUCTORY LOGIC
Sentential and quantification logics are introduced and applied to arguments in English.
Three lectures; one term
Prerequisite: Registration in Level II and above

PHILOS 2C06 DESCARTES TO HUME
A study of 17th- and 18th-Century European and British philosophy, dealing with the major philosophical issues raised by the 17th-Century scientific revolution.
Three lectures; two terms
Prerequisite: Registration in Level II and above

PHILOS 2D03 MORAL ISSUES
An introduction to moral philosophy, accenting biomedical ethics. Issues such as abortion, human experimentation, euthanasia, and genetic screening will be investigated.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above
Cross-list: RELIG ST 2C03
Enrollment is limited to 475 students.

PHILOS 2F03 PHILOSOPHICAL PSYCHOLOGY
A consideration of such questions as: In what terms might human nature be described? How do intentional and unintentional behaviour differ? How do physical and mental states differ? Is action free? Can intelligence be duplicated artificially?
Three lectures; one term
Prerequisite: Registration in Level II and above

PHILOS 2G03 SOCIAL AND POLITICAL ISSUES
A philosophical examination of some contemporary issues in public policy, such as environmental problems, the question of a just distribution of society's goods and services, and problems of liberty and coercion.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above
PHILOS 2H03 AESTHETICS
An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: ART HI 2H03
Offered in alternate years.

PHILOS 2N03 BUSINESS ETHICS
An analysis of ethical issues arising in contemporary business life. Sample topics include: fair and unfair competition; responsibilities towards employees, society and the environment; honesty and integrity in business; the moral status of corporations.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above.

PHILOS 2R03 REASONING
An introduction to important types of reasoning, including philosophical reasoning, with emphasis on concepts rather than techniques and some exposure to commonly used symbolic notation.
Three lectures; one term
Prerequisite: Registration in a programme in Philosophy
Antirequisite: HUMAN 2C06 or ARTS & SCI 1B06
Other students who want a Reasoning course are advised to take HUMAN 2C03.

PHILOS 2A06 FROM KANT TO HEGEL
The philosophies of Kant and Hegel viewed in relation to each other and to other philosophies of the period, such as those of Rousseau or Schelling.
Three lectures; two terms
Prerequisite: PHILOS 2C06.

PHILOS 2B03 PHILOSOPHIES OF EXISTENCE
An examination of the 19th-century forerunners of contemporary existential philosophy, concentrating principally on the thought of Kierkegaard and Nietzsche.
Three lectures; one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme
Offered in alternate years.

PHILOS 2C03 ADVANCED BIOETHICS
An advanced study of the application of ethical theory to selected problems in health care, such as our reproductive practices, care of the dying, the therapeutic relationship.
Three lectures; one term
Prerequisite: PHILOS 2D03 or RELIG ST 2C03 with a grade of at least B, and at least three additional units of Philosophy; or registration in Level III or IV of an Honours programme in Philosophy
Offered in alternate years.

PHILOS 2F03 INTERMEDIATE LOGIC
Selected topics in the study of formal languages and their interpretations, metalogic, and the philosophy of logic.
Three lectures; one term
Prerequisite: PHILOS 2G03
Offered in alternate years.

PHILOS 2G03 ETHICS
An introduction to the major types of ethical theory and the problem of their justification.
Three lectures; one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme

PHILOS 2H03 PHILOSOPHY OF RELIGION
An analysis of the concept of religion in light of the philosophical claims of religious experience, practice, and belief.
Three lectures; one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme
Offered in alternate years.

PHILOS 2I03 PHILOSOPHY OF EDUCATION
A systematic account of education through a critical analysis of the concepts of teaching, learning, and subject matter.
Two lectures, one tutorial; one term
Prerequisite: At least six units of Philosophy
Offered in alternate years.

PHILOS 3A03 ANDREW W. BARTON
A study of some major currents of 20th-Century philosophy, including the work of such figures as Russell, Wittgenstein, Quine, and Davidson.
Seminar (two hours); one term
Prerequisite: PHILOS 2G03, and registration in Level III or IV of any programme
Offered in alternate years.

PHILOS 3B03 EARLY MODERN PHILOSOPHY
A study of human practices of evaluation in morality, politics, art, religion, and economics.
Seminar (two hours); one term
Prerequisite: PHILOS 3G03, and registration in Level III or IV of any programme
Offered in alternate years.

PHILOS 3C03 20TH-CENTURY ANALYTIC PHILOSOPHY
A study of some main currents of 20th-Century philosophy, including the work of such figures as Russell, Wittgenstein, Quine, and Davidson.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme
Offered in alternate years.

PHILOS 3D03 EXISTENTIALISM AND PHENOMENOLOGY
A study of selected texts of major existential and phenomenological philosophers in the 20th-century, such as C. S. Lewis, Heidegger, Jaspers, Marcel.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme

PHILOS 3E03 RECENT EUROPEAN PHILOSOPHY
Contemporary trends in European Philosophy as represented by such writers as Derrida, Foucault and Habermas.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme
Offered in alternate years.
PHILOS 4H03 METAPHYSICS
An investigation of metaphysical concepts, such as substance, individuation, identity, essence, quality, process, mind, time and causality. Some contemporary criticisms of metaphysics will be discussed.
Seminar (two hours); one term
Prerequisite: PHILOS 2A06 and 2C06, and registration in Level III or IV of a programme in Philosophy
PHILOS 4I03 MEDIEVAL PHILOSOPHY
A study of one or more central medieval philosophers, such as Augustine, Aquinas, or William of Ockham.
Seminar (two hours); one term
Prerequisite: One of PHILOS 2A06, 2C06
Offered in alternate years.
PHILOS 4K03 ANCIENT PHILOSOPHY
A critical study of one or more ancient Greek philosophers such as Parmenides, Plato, Aristotle.
Seminar (two hours); one term
Prerequisite: PHILOS 2A06 and registration in Level III or IV of any programme
Antirequisite: PHILOS 4C03, 4J03
Cross-list: CLASSICS 4K03
Offered in alternate years.
PHILOS 4L03 PRAGMATISM
A study of the most distinctive American contribution to philosophy with emphasis on such figures as C.S. Peirce, William James, John Dewey, C.I. Lewis and Richard Rorty.
Seminar (two hours); one term
Prerequisite: Six units of Philosophy and registration in Level III or IV of any programme
Antirequisite: PHILOS 3D03
Offered in alternate years.
PHILOS 4N03 INDEPENDENT STUDY
In consultation with a member of the Department of Philosophy, students will prepare an essay on an approved topic, on the basis of a list of readings outside normally available course offerings. It is the student's responsibility to secure the agreement of an instructor and to complete a proposal form (available in the Philosophy Department office), before attempting to register in the course.
Prerequisite: Registration in Level IV of any Honours programme in Philosophy, with a Cumulative Average of at least 8.5 and permission of the Department
Antirequisite: PHILOS 4206
PHILOS 4P06 THESIS
Reading and research under the supervision of two members of the Department. A major paper is required as well as a formal examination. It is the student's responsibility to secure the agreement of an instructor and to complete a proposal form (available in the Philosophy Department office), before attempting to register in the course.
Prerequisite: Registration in Level IV of any Honours programme in Philosophy, with a Cumulative Average of at least 8.5 and permission of the Department
Antirequisite: PHILOS 4W03

PHYSICS AND ASTRONOMY

Faculty as of January 15, 1997

Chair
D.W.L. Sprung

University Professor
Jules P. Carbone/B.Sc. (Manitoba), M.Sc., Ph.D. (McGill), D.Sc. (Waterloo), F.R.S.C.

Associate Chair
H.K. Haugen

Professor Emeriti
Bertram N. Brockhouse/B.A. (British Columbia), M.A., Ph.D. (Toronto), D.Sc. (Waterloo, McMaster), F.R.S.C., F.R.S., Nobel Laureate
Dennis G. Burke/B.E., M.Sc. (Saskatchewan), Ph.D. (McMaster)
W. Brian Clarke/B.A. (Dublin), Ph.D. (McMaster)
W. Ross Daters/M.Sc. (McMaster), Ph.D. (Wisconsin), F.R.S.C.
David A. Goodings/B.A. (Toronto), Ph.D. (Cambridge)
Martin W. Johns/M.A. (McMaster), Ph.D. (Toronto), D.Sc. (Brandon), F.R.S.C.
Terence J. Kennett/M.Sc., Ph.D. (McMaster)
John A. Kuehner/B.Sc. (Bishop's), M.A. (Queen's), Ph.D. (Liverpool), F.R.S.C.
Carman C. McMullen/M.Sc., Ph.D. (McMaster)
Yukihisa Nogami/B.Sc., D.Sc. (Kyoto)
Melvin A. Preston/B.A., M.A. (Toronto), Ph.D. (Birmingham), D.Sc. (McMaster), C.D., F.R.S.C.
Robert G. Summers-Gill/M.A. (Saskatchewan), Ph.D. (Calgary)
Anatole B. Volkov/B.S. (North Carolina), M.S., Ph.D. (Wisconsin)
Derek Walton/B.Sc.A. (Toronto), Ph.D. (Harvard)

Professors
A. John Bellinsky/B.Sc. (Fordham), M.Sc., Ph.D. (Pennsylvania)
Rajat K. Bhaduri/M.Sc. (Calcutta), Ph.D. (McMaster)
John A. Cameron/B.A. (Toronto), Ph.D. (McMaster)
David R. Chettle/B.Sc., M.Sc., Ph.D. (Birmingham)
Malcolm F. Collins/M.A., Ph.D. (Cambridge)
William E. Harris/B.Sc. (Alberta), M.Sc., Ph.D. (Toronto)
Harold K. Haugen/B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)
Catherine Kallin/B.Sc. (British Columbia), A.M., Ph.D. (Harvard)
William V. Prestwich/B.Sc., Ph.D. (McMaster)
Ralph E. Puchit/Z.B.Sc. (British Columbia), M.Sc., Ph.D. (British Columbia)

Associate Professors
Bruce D. Gaulin/B.Sc. (McGill), Ph.D. (McMaster)
David E. Venus/B.Sc. (Queen's), Ph.D. (Toronto)
Douglas L. Welch/B.Sc., Ph.D. (Toronto)
Carl V. Stager/B.Sc. (McMaster), Ph.D. (M.I.T.)
Peter G. Sutherland/B.Sc. (McGill), M.S., Ph.D. (Illinois)
David W. Taylor/B.A., D.Phil. (Oxford)
Thomas Timusk/B.A. (Toronto), Ph.D. (Cornell), F.R.S.C.
James C. Weddington/B.Sc. (Queen's), Ph.D. (McMaster)

Assistant Professors
Stephane Flibotte/B.Sc., M.Sc., Ph.D. (Montreal)
Neil M. Kay/B.Sc. (Queen's), M.Sc., Ph.D. (McMaster)/part-time

Assistant Members
Stephane Flibotte/B.Sc., M.Sc., Ph.D. (Montreal)

Senior Demonstrator
J. Everett Cairns/B.Eng., M.Sc. (McMaster)

Department Notes:
1. The Department reserves the right to withdraw a Level III or IV course which is not specifically required in a Physics programme if the registration falls below four.
2. Students in Level III or IV of Physics programmes will find a number of relevant electives among the offerings of the Department of Biology, the Department of Engineering Physics and the Department of Geology.
ASTRONOMY...

Courses

If no prerequisite is listed, the course is open.

ASTRON 1F03 INTRODUCTION TO ASTRONOMY AND ASTROPHYSICS
Topics include orbital motion, electromagnetic radiation, telescopes, the solar system, stars and stellar evolution, the Milky Way Galaxy, galaxies and quasars, the evolution of the universe. Three lectures; one term
Prerequisite: OAC Calculus or equivalent
Antirequisite: PHYSICS 2F03, SCIENCE 2D03

ASTRON 2E03 ASTRONOMY AND THE SOLAR SYSTEM
Basic observational astronomy. Historical development of ideas about the solar system. A modern view of the planets; the origin and evolution of the solar system. Three lectures; one term
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, 1B3 or 1BB3, and one of MATH 1A03, 1A06, 1A16, 1C06 or ARTS & SCI 1D06
Antirequisite: PHYSICS 2E03
Offered in alternate years.
Offered in 1997-98

ASTRON 3X03 GALAXIES AND COSMOLOGY
Basic stellar evolution, the interstellar medium. The Milky Way Galaxy; normal and active galaxies and large scale structure in the universe; modern ideas in cosmology. Three lectures and occasional lab periods; one term
Prerequisite: One of PHYSICS 2D03, 2G03, 2K03 and one of PHYSICS 2A03, 2B06, and one of PHYSICS 2H03, 2H04, CHEM 2P06, 2P03.
Antirequisite: PHYSICS 3X03
Alternate with ASTRON 3Y03.
Offered in 1997-98.

ASTRON 3Y03 STELLAR STRUCTURE
The physics of stellar interiors. The main sequence and the life cycle of a star. Stellar evolution, including white dwarfs, neutron stars, and black holes. Three lectures; one lab (three hours) every other week; one term
Prerequisite: One of PHYSICS 2D03, 2G03, 2K03 and one of PHYSICS 2A03, 2B06, and one of PHYSICS 2H03, 2H04, CHEM 2P06, 2P03.
Antirequisite: PHYSICS 3X03
Alternate with ASTRON 3X03.
Not offered in 1997-98.

PHYSICS...

Courses

If no prerequisite is listed, the course is open.

PHYSICS 1B03 MECHANICS AND WAVES
Mechanics of a point particle, emphasizing work and energy. Fluids. Simple Harmonic Motion and Waves, including properties of sound and light waves, interference and diffraction. Three lectures; one lab (three hours) every other week; one term
Prerequisite: At least 60% in OAC Physics
Corequisite: MATH 1A03, SCIENCE 1A00
Antirequisite: PHYSICS 1A06, 1B06, 1C06

PHYSICS 1B13 INTRODUCTION TO MODERN PHYSICS A
A course for students intending to proceed in the physical sciences. Linear algebra and angular momentum. Atomic and quantum physics. Nuclear and Particle Physics. Cosmology. Three lectures; one lab (three hours) every other week; one term
Prerequisite: PHYSICS 1B03 or 1C03
Antirequisite: PHYSICS 1A06, 1B06, 1C06, 1B3

PHYSICS 1B23 INTRODUCTION TO MODERN PHYSICS B
Linear and angular momentum. Electric fields. Atomic and quantum physics. Nuclear Physics. Applications directed to topics in the life sciences. Three lectures; one lab (three hours) every other week; one term
Prerequisite: PHYSICS 1B03 or 1C03
Antirequisite: PHYSICS 1A06, 1B06, 1C06, 1B3

PHYSICS 1C03 NEWTONIAN MECHANICS AND WAVES
Mechanics of a point particle. Fluids. Simple Harmonic Motion and Waves, including properties of sound and light waves, interference and diffraction. Three lectures; one lab (three hours) every other week; one term
Corequisite: MATH 1A03; SCIENCE 1A00
Antirequisite: PHYSICS 1A06, 1B06, 1C06, 1B3
Not open to students with a grade of at least 60% in OAC PHYSICS.

PHYSICS 1D03 INTRODUCTORY MECHANICS
A course for engineering students. Statics, kinematics, Newtonian dynamics, energy. Three lectures; one lab (three hours) every other week; one term
Prerequisite: Registration in Engineering

PHYSICS 1E03 WAVES, ELECTRICITY AND MAGNETIC FIELDS
A course for engineering students. Oscillations and waves, interference; electrostatics, electric potential, circuit elements; magnetic fields, optics. Three lectures; one lab (three hours) every other week; one term
Prerequisite: Registration in Engineering

PHYSICS 2A03 INTRODUCTORY ELECTRICITY AND MAGNETISM
Electrostatics, D.C. circuits, the magnetic field; Faraday's law of induction; Maxwell's equations. Three lectures; one term
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, 1B03, 1C03, and one of MATH 1A03, 1A06, 1A16, 1C06, ARTS & SCI 1D06
Antirequisite: PHYSICS 2E06

PHYSICS 2B06 ELECTRICITY AND MAGNETISM
Electrostatics, D.C. and A.C. circuits, the magnetic field; Faraday's law of induction; Maxwell's equations. Three lectures, first term; two lectures, second term; one lab (three hours) every other week; two terms
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, 1B03, 1C03
Corequisite: MATH 2A03 and either 2C03 or 2D03
Antirequisite: PHYSICS 2A03

PHYSICS 2D03 MECHANICS FOR ENGINEERING
Dynamics of a particle, central field problem, many-particle systems, the mechanics of rigid bodies, Lagrange's equations. Three lectures, first term
Prerequisite: Registration in a programme in Engineering Physics
Antirequisite: PHYSICS 2G03, 2K03

PHYSICS 2F04 THERMODYNAMICS
An introduction to thermodynamics and its statistical basis at the microscopic level, with applications. Three lectures, one lab (three hours), tutorial every other week; second term
Prerequisite: MATH 2A03 and credit or registration in MATH 2C03 or 2P03; either one of PHYSICS 1A06, 1B06, 1C06 or both PHYSICS 1B03 (or 1C03) and credit or registration in PHYSICS 1B03 or 1BB3
Corequisite: CHEM 2P02, 2P03, ENGINEER 2V04, PHYSICS 2H03
Cross-list: ENG PHYS 2H04

PHYSICS 2H03 SOLID EARTH GEOPHYSICS
Application of physical methods to understand large scale processes in the Earth. Plate tectonics, structure of the Earth's interior, rock magnetism, seismology, gravitation, natural radioactivity, heat flow. Two lectures, one tutorial; one term
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, 1B03, 1C03
Cross-list: GEOLOGY 2103

PHYSICS 2K03 MECHANICS AND RELATIVITY
Dynamics of a particle, central field problem, many-particle systems, Lagrange's equations, Special Relativity. Three lectures; first term
Prerequisite: Credit or registration in MATH 2A03; one of PHYSICS 1A06, 1B06, 1C06, 1B03, 1C03
Antirequisite: PHYSICS 2C03, 2D03, 2G03

PHYSICS 2L03 DYNAMICAL SYSTEMS
The continuation of PHYSICS 2K03, including rigid body motion and chaos. Three lectures, second term
Prerequisite: PHYSICS 2K03, and credit or registration in either MATH 2C03 or 2D03

PHYSICS 3A03 RELATIVITY
An introduction to general relativity. Three lectures; one term
Prerequisite: PHYSICS 2G03 or 2K03 and registration in any Honours programme in Science or any programme in the Faculty of Engineering
Offered in alternate years.
Not offered in 1997-98.

PHYSICS 3B06 ELECTRONICS
Network theory and filters, semiconductor devices, amplifier circuits, D.C. power supplies, integrated circuits, operational amplifiers and digital circuits. Two lectures, both terms: one lab (two hours); two terms
Prerequisite: PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04
Antirequisite: PHYSICS 3B3A3, 3BB3
PHYSICS 3B03 ELECTRONICS II
Network theory and filters, semiconductor devices, amplifier circuits, D.C. power supplies, integrated circuits, operational amplifiers and digital circuits.
Two lectures, one lab (two hours); first term
Prerequisite: PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04
Antirequisite: PHYSICS 3B06

PHYSICS 3C03 ANALYTICAL MECHANICS
Stability theory; Lagrange’s equations, conservative Hamiltonian systems; transformation theory and action angle variables; perturbation theory, resonances; non-integrable systems and chaos.
Three lectures; one term
Prerequisite: Credit or registration in, MATH 3C03 and registration in any Honours programme in Science or any programme in the Faculty of Engineering; or registration in Honours Mathematics and Physics; or permission of the instructor
Offered in alternate years.

PHYSICS 3H04 INTERMEDIATE LABORATORY
Experiments in atomic physics, neutron physics, optics, spectroscopy, mechanics.
One lecture, one term; one lab (three hours) two terms
Prerequisite: PHYSICS 2B06 and credit or registration in PHYSICS 3M03 or 3C03

PHYSICS 3M03 QUANTUM MECHANICS AND ITS APPLICATIONS I
Phenomenological basis for quantum physics, topics from atomic and photon physics; wave phenomena; Schrödinger equation for one dimensional systems, barriers, harmonic oscillator.
Three lectures; one term
Prerequisite: PHYSICS 3M03

PHYSICS 3M03 QUANTUM MECHANICS AND ITS APPLICATIONS II
Schrödinger equation for 3D systems with applications to atomic and modern physics.
Three lectures; one term
Prerequisite: PHYSICS 3M03

PHYSICS 3N03 PHYSICAL OPTICS
Interference, Fraunhofer and Fresnel diffraction; Maxwell’s equations and the electromagnetic character of light; polarization and double refraction; interference of polarized light; selected topics in modern optics.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2A06, 2G03, 2Q04 and one of MATH 2A03, 2B03, 2P04; and either PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04

PHYSICS 3P03 MODERN PHYSICS AND WAVE MECHANICS
Phenomenological basis for quantum physics, topics from atomic and photon physics; wave phenomena; Schrödinger equation for one dimensional systems, barriers, harmonic oscillator.
Three lectures; one term
Prerequisite: PHYSICS 2A03 or 2B06
Not open to students with credit or registration in PHYSICS 3M03

PHYSICS 3P03 INTRODUCTORY QUANTUM MECHANICS
Schrödinger equation for 3D systems with applications to atomic and modern physics.
Three lectures; one term
Prerequisite: PHYSICS 3C03 and MATH 3C03
Not open to students with credit or registration in PHYSICS 3M03

PHYSICS 3P03 COMPUTATIONAL MEDICAL PHYSICS
A problem-based introduction to the use of numerical methods in medical physics.
Three lectures, one lab (three hours); second term
Prerequisite: Registration in Level III of Honours Medical and Health Physics or Level II or IV of Honours Medical and Health Co-op

PHYSICS 3T03 RADIOACTIVITY AND RADIATION INTERACTIONS
Radioactivity and radiation phenomenology: interaction of radiations with matter, dosimetry, tracer methods, radiation in medicine, biological effects, radiation levels and regulations, radiation protection.
Three lectures; one term
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, 1B03, or permission of the instructor.
Cross-list: BIOLOGY 3L03

MATH 3C03 MATHEMATICAL PHYSICS I
Linear algebra and eigenvalue problems; partial differential equations, orthogonal functions, Fourier series, Legendre functions, spherical harmonics.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2A06, 2G03, 2Q04; and one of MATH 2C03, 2M03; one of PHYSICS 2B06, 2M03, 2B03, 2Q03, or 2K03 is recommended.
Antirequisite: MATH 3V06
Not open to students with credit or registration in MATH 3FF3, 3J04

MATH 3D03 MATHEMATICAL PHYSICS II
Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.
Three lectures; one term
Prerequisite: MATH 3C03
Antirequisite: MATH 3K03, 3V06
Not open to students with credit or registration in MATH 3J04, 3X03.
Not open to students registered in Honours Mathematics and Physics.

PHYSICS 4A03 SPECIAL TOPICS
Independent study of the scientific literature, including the preparation of seminars and reports on assigned topics.
Two lectures or seminars; two terms
Prerequisite: Registration in a programme in which PHYSICS 4A03 is required or is a specified option

PHYSICS 4B04 ELECTROMAGNETIC THEORY
Potential theory, electrostatics and magnetostatics in matter, electrodynamics, electromagnetic waves and wave guides, radiation from dipoles; Special Relativity and electromagnetism.
Two lectures; two terms
Prerequisite: PHYSICS 2B06 or ENG PHYS 2A03 and 2E04, and MATH 3D03; or registration in Honours Mathematics and Physics
PHYSICS 4D06 DIGITAL LOGIC AND COMPUTER SYSTEMS I
The design and use of digital logic systems and their application to data acquisition and control techniques. The project-oriented laboratory involves both hardware and software.

Two lectures, one lab (three hours); first term
Prerequisite: PHYSICS 2B06, or ENG PHYS 2A03 and 2E04
Antirequisite: COMP ENG 3H03, PHYSICS 4D03, 4D05

PHYSICS 4DA3 DIGITAL LOGIC AND COMPUTER SYSTEMS II
The design and use of digital logic systems and their application to data acquisition and control techniques. The project-oriented laboratory involves both hardware and software.

Two lectures, one lab (three hours); first term
Prerequisite: PHYSICS 2B06, or ENG PHYS 2A03 and 2E04
Antirequisite: COMP ENG 3H03, PHYSICS 4D06

PHYSICS 4DB3 DIGITAL LOGIC AND COMPUTER SYSTEMS II
The design and use of digital logic systems, including general structure of quantum mechanics, matrix mechanics, scattering, perturbation theory and the variational method.

One lecture; one term
Prerequisite: PHYSICS 3MM3, and MATH 3D03; or registration in Honours Mathematics and Physics

PHYSICS 4E03 NUCLEAR PHYSICS
Nuclear masses and stability; radioactivity and nuclear reactions; elementary nuclear models.

Three lectures; one term
Prerequisite: PHYSICS 3MM3, or a grade of at least B- in PHYSICS 3D03 or registration in Level IV of an Honours Medical and Health Physics programme

PHYSICS 4F03 QUANTUM MECHANICS
A sequel to PHYSICS 3MM3, including general structure of quantum mechanics, matrix mechanics, scattering, perturbation theory and the variational method.

Three lectures; one term
Prerequisite: PHYSICS 3MM3

PHYSICS 4G03 COMPUTATIONAL PHYSICS
A course using microcomputers to solve selected problems in physics. The emphasis is on applying computational methods to physics, rather than numerical methods or computer programming.

One lab (three hours); one term
Prerequisite: PHYSICS 3MM3

PHYSICS 4I01 SEMINAR II
Preparation and presentation of report on second work term.

One seminar (one hour); second term
Prerequisite: Registration in Level IV of Honours Medical and Health Physics Coop

PHYSICS 4J04 ADVANCED LABORATORY
Projects in atomic, nuclear and solid state physics. Three or four projects are required, one of which may be associated with a faculty research programme.

One lab (three hours); two terms
Prerequisite: Registration in a programme in which PHYSICS 4J04 is required or is a specified option; or permission of the Chair of the Department

PHYSICS 4K03 SOLID STATE PHYSICS
Crystal structure and bonding; lattice vibrations; electron energy bands; metals and semiconductors; magnetism.

Three lectures; one term
Prerequisite: PHYSICS 3MM3 or a grade of at least B- in 3Q03 and 3D03 or registration in Level IV of an Honours Medical and Health Physics programme

PHYSICS 4Q04 RESEARCH PROJECT
An experimental or theoretical project to be carried out under the supervision of a faculty member. A report will be required.

Lab (six hours); two terms
Prerequisite: Registration in Level IV of any Physics programme, a CA of at least 8.0 and permission of the Chair of the Department

See the heading Courses Requiring Permission in the Faculty of Science section of the Calendar

PHYSICS 4R06 RADIATION AND RADIOISOTOPE METHODOLOGY
Techniques and theory of the measurement of radiation. Includes radioactivity and radioactive decay, solid state dosimetry, principles of radioactive detectors, counting statistics and data reduction, advanced multidetector systems.

One lecture, one lab (three hours) every other week; two terms
Prerequisite: Registration in Level IV of an Honours Medical and Health Physics programme or permission of the instructor
Antirequisite: PHYSICS 4F03, 4G04

PHYSICS 4T03 INTRODUCTION TO MEDICAL PHYSICS
Basic concepts in radiology, nuclear medicine, radiotherapy, physiological measurements and laser applications.

Three lectures; one term
Prerequisite: One of MATH 2A03, 2A06, 2G03, 2Q04 and one of MATH 2C03, 2B03, 2P04; and either PHYSICS 3T03 or ENG PHYS 3D03

PHYSICS 4Z13 INQUIRY: ENERGY, PHYSICS AND THE ENVIRONMENT
Inquiry seminars are designed to develop skills basic to the systematic investigation of public issues related to Science.

Three lectures or seminars; one term
Prerequisite: Enrolment in Level IV of an Honours (Complementary Studies Option) programme in the Faculty of Science. One of PHYSICS 1A04, 1B04, 1C06, or 1B03 (or 1E03) and 1B03 (or 1BB3) is recommended.

Antirequisite: SCIENCE 4103, PHYSICS 2H03, 2H04
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PHYSICS 4Z13 INQUIRY: RELATIVITY AND GRAVITATION
To acquire a qualitative understanding of Einstein's Special and General Theories of Relativity.

Lectures and tutorials (three hours); one term
Prerequisite: Enrolment in Level IV of an Honours (Complementary Studies Option) programme in the Faculty of Science.

Antirequisite: SCIENCE 4J03
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PHYSIO THERAPY

(SEE OCCUPATIONAL THERAPY AND PHYSIOTHERAPY)

POLISH

Courses in Polish are administered within the Department of Modern Languages of the Faculty of Humanities.

Courses If no prerequisite is listed, the course is open.

POLISH 1Z06 BEGINNER'S POLISH
An introduction to basic conversational and written Polish, teaching the skills of listening, speaking, reading and writing.

Five hours (lectures and lab practice); two terms

Students with prior knowledge of the language, as determined by a placement test, may be required to take an appropriate alternative.

Alternates with POLISH 2Z06.

POLISH 2Z06 INTERMEDIATE POLISH
A course designed to further the student's command of oral and written Polish. It will concentrate on developing conversational skills, as well as studying basic grammatical structures and rules of composition.

Four hours; two terms
Prerequisite: POLISH 1Z06
Alternates with POLISH 1Z06.

POLITICAL SCIENCE

Faculty as of January 15, 1997

Chair
William M. Chandler

Professors Emeriti
Adam Bromke/M.A. (St. Andrews), Ph.D. (Montreal and McGill)
Marshall N. Goldstein/B.A. (Florida), Ph.D. (North Carolina)
Gordon P. Means/B.A. (Reed College), M.A., Ph.D. (Washington)
Derry Novak/B.A. (Toronto)
Peter J. Potichnyj/B.A. (Temple), M.A., Ph.D. (Columbia)
Klaus H. Pringsheim/B.A. (California, Los Angeles), M.A. (Columbia)

Professors
Michael M. Atkinson/B.A. (Alberta), M.A., Ph.D. (Carleton)
William M. Chandler/B.A. (Cornell), Ph.D. (North Carolina)
William D. Coleman/B.A. (Carleton), A.M., Ph.D. (Chicago)
POLITICAL SCIENCE

Courses

POL SCI 1G06 POLITICS AND GOVERNMENT
An introduction to the study of politics with the spotlight on Canada, emphasizing critical discussion of issues before us today: social conflict, prospects for democracy, citizens’ rights and responsibilities and Canada’s future as a nation. Antirequisite: PCL SCI 1A06, 1B03, 1C03, 2G06

POL SCI 2A06 COMPARATIVE POLITICS
An introduction to comparative politics with emphasis on the different forms of government in advanced industrial states including Canada. Three hours (lectures and tutorials); two terms

POL SCI 2B06 U.S. POLITICS
A study of the development, nature, and functioning of the political system of the U.S.A. Three hours (lectures and tutorials); two terms

POL SCI 2E06 GLOBAL POLITICS
A study of the institutions and processes of the international political system. Three hours (lectures and tutorials); two terms

POL SCI 2G06 POLITICS IN CANADA
A study of the development, nature and functioning of the political system of Canada. Three hours (lectures and tutorials); two terms Antirequisite: PCL SCI 1G06 Last offered in 1997-98.

POL SCI 2H06 POLITICAL THEORY
An introduction to political theory that includes Classical Greek thought, early modern natural right theory and contemporary political theory. Three hours (lectures and tutorials); two terms (See Department Note 4.)

POL SCI 3A06 HISTORY OF POLITICAL IDEAS
A study of the political ideas of some eminent thinkers from classical times to the 19th century. Three hours; two terms Enrolment is limited.

POL SCI 3A33 INTERNATIONAL POLITICS IN THE POSTWAR PERIOD
A survey of international relations from 1945 focusing on the various approaches to international politics. Three hours; one term Enrolment is limited.

POL SCI 3C03 GOVERNMENT AND POLITICS OF INDIGENOUS PEOPLES
An historical examination of the leadership and politics in Canada’s indigenous communities, with a particular focus on pre-contact political structures, the Indian Act and its consequences, and contemporary social questions. Three hours; one term Enrolment is limited.

POL SCI 3D03 POLITICS OF RESTRUCTURING: THE STATE AND THE ECONOMY
An examination of the politics of economic restructuring in selected industrialized countries during the past decade; major issues include privatization, labour policies, and trade agreements. Three hours; one term Enrolment is limited.

POL SCI 3D06 POLITICAL PARTICIPATION AND ELITIST POLITICS IN CANADA
An analysis of the impact of social structure, ideology, and political culture on structures of political participation and elitist politics in Canada. Three hours; two terms Enrolment is limited.

POL SCI 3E03 THE POLITICS OF INTERNATIONAL ECONOMIC ORGANIZATIONS
An analysis of the structure, function and politics of the principal multilateral organizations governing the postwar international economy. Three lectures; one term Enrolment is limited.

POL SCI 3E03 INTERNATIONAL RELATIONS: NORTH-SOUTH
An examination of recent North-South relations concentrating on such issues as commodity trade, protectionism, the debt crisis and negotiations over a new international economic order. Three hours; one term Enrolment is limited.
POL SCI 3FF3  CANADIAN FOREIGN POLICY
An analysis of recent issues in Canada's external relations designed to indicate themes, problems and constraints in the making and execution of foreign policy in Canada.
Three hours; one term
Enrolment is limited.

POL SCI 3GG3  POLITICS OF FEDERALISM
An analysis of the constitutional framework, evolution, and structure of the federal system in Canada and/or other Western countries.
Three hours; one term
Enrolment is limited.

POL SCI 3L03  TOPICS IN AMERICAN POLITICS
The study of a central component of the U.S. political system.
Three hours; one term
Enrolment is limited.

POL SCI 3L13  ELECTIONS AND ELECTORAL BEHAVIOUR IN CANADA
A study of the development, nature and functioning of the electoral process in Canada and the basis of voters' decisions.
Three hours; one term
Enrolment is limited.

POL SCI 3L66  COMMUNICATIONS AND POLITICS
An examination of the impact of the media and culture on contemporary politics.
Three hours; two terms
Enrolment is limited.

POL SCI 3LJ3  PROVINCIAL POLITICS IN CANADA
A study of the development, nature and functioning of the political systems of the Canadian provinces.
Three hours; one term
Enrolment is limited.

POL SCI 3L03  THE AMERICAN PRESIDENCY
An examination of the office of the American presidency and the ideological and institutional environment within which it functions.
Three hours; one term
Enrolment is limited.

POL SCI 3N06  RESEARCH METHODS, STATISTICS AND POLITICAL ANALYSIS
An introduction to the study of concept and theory formation, and an overview of the scope, research methods and statistical techniques of political science.
Three hours; two terms
Antirequisite: POL SCI 2F06.
(See Department Note 4.)

POL SCI 3N66  PUBLIC LAW
A study of the nature and function of public law, with special reference to constitutional law and judicial behaviour.
Three hours; two terms
Enrolment is limited.

POL SCI 3O06  MODERN POLITICAL THOUGHT
A critical analysis of modern political ideas, from the early nineteenth century to the present time, with special emphasis on the theories of modern conservatism, liberalism, socialism, fascism and democracy.
Three hours; two terms
Enrolment is limited.

POL SCI 3P33  POLITICS IN GERMANY
A study of the development of the German political system, including analysis of political culture, ideological traditions, parties, elites and the policy process.
Three hours; one term
Enrolment is limited.

POL SCI 3Q33  POLITICS IN FRANCE
A study of the development and functioning of the French political system, including analysis of political culture, ideological traditions, parties, elites and the policy process.
Three hours; one term
Enrolment is limited.

POL SCI 3RR3  POLITICS IN ITALY
A study of the development and functioning of the Italian political system, including analysis of political culture, ideological traditions, parties, elites and the policy process.
Three hours; one term
Enrolment is limited.

POL SCI 3S03  LOCAL GOVERNMENT AND POLITICS IN CANADA
A description of the laws and institutions of local government; examination of relationships with citizens and other levels of government; the dynamics of local politics.
Three hours; one term
Enrolment is limited.

POL SCI 3T03  PROBLEMS OF POSTCOMMunist TRANSITION
An examination of the legacy of communism and system transformation in Eastern European countries such as Poland, the Czech Republic and Slovakia.
Three hours; one term
Antirequisite: POL SCI 3M06, 4J06
Enrolment is limited.

POL SCI 3T33  POLITICS OF POSTCOMMUNIST RUSSIA
An examination of the legacy of the Soviet communist system and system transformation in Russia.
Three hours; one term
Antirequisite: POL SCI 3K06, 4J06
Enrolment is limited.

POL SCI 3U33  READING COURSE
Topics to be arranged between an individual student and instructor.
One term
Prerequisite: Registration in Level III or IV of any programme in Political Science, and the written permission of an Undergraduate Advisor on behalf of the Department. A written proposal must be submitted to the Department prior to the term in which the course is to be taken.

POL SCI 3W03  POLITICS IN BRITAIN
A study of the development and functioning of the British political system, including political culture, political parties and parliamentary institutions.
Three hours; one term
Enrolment is limited.

POL SCI 3WW3  ISSUES IN COMPARATIVE POLITICS
An examination of emerging theoretical and substantive issues in a comparative context.
Three hours; one term
Enrolment is limited.

POL SCI 3X03  POLITICS AND SOCIETY IN AFRICA
An examination of the problems of democratic institutions in Sub-Sahara Africa.
Three hours; one term
Enrolment is limited.

POL SCI 3X33  POLITICS OF THE THIRD WORLD
An examination of major theoretical approaches to the study of development and underdevelopment, such as modernization, politics of order, dependency and modes of production.
Three hours; one term
Enrolment is limited.

POL SCI 3Y33  ISSUES IN PUBLIC POLICY
An examination of emerging theoretical and substantive issues in the field of public policy studies.
Three hours; one term
Enrolment is limited.

POL SCI 3Z06  PUBLIC ADMINISTRATION
An examination of the role of public administration in seeking collective solutions to common problems at all levels of government in Canada.
Three hours; two terms
Enrolment is limited.

POL SCI 4A6  PROBLEMS IN AMERICAN POLITICS
An examination in depth of one of the important dimensions of the American political system.
Three hours (seminar); two terms
Prerequisite: One of POL SCI 2B06, 3L03, 3L06 and permission of the Department.
Enrolment is limited.
POL SCI 4B06 THE TRIAL OF Socrates
Plato's understanding of the status of philosophy with respect to politics and rhetoric on the basis of the dialogues thematically connected to the trial and death of Socrates.
Three hours (seminar); two terms
Prerequisite: Registration in Level IV of any programme, a course in Political Theory and permission of the Department
Enrolment is limited.

POL SCI 4C06 SELECTED PROBLEMS IN COMMUNICATIONS AND POLITICS
An examination of selected issues in communications and politics from a theoretical and comparative perspective.
Three hours (seminar); two terms
Prerequisite: POL SCI 3J06 and permission of the Department
Enrolment is limited.

POL SCI 4D03 HUMAN RIGHTS AND INTERNATIONAL POLITICS
An examination of the concept of human rights as reflected in international declarations and practices.
Three hours (seminar); one term
Prerequisite: POL SCI 2E06 and permission of the Department
Antirequisite: POL SCI 4F06
Enrolment is limited.

POL SCI 4E06 ISSUES IN LIBERAL-DEMOCRATIC THEORY
An analysis of liberal and liberal-democratic approaches to a select issue, such as justice, religion, education, political authority or community.
Three hours (seminar); two terms
Prerequisite: Registration in Level IV of any programme, a course in Political Theory and permission of the Department
Enrolment is limited.

POL SCI 4F06 ISSUES IN LIBERAL-DEMOCRATIC THEORY
Not open to students with credit in POL SCI 4U06 in 1995/96.
Enrolment is limited.

POL SCI 4G06 COMPARATIVE PUBLIC POLICY
A critical analysis of the formation, content and impact of public policy within advanced industrial societies.
Three hours (seminar); two terms
Prerequisite: Six units of Comparative Politics and permission of the Department
Enrolment is limited.

POL SCI 4H03 ADVANCED STATISTICAL ANALYSIS
An outline of advanced levels of measurement and descriptive statistics, and a study of the logic of statistical inference and its applications.
Three hours (lectures and labs); one term
Prerequisite: POL SCI 3N06 and permission of the Department
Antirequisite: SOCIOIOL 4203

POL SCI 4K06 ADVANCED TOPICS IN PUBLIC ADMINISTRATION
An examination in depth of one or more of the important topics, problems, or perspectives in the study of public administration.
Three hours (seminar); two terms
Prerequisite: POL SCI 3Z06 or six units of Comparative Politics and permission of the Department
Enrolment is limited.

POL SCI 4M06 ISSUES IN INTERNATIONAL POLITICS
An examination of selected topics in international politics and foreign policy.
Three hours (seminar); two terms
Prerequisite: A course in International Relations and permission of the Department
Enrolment is limited.

POL SCI 4M66 INTERNATIONAL RELATIONS OF THE PACIFIC RIM
An examination of the major international and regional economic and strategic issues that currently preoccupy the governments and peoples of the Pacific Rim.
Three hours (seminar); two terms
Prerequisite: A course in International Relations and permission of the Department
Enrolment is limited.

POL SCI 4O06 CANADIAN PUBLIC POLICY
An examination of the patterns of public policy in Canada and a critical evaluation of several types of explanation.
Three hours (seminar); two terms
Prerequisite: One of POL SCI 1G06 or 2G06; registration in Level IV of any programme and permission of the Department
Enrolment is limited.

POL SCI 4Q06 POLITICS AND SOCIETY IN LATIN AMERICA
An examination of Latin America's longstanding hegemonic crisis and corresponding ideologies such as populism, corporatism, and authoritarianism.
Three hours (seminar); two terms
Prerequisite: POL SCI 3X33 and permission of the Department
Enrolment is limited.

POL SCI 4S06 CANADIAN POLITICAL THEORY
An examination of the major international and regional economic and strategic issues that currently preoccupy the governments and peoples of the Pacific Rim.
Three hours (seminar); two terms
Prerequisite: Two courses from Political Theory, Canadian Politics, or Philosophy and permission of the Department
Enrolment is limited.

POL SCI 4U06 PROBLEMS OF POLITICAL PHILOSOPHY
A study in detail and in depth of writings by a limited number of political thinkers, focusing upon one of the central problems of political philosophy.
Three hours (seminar); two terms
Prerequisite: A course in Political Theory and permission of the Department
Enrolment is limited.

POL SCI 4W06 QUEBEC POLITICS
The political ideology of Quebec-based parties and movements, the impact of industrialization upon Quebec culture, and the economic implications of separation.
Three hours (seminar); two terms
Prerequisite: One of POL SCI 1G06 or 2G06 and permission of the Department
Enrolment is limited.

POL SCI 4Z06 HONOURS ESSAY
A major piece of scholarly writing designed to cap the undergraduate Honours programme in Political Science. The subject matter is to be different from that covered in 3U03, if the student is registered or has credit in that course.
Three hours (seminar); two terms
Prerequisite: Registration in Level IV of any Honours programme in Political Science. For registration in the summer, written permission of the Course Coordinator is also required.

PORTUGUESE

Courses in Portuguese are administered within the Department of Modern Languages, Faculty of Humanities.

Courses If no prerequisite is listed, the course is open.

PORTUGUESE 1206 BEGINNER’S INTENSIVE PORTUGUESE
A course designed to cover the rudiments of the language as used in Portugal and Brazil in both written and oral forms.
Four hours (including lab practice); two terms
Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

PORTUGUESE 2206 INTERMEDIATE PORTUGUESE
A course designed to further a student’s command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be on composition, expansion of vocabulary and more advanced aspects of the language.
Three hours; two terms
Prerequisite: PORTUGUESE 1206 or OAC Portuguese or permission of the Department

PSYCHOLOGY

Faculty as of January 15, 1997

Chair
Betty A. Levy

Professors Emeriti
D. William Carment/B.A. (Saskatchewan), M.A., Ph.D. (Toronto)
Herbert M. Jenkins/A.B. (Oberlin), Ph.D. (Harvard)
Alfred B. Kristoferson/B.S., M.A., Ph.D. (Michigan)
Grant K. Smith/B.S., Ph.D. (McGill)
PSYCHOLOGY 235

Professors
Lorraine G. Allan/B.A., M.A. (Toronto), Ph.D. (McMaster)
Ian M. Bogg/B.A., M.A., Ph.D. (Western Ontario)
Lee R. Brooks/A.B. (Columbia), M.S., Ph.D. (Brown)
Merilee M. Clark/B.A., Ph.D. (McMaster) part-time
Martin Daly/B.A. (Toronto), M.A. (McGill), Ph.D. (Toronto)
Denys deCathanaro/B.A., M.A. (Carleton), Ph.D. (British Columbia)
Bennett G. Gale/B.A., Ph.D. (Princeton), M.A., Ph.D. (Pennsylvania)
Larry J. Jaccoby/B.A. (Washburn), M.A., Ph.D. (Southern Illinois)
Betty A. Levy/B.A. (Dalhousie), M.A., Ph.D. (Toronto)
Terry L. Lewis/B.A. (Toronto), Ph.D. (McMaster) part-time
Stephen W. Link/B.A. (Colorado), Ph.D. (Stanford)
Deepeh M. Maurer/B.A. (Swiftmore), M.A. (Pennsylvania), Ph.D. (Minnnesota)
G. Rofe Morrison/B.Sc., M.Sc. (McGill), Ph.D. (Brown)
John R. Piatt/B.A. (Kansas), Ph.D. (Texas)
Roy M. Pritchard/B.Sc., Ph.D. (Reading)
Ronald J. Racine/B.Sc. (Oregon), M.Sc., Ph.D. (McGill)
Larry E. Roberts/B.A., Ph.D. (Minnesota)
Shepard Siegel/A.B. (New York), M.S. Ph.D. (Yale)
Harvey Weingarten/B.Sc. (McGill), M.S., M.Phil., Ph.D. (Yale)

Associate Professors
Richard B. Day/B.A. (Massachusetts), M.A. (Iowa), Ph.D. (McMaster)
Bruce Milliken/B.A., Ph.D. (Waterlo)
Kathryn M. Murphy/B.A. (Western Ontario), M.A., Ph.D. (Dalhousie)

Assistant Professors
Sue Becker/B.A., M.Sc. (Queens), Ph.D. (Toronto)
Judith M. Sheddon/B.Sc. (Alberta), M.Sc., Ph.D. (Pittsburgh)
Laurel J. Trainor/ARCT (Royal Conservatory of Toronto), B.Mus., Ph.D. (Toronto)

Associate Members
Ramona M. Carlbott/Psychiatry/B.Sc. (Manitoba), M.Sc. (McGill), Ph.D. (McMaster)
Charles E. Cunningham/Psychiatry B.A. (California State), M.A. (San Diego State), Ph.D. (The American University)
John R. Davia/Psychiatry B.A. (George Washington), M.A., Ph.D. (Wayne State)
Jan E. Felling/Psychiatry B.Sc., M.D. (Toronto)
Eleni Hapicoul/Psychiatry B.A. (The American College of Greece), M.A. (New Brunswick), Ph.D. (McMaster)
Joel P. Hundert/Psychiatry B.A., M.A. (McMaster), Ph.D. (Western Ontario)
Marianne W. Kiosotherson/Psychiatry B.A., Ph.D. (Cincinnati)
William Mahoney/Pediatrics M.D. (McMaster)
Catherine L. Mancllni/Psychiatry B.Sc., M.Sc., M.D. (Western Ontario)
Christopher David Roll/Cology, B.Sc., M.Sc. (Guelph), Ph.D. (British Columbia)
Mark N. Sanford/Psychiatry M.B., Ch.B. (Otago)
Karen L. Shue/Psychiatry B.A. (Hood College), Ph.D. (McGill)
William Salis/Psychiatry B.Sc. (Carleton), M.D., M.A., Ph. D. (Western Ontario), F.R.C.P.C.
Henry Szechmann/Biomedical Sciences B.Sc., Ph.D. (Dhugh)
Michael A. Van Ameringen/Psychiatry B.Sc., M.D. (McMaster)
Marriane Walters/Psychiatry B.A., Ph.D. (Cincinnati)

Department Notes:
1. The University reserves the right to limit enrolment in any course. Where priorities have to be established first consideration will be given to Honours B.Sc. and Honours B.A. Psychology students.
2. Registration in all courses with a course code ending "**" (ie. selected topics, independent research, individual readings and honours essays) requires written permission of the Department. Registration with appropriate permission must be completed no later than the last day for registration as stated in the Calendar under Sessional Dates.
3. In certain cases students lacking the specific prerequisites listed for a course may be deemed, by the course instructor, to have equivalent qualifications. In such cases permission to register in the course may be requested from the instructor.
4. Students who entered Level II Honours B.A. Psychology before September 1994, may, in Level IV register for PSYCH 4006 (Psychology Thesis) with permission of the cooridinator: These students will be transferred to Honours Psychology (Specialist Option).

Courses
If no prerequisite is listed, the course is open.

PSYCH 1A03 INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY
This course introduces experimental psychology, and includes basic research methods in psychology, the relationship between the brain and behaviour, sensation and perception, conditioning and learning, and memory and reasoning.
Three hours (lectures and tutorials); one term
Antirequisite: PSYCH 1A06

PSYCH 1A08 THE PSYCHOLOGY OF INTERPERSONAL BEHAVIOUR
A discussion of phenomena and theory in areas of psychology related to interpersonal behaviour. Topics include child development, personality, abnormal psychology, social psychology, and sociobiology.
Three hours (lectures and tutorials); one term
Antirequisite: PSYCH 1A06

PSYCH 2A03 THEORIES OF HUMAN DEVELOPMENT
A general survey of human development with an emphasis on the childhood years.
Three lectures; one term
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology
Not open to students with credit or registration in PSYCH 3G03.

PSYCH 2B03 PERSONALITY
An introduction to the scientific study of personality which will consider theories, assessment and research in five approaches to personality: psychodynamic, biological, trait, behavioural and humanistic.
Three lectures; one term
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2C03 INTRODUCTION TO SOCIAL PSYCHOLOGY
An overview of research and theory in areas such as social perception, attitude and attitude change, social influence, interpersonal attraction, altruism, aggression, small group processes.
Three lectures; one term
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2E03 SENSORY PROCESSES
General processes mediating sensation and perception. Topics include neural principles of sensory pathways, the measurement of perception and the role of sensory processes in behaviour.
Three lectures; one term
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2F03 FUNDAMENTALS OF NEUROSCIENCE
Fundamentals of nervous system and endocrine function in humans and animals, including neurophysiology, neural transmission and neuroanatomy.
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology, and BIOL 1A03 or 1A05
Antirequisite: PSYCH 3F03

PSYCH 2G03 PSYCHOLOGICAL STATISTICS
An introduction to descriptive statistics and to the logic of statistical inference. This course is intended to provide an understanding of statistical procedures commonly found in the psychological literature.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1K03 or 1M03 and registration in B.A. Psychology or B.A. Psychology Major
Antirequisite: PSYCH 2R03, 2R23, STAT 1C03
Not open to students with credit or registration in STATS 2R06 or equivalent

PSYCH 2H03 HUMAN LEARNING AND COGNITION
The psychological study of knowledge and how people use it. Topics include pattern recognition, remembering and reasoning.
Three lectures; one term
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2S03 NEUROPSYCHOLOGY I
Neural organization and the relationship between human brain function and behaviour.
Three lectures; one term
Prerequisite: PSYCH 1A03 or 1A06 or registration in Honours Biology and Psychology
Antirequisite: PSYCH 2W06, 3F03
Not open to students with credit or registration in PSYCH 2F03.
PSYCH 3R3 RESEARCH DESIGN AND STATISTICS FOR PSYCHOLOGISTS
Advanced statistical principles in the design and analysis of experiments in psychology. Parametric and non-parametric techniques for two sample and multi sample designs.
Three lectures; one term
Prerequisite: STAT 1CC3 and registration in an Honours Psychology programme; or STAT 1CC3 with a grade of at least C+ and registration in a Psychology programme, BSc Life Science, or the Honours Science (Complementary Studies Option) Stream B programme; or PSYCH 2R03 and registration in a Psychology programme, BSc Life Science, or the Honours Science (Complementary Studies Option) Stream B programme
Antirequisite: STAT 2MB3, 2R06.
Not open to students with credit or registration in STAT 2003.

PSYCH 2T03 PRINCIPLES OF CONDITIONING
An experimental survey of conditioning processes based on the study of animal behaviour.
Three lectures; one term
Prerequisite: PSYCH 1AA3 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2V03 CONTEMPORARY ISSUES IN EXPERIMENTAL PSYCHOLOGY
This course discusses selected topics chosen from cognitive psychology, perception, learning and animal behaviour, and neurobiology. We consider how our current understanding has evolved, and why viewpoints have changed.
Three lectures; one term
Prerequisite: Registration in Level II of an Honours Psychology programme, and a CA of 9.5 or greater

PSYCH 3A03 AUDITION
An introduction to auditory perception. The emphasis is on the application of classical and modern psychoacoustical methods to the development of theories of hearing.
Three lectures; one term
Prerequisite: PSYCH 2E03 or 2V03

PSYCH 3B03 SPECIAL POPULATIONS
Selected topics in developmental disability, perceptual or cognitive handicap, or behavioural disorder.
Three lectures; one term
Prerequisite: PSYCH 2E03 or 3N03

PSYCH 3D03 PSYCHOLOGICAL ASPECTS OF AGING
An examination of the aspects of aging: sensation, perception, attention, memory, intelligence, communication, personality, attitudes and mental health.
Three hours (lectures and seminars); one term
Prerequisite: PSYCH 1AA3 or 1A06, GERONTOL 1A06 and registration in a Gerontology programme or a Psychology programme
Cross-list: GERONTOL 3D03
Students in a Psychology programme (except those in Gerontology and Psychology) must register for this course as PSYCH 3D03.

PSYCH 3E03 AUDITION LABORATORY
Experimental investigation of human auditory processes in the perception of music. The emphasis is on all phases of experimentation including experimental design, data analysis, and report writing.
One lab (three hours); one term
Prerequisite: Registration in Level III or IV of an Honours Psychology programme and PSYCH 3A03, and one of PSYCH 2R06, 2R03, STATS 2R06. Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 3FA3 THE NEUROBIOLOGY OF LEARNING AND MEMORY
Learning and memory mechanisms will be discussed from several perspectives ranging from cognitive neuroscience to synaptic physiology.
Three lectures; one term
Prerequisite: PSYCH 2F03 or 2V03
Antirequisite: PSYCH 3F03

PSYCH 3G03 DEVELOPMENT DURING INFANCY
Social and cognitive development in the first two years of life. Topics include fetal development, development of perception, memory and concepts.
Three lectures; one term
Prerequisite: 9 units of Level II Psychology including at least 6 units from PSYCH 2E03, 2F03, 2H03, 2T03 or 2V03, and one of 2G03 or 2R03, STATS 1CC3

PSYCH 3H03 INTELLECTUAL DEVELOPMENT AFTER INFANCY
The development of perception, memory, language and concepts after infancy.
Three lectures; one term
Prerequisite: PSYCH 3G03

PSYCH 3I06 PRACTICA IN PSYCHOLOGY
Supervised laboratory and field placements will be arranged for a maximum of 16 students each year. The placements may vary from year to year, but will include cognitive, language, perceptual, memory, neuropsychological and behavioral disorders. A 20 page final report must be submitted to the coordinator by April 1. Applications must be submitted to the coordinator by February 1 of the preceding year, with selection for placements announced by March 15.
Prerequisite: PSYCH 2R03; registration in Level III or IV of an Honours Psychology or Combined Honours Psychology programme and permission of the coordinator. This course cannot be combined with any independent study course with the same supervisor.
Antirequisite: PSYCH 3I03
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 3J03 NEUROPHYSIOLOGY OF VISION
Neuropysiological and clinical aspects of perceptual processes. One component of the course will examine perceptual processes in terms of the major visual pathways and brain structures. The second component will relate this to specific perceptual deficits.
Three lectures; one term
Prerequisite: PSYCH 2V03, or PSYCH 2E03 and 2H03

PSYCH 3K03 PSYCHOLOGICAL MEASUREMENT
Theory of psychological testing and measurement. Topics include the statistical bases and assumptions of measurement, test validity and reliability and the measurement of human characteristics.
Three lectures; one term
Prerequisite: PSYCH 1AA3 or 1A06, and one of PSYCH 2G03, 2R03, STATS 1CC3, 2R06. Students with grades less than B- in PSYCH 2G03 are advised not to enrol in this course.

PSYCH 3L3 GENERAL EXPERIMENTAL PSYCHOLOGY LABORATORY
Students undertake to learn critical appraisal skills and to answer general and specific questions by manipulating and analyzing real or simulated data sets drawn from a variety of areas in psychology.
Tutorials, lab by appointment; one term
Prerequisite: PSYCH 2R03 and registration in an Honours Psychology programme

PSYCH 3M03 MOTIVATION AND EMOTION
Theory and data concerning human and nonhuman motivation and emotion, drawing on perspectives from evolution, physiology, learning, and culture.
Three lectures; one term
Prerequisite: One of PSYCH 2F03, 2T03, 2V03

PSYCH 3N03 ABNORMAL PSYCHOLOGY I (FUNDAMENTALS)
Fundamentals of clinical psychology, including viewpoints on the nature of behavioural disorder, diagnostic systems, clinical judgement, and treatment approaches.
Three lectures; one term
Prerequisite: Six units from PSYCH 2E03, 2F03, 2H03, 2O03, 2T03 or 2V03 or registration in Level III or IV of a Nursing or Social Work programme
Antirequisite: PSYCH 3N06

PSYCH 3N03 ABNORMAL PSYCHOLOGY II (MAJOR DISORDERS)
A review of the major forms of mental disorder including dementia, neuropsychological disorder, schizophrenia, mood and anxiety disorders, psychophysiological disorders, addiction, and problems of sexual adaptation.
Three lectures; one term
Prerequisite: PSYCH 3N03
Antirequisite: PSYCH 3N06

PSYCH 3O03 NEUROPSYCHOLOGY II
Neuronal organization and the relationship between human brain function and behavior. A continuation of PSYCH 2O03.
Three lectures; one term
Prerequisite: PSYCH 2O03 or 2F03
Antirequisite: PSYCH 2W06
PSYCH 3P03 PSYCHOLOGICAL TOPICS IN THINKING
Areas to be examined include decision making, inference and problem solving. Particular attention will be paid to the informal reasoning and heuristics that are crucial to everyday decisions.
Three lectures; one term
Prerequisite: One of PSYCH 2H03, 2V03 and one of PSYCH 2G03, 2R03, STATS 1CC3 (or an equivalent course in statistics)
Not offered in 1997-98
PSYCH 3Q03** INDIVIDUAL STUDY I
A library project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.
Prerequisite: Permission of the course coordinator
Antirequisite: PSYCH 3Q03

PSYCH 3Q03** INDIVIDUAL LAB STUDY I
A laboratory project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.
Prerequisite: Permission of the course coordinator
Antirequisite: PSYCH 3Q03

PSYCH 3R03 INTRODUCTION TO ANIMAL BEHAVIOUR
The development, stimulus control, and function of behaviour as seen in evolutionary perspective. Instinctive behaviour, learned behaviour, and their interactions.
Three lectures; one term
Prerequisite: Registration in a Psychology programme, B.Sc. Life Science, the Honours Science (Complementary Studies Option) Stream B programme, or in a four-level programme in Biochemistry or Biology

PSYCH 3R03 ANIMAL BEHAVIOUR LABORATORY
Experiments involving a wide variety of animal species, both vertebrate and invertebrate.
One lab (three hours); one term
Prerequisite: PSYCH 3R03 and registration in an Honours programme in Psychology or Biology
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 3T03 SOCIOBIOLOGY
Social behaviour of people and other animals from the perspective of evolutionary theory. Topics include aggression, altruism, kinship, parent-offspring interaction, sex and reproduction.
Three lectures; one term
Prerequisite: One of ANTHROP 2D03, 2E03, BIOLOGY 2C03, 3J03, PSYCH 3R03

PSYCH 3V03 HUMAN LANGUAGE PROCESSING
Cognitive processes involved in encoding, storing and retrieving spoken and written language will be discussed in terms of information processing models.
Three lectures; one term
Prerequisite: PSYCH 2H03 or 2V03 and registration in Level III or IV of a Psychology, Computer Science, or Linguistics programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) Stream B programme

PSYCH 3V03 LABORATORY IN HUMAN MEMORY AND COGNITION
Experiments illustrating important issues in human memory and cognition. Problems in the design, analysis, and reporting of experiments will be emphasized. Individual projects required.
One lab (three hours); one term
Prerequisite: PSYCH 3V03 and STAT 2H06, or credit or registration in PSYCH 2R03 and registration in Level III or IV of an Honours Psychology programme
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 3V03 HUMAN MEMORY
Cognitive processes involved in encoding, storage and retrieval will be discussed in terms of current theories of memory and information processing.
Three lectures; one term
Prerequisite: PSYCH 2H03 or 2V03 and registration in Level III or IV of a Psychology programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) Stream B programme

PSYCH 3W03 NEURAL COMPUTATION
An introduction to the use of neural network computational models for understanding the neural bases of psychological processes, and for solving real-world problems.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1A06, 1A66, 1C03, 1C06, 1N06 or ARTS&SCI 1D06 and one of COMP SCI 1MA3 or 1MC3. MATH 1B03 is strongly recommended.
Cross-list: NEURCOMP 3W03

PSYCH 3WW3 MEASURING THE MIND
The course reviews, discusses, and illustrates how psychophysical theories and experiments about discrimination, preference and choice, are crucial to the development of modern experimental psychology.
Three lectures; one term
Prerequisite: PSYCH 2E03 or 2V03 and PSYCH 2R03

PSYCH 3XX3 TEACHING PRACTICUM
This course is designed to give a maximum of 70 Honours Psychology students practical experience with general teaching methods as they relate to the classroom teaching of Psychology. Applications must be submitted to the coordinator by February 1 of the preceding year, with selection for placements announced by March 15.
One lecture and one practicum; two terms
Prerequisite: Registration in Level III or IV of an Honours Psychology programme
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 4A03 CONTEMPORARY TOPICS IN HISTORICAL PERSPECTIVE
Discussion of the background and current status of several issues of contemporary interest.
Three hours (lectures and seminar); one term
Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CA of at least 6.0 and permission of the instructor
See heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

PSYCH 4B03 HISTORY OF PSYCHOLOGY
An historical account of the main lines of development of psychology.
Three lectures; one term
Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CA of at least 6.0

PSYCH 4D06 PSYCHOLOGY THESIS
Students conduct research projects with individual faculty members. Three copies of a completed thesis must be submitted by the end of the term.
Prerequisite: Registration in Level IV of an Honours (Specialist Option) or Combined Honours (B.Sc.) programme in Psychology for which this course is required. If space permits, students in the non-specialist Honours Psychology programmes may be permitted to register. Permission must be requested from the course coordinator in March. If PSYCH 3003, 3Q03, 4D03, or 4Q03 is taken concurrently with PSYCH 4D06, a different faculty member must supervise each course. (See Department Note 4)
See heading Courses Requiring Permission in the Faculty of Science section of the Calendar.

PSYCH 4G03 NEUROSCIENCE LABORATORY
Seminars and laboratory experience in current problems in neurobiology.
Two hours, seminar; three hours lab; one term
Prerequisite: One of PSYCH 2E03, 2F03, BIOLOGY 3P03 and registration in Level IV of an Honours programme
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 4I03 MODELS IN BRAIN AND COGNITIVE SCIENCES
A discussion of the contemporary literature on computer models of neural and cognitive processes with practical exercises.
Three hours (seminar); one term
Prerequisite: Registration in an Honours Psychology programme; or an Honours B.Sc. programme

PSYCH 4J03 PSYCHOLOGY INQUIRY I
This course will provide students with an opportunity to develop skills required to launch investigations of selected psychological themes in nonhuman populations.
Seminar and discussions (three hours); one term
Prerequisite: Registration in Level IV of an Honours Psychology programme.
Students registered in Honours Psychology (Complementary Studies Option) will be given preference.
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 4K03 PSYCHOLOGY INQUIRY II
This course will provide students with an opportunity to develop skills required to launch investigations of selected psychological themes in human populations.
Seminar and discussions (three hours); one term
Prerequisite: Registration in Level IV of an Honours Psychology programme.
Students registered in Honours Psychology (Complementary Studies Option) will be given preference.
Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.
RELIGIOUS STUDIES

Faculty as of January 15, 1997

Chair
Stephen R. Westerholm

Professors Emeriti
John G. Arapura/B.A. (Serampore College, and Bishop’s College, Calkutta), S.T.M. (Union Theological Seminary), M.A., Ph.D. (Columbia)
A. Eugene Combs/B.A. (Trinity, San Antonio), M.Div. (Union Theological Seminary), Ph.D. (Columbia)
Louis I. Greenspan/M.A. (Dalhousie), Ph.D. (Brandeis)
Yun-hua Jan/M.A., Ph.D. (Visva-Bharati)
Johannis J. Mol/B.D. (Union Theological Seminary), M.A., Ph.D. (Columbia)
Gérard Vélasse/B.A. (Laval), M.A. (Montreal), Ph.D. (Münster)
Paul Younger/A.B. (LaFayette), M.A. (Banaras), B.D. (Serampore), Th.M., M.A., Ph.D. (Princeton)

Professors
Phyllis Cranach/B.A. (Radcliffe College), Ph.D. (Harvard)
David R. Kinslay/B.A. (Drew), B.D. (Union Theological Seminary), M.A., Ph.D. (Chicago)
Alan Mendelson/A.B. (Kenyon College), M.A. (Brandeis), Ph.D. (Chicago)
John C. Robertson/B.A. (Texas Wesleyan College), B.D. (Southern Methodist University), S.T.M., M.A., Ph.D. (Yale)
Koichi Shinohara/B.S., M.L. (Tokyo), Ph.D. (Michigan)

Associate Professors
Ellen Badone/B.A., M.A. (Toronto), Ph.D. (California, Berkeley)
P. Travis Kroeber/B.A. (Winnipeg), M.A. (Manitoba), Ph.D. (Chicago)
Cline MacQueen/B.A., M.A. (McMaster), Ph.D. (Harvard)
Adile Reinhartz/B.A. (Toronto), M.A., Ph.D. (McMaster)
Stephen R. Westerholm/B.A., M.A. (Toronto), D.Th. (Lund)
Wayne K. Whilier/B.A. (Sir George Williams), Ph.D. (McMaster) part-time

Assistant Professor
Peter Willicombe/B.A. (Manitoba), M.Phil. (Oxford), M.Div. (Toronto), D.Phil. (Oxford)

Associate Member
Virginia Aksan/(History) B.A. (Allegheny College), M.L.S. (Berkeley), M.A., Ph.D. (Toronto)

Department Notes:
Students are advised to consult both the Department’s Handbook and the Undergraduate Timetable for a list of the courses offered in the current year.

Fields of Study:
The Department offers courses in four fields of study. Students are encouraged to specialize in any one of these fields: Level II, III and IV courses are allocated to the fields as follows:

I. ASIAN RELIGIONS

RELIG ST 2J03, 2L03, 2P03, 2R03, 2T03, 3AA3, 3E03, 3H03, 3I03, 3L03, 3S03, 3U03, 3UU3
SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES

RELIG ST 2B03, 2D03, 2E03, 2G03, 2H03, 3N03, 3V03, 3Y03
2Z03, 3M03, 3N03, 3R03, 3T03, 4B03, 4C03
HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT

RELIG ST 2D03, 2E03, 2J03, 2K03, 2L03, 2N03, 2O03
2P03, 2Q03, 2R03, 2S03, 2T03, 2U03, 2V03, 2W03

IV. CONTEMPORARY AND COMPARATIVE RELIGIONS

RELIG ST 2A03, 2B03, 2E03, 2M03, 2N03, 2Q03
2S03, 2V03, 2W03, 2W03, 3J06

Courses
If no prerequisite is listed, the course is open.

RELIG ST 1B06 WORLD RELIGIONS
A comparative study of religions such as Hinduism, Buddhism, Islam, Christianity, and Judaism with special reference to selected texts, traditions and thought. Two lectures, one tutorial; two terms

RELIG ST 1D06 MODERN STUDY OF THE BIBLE
An introduction to the discipline of modern biblical criticism focusing on the development of selected central themes. Two lectures, one tutorial; two terms

RELIG ST 1E06 IDEAS OF LOVE
This course will discuss the variety of accounts of love in Western civilization from the time of the ancient Greeks and the rise of Christianity to modernity. Two lectures, one tutorial; two terms

RELIG ST 1H03 RELIGIOUS DISSENT AND REVITALIZATION
A study of recent dissent from established religion as exemplified in feminist thought, liberation theology, and ecological spirituality. Two lectures, one tutorial; one term

RELIG ST 1I06 RELIGIOUS THEMES IN MODERN LITERATURE
An introduction to religious themes, imagery and issues through a study of selected modern literature. Two lectures, one tutorial; two terms

RELIG ST 2A03 MYSTICISM IN HINDU AND CHRISTIAN TRADITIONS
An exploration of the unique and common characteristics of mysticism in the Hindu and Christian traditions, both in its philosophical and popular expression through the study of selected texts. Two lectures, one tutorial; one term

RELIG ST 2B03 WOMEN IN THE BIBLICAL TRADITION
This course will focus on the portrayal of women in the Hebrew Scriptures and the New Testament. Among the texts to be dealt with are examples of biblical narrative and legal material, the gospels, the letters of Paul and extra-biblical material. Two lectures, one tutorial; one term

RELIG ST 2B03 IMAGES OF THE DIVINE FEMININE
An examination of goddesses and religious heroines from a variety of cultures: tribal, eastern and western. Two lectures, one tutorial; one term
RELIG ST 2C03 MORA L ISSUES
An introduction to moral philosophy accenting biomedical ethics. Issues such as abortion, human experimentation, euthanasia, and genetic screening will be investigated in cooperation with members of the Faculty of Health Sciences.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above
Cross-list: PHILOS 2D03
Enrolment is limited to 475 students.

RELIG ST 2C3 SPIRITUAL AUTOBIOGRAPHIES
A study of the interplay of self and circumstance in the quest for personal identity in selected modern autobiographies: Rousseau, Goethe, Tolstoy, Merton and Weil.
Two lectures, one tutorial; one term

RELIG ST 2D03 THE FIVE BOOKS OF MOSES
An examination of selected texts from the Pentateuch and their significance for ancient Israelite religion and modern thought.
Two lectures, one tutorial; one term
For further study of the Hebrew Bible, RELIG ST 2D03, 2E3, 3M03 are also recommended.

RELIG ST 2E3 ISLAM AND MEDITERRANEAN SOCIETY, 600-1300
An introduction to Islamic civilization from its beginnings in Arabia to the period of the Crusaders, with an emphasis on Mediterranean culture of the period.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: RELIG ST 2D03
Cross-list: HISTORY 2EA3

RELIG ST 2EB3 ISLAM IN THE WORLD, 1300-1800
A survey course which emphasizes the role of Islam in the global setting in the period of the great Islamic empires.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: RELIG ST 2D06
Cross-list: HISTORY 2EB3

RELIG ST 2EE3 THE PROPHETS
The role and teaching of biblical prophets in their ancient setting and their impact on modern religious life and thought.
Two lectures, one tutorial; one term

RELIG ST 2GG3 EARLIEST PORTRAITS OF JESUS
A study of the Gospels of Matthew, Mark, and Luke. Special attention will be given to the possible literary relationships among them as well as to the distinctive features of their Jesus stories.
Two lectures, one tutorial; one term

RELIG ST 2H03 THEORY AND PRACTICE OF NON-VIOLENCE
An introduction to the history, theory and practice of non-violence, with attention to the relations between religious representatives of the tradition such as Tolstoy, Gandhi and King and secular or political figures such as Gene Sharp and James Scott.
Two lectures, one tutorial; one term

RELIG ST 2HH3 PAUL AND CHRISTIAN ORIGINS
Two lectures, one tutorial; one term

RELIG ST 2H3 CHRISTIANITY IN THE PATRISTIC PERIOD (100-800)
The development of Christianity in the first centuries C.E. in relation to competing alternatives such as Judaism, Graeco-Roman cults and philosophies.
Two lectures, one tutorial; one term

RELIG ST 2J06 INDIA: ITS CULTURE, SOCIAL HISTORY, RELIGION AND PHILOSOPHY
A systematic study of the Intellectual and spiritual traditions of India. The course will include political, economic and social thought, as well as religion and philosophy.
Two lectures, one tutorial; one term

RELIG ST 2J3 CHRISTIANITY IN THE MEDIEVAL PERIOD (800-1500)
The development of Christianity in the Middle Ages and its relation to the political and intellectual context. Primary texts will illustrate typical aspects of medieval religion, learned and popular.
Two lectures, one tutorial; one term

RELIG ST 2K3 CHRISTIANITY IN THE REFORMATION PERIOD
The place of the Reformation in the development of Christian thought and practice - its background, context and sequel. Attention is given to such figures and movements as Martin Luther, John Calvin, the Anabaptists, the reformation in England, the Catholic Reformation.
Two lectures, one tutorial; one term

RELIG ST 2L03 LIFE, WORK AND TEACHINGS OF MAHATMA GANDHI
A study of the central religious and ethical ideas of Gandhi in the context of his life; in particular: his doctrines of Non-violent Struggle and Truth-act; his place in contemporary consciousness, particularly in the struggle for human harmony and preservation of the earth and its living species; and his revolutionary view of Truth itself as God.
Two lectures, one tutorial; one term

RELIG ST 2M03 DEATH AND DYING: COMPARATIVE VIEWS
A comparative survey of the diversity of social and ritual practices, religious beliefs, and emotional responses surrounding death in a variety of non-Western cultural contexts.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II and above

RELIG ST 2P06 JAPANESE CIVILIZATION
Introduction to Japanese history, society, and culture through a study of the religious traditions, literature, and art of Japan.
Two lectures, one tutorial; two terms
Cross-list: JAPAN ST 2P06

RELIG ST 2Q03 INTRODUCTION TO ISLAM
The origins and early history of Islam with an emphasis on the Koran and the early Muslim community.
Two lectures, one tutorial; one term

RELIG ST 2Q03 CULTS IN NORTH AMERICA
An examination of recent religious trends in North America. The Hare Krishna Movement, the Unification Church, Scientology, Wicca, New Age Spiritualities, and Satanism will be covered.
Two lectures, one tutorial; one term

RELIG ST 2R03 INTRODUCTION TO HINDU PHILOSOPHY
An introduction to the vast field of Hindu philosophy from the poetic writings of the Vedas to the development of speculative inquiry in the Upanisads. Primary emphasis is on Indian modes of inquiry and the typical answers bearing upon reality, life and the world.
Two lectures, one tutorial; one term

RELIG ST 2S03 WOMEN AND RELIGION
A study of the status and roles of women in several religions, such as Hinduism, Buddhism, Confucianism, Christianity, Judaism, and Islam.
Important women religious figures and feminist theology will also be studied.
Two lectures, one tutorial; one term

RELIG ST 2T03 TOPICS IN INDIAN PHILOSOPHY
This course explores select themes in Indian philosophy through a reading of primary texts in English translation. Possible topics include: an examination of Indian concepts of the soul, free will and determinism, origins of the universe and Indian debates concerning the existence and function of an omnipotent god.
Two lectures, one tutorial; one term

RELIG ST 2TT3 TAOISM AND THE SEARCH FOR IMMORTALITY IN CHINA
This course is an introduction to the Taoist tradition in China. The classics of "Philosophical Taoism", including the Lao-Tzu and the Chuang-Tzu will be studied, followed by the scriptures of the medieval period which taught meditation, ritual and alchemy as paths to immortality.
Two lectures, one tutorial; one term
RELIG ST 2U03
RELIGION AND MORALITY II:
ANCIENT AND MEDIEVAL
An examination of the development of moral thought in the West through a
study of pre-modern texts and authors, such as the Bible, the Greeks, Au-
gustine, and Thomas Aquinas.
Two lectures, one tutorial; one term

RELIG ST 2V03
ISLAM AND THE MODERN WORLD
The spread of Islam, Islam as a minority community, the role of women in
Islam and fundamentalism.
Two lectures, one tutorial; one term

RELIG ST 2W03
HEALTH, HEALING AND RELIGION
An examination of the different ways in which religion and health are re-
lated. Ideas of sickness and techniques of healing will be studied in a vari-
ety of traditional and modern religious contexts.
Two lectures, one tutorial; one term

RELIG ST 2Y03
RELIGION AND THE CULTURE
OF THE TWENTIETH CENTURY I
A study of religion in the thought of the founding figures of the twentieth
century. Topics include: religion and the promise of science; religious mod-
ernism; Freud; Marxism; religion in the age of ideology.
Two lectures, one tutorial; one term

RELIG ST 2YY3
THE BIBLE AND FILM
An examination of the use of the Bible in film. A variety of film genres will
be studied including the Disney cartoon, biblical epic, horror film, contem-
porary comedy and drama and the rock music video. Issues to be dis-
cussed include the transformation of biblical images in popular media and
film as a vehicle for conveying religious values.
Two lectures, one tutorial; one term

RELIG ST 2Z03
GREEK AND ROMAN RELIGION
A study of the role of religion in Greek and Roman public and private life.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: CLASSICS 2Z03

RELIG ST 3AA3
POPULAR RELIGION IN INDIA
'The Music, Dance and Festivals of Indian Temples will be analyzed in terms
of their social, psychological and political implications.'
Two lectures, one tutorial; one term

RELIG ST 3003
GOD, REASON AND EVIL
An examination of understandings of reason and evil in ancient Greek,
medieval Christian and modern times, and of how these understandings
are related to accounts of the nature of God.
Two lectures, one tutorial; one term

RELIG ST 3E03
JAPANESE RELIGION
Topics will include Shinto, Shakerism, Ancestor Worship, Japanese Bud-
dhism and the New Religions of Japan.
Two lectures, one tutorial; one term
Cross-list: JAPAN ST 3E03

RELIG ST 3F03
APPROACHES TO THE STUDY OF RELIGION
A study of the various ways religious phenomena can be studied, e.g. psy-
chologically, sociologically, philosophically, theologically, comparatively, etc. Attention is also given to the history of the discipline of religious studies.
Two lectures, one tutorial; one term
Prerequisite: Six units of Religious Studies courses above Level I

RELIG ST 3H03
STORYTELLING IN EAST ASIAN RELIGIONS
An in-depth study of selected examples of story literature in China and
Japan with attention to the way religion is represented.
Two lectures, one tutorial; one term
Cross-list: JAPANESE 3H03

RELIG ST 3I03
RELIGION AND SOCIAL JUSTICE
An examination of the conceptualization of justice, ancient and modern, and their
relationship to religious understandings of human nature and society.
Two lectures, one tutorial; one term
Prerequisite: RELIG ST 2I03 or 2U03 or permission of the instructor.
Antirequisite: RELIG ST 2I03

RELIG ST 3J03
RELIGION AND MODERN SOCIETY
An introduction to the thoughts and theories of scholars who have studied
the relation between religion and society. In the first term, the emphasis will
be on pre-World War II writings. In the second term, the empirical materials of
the sociology of religion since World War II will be surveyed.
Two lectures, one tutorial; two terms
Prerequisite: Any course in Anthropology, Philosophy, Religious Studies or
Sociology
Cross-list: SOCIO 3J03
Enrolment is limited.

RELIG ST 3K03
CHRISTIANITY IN THE MODERN PERIOD
Topics in Christianity (Catholic and Protestant) from the 17th to the 20th centu-
ries. Attention is given to the interaction between secular and religious thought.
Two lectures, one tutorial; one term

RELIG ST 3L03
ISSUES IN ASIAN RELIGIOUS THOUGHT: INDIA
Readings of Indian religious texts in translation will centre around themes such as
the nature of human nature; free will and determinism; personal identity and the quest for perfection; renunciation and social action; violence
and non-violence; altruism and selfishness.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level III and above
Cross-list: ARTS&SCI 3L03

RELIG ST 3M03
RELIGION AND HUMAN NATURE
What is the nature of human nature and its fulfilment? A study of recent
philosophical, scientific and religious anthropology.
Two lectures, one tutorial; one term

RELIG ST 3N03
SONGS OF DAVID:
POETRY IN THE HEBREW BIBLE
A study of poetry in the Hebrew Bible (in translation). The course will give
primary attention to the study of the psalms. Some examples of early epic
poetry and wisdom poetry will also be included.
Two lectures, one tutorial; one term

RELIG ST 3P03
THE ENCOUNTER OF SCIENCE AND RELIGION
A study of contemporary discussions of: (a) methods of inquiry in science
and religion, (b) the human being's relation to nature and (c) God's relation
to nature.
Two lectures, one tutorial; one term
Prerequisite: RELIG ST 2P03
RELG ST 3R03  DEATH AND THE AFTERLIFE IN EARLY JUDAISM AND CHRISTIANITY
An examination of the variety of ways in which physical death and the afterlife were understood in biblical and post-biblical Judaism as well as in the New Testament and early Christianity. Among the topics to be considered are the netherworld, immortality and resurrection, as well as the relationship of these concepts to issues of faith and morality.
Two lectures, one tutorial; one term

RELG ST 3S03  ISSUES IN ASIAN RELIGIOUS THOUGHT: EAST ASIA
Readings in East Asian religious texts in translation will centre around themes such as culture vs. nature, virtue vs. power, social responsibility vs. personal cultivation, bookish learning vs. meditation.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level III and above
Cross-list: ARTS&SCI 3S03

RELG ST 3T03  THE QUEST FOR THE HISTORICAL JESUS
A look at the continuing scholarly effort to reconstruct the career and teachings of the historical Jesus.
Two lectures, one tutorial; one term

RELG ST 3U03  THE BUDHIST TRADITION IN INDIA
A study of the origins and early development of Indian Buddhism, largely through readings in Buddhist scripture (pre-Mahayana and Mahayana) in translation.
Two lectures, one tutorial; one term

RELG ST 3UU3  CH’AN AND ZEN BUDDHISM
An examination of Ch’tan and Zen Buddhist myth, history, doctrine, monastic culture, and ritual practice.
Two lectures, one tutorial; one term
Cross-list: JAPAN ST 3UU3

RELG ST 3YY3  RELIGION AND THE CULTURE OF THE TWENTIETH CENTURY
Religion in the post-war period. Topics include: theological revival and the end of ideology; the sixties and neo-marxist religion; religion and the post modern; fundamentalism; religious extremism and the global village.
Two lectures, one tutorial; one term

RELG ST 3ZZ3  JUDAISM, THE JEWISH PEOPLE AND THE BIRTH OF THE MODERN WORLD
On the lures and threats of the modern world from the early eighteenth to the early twentieth century. Topics include: Jewish philosophy in the Age of Reason, new Jewish denominations, assimilation, early Zionism, Yiddish socialism, the beginnings of modern anti-semitism, movements of cultural renewal.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 2X03
Cross-list: HISTORY 3ZZ3

RELG ST 4A06  HONOURS SEMINAR
A seminar in selected topics in the study of religion, including a presentation and discussion of research conducted by students in the Honours Research Course (4J06).
Seminar (three hours); two terms
Prerequisite: Registration in Level IV Honours Religious Studies

RELG ST 4B03  ADVANCED SEMINAR IN EARLY JUDAISM
This seminar will concentrate on the study of special topics in Early Judaism.
One term
Prerequisite: Registration in Level IV of an honors programme in Religious Studies and written permission of the instructor

RELG ST 4C03  ADVANCED SEMINAR IN EARLY CHRISTIANITY
This seminar will concentrate on the study of special topics in Christianity.
One term
Prerequisite: Registration in Level IV of an honors programme in Religious Studies and written permission of the instructor

RELG ST 4D03  ADVANCED SEMINAR IN WESTERN RELIGIOUS THOUGHT
This seminar will concentrate on the study of special topics in Western Religious Thought.
One term
Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

RELG ST 4E03  ADVANCED SEMINAR IN RELIGION AND POLITICS
This seminar will concentrate on the study of special topics in Religion and Politics.
One term
Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

RELG ST 4F03  ADVANCED SEMINAR IN EAST ASIAN RELIGIONS
This seminar will concentrate on the study of special topics in East Asian Religions.
One term
Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

RELG ST 4J06  HONOURS RESEARCH COURSE
Students in this course will work closely with faculty members who specialize in the fields in which they plan to write their honours essay.
Two terms
Prerequisite: Registration in Level IV Honours Religious Studies

RELG ST 4W06  GUIDED READING IN RELIGIOUS STUDIES
Independent study on a topic approved by the instructor.
Two terms
Prerequisite: Registration in Level IV of an honors programme in Religious Studies and permission of the instructor

HEBREW...

HEBREW 2A03  INTRODUCTION TO BIBLICAL HEBREW I
An introduction to the basics of grammar, syntax and vocabulary of the language of the Hebrew Bible. The student will begin to read in the Hebrew Bible. Four hours (two lectures); one term
Antirequisite: HEBREW 2A06

HEBREW 2B03  INTRODUCTION TO BIBLICAL HEBREW II
An introduction to more grammar, syntax and vocabulary of the language of the Hebrew Bible. The knowledge acquired should enable the student to read the simple prose and poetry of the Hebrew Bible. Four hours (two lectures); one term
Antirequisite: HEBREW 2A06

HEBREW 3A03  INTERMEDIATE HEBREW I
A reading course in classical (biblical) Hebrew. Sample texts will be read from some or all of the following: the Hebrew Bible, Mishnah, ancient Hebrew inscriptions and the Dead Sea Scrolls. Four hours (two lectures); one term
Antirequisite: HEBREW 2A06

HEBREW 3B03  INTERMEDIATE HEBREW II
Further sample texts will be read from some or all of the following: the Hebrew Bible, the Mishnah, ancient inscriptions and the Dead Sea Scrolls. Four hours (two lectures); one term
Antirequisite: HEBREW 2A06
RUSSIAN

Courses and programmes in Russian are administered within the Department of Modern Languages of the Faculty of Humanities.

Department Note:

Students should note that the Department has classified its Russian language courses under the following categories:

Introductory Level Language Course
RUSSIAN 1206

Intermediate Level Language Course
RUSSIAN 2C06

Advanced Level Language Courses
RUSSIAN 3C06, 4C06

Courses

RUSSIAN 1206 BEGINNER’S INTENSIVE RUSSIAN
An intensive beginner’s course designed for students with no prior knowledge of the language. This course gives the student a basic knowledge of Russian grammar, while emphasizing spoken Russian. The course is enhanced by a CALL (Computer-Aided Language Learning) module. Four hours (including lab practice); two terms
Enrolment is limited
Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

RUSSIAN 2B03 RUSSIAN SHORT STORY
Reading of short stories in the original language to develop comprehension, writing and speaking skills.
Three lectures; one term
Prerequisite: RUSSIAN 1206

RUSSIAN 2C06 INTERMEDIATE LANGUAGE STUDY
Intermediate Russian will continue the study of Russian grammar for both the conversational and written language. Emphasis will be extended for conversation, reading and writing. Video film and interactive computer software will be used to supplement traditional printed materials.
Four hours; two terms
Enrolment is limited
Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

RUSSIAN 3C06 ADVANCED LANGUAGE STUDY
This course is designed to enhance the student’s oral and written proficiency through the study of Russian idioms, exercises in syntax, and conversational diction based on selected texts and films.
Four hours; two terms
Prerequisite: RUSSIAN 2C06

RUSSIAN 4C06 CONVERSATION AND ADVANCED COMPOSITION
An advanced language course focusing on the structure of compound and complex sentences, and on the development of writing and oral skills.
Three lectures; two terms
Prerequisite: RUSSIAN 3C06

RUSSIAN 413 INDEPENDENT STUDY
The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.
Tutorials; one term
Prerequisite: 18 units of Russian above Level I and permission of the Department.

RUSSIAN 4203 TOPICS IN RUSSIAN LITERATURE I
Previous topics include: 19th-Century Lyric Poetry, 20th-Century Short Story, 19th-Century Drama. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: RUSSIAN 2C06

RUSSIAN 4773 TOPICS IN RUSSIAN LITERATURE II
Previous topics include: Soviet Plays of the 1920’s. Consult the Department concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: RUSSIAN 2C06

RUSSIAN 4TT3 may be repeated, if on a different topic, to a total of six units. Offered in alternate years.

JEWISH STUDIES

(SEE SEPARATE CALENDAR LISTING UNDER INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

JAPANESE

(SEE SEPARATE LISTING IN THE CALENDAR)

SANSKRIT

(SEE RELIGIOUS STUDIES, SANSKRIT)

SCHOOL OF ART, DRAMA AND MUSIC

Faculty as of January 15, 1997

Director
Hugh Hartwell

Professors Emeriti

Marta Hidy/Dip Perf (Budapest), F.R.H.C.M. (Hon.) (Music)
Graham Petro/M.A. (St. Andrews), B. Litt. (Oxford) (Drama)
George B. Wallace/A.M. (Trinity College, Dublin) (Art)
William Wallace/B.Mus., Ph.D. (U of Utah) (Music)

Professors

Ronald W. Vincze/B.A. (McMaster), M.A. (Rice), Ph.D. (Northwestern) (Drama)

Associate Professors

Donald F. Carr/B.A. (Guelph), M.F.A. (Chicago) (Art)
Hugh G. Galloway/Dipl. Art (Edinburgh) (Art)
Frederick A. Hall/Assoc. Dipl., B.Mus. (McGill), M.A., Ph.D. (Toronto) (Music)
Hugh K. Hartwell/Assoc. Dipl., B. Mus. (McGill), A.M., Ph.D. (Pennsylvania) (Music)
Keith W. Kinder/Dipl.F.A. (Calgary), B. Mus. (Western Ontario), M. Mus. (Northwestern), Ph.D. (Colorado) (Music)
Brian S. Pocknell/M.A. (Manchester), D. de l’U. (Paris-Sorbonne) (Drama)
Graham Todd/L.D.A. Dip. (Chelse School of Art) M.F.A. (Guatemala) (Art)

Assistant Professors

Susan Fast/B.M. (Western Washington), M.A., Ph.D. (Iowa) (Music)
Stephen B. Johnson/B.A. (Guelph), M.A., Ph.D. (New York) (Drama)
Niamh O’Luachaire/B.A., M.A., Ph.D. (Toronto)
William Renwick/B.Mus. (British Columbia), Ph.D. (CUNY), A.A.G.O., F.R.C.C.O. (Music)
With the exception of SCIENCE 1A00, the Science courses are designed primarily for students in the Humanities and Social Sciences to give an appreciation of important areas of modern science and do not assume any specific background in science. Other science courses that may be of interest to students in the Humanities and Social Sciences are listed by Department. They are:

- **BIOLOGY 1J03** Human Physiology
- **COMP SCI 1S03** Computing Fundamentals
- **STATS 1A03** Statistical Reasoning
- **STATS 1L03** Probability and Linear Algebra

**SCIENCE 1A00 WHMIS, HEALTH AND SAFETY**
Introduction to safety guidelines at McMaster University, acceptable safety conduct and positive safety attitudes and practices in laboratories and Workplace Hazardous Materials Information System (WHMIS). Evaluation: one multiple choice examination graded Pass or Fail; students who fail will be required to attend the course again during the same academic year.

One three hour session.

**SCIENCE 1C03 GENERAL CHEMISTRY**
A general interest course in Chemistry discussing topics relevant to society and the environment.

Three lectures; one term
Prerequisite: A minimum of one high school Chemistry course
Not open to students with credit or registration in CHEM 1A00, 1A03, 1A06, 1C03, 1E03, 1F03
Not open to students registered in Science or Engineering.

**SCIENCE 2A03 THE NATURE OF MATTER**
Contemporary ideas about the structure of atoms and molecules; the collective behaviour of large numbers of atoms in solids, liquids, and gases and the technological implications of such behaviour.

Three lectures; one term
Prerequisite: Registration in Level II, Ill, or IV of a non-science programme
No mathematics is required.
Offered in alternate years.
Not offered in 1997-98.

**SCIENCE 2B03 CONTINENTAL DRIFT AND PLATE TECTONICS**
A review of modern ideas of crustal movement, the origin of volcanoes and earthquakes and the construction of mountain belts, as portions of the crust drift and collide.

Three lectures; one term
Prerequisite: Registration in Level II, III, or IV of a non-science programme
No mathematics is required.
Antirequisite: GEOLOGY 1C03

**SCIENCE 2D03 ASTRONOMY**
A survey of modern and historical concepts in astronomy. Light and the telescope; distance measurement in space; the structure and evolution of stars, galaxies, cosmology.

Three lectures; one term
Prerequisite: Registration in Level II, III, or IV of a non-science programme
Grade 12 Mathematics required.
Antirequisite: ASTRON 1F03

**SCIENCE 2G03 THE RIGHT TO FOOD**
Human food requirements; how food is produced; alternative approaches to alleviating world hunger.

Three lectures or two lectures, one tutorial; one term
Prerequisite: Registration in Level II, III, or IV of any programme
Enrolment is limited to 100. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

**SCIENCE 2H03 THE MOLECULAR BASIS OF LIFE**
A survey of the molecular basis of life; the current revolution in biology caused by recombinant DNA technology and its implications for the future.

Three lectures; or two lectures, one tutorial; one term
Prerequisite: Registration in Level II, III, or IV of any programme
Antirequisite: BIOLOGY 1A06, 1A03, 1A03

**SCIENCE 2J03 PHYSICS OF MUSICAL SOUND**
Sound waves; production of sound by musical instruments; properties of the ear, musical scales and intervals; auditorium acoustics.

Three lectures with demonstrations; one term
Prerequisite: Registration in Level II, III or IV of a non-science programme
Antirequisite: PHYSICS 2J03

Knowledge of Grade 12 Mathematics would be helpful.
SCIENCE 2K03 HEREDITY, EVOLUTION AND THE ENVIRONMENT
Introduction to the principles of human genetics and evolutionary biology, the adaptation of organisms to their environment, biological diversity and integrated ecosystems.
Three lectures or two lectures and one tutorial; one term
Prerequisite: Registration in Level II, III, or IV of any programme
Antirequisite: BIOLOGY 1A06, 1A03, 1A03
Offered in alternate years.
Not offered in 1997-98.

SCIENCE 2L03 ENVIRONMENTAL GEOLOGY
Geological methods applied to the study of environmental problems. A case study of pollution of water resources, nuclear waste disposal, indoor radon, and mine drainage and leakage from peat bogs.
Lectures and seminars (three hours); one term
Prerequisite: Registration in Level II, III, or IV of any programme
Antirequisite: ENVIR SC 1A06, 1B03, GEOG 3C03
Not open to students registered in any Geography programme.
Not offered in 1997-98.

SCIENCE, TECHNOLOGY, AND PUBLIC POLICY
(SEE THEME SCHOOL ON SCIENCE, TECHNOLOGY, AND PUBLIC POLICY)

SOCIAL SCIENCE

Courses If no prerequisite is listed, the course is open.
SOC SCI 2B06 INTRODUCTION TO THE STUDY OF PEACE
The concept of peace; an analysis of contemporary war and of conditions for peace, grounded in specific case studies; the roles of values, ideologies and strategies in the attainment of peace; education as a discipline.
Three hours (lectures and discussions); one term
SOC SCI 2C03 GENOCIDE AND ETHNOCIDE
The general sociological and political issue of genocide approached through the analysis of three types: (1) ethnic genocide (Haman, Jews, Gypsies), (2) po llicide (the Ukraine, Cambodia), (3) ethnoicide of indigenous peoples in settler societies.
Three hours; one term
SOC SCI 2D03 PEACE AND DEVELOPMENT
Analysis of economies of less developed countries and the processes of transformation that govern their growth and development. Special emphasis will be placed on the relationship between development and peace.
Three hours; one term
SOC SCI 2E03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES I
Topic for 1997-98: The Structure of the Family and the Role of Women in Historical and Contemporary Society
A discussion of contrasting approaches to the study of the family from a Symbolic Interactionist perspective. Included will be an examination of historical and comparative examples of different family forms.
Three hours (lectures and discussions); one term
May be repeated, if on a different topic, for a total of six units.
SOC SCI 2F03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II
Topic for 1997-98: Woman and Work in Canada: A Life Cycle Perspective
This course is designed as a sequel to SOC SCI 2E03. It will focus upon the life cycle of contemporary women, their increased integration into the labour force and the impact this has upon their traditional roles as wife and mother. The experiences of women will be interfaced with those of men so as to make the course equally relevant to a male audience.
Three hours (lectures and discussion); one term
May be repeated, if on a different topic, for a total of six units.

SOC SCI 2G03 INTRODUCTION TO STATISTICS
An introduction to basic statistical concepts and their application to the analysis of data from the social sciences. The use of spread sheets is emphasized.
Three hours; one term
Prerequisite: Registration in Level II and above
Not open to students with credit or registration in: COMMERC 2A33, ECON 2B03, 3006, 3U03, GEOG 2L3, 2N03, POL SCI 2F06, 2N06, PSYCH 2G03, 2R03, 2R03, SOCIOL 2Y03, 3H06 or STATS 1C3, 2A3, 2MB3, 2R06.

SOCIAL WORK

Faculty as of January 15, 1997

Director
J. McEwan MacIntyre

Professors Emeriti
Cyril Greenwood, M.Sc. (North Wales), Ph.D. (Birmingham)
Harry L. Penny, Dip. Theol., (Union College, British Columbia), B.A., M.S.W. (British Columbia), LL.D. (McMaster)

Professors
Michael J. MacLean, B.A. (St. Thomas), M.A. (Saskatchewan), Ph.D. (London) part-time
Sally Palmer, B.A. (Western Ontario), B.S.W., M.S.W., Ph.D. (Toronto)

Adjunct Professor
Ramesh Mishra (York), B.Sc., Ph.D. (London)

Associate Professor
Jane Aronson, B.Sc. (New University of Ulster), B.S.W., M.S.W. (McGill), Ph.D. (Toronto)
Ralph A. Brown, B.A., M.S.W. (Waterloo Lutheran), D.S.W. (UCLA)
Roy Cain, B.S.W., M.S.W., Ph.D. (McGill)
Patricia M. Daenzer, B.A., M.S.W., Ph.D. (Toronto)
James W. Gladstone, B.A. (British Columbia), M.S.W., Ph.D. (Toronto)
Nora Gold, B.S.W. (McGill), M.S.W., Ph.D. (Toronto)
L. William Lee, B.A. (St. Thomas, Texas), M.S.W., Adv. Dip. S.W., Ed.D. (Toronto)
Jamee J. Ficke, B.A. (Sir George Williams), B.S.W., M.S.W. (Calgary), Ph.D. (Exeter)

Assistant Professors
Sheere D. Meredith, B.A. (Trent), M.S.W., Wilfrid Laurier
Sheila Sammson, B.A. (Nazereth College, New York), M.S.W. (Toronto)

Associates Members
N.C. Agarwal, B.A. (London), M.A. (Delhi), Ph.D. (Minnesota)
J.A. Johnson, Economics, M.A., Ph.D. (Minnesota)
D.F.L. Matthews, Sociology, B.A. (Memorial), Ph.D. (Minnesota)

Practice Instructors
Michael Baikie, B.A., B.S.W., M.A. (McMaster)
Mary Cott, B.S.W. (Hamilton), M.S.W. (Toronto), C.C.C.W. (Fanshaw)
Mary Ann Covill, B.A. (SUNY-Buffalo), M.S.W. (Toronto)
Richard P. Csiernik, B.A., B.S.W., B.Sc. (McMaster), M.S.W. (Toronto)
Janet Fishlock, B.A., M.S.W. (Waterloo), M.S.W. (Wilfrid Laurier)
M. Heather Gardner, B.A., M.S.W. (McMaster), M.S.W. (Toronto)
Rocco Gizzarelli, B.A., B.S.W. (McMaster), M.S.W. (York)
Gordon Greenway, B.A., M.S.W. (Carleton)
Paul Haalboom, B.A. (McMaster), M.S.W. (Carleton)
Barbara Hill-Laurier, B.S.W. (Western Ontario), M.S.W. (Wilfrid Laurier)
Liz Lamb, B.A., B.S.W. (McMaster), M.S.W. (Carleton)
Maureen Lane, B.A., B.S.W. (McMaster), M.Ed. (Brock)
Bob Lang, B.A., B.S.W. (McMaster), M.S.W. (Wilfrid Laurier)
Steve McCann, B.A., B.S.W. (Wilfrid Laurier)
Carol McKenna, B.S.W. (Western Ontario), M.S.W. (Toronto)
Tony Quick, B.A. (St. Mary's), M.S.W. (Dalhousie)
Shelley M. Rempel, B.A. (Toronto), B.S.W., M.A. (McMaster)
Handy Scott, B.S.W. (Carleton), M.S.W. (Wilfrid Laurier)
Gerald Smith, B.S.W., M.S.W. (Windsor)
Brenda Simmons-McLoughlin, B.A., B.S.W. (McMaster), M.S.W. (Wilfrid Laurier)
Susan West, B.A. (Alberta), M.A. (McMaster)

Department Notes:
1. The following courses may be taken for elective credit by qualified students registered in any university programme; however, enrolment in these courses is limited and permission of the department is required.
SOC WORK 3C03 Social Aspects of Health & Disease
SOC WORK 3G03 Social Welfare Policy and Process
SOC WORK 3H03 Justice and Social Welfare
SOC WORK 4B03 Adult Family Violence
SOC WORK 2A03* INTRODUCTION TO SOCIAL WORK
Theories of interpersonal communication. Basic skills in interpersonal communication and interviewing.

SOC WORK 2B03* SOCIAL WORK AND COMMUNITY DEVELOPMENT
Formation of relationships with individuals, families, and communities. Students participate in defining learning goals and experiences. This course involves critical analysis of the construction of social relations in Canadian society. Students will have the opportunity to examine variables such as race, ethnicity and cultural specificity in the socialisation and adaptation process.

SOC WORK 3A03* SOCIOLOGY OF RELIGION AND SOCIAL CHANGE
Critical examination of the social and economic implications of the aging population and the nature of social welfare policy with respect to the aging population. Students will have the opportunity to examine variables such as race, ethnicity and cultural specificity in the socialisation and adaptation process.

SOC WORK 3A03* SOCIAL POLICY AND THE AGING POPULATION
Theories of interpersonal communication. Basic skills in interpersonal communication and interviewing.

SOC WORK 3B03* SOCIAL WORK INTERVENTION
Examination and analysis of social work intervention with individuals and their families.

SOC WORK 3C03* SOCIAL WORK WITH GROUPS
Examination and analysis of social work intervention with individuals and groups.

SOC WORK 3D03* SOCIAL WORK WITH COMMUNITY
Examination and analysis of social work intervention with communities.

SOC WORK 3E03* SOCIAL WORK WITH ORGANISATIONS
Examination and analysis of social work intervention with organisations.

SOC WORK 3F03* SOCIAL WORK WITH INSTITUTIONS
Examination and analysis of social work intervention with institutions.

SOC WORK 3G03* SOCIAL WORK WITH PRACTICE CONTEXTS
Examination and analysis of social work intervention with practice contexts.

SOC WORK 3H03* SOCIAL WORK WITH POPULATIONS
Examination and analysis of social work intervention with populations.

SOC WORK 3I03* SOCIAL WORK WITH SYSTEMS
Examination and analysis of social work intervention with systems.

SOC WORK 3J03* SOCIAL WORK WITH INSTITUTIONS AND PERSONS
Examination and analysis of social work intervention with institutions and persons.

SOC WORK 3K03* SOCIAL WORK WITH FAMILIES
Examination and analysis of social work intervention with families.

SOC WORK 3L03* SOCIAL WORK WITH GROUPS AND COMMUNITIES
Examination and analysis of social work intervention with groups and communities.

SOC WORK 3M03* SOCIAL WORK WITH ORGANISATIONS AND INSTITUTIONS
Examination and analysis of social work intervention with organisations and institutions.

SOC WORK 3N03* SOCIAL WORK WITH SYSTEMS AND POPULATIONS
Examination and analysis of social work intervention with systems and populations.

SOC WORK 3P03* CONCENTRATED STUDIES IN SOCIAL WORK PRACTICE
Completion of a major project focusing on a selected social work problem or issue.

SOC WORK 4A03* SOCIAL POLICY AND THE AGING POPULATION
Examination and analysis of social work intervention with individuals and their families.

SOC WORK 4B03* SOCIAL WORK WITH COMMUNITY
Examination and analysis of social work intervention with communities.

SOC WORK 4C03* SOCIAL WORK WITH ORGANISATIONS
Examination and analysis of social work intervention with organisations.

SOC WORK 4D03* SOCIAL WORK WITH INSTITUTIONS
Examination and analysis of social work intervention with institutions.

SOC WORK 4E03* SOCIAL WORK WITH PRACTICE CONTEXTS
Examination and analysis of social work intervention with practice contexts.

SOC WORK 4F03* SOCIAL WORK WITH POPULATIONS
Examination and analysis of social work intervention with populations.

SOC WORK 4G03* SOCIAL WORK WITH SYSTEMS
Examination and analysis of social work intervention with systems.

SOC WORK 4H03* SOCIAL WORK WITH INSTITUTIONS AND PERSONS
Examination and analysis of social work intervention with institutions and persons.

SOC WORK 4I03* SOCIAL WORK WITH FAMILIES
Examination and analysis of social work intervention with families.

SOC WORK 4J03* SOCIAL WORK WITH GROUPS AND COMMUNITIES
Examination and analysis of social work intervention with groups and communities.

SOC WORK 4K03* SOCIAL WORK WITH ORGANISATIONS AND INSTITUTIONS
Examination and analysis of social work intervention with organisations and institutions.

SOC WORK 4L03* SOCIAL WORK WITH SYSTEMS AND POPULATIONS
Examination and analysis of social work intervention with systems and populations.

SOC WORK 4M03* INTERNATIONAL AND COMPARATIVE SOCIAL WELFARE
Basic information on anatomy, physiology, psychology and sociology of sexuality and fertility. Attitudinal self-awareness, communication skills, values, regarding sexual identity and roles; analysis of policy issues.

SOC WORK 4N03* SOCIAL WORK WITH SPECIFIC POPULATIONS
Examination and analysis of social work intervention with specific populations.

SOC WORK 4O03* SOCIAL WORK WITH SPECIFIC PROBLEMS
Examination and analysis of social work intervention with specific problems.

SOC WORK 4P03* SOCIAL WORK WITH SPECIFIC CONTEXTS
Examination and analysis of social work intervention with specific contexts.

SOC WORK 4Q03* SOCIAL WORK WITH SPECIFIC SYSTEMS
Examination and analysis of social work intervention with specific systems.

SOC WORK 4R03* SOCIAL WORK WITH SPECIFIC ORGANISATIONS
Examination and analysis of social work intervention with specific organisations.

SOC WORK 4S03* SOCIAL WORK WITH SPECIFIC INSTITUTIONS
Examination and analysis of social work intervention with specific institutions.

SOC WORK 4T03* SOCIAL WORK WITH SPECIFIC PERSONS
Examination and analysis of social work intervention with specific persons.

SOC WORK 4U03* SOCIAL WORK WITH SPECIFIC FAMILIES
Examination and analysis of social work intervention with specific families.

SOC WORK 4V03* SOCIAL WORK WITH SPECIFIC GROUPS
Examination and analysis of social work intervention with specific groups.

SOC WORK 4W03* SOCIAL WORK WITH SPECIFIC COMMUNITIES
Examination and analysis of social work intervention with specific communities.

SOC WORK 4X03* SOCIAL WORK WITH SPECIFIC INSTITUTIONS AND PERSONS
Examination and analysis of social work intervention with specific institutions and persons.

SOC WORK 4Y03* SOCIAL WORK WITH SPECIFIC ORGANISATIONS AND INSTITUTIONS
Examination and analysis of social work intervention with specific organisations and institutions.

SOC WORK 4Z03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND POPULATIONS
Examination and analysis of social work intervention with specific systems and populations.

SOC WORK 4AA03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND INSTITUTIONS
Examination and analysis of social work intervention with specific contexts and institutions.

SOC WORK 4AB03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND ORGANISATIONS
Examination and analysis of social work intervention with specific systems and organisations.

SOC WORK 4AC03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND POPULATIONS
Examination and analysis of social work intervention with specific contexts and populations.

SOC WORK 4AD03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND PERSONS
Examination and analysis of social work intervention with specific systems and persons.

SOC WORK 4AE03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND FAMILIES
Examination and analysis of social work intervention with specific contexts and families.

SOC WORK 4AF03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND GROUPS
Examination and analysis of social work intervention with specific systems and groups.

SOC WORK 4AG03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND COMMUNITIES
Examination and analysis of social work intervention with specific contexts and communities.

SOC WORK 4AH03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND INSTITUTIONS
Examination and analysis of social work intervention with specific systems and institutions.

SOC WORK 4AI03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND ORGANISATIONS
Examination and analysis of social work intervention with specific contexts and organisations.

SOC WORK 4AJ03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND PERSONS
Examination and analysis of social work intervention with specific systems and persons.

SOC WORK 4AK03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND FAMILIES
Examination and analysis of social work intervention with specific contexts and families.

SOC WORK 4AL03* SOCIAL WORK WITH SPECIFIC SYSTEMS AND GROUPS
Examination and analysis of social work intervention with specific systems and groups.

SOC WORK 4AM03* SOCIAL WORK WITH SPECIFIC CONTEXTS AND COMMUNITIES
Examination and analysis of social work intervention with specific contexts and communities.
SOC WORK 4D06 GENERAL SOCIAL WORK II
Seminars to deepen understanding and further develop practice skills. 
Two terms
Option of equivalent block placement in combination with SOC WORK 4D06
Prerequisite: SOC WORK 3D06, 3D06 and registration in SOC WORK 4D06
Antirequisite: SOC WORK 4D12
Credit in this course is dependent on achieving a minimum grade of C- 
and a "Pass" in SOC WORK 4D06. Enrolment is limited.

SOC WORK 4D09 FIELD PRACTICUM II
Field experience to refine practice skills. Students spend the equivalent of 
two days per week in social agencies, or with other organizations, in supervised practice.
Option of equivalent block placement in conjunction with SOC WORK 4D06.
Prerequisite: Registration in SOC WORK 4D06. This course is evaluated on a "Pass/Fail" basis
Credit in this course is dependent on receiving a "Pass" and a minimum grade of C- in SOC WORK 4D06. Enrolment is limited.

SOC WORK 4E03 WOMEN AND SOCIAL WELFARE
Critical examination of the responses of the welfare state to women, in particular its support of women's dependency within families and positioning as unpaid and paid providers of care.
Seminars: one term
Permission of the School of Social Work is required by all students. 
This course may be taken as elective credit by undergraduates not in Social Work. 
Not open to students with credit in SOC WORK 4Z03, SELECTED ISSUES IN SOCIAL WELFARE POLICY, if the issue was Women and Social Welfare. 
Enrolment is limited.

SOC WORK 4G03 SELECTED SOCIAL ISSUES AND SOCIAL WORK PRACTICE
Critical examination of social work practice in respect to selected social issues. Topics will vary from year to year and the School should be consulted for details for any particular year.
Seminars: one term
Prerequisite: Permission of the School of Social Work is required by all students. 
The course may be repeated if on a different topic.

SOC WORK 4H03 SOCIAL CHANGE AND SOCIAL WELFARE
Critical examination of the meaning of social change as a concept and event. Review of strategies of social change and of attempts to effect social change.
Seminars: one term
Prerequisite: Permission of the School of Social Work is required by all students. 
This course may be taken as elective credit by undergraduates not in Social Work. 
Enrolment is limited.

SOC WORK 4I03 CONCENTRATED STUDIES IN SOCIAL WELFARE POLICY
Independent study of a particular issue of interest in social welfare, and completion of a major essay or project.
Discussion and tutorials: two terms
Prerequisite: Permission of the School of Social Work is required by all students. 
This course may be taken as elective credit by undergraduates not in Social Work. 
Enrolment is limited.

SOC WORK 4J03 INTERNATIONAL AND COMPARATIVE SOCIAL WELFARE
Comparative perspective on problems of social structures in shaping social welfare institutions. Scope and limits of international collaboration.
Seminars: one term
Prerequisite: Permission of the School of Social Work is required by all students. 
This course may be taken as elective credit by undergraduates not in Social Work. 
Enrolment is limited.

SOC WORK 4K03 COMMUNITY WORK
Analysis of major community work strategies, historical antecedents, current developments and future potential in Canada. Student participation in the analysis of a community project is expected.
Seminars: one term
Prerequisite: Registration or credit in SOC WORK 3D06 and 3D06, or 3D09; or permission of the instructor

SOC WORK 4P03 PROFESSIONAL ISSUES
A seminar focusing on the status, roles and values of the professional social worker in contemporary society.
Seminars: one term
Prerequisite: Registration or credit in SOC WORK 3D06 and 3D06, or 3D09

SOC WORK 4T03 SOCIAL WORK PRACTICE WITH WOMEN
Study of feminist and non-sexist social work practice (with individuals, groups and the community) and implications for women of selected social policies.
Seminars: one term

SOC WORK 4V03 SOCIAL WORK PRACTICE WITH THE AGED
A critical analysis of the social context in which the aged live, and an examination of social work methods as they apply to the aged.
Seminars: one term
Prerequisite: Permission of the School of Social Work.

SOC WORK 4X03 FAMILY IN SOCIAL WORK PRACTICE
Examination of relevant aspects of family theory for social work practice; models of family intervention.
Seminars: one term
Prerequisite: Credit or registration in SOC WORK 3D06 and 3D06, or 3D09; or permission of the instructor
Antirequisite: SOC WORK 3M03

SOC WORK 4Y03 METHODS OF APPLIED SOCIAL RESEARCH
Examination of the conceptual framework of scientific inquiry relating to social work research and practice. Survey of selected research from other disciplines relevant to social work.
Seminars: one term
Prerequisite: Permission of the School of Social Work is required by all students. 
This course may be taken as elective credit by undergraduates not in Social Work. 
This course may be repeated if on a different topic.
Enrolment is limited.

SOCIOLOGY
Faculty as of January 15, 1997
Chair
Cyril Levitt

Professors Emeriti
Jack W. Haas/B.S. (SUNY, Brockport), Ph.D. (Syracuse)
Peter C. Pineo/B.A. (British Columbia), M.A. (McGill), Ph.D. (Chicago)

Professors
W. Peter Archibald/B.A. (Mt. Allison), M.A. (British Columbia), Ph.D. (Michigan)
Carl J. Cuneo/B.A., M.A., Ph.D. (Waterloo)
John Fox/B.A., M.A., Ph.D. (Michigan)
Rhoda E. Howard/B.A., M.A., Ph.D. (McGill)
F.R.S.C.
Cyni H. Levitt/B.A., M.A. (Waterloo), Ph.D. (Free Universitat, Berlin)
D. Ralph L. Matthews/B.A. (Memorial), M.A., Ph.D. (Minnesota)
Carolyn Rosenthal/B.A. (Toronto), M.A., Ph.D. (McMaster)
William B. Shaffir/B.A., M.A., Ph.D. (McGill)
Vivienne Walters/B.A., M.A. (Sheffield), Ph.D. (McGill)

Associate Professors
Richard A. Brymer/B.A., M.A. (Towson), Ph.D. (Michigan State) (part-time)
Margaret Denton/B.A., M.A., Ph.D. (McMaster)
Graham K. Knight/B.A. (Kent), M.A., Ph.D. (Carleton)
Rhonda Lenton/B.A. (Winnipeg), M.A. (Manitoba), Ph.D. (Toronto)
Charlene Miall/B.A. (Ottawa), M.A. (Calgary), Ph.D. (York)
SOCPY 2005  THE HUMAN GROUP
An examination of the individual in social interaction, with emphasis upon relationships between this and social structure.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Enrollment is limited.

SOCPY 2006  RACIAL AND ETHNIC GROUP RELATIONS
The course deals with the study of racial and ethnic group relations in Canada and the United States.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06

SOCPY 2003  THE SOCIOLOGY OF ORGANIZATIONS
A theoretical and empirical analysis of formal and informal organizational structures and processes in the major sectors of modern industrial society.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Cross list: LABR ST 2103
Antirequisite: LABR ST 3103

SOCPY 2005  THE SOCIOLOGY OF EDUCATION
A comprehensive analysis of educational institutions in modern society.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Enrollment is limited.

SOCPY 2006  SOCIOLOGY OF GENDER
A theoretical and empirical examination of gender differences and gender inequalities with a focus on women's experiences.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Enrollment is limited.

SOCPY 2003  THEORIES OF CLASS AND STRATIFICATION
This course will introduce the student to major theories of social inequality, such as the Marxian, Weberian and structural-functionalism.
Three hours (lecture and discussion); one term
Prerequisite: SOCIOL 1A06
Antirequisite: SOCIOL 2006

SOCPY 2R03  EMPIRICAL STUDIES OF CLASS AND STRATIFICATION
This course will introduce the student to the empirical literature on social inequality. Depending on the year, the focus will be on class, status, power and elites, income, education, region, age, gender and race/ethnicity.
Three hours (lecture and discussion); one term
Prerequisite: SOCIOL 1A06. SOCIOL 2R03 is strongly recommended.
Antirequisite: SOCIOL 2006

SOCPY 2506  INTRODUCTION TO SOCIOLOGICAL THEORY
An introduction to the foundations, rise and development of sociological theory.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06 and registration in any programme in Sociology
Antirequisite: SOCIOL 2503 or 3A06.

SOCPY 2006  SOCIOLOGY OF THE FAMILY
An analysis of kinship and family units in comparative, historical, and contemporary perspective.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Enrollment is limited.

SOCPY 2005  OCCUPATIONS AND PROFESSIONS
An examination of the occupational structure of industrial society, the changing nature of work, and problems associated with such change.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06

SOCPY 2X03  PSYCHOANALYTIC APPROACHES TO LITERARY TEXTS
The basic assumptions and methods of psychoanalytic criticism will be studied with reference to selected texts in drama, fiction and poetry from Shakespeare to the present.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: ENGLISH 3B03

SOCPY 2203  INTRODUCTION TO SOCIOLOGICAL RESEARCH
This course is designed to develop those skills necessary to pursue and understand research. Several general methods of sociological research will be examined.
Three hours (lectures and discussion); one term
Prerequisite: Registration in any programme in Sociology or Social Work
Antirequisite: GERONTOL 2C03 or (3C03)
Cross-list: ANTHROP 2Z03
SOCIO 3A03  EUROPEAN SOCIOLOGICAL THEORY
An advanced examination of classical and contemporary European sociological theory.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2501
Antirequisite: SOCIOL 3A06
Enrolment is limited.

SOCIO 3A33  THE SOCIOLOGY OF MASS MEDIA
The development of the mass media (the press, magazines, radio, television), with particular attention to their social organization, how information and news are produced, and effects upon social attitudes and behaviour.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A05 and registration in any Social Sciences programme
Enrolment is limited.

MSC 3B03  SELECTED TOPICS IN
THE SOCIOLOGY OF EDUCATION
An examination of selected topics in the sociology of education.
Three hours (lectures and discussion); one term
Prerequisite: At least 18 units of Sociology
Enrolment is limited.

SOCIO 3C33  SPECIAL TOPICS IN THE SOCIOLOGY OF THE FAMILY AND THE LIFE CYCLE
An advanced course allowing detailed study of the family and the life cycle.
Special attention will be paid to the mid and later years.
Three hours (lecture and discussion); one term
Prerequisite: SOCIOL 2U06 or registration in a Combined Honours in Sociology and Gerontology programme
Alternates with SOCIOL 3D03.
Enrolment is limited.

SOCIO 3D03  SPECIAL TOPICS IN
THE SOCIOLOGY OF THE FAMILY
An advanced course allowing detailed study of selected topics in the sociology of the family.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2U06
Alternates with SOCIOL 3C03.
Enrolment is limited.

SOCIO 3D03  SPORT AND SOCIAL DEVELOPMENT
Macro-analysis of sport in small social systems; investigation of the dynamics of involvement in sport encounters, the team as a small group, and sport sub-cultures.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Cross-list: KINESIOL 3P03
Only Kinesiology students who are working towards a Minor in Sociology may, if they meet the prerequisite and with permission of the instructor, register for this course as SOCIOL 3D03. All other Kinesiology students must register for this course as KINESIOL 3P03.
Enrolment is limited.

SOCIO 3E03  SELECTED TOPICS IN THE SOCIOLOGY OF WOMEN
An advanced course allowing detailed study of selected topics in the sociology of women.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06 and 2Q06
Enrolment is limited.

SOCIO 3E03  SPORT AND SOCIALIZATION
Micro-analysis of sport in small social systems: investigation of the dynamics of involvement in sport encounters, the team as a small group, and sport sub-cultures.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Cross-list: KINESIOL 3Q03
Only Kinesiology students who are working towards a Minor in Sociology may, if they meet the prerequisite and with permission of the instructor, register for this course as SOCIOL 3E03. All other Kinesiology students must register for this course as KINESIOL 3Q03.
Not offered in 1997-98.
Enrolment is limited.

SOCIO 3F06  POLITICAL SOCIOLOGY
A survey of social and state institutions, focusing on current debates in the field.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Enrolment is limited.

SOCIO 3G03  SOCIOLOGY OF HEALTH CARE
Selected issues concerning forms of providing health care.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Enrolment is limited.

SOCIO 3G03  SPECIAL TOPICS IN THE SOCIOLOGY OF DEVIANCE
An advanced course allowing detailed study of selected topics in the Sociology of Deviance. Topics will vary from year to year.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2C06
Enrolment is limited.

SOCIO 3H06  RESEARCH TECHNIQUES AND DATA ANALYSIS
A comprehensive introduction to statistical principles of research design and data analysis in the social sciences.
Three hours (lectures and labs); two terms
Prerequisite: Registration in any programme in Sociology. Students in Honours Anthropology, Gerontology and Labour Studies will have second priority
Not open to students with credit or registration in any six units of Research Methods as prescribed by all other Social Science programmes; SOCIOL 2Y03; all STATS courses except 1A03, 1L03, 2D03, 3S03, 3U03, 4H03
Enrolment is limited.

SOCIO 3H03  SOCIOLOGY OF HEALTH
Sociological approaches to the study of health and illness.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Enrolment is limited.

SOCIO 3I03  SURVEY METHODS
An introduction to survey-research methods in the social sciences, including issues of research design, data collection, and data analysis.
Three hours (seminar and discussion); one term
Prerequisite: Registration in Honours Sociology. Concurrent or previous exposure to basic social statistics (e.g., SOCIOL 3I03) is highly desirable.
Enrolment is limited. However, the Department of Sociology guarantees that all Third and Fourth Level Honours Sociology students will have access to either this course, SOCIOL 3G03 or 3W03.

SOCIO 3J03  SPECIAL TOPICS IN SOCIOLOGICAL ANALYSIS I
An examination of selected topics of contemporary interest to sociologists.
Students should consult the Department concerning the topics to be examined.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
May be repeated if on a different topic.
Enrolment is limited.

SOCIO 3J03  SOCIOLOGY OF THE ENVIRONMENT
The course examines the way in which environmental issues can be considered from a sociological perspective. Particular attention will be given to the social construction of nature, risk, and trust in postmodern society and to the changing basis of environmental values and behaviour.
Three hours (seminar); one term
Prerequisite: SOCIOL 1A05
Enrolment is limited.

SOCIO 3K03  SPECIAL TOPICS IN SOCIOLOGICAL ANALYSIS II
Same as SOCIOL 3J03.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
May be repeated if on a different topic.
Enrolment is limited.

SOCIO 3L03  SELECTED TOPICS IN OCCUPATIONAL SOCIOLOGY
An advanced course allowing detailed study of one or more topics of special interest.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Enrolment is limited.

SOCIO 3L03  SOCIOLOGY OF WORK AND LABOUR MARKETS
A consideration of the manner in which labour markets are structured and how they influence the access that people have to employment.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Enrolment is limited.
SOCIOL 3M06 RELIGION AND MODERN SOCIETY
An introduction to the thoughts and theories of scholars who have studied the relation between religion and society. In the first term, the emphasis will be on pre-World War II writings. In the second term, the empirical materials of the sociology of religion since World War II will be surveyed.
Three hours (lecture and discussion); two terms
Prerequisite: Any course in Anthropology, Philosophy, Religious Studies or Sociology
Cross-list: RELIG ST 3J06
Enrolment is limited.

SOCIOL 3N03 THE SOCIOLOGY OF KNOWLEDGE AND CULTURE
An analysis of the origins, development and functions of ideas, images, and other cultural representations through which knowledge about society, its institutions and practices is formed, distributed and used.
Three hours (lectures and discussion); one term
Prerequisite: SOC 1A06
Enrolment is limited.

SOCIOL 3P03 ADVANCED SOCIOLOGICAL RESEARCH
This course will provide a detailed study of selected qualitative methods in Sociology.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Honours Sociology
Enrolment is limited. However, the Department of Sociology guarantees that all Level III and Level IV Honours Sociology students will have access to either this course, SOC 3G03 or 3W03.

SOCIOL 3Q03 AMERICAN SOCIOLOGICAL THEORY
An advanced examination of classical and contemporary American sociological theory.
Three hours (lectures and discussion); one term
Prerequisite: SOC 2G06
Antirequisite: SOC 3A06
Alternates with SOC 3P03.
Offered in 1997-98.
Enrolment is limited.

SOCIOL 3P03 CANADIAN SOCIOLOGICAL THEORY
An examination of the more or less unique contributions of English Canadians to sociological theory. Emphasis is on the Toronto school, and its leftist-nationalist progeny and critics.
Three hours (lectures and discussion); one term
Prerequisite: SOC 2G06
Antirequisite: SOC 3A06
Alternates with SOC 3P03.
Not offered in 1997-98.
Enrolment is limited.

SOCIOL 3Q03 PSYCHOANALYSIS AND CREATIVITY
A study of the motivations of some representative writers, and of the psychological processes in literary creativity. Psychoanalytic and psychiatric contributions to understanding the subject will be considered.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: ENGLISH 3F03

SOCIOL 3C03 THE SOCIOLOGY OF URBAN AREAS
Sociological analysis of urban structure and development, and the social consequences of urbanization.
Three hours (lectures and discussion); one term
Prerequisite: SOC 1A06
Enrolment is limited.

SOCIOL 3W03 HISTORICAL METHODS IN SOCIOLOGY
An examination of methods for incorporating historical data and archival sources into sociological argument.
Three hours (seminar and discussion); one term
Prerequisite: Registration in Honours Sociology
Enrolment is limited. However, the Department of Sociology guarantees that all Level III and IV Honours Sociology students will have access to either this course, SOC 3W03 or 3G03.

SOCIOL 3X03 SOCIOLOGY OF AGING
This course deals with changing population structure, economic support of the aged, family of later life, the sociology of retirement, widowhood, death, bereavement, and institutionalization.
Three hours (lectures and discussion); one term
Prerequisite: SOC 1A06
Enrolment is limited.

SOCIOL 3Y03 THE SOCIOLOGY OF ORGANIZATIONS II
An advanced course which allows detailed examination of relevant theories and research, including those to which the student was introduced in SOC 2Y03.
Three hours (lecture and discussion); one term
Prerequisite: SOC 2A06. SOC 203 is strongly recommended.
Enrolment is limited.

SOCIOL 3Z03 ETHNIC RELATIONS
An analysis of political, social and economic change in selecte locales.
Three hours (lectures and discussion); one term
Prerequisite: SOC 1A06
Enrolment is limited.

SOCIOL 4A03 ETHNIC/RACIAL TENSIONS
The course will investigate the processes by which racial and/or ethnic tensions develop in various societies.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.

SOCIOL 4B06 FIELD STUDY METHODOLOGY
This course provides students an opportunity to engage in first hand sociological research using field study methods, particularly participant observation.
Three hours (seminar); two terms
Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.

SOCIOL 4C03 SELECTED PROBLEMS IN SOCIOLOGICAL RESEARCH
Students will undertake a class project which involves quantitative materials.
Three hours (seminar); one term
Prerequisite: SOC 3H06 and registration in Level IV Honours Sociology.
Students wishing to register in this course must seek the permission of the Department.
Antirequisite: SOC 4C06
Enrolment is limited.

SOCIOL 4D03 CRITIQUES OF SOCIOLOGICAL THEORY
A discussion of various sociological and non-sociological critiques of sociological theory.
Three hours (seminar); one term
Prerequisite: SOC 2G06 and registration in Level IV Honours Sociology.
Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.

SOCIOL 4E03 SELF AND IDENTITY
A consideration of theoretical and empirical questions relating to self and identity viewed from historical, cross-cultural and cross-disciplinary perspectives.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.

SOCIOL 4F03 SPECIAL TOPICS IN COMPARATIVE SOCIOLOGICAL RESEARCH
The focus of this course will be the comparative analysis of industrialized societies. Students will have an opportunity to engage in comparative sociological research using a range of data sources.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.

SOCIOL 4G03 THE SOCIAL PRODUCTION OF ILLNESS
An examination of the social bases of illness. In different years consideration may be given to topics such as gender, social class and occupational and environmental health issues.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.

SOCIOL 4G03 SPECIAL TOPICS IN THE SOCIOLOGY OF DEVIANCE
An advanced course allowing detailed study of selected topics in the Sociology of Deviance. Topics will vary from year to year.
Three hours (seminar); one term
Prerequisite: SOC 2G06 and registration in Level IV Honours Sociology.
Students wishing to register in this course must seek the permission of the Department.
Enrolment is limited.
SOCIOLOGY

SOCIOLOGY OF THE WORLD WIDE WEB

Sociology of religion, with emphasis upon current theory and research. Students should consult the Department concerning the topics to be examined.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

May be repeated if on a different topic.

SOCIOLOGY OF AGING

A study of selected sub-areas in the sociology of aging, such as demographic change, changing family and social relationships, social and health services, retirement, political economy, and theoretical approaches in social gerontology.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOLOGY OF RELIGION

Sociology of religion, with emphasis upon current theory and research. Students should consult the Department concerning the topics to be examined.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

SOCIAL PROBLEMS

The focus of the course will be theories concerning social problems or an empirical examination of specific issues that have become the object of public debate and discussion.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

LABOUR AND SOCIETY

The course will focus on the emergence of labour organizations during the course of modernization and the factors determining the political outlook of labour.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

THE SOCIOLOGY OF CORPORATIONS

This course will analyze the modern corporation as a vehicle through which economic, social and political power is wielded.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIAL PROBLEMS

The focus of the course will be theories concerning social problems or an empirical examination of specific issues that have become the object of public debate and discussion.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

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Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

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Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.
THEME SCHOOL ON INTERNATIONAL JUSTICE AND HUMAN RIGHTS

Faculty as of January 15, 1997

Director
Roy Adams (Business)
Samuel Ajzenstat (Philosophy)
Alex Berezin (Engineering Physics)
Ken Chan (Economics)
Rhoda E. Howard (Sociology)
Howard Jones (Classics)
Gary Madison (Philosophy)
Stefania Miller (Political Science)
Evert Nieboer (Biochemistry)
Tony Porter (Political Science)
Mary Tremblay (School of Rehabilitation Science)
Gary Warner (French)
Wayne Wany (Anthropology)

NOTE:
For information on the Theme School on International Justice and Human Rights, see Theme Schools in the programme section of this Calendar.

Courses

TSIJHR 3C03 CIVIL SOCIETY
Explores social and governmental arrangements necessary for the existence of a Civil Society organized on the basis of the principles of democracy and human rights.
Prerequisite: TSIJHR 2A06
Preference given to Level III Theme School students.
Not open to students with credit in TSIJHR 3B03 if the topic was Civil Society.
Enrolment is limited.

TSIJHR 3E03 INDIGENOUS HUMAN RIGHTS
This course will explore First Nations human rights and self-determination in North America from an Indigenous perspective.
Prerequisite: TSIJHR 2A06
Preference given to Level III Theme School students.
Not open to students with credit in TSIJHR 3B03 if the topic was Indigenous Human Rights (1994-95, Section 03).
Enrolment is limited.

TSIJHR 3F03 INTERNATIONAL ECONOMIC COOPERATION AND HUMAN RIGHTS
Focus on human rights issues pertinent to trade and investments; including conduct of multinational corporations, the rights of trading nations and unequal exchange.
Prerequisite: TSIJHR 2A06
Preference given to Level III Theme School students.
Enrolment is limited.

TSIJHR 3G03 SPECIAL TOPICS IN INTERNATIONAL JUSTICE AND HUMAN RIGHTS
The topic for 1997-98 will be Human Rights and Disability. A case study approach is used to examine the development, use and impact of human rights on the life experiences of individuals with disabilities in both a Canadian and international context.
Prerequisite: TSIJHR 2A06
Preference given to Level III Theme School students.
Not open to students with credit in TSIJHR 2B03 (1994-95, Section 01) and TSIJHR 2E03 (1995-96) if the topic was Human Rights and Disability.
Enrolment is limited.

TSIJHR 4B03 GENOCIDE AND INTERNATIONAL HUMANITARIAN LAW
The course will focus on genocide and other extreme forms of group violence, and the problems of international regulation and intervention.
Prerequisite: TSIJHR 2A06
Preference given to Level IV Theme School students.
Enrolment is limited.

TSIJHR 4C03 INTERNATIONAL WOMEN'S RIGHTS
Key theoretical and empirical questions on women's rights, such as cultural relativism, refugee women and development. Group and individual research.
Prerequisite: TSIJHR 2A06
Preference given to Level IV Theme School students.
Enrolment is limited.

TSIJHR 4D03 HUMAN RIGHTS IN TECHNOLOGICAL SOCIETY
Group and individual projects on the issues related to social justice, human development and individual freedom in the context of modern science and technology.
Prerequisite: TSIJHR 2A06
Preference given to Level IV Theme School students.
Enrolment is limited.

TSIJHR 4E03 THE FACES OF INTEGRITY
An exploration of the general issue of freedom of intellectual and artistic expression employing specific case studies from different historical periods.
Prerequisite: TSIJHR 2A06
Preference given to Level IV Theme School students.
Enrolment is limited.

TSIJHR 4F03 INDEPENDENT RESEARCH
In consultation with the Director, students may choose a topic for independent research and recruit a supervisor from among the McMaster faculty.
Prerequisite: TSIJHR 2A06
Open only to Theme School students not writing a thesis in any other programme.

TSIJHR 4H03 SPECIAL TOPICS IN INTERNATIONAL JUSTICE AND HUMAN RIGHTS
The topic for 1997-98 will be The Right to Development. This course will explore different approaches to development, such as gender, cultural and human rights issues, popular participation and sustainable development.
Prerequisite: TSIJHR 2A06
Preference given to Level IV Theme School students.
Not open to students with credit in TSIJHR 2B03 (1993-94, section 01) and TSIJHR 2D03 (1995-96) if the topic was The Right to Development.
Enrolment is limited.

THEME SCHOOL ON NEW MATERIALS AND THEIR IMPACT ON SOCIETY

Faculty as of January 15, 1997

Director
A. John Berinsky (Institute for Materials Research)
John L. Brash (Chemical Engineering and Pathology)
Michael A. Brook (Chemistry)
Malcolm Collins (Physics and Astronomy)
J. David Embury (Materials Science and Engineering)
Richard M. Eppend (Biochemistry)
John E. Greedan (Chemistry)
Andrew N. Hrynak (Chemical Engineering)
Catherine Kallin (Physics and Astronomy)
Pavlos S. Kanaroglou (Geography)
Frank Maine (Business)
John S. Preston (Engineering Physics)
Harald D.H. Stoever (Chemistry)
George C. Weatherly (Materials Science and Engineering)
Francois M. Wannik (Chemistry and Physics)
Daniel S.C. Yang (Biochemistry)
Shiping Zhu (Chemical Engineering and Materials Science & Engineering)
STPP 3C03 POLICY AND REGULATION OF DISCOVERY AND INNOVATION
This course explores the key issues of the existing regulating mechanisms (administrative, social, political, legal) for science and technology with the emphasis on the societal support for discovery and innovation.
Prerequisite: Registration in the Theme School or permission of the Director Preference will be given to Level III Theme School students.
First offered in 1998-99.
Enrolment is limited.

STPP 3D03 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY
1998-99: TECHNOLOGY, ETHICS AND SOCIETY
This course examines the intellectual and cultural premises underlying the growing dominance of the technological paradigm in modern societies, and its ethical implications. It explores the moral issues that arise in technological societies and considers various approaches and resources for ethical reflection, judgment, and action on those issues.
Prerequisite: Registration in the Theme School or permission of the Director Preference will be given to Level III Theme School students.
First offered in 1998-99.
STPP 3E03 may be repeated, if on a different topic.
Enrolment is limited.

STPP 4A03 SOCIAL CONSTRUCTION OF THE ENVIRONMENT AND OF ENVIRONMENTAL REGULATION
This course examines the way in which we 'socially construct' the meaning of nature in relation to our societal goals and values. It examines the way related policies are influenced by changing 'postmodern' values and the need for the 'sustainable development' of our resources.
Prerequisite: Registration in the Theme School or permission of the Director Preference will be given to Level IV Theme School students.
Enrolment is limited.

STPP 4B03 PUBLIC POLICY AND DRUG USE
This course will focus on the interactive roles of science, history, law, and politics in the formulation of policy with respect to the use of illicit drugs.
Prerequisite: Registration in the Theme School or permission of the Director Preference will be given to Level IV Theme School students.
Enrolment is limited.

STPP 4C03 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY
1999-2000: THE INTERNET, SOCIETY AND CHANGE
This course examines the Internet in terms of government, corporate and community policies, the social participation of individuals and groups, and societal consequences, such as in education and work. Students will conduct research using the Internet as a resource. Some Internet skills are assumed.
Prerequisite: Registration in the Theme School or permission of the Director Preference will be given to Level IV Theme School students.
STPP 4D03 may be repeated, if on a different topic.
Enrolment is limited.

STPP 4D03 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY
1999-2000: TOPIC TO BE DECIDED
Prerequisite: Registration in the Theme School or permission of the Director Preference will be given to Level IV Theme School students.
STPP 4D03 may be repeated, if on a different topic.
Enrolment is limited.
Courses

If no prerequisite is listed, the course is open.

WOMEN ST 1A06 WOMEN IN CANADIAN SOCIETY
An introduction to Women's Studies of an interdisciplinary nature, designed to illustrate and account for the position of women in Canadian society. Possible areas of enquiry include health, law, politics, history, women and work, representation of women in literature, Canadian women artists and musicians. Three hours (two lectures, one tutorial); two terms

WOMEN ST 2A06 WOMEN'S ACTION FOR SOCIAL CHANGE
The course explores the collective efforts of women, past and present, to improve social conditions. It examines the issues and controversies at the heart of historical and contemporary movements and studies utopias as envisioned by women writers. Subjects might include anti-slavery, temperance and afro-islamic movements, prison and labour reform, and women's peace movements. Three hours (Seminar and discussion); two terms

Prerequisite: Registration in the Women's Studies Programme, or permission of the Director of Women's Studies

WOMEN ST 2B06 WOMEN'S ROLE IN WESTERN EUROPEAN SOCIETY
The course examines the contribution of women to Western European society from the late classical era to the early twentieth century. Whether examined from a historical, sociological or cultural perspective, the female role will be seen in relation to the major political changes taking place during this period. Three hours; two terms

Prerequisite: WOMEN ST 1A06 (Preference will be given to students in the Women's Studies Programme.) Enrolment is limited.

WOMEN ST 2C06 PERSPECTIVES ON GENDER
This course is an overview of debates and research on the shaping of gender identity. Whether taking the approach of social psychology, literature or cultural studies, it includes such topics as sex typing and socialization experiences, daughter/parent relationships and moral development. Three hours; two terms

Prerequisite: WOMEN ST 1A06 (Preference will be given to students in the Women's Studies Programme.) Enrolment is limited.

WOMEN ST 2H03 REPRODUCTIVE BIOLOGY
This course presents a medical study of human reproductive anatomy and physiology, with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction. It also explores feminist approaches to this subject. Three hours; lectures, tutorials and guided reading; one term

Prerequisite: Registration in the Women's Studies Programme Enrolment is limited.

WOMEN ST 2H03 WOMEN'S HEALTH: A SOCIO-CULTURAL PERSPECTIVE
This course studies women's actions to improve health and health care. Topics to be explored may include: the relationship between biomedicine and the social construction of gender; women as paid and unpaid health workers; the consequences of discrimination for women's health; and the provision of health care; historical analysis of female healers. Three hours; one term
Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Antirequisite: SOCIOl 4U03, WOMEN ST 3C06 (Summer 1994 only) Enrolment is limited.

WOMEN ST 2K06 STUDIES IN WOMEN WRITERS
A closely focused course on women's writing in English. The topic for the course varies, sometimes concentrating on specific issues, sometimes on an historical period or national literature. Relevant feminist theory will be a component of the course. Three hours; two terms

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies Cross-list: ENGLISH 2K06

WOMEN ST 3A06 FEMINIST THEORY AND METHODOLOGY
This seminar explores various theoretical feminist perspectives and methodological issues in feminist research. Theories may include classical Marxism, liberal feminism, radical feminism, socialist feminism, biological determinism and post structuralism. Possible themes to be studied from these perspectives are psychotherapy, sexuality and language. Guest speakers from different disciplines will lead workshops on feminist interdisciplinary research methods. Three hours (Seminar and discussion); two terms

Prerequisite: WOMEN ST 2A06, or permission of the Director of Women's Studies

WOMEN ST 3B03 TOPICS IN WOMEN AND THE ARTS
This course explores the roles of women in any one of the following fields: literature, music, visual arts, film or theatre, whether as subjects or creators. Approaches may be practical, historical and/or theoretical, and interrelationships between the fields will be examined where appropriate. Three hours; one term

Prerequisite: WOMEN ST 1A06 (Preference will be given to students in the Women's Studies programme.) WOMEN ST 3B03 may be repeated, if on a different topic, to a total of six units. Enrolment is limited.

WOMEN ST 3C03 WOMEN AND ECOLOGY
This course explores women's roles in the ecology movement. It examines the various meanings of ecofeminism and its focus on the interconnectedness between human life and our physical environment. Possible areas of enquiry are: environmental ethics, anti-militarism, earth-goddess religions and the nature/culture debate. Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Antirequisite: WOMEN ST 3C06 Enrolment is limited.

WOMEN ST 3C3C WOMEN AND THE URBAN ENVIRONMENT
The course is an interdisciplinary enquiry into how women's lives are shaped by an urban environment. It examines a range of issues regarding women's experience of urban living with a focus on such subjects as women's responses to urban change, women and urban planning, women and housing problems, and women's struggles for socially safer environments. Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Antirequisite: WOMEN ST 3C06 Enrolment is limited.

WOMEN ST 3D06 WOMEN IN CROSS-CULTURAL PERSPECTIVE
This course explores the experience of women in different cultures through examination of social and historical conditions, symbolic systems and women's own narratives. Topics such as: the family and household, the sexual division of labour, the social construction of gender, and social change will be explored through cross-cultural comparison. Three hours; two terms

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies (Preference will be given to students in the Women's Studies programme.) Enrolment is limited.
WOMEN'S STUDIES

WOMEN ST 3E03  SPECIAL TOPICS IN WOMEN'S ISSUES
1997-98: Feminist Spirituality
A combination of seminars and student-driven research into social, political and historical issues which highlight the contributions of feminist scholars and scholarship.
Three hours; one term
Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies
Preference will be given to students in the Women's Studies Programme.
Enrolment is limited.

WOMEN ST 4A06  INDEPENDENT RESEARCH
Students develop and execute their own research projects, in regular consultation with a faculty supervisor. In March, students present the results of their work at a one-day forum in which all students and faculty of Women's Studies are encouraged to participate. A formal written report is submitted to the supervisor shortly afterwards.
Prerequisite: Registration in Level IV of the Women's Studies Programme

WOMEN ST 4B06  TOPICS IN WOMEN, THE ECONOMY AND THE STATE
The purpose of this course is to encourage critical gender-based analysis of Canadian "social" welfare policies and programmes. The focus will be on understanding the role of the Canadian state in influencing social and economic outcomes for women.
Three hours; two terms
Prerequisite: Registration in Level III or IV of the Women's Studies Programme, or permission of the Director of Women's Studies
WOMEN ST 4B06 may be repeated, if on a different topic, to a total of 12 units.
Enrolment is limited.

WOMEN ST 4C06  TOPICS IN FEMINIST SCHOLARSHIP
1997-98: Women in an International Context
This course offers intensive study in a specific field as defined by the instructor's own special research interests. It allows the students to benefit from up-to-date scholarship and provides insight into research methods that might be different from or complementary to those being used in WOMEN'S ST 4A06.
Three hours; two terms
Prerequisite: Registration in Level III or IV of the Women's Studies Programme, or permission of the Director of Women's Studies
Enrolment is limited.
ACADEMIC FACILITIES, STUDENT SERVICES AND ORGANIZATIONS

ACADEMIC FACILITIES

THE UNIVERSITY LIBRARY

E-mail Address
llbinfo@mcmaster.ca (Humanities, Social Sciences, Science and Engineering)
library@ths.mcmaster.ca (Health Sciences)

University Librarian
Graham R. Hill, B.A., M.A., M.L.S.

Systems Development
Marji Drynan, B.A., M.S./Associate University Librarian

Health Sciences Library
Dorothy Fitzgerald, B.A., M.L.S./Director

Reader Services
Sheila Pepper, B.A., M.A., B.L.S./Assistant University Librarian

Thode Library of Science and Engineering
Peggy Findlay, B.A., M.L.S./Librarian

Archives & Research Collections
Charlotte Stewart, B.A., M.A., M.L.S./Director

Collections Management
Victor Nunn, B.A., M.L.S./Assistant University Librarian

Processing Services
Carol Racheter, B.A., M.L.S./Director

Administrative Services
Mary Ruth Linkert/Manager

The University Library System consists of Mills Memorial Library (Humanities and Social Sciences), the Imils Library in Kenneth Taylor Hall, containing a collection of business materials, the H.G. Thode Library of Science and Engineering, and the Health Sciences Library in the Health Sciences Centre. An on-line catalogue covering the holdings of all libraries is available and stacks are open to all library users.

The collection in 1996 contained more than 1,730,582 volumes, 1,407,290 microform items, 174,188 non-print items and 10,703 linear feet of archival material. Current periodical titles number about 11,376.

To help readers, service is maintained at key Reference points in the various libraries. Introductory library tours and subject-related seminars are conducted. Pamphlets describing the hours and services of the different areas are available in each library and on the University gopher.

Mills Library has several collections - Reference, Periodicals, Government Publications, Music and Maps, which contain materials of significance for both Undergraduates and Researchers, and Reserve, which is used mainly by Undergraduates.

The William Ready Division of Archives and Research Collections in Mills Library contains rare books, manuscripts and special book and archival collections, which afford many opportunities for original research. Of outstanding interest are the Bertrand Russell Archives, a massive collection of correspondence and manuscripts supported by books, journal articles, secondary literature, tapes, films, and personal memorabilia.

The Eighteenth-Century Collection of British material numbers over 33,000 volumes and is the major Canadian collection in the field. Library fellowships in Eighteenth-Century Studies are offered annually. Among more modern materials are the papers of Vera Brittain, Marian Engel, Robert Fulford, Pierre Berton, Farley Mowat, Peter Newman, Matt Cohen and many others.

Business interests are reflected in such files as the General Steel Wares Archives, the Macmillan of Canada Archives, the Clarke Irwin Archives, and the McClelland and Stewart Archives. Canadian social and political interests are documented in papers from the Canadian Union of Students, the Canadian Youth Congress, the SUFA/ CUCND, and other related collections. There are holdings of the records of a number of labour unions, including USWA Local 1005, USWA. District 6, United Glass and Ceramic Workers (Canada), and the Hamilton and District Labour Council.

Publications
- McMaster University Library Research News
- Russell, The Journal of the Bertrand Russell Archives
- Monographs with the imprint of the McMaster University Library Press

COMPUTING AND INFORMATION SERVICES (CIS)

Web Address
http://www.mcmaster.ca/cis

Assistant Vice-President, IST

Director, CIS
Pat O'Day, B.A.

Client Services-Research
Robin Griffin, B.Sc., Ph.D./Senior Manager

Data Services
Eric Matthews/Senior Manager

System Support
Doug Fraser/Senior Manager

Client Services
Heather Grigg/Senior Manager

Administration
Barb Campbell, B.A./Senior Manager, Department

CIS provides computing services in support of both academic (instruction and research) and administrative activities. The facilities available for academic use include several microcomputer and workstation laboratories. CIS manages a campus-wide Ethernet which is linked to the Internet, allowing access to resources throughout the world. Administrative computing is run on an IBM MVS system and several SUN UNIX systems. A transition to an increased level of distributed computing is underway. For example, MUGSI provides students access to their academic and personal data via the WWW.

Student computer laboratories for academic use are located in the Burke Sciences Building, Rooms 240-245, the John Hodgins Engineering Building, Room 234, the Arthur Bourns Building, Room 166, and Kenneth Taylor Hall, Rooms B110, B111, B120 and B123. All labs provide access to popular wordprocessing and spreadsheet packages as well as various computing languages, statistical applications and specialized course software provided by instructors. Several email rooms have been set up to enable students to view their email. Student consultants are available to assist customers in each of these computer labs. Assistance is also available in the Main CIS Office located in Arthur Bourns Building, Room 132. Each Faculty has a Service Coordinator, who is familiar with the Faculty's particular requirements, to assist faculty and student members and to undertake projects of interest to the Faculty. CIS provides seminars and short non-credit courses.

Every undergraduate and graduate student may register for an email account, free of charge, with full access to the Internet. Students may dial in from home using the enhanced modem pool. Rates are currently $0.50 per hour and full access to the WWW and email is provided. A limited modem pool is also available free of charge.

In addition to the facilities operated by CIS, there is computer equipment located in Departments to support academic programmes.

THE INSTRUCTIONAL DEVELOPMENT CENTRE

- General Sciences, Room 217, ext. 24540

Web Address
http://www.science.mcmaster.ca/idc

E-mail Address
riselays@mcmaster.ca

Director
A.C. Blizzard, B.Sc., M.Sc., Ph.D.

Educational Consultant
D.E. Roy, B.A., M.A.

Secretary
S. Riselay

The Instructional Development Centre (IDC) is a resource centre for people who teach at McMaster, individual faculty members and teaching assistants (tutors, demonstrators, markers) as well as departments and other groups. The Centre works closely with the University Committee on Teaching and Learning. This group, which includes a representative of the McMaster Students Union Teaching Awards Committee, two graduate students and faculty members from all six Faculties, provides policy guidance for the Centre, makes recommendations to the University on issues affecting teaching and learning conditions and provides grants for teaching and learning development projects. The Centre’s activities include:

**Teaching and Learning Grants:** The IDC consults with applicants on their proposals and assists them with projects. It also provides administrative services for the Grants programme.

**Programmes for Teaching Assistants:** The Centre plans and organizes T.A. Day, a campus-wide orientation programme for teaching assistants. It also offers a series of short courses on teaching for senior Ph.D. students.

**Workshops, Seminars and Conferences:** A wide variety of events are offered, conducted by McMaster faculty, visiting resource people and IDC staff. Generally, the topics are ones requested by instructors or departments or are reports by people who have completed Teaching and Learning Grant projects. Subjects typically include teaching large classes, self-directed learning, research on learning and teaching methods, lecturing, small group discussion, simulations and the use of microcomputers in education.

**Consultation:** A major part of the Centre’s work is discussing current courses with instructors. The instructor or department provides the expertise in the course content. The Centre provides information on ways for instructors to evaluate and refine courses. It also arranges contacts with other experienced people and assistance in trying new approaches.

The Centre has a long history of collaboration with student efforts to support excellence in teaching. For example, the IDC provided consultation on refinements to the MSU Teaching Awards programme and the MSU Handbook. The Disabled Student as well as on grants the MSU has received for its own teaching and learning projects.

**Resources:** The IDC has a library of books on university teaching and learning, example audio-visual materials and microcomputer programs. It also has video-tape equipment (for use in workshops and for taping classes at the request of instructors) and a microcomputer equipment for familiarization seminars and for faculty to use in evaluating educational software.

Students, especially those working as teaching assistants, are invited to visit the Centre.

McMaster Audio Visual Services provides a complete media service to faculty, staff and students at McMaster. These services include: television production editing and tape duplication; audio recording, tape and cassette editing, and high-speed tape duplication; AV equipment distribution (all kinds of projectors, audio and video tape recorders, etc.); film reservations; AV equipment repair; graphic art-for design, charts and graphs for publication, display or poster presentations, and computer graphics; black-and-white laser prints and high-resolution 35mm colour slides; full line of desktop publishing services offered; photographic services, including location and studio photography, black-and-white and colour photofinishing, 35mm slides, film processing and slide duplication, and a wide range of film and supply sales. Full Videoconferencing services are now available.

PRINTING SERVICES DIVISION

- Michael G. Degrootes School of Business, Room B111, ext. 24447
- Health Sciences Centre, Room 175, ext. 22348

Printing is staffed and equipped to provide a comprehensive, efficient service to the university at low cost. The service includes: layout and typesetting; cameras for reduction and enlargement; halftone (photograph) and line reproduction; copying (Xeroxing); copy duplicating; offset printing; bindery (collating, stitching, drilling).

Printing Services will reproduce a wide range of printed matter from business cards to a multi-page brochure and will provide technical assistance for any printing jobs.

GERONTOLOGICAL STUDIES

There are three Gerontology components at McMaster: the Office of Gerontological Studies; The R. Samuel McLaughlin Centre for Gerontological Health Research; and Undergraduate Degree Studies in Gerontology. (Further information concerning the two Centres mentioned above can be obtained by contacting the Office of the Vice-President (Research and International Affairs) located in Glummer Hall, Room 112, ext. 27270.)

Office of Gerontological Studies

Director
Carolyn J. Rosenthal, B.A., M.A., Ph.D.

The Office of Gerontological Studies (OGS) is involved in the promotion and development of multidisciplinary research and educational programmes within the University and the local community. OGS also provides a forum for collaboration on education, research, and service projects with other community organizations.

The Office’s activities are supported by University funding, while specific projects are funded by public agencies, private foundations, or user fees. The Undergraduate Degree Studies in Gerontology programme is administered by this Office. The various degree options are described in this Calendar in the Faculty of Social Sciences section, Gerontological Studies.

The Office mandate is as follows:

1. to serve as the communication centre regarding gerontological education and research activities at McMaster University. Regular information about gerontological activities is provided through the newsletter Aging, Health and Society: News and Views, the Inventory of Gerontological Research, and the Annual Report;
2. to coordinate and plan multidisciplinary initiatives in gerontology education and research across all Faculties of the University. (Social Sciences, Health Sciences, Humanities, Science, Business, Engineering);
3. to organize multidisciplinary educational events in gerontology for professionals and the general public, e.g. the McMaster Summer Institute on Gerontology;
4. to actively participate in provincial and national gerontological organizations and initiatives;
5. to initiate and support the development of new gerontological projects with older adults, community agencies, students, staff and faculty;
6. to promote educational opportunities for older adults at McMaster and the Hamilton-Wentworth region.

MCMASTER MEDIA PRODUCTION SERVICES

Web Address
http://www.media.mcmaster.ca

E-mail Address
knowles@mcmaster.ca

AUDIO VISUAL DIVISION

- Health Sciences Centre, Room 1G1, ext. 22301 or Burke Sciences Building, Room B231, ext. 22761

The McMaster Audio Visual Services is a media and production service for design, charts and graphs for publication, audio-visual materials and microcomputer equipment for familiarization seminars and for training, and learning, workshops, seminars and conferences.

A wide variety of events are offered, conducted by the McMaster College, visiting resource people and IDC staff. Generally, the topics are ones requested by instructors or departments or are reports by people who have completed Teaching and Learning Grant projects. Subjects typically include teaching large classes, self-directed learning, research on learning and teaching methods, lecturing, small group discussion, simulations and the use of microcomputers in education.

A major part of the Centre’s work is discussing current courses with instructors. The instructor or department provides the expertise in the course content. The Centre provides information on ways for instructors to evaluate and refine courses. It also arranges contacts with other experienced people and assistance in trying new approaches.

The Centre has a long history of collaboration with student efforts to support excellence in teaching. For example, the IDC provided consultation on refinements to the MSU Teaching Awards programme and the MSU Handbook. The Disabled Student as well as on grants the MSU has received for its own teaching and learning projects.

A library of books on university teaching and learning, example audio-visual materials and microcomputer programmes. It also has video-tape equipment (for use in workshops and for taping classes at the request of instructors) and a microcomputer equipment for familiarization seminars and for faculty to use in evaluating educational software.

Students, especially those working as teaching assistants, are invited to visit the Centre.
MCMASTER INTERNATIONAL

- Kenneth Taylor Hall, Room A241, ext. 24700
- Web Address: http://www.mcmaster.ca/macintl
- E-mail Address: macintl@mcmaster.ca
- Director: Gary Warner
- Project Officer: Nijadon
- Administrative Coordinator: Laurine Mollinga

McMaster University has become increasingly involved around the world in exchange agreements, institutional linkages and externally funded international programmes concerned with collaborative research, education and human resource development, and with improving the delivery of services in such sectors as business, environmental protection, community health and engineering. McMaster International was created in 1988 in response to the need for a coordinated approach to the international activities of the University. The role of McMaster International is to support and encourage institutional international activities which contribute to the achievement of the international component of the Strategic Plan adopted by the University Senate and Board. The vision of McMaster International is to promote global social equity and to be guided by the principles of partnership, human rights and environmental protection.

The specific functions of McMaster International are as follows:

1. Develop and provide liaison with funding agencies, as well as domestic and overseas contacts, for international research and education projects involving McMaster faculty and graduate students.
2. Serve as the resource centre concerning international activities at McMaster and for those at McMaster seeking to promote internationalization of their programmes.
3. Assist in developing exchange agreements with Universities in other provinces and countries.
4. The Director of MI acts as McMaster's International Liaison Officer (ILO), for sharing information internally and externally as appropriate.

MCMASTER MUSEUM OF ART

- University Avenue, Ext. 23081
- Director and Curator: K.G. Ness, B.A., M.Litt., MMST
- E-mail: nesskg@mcmaster.ca
- Special Programmes Officer/Assistant to the Director: J. Zatylny, B.A.
- E-mail: zatylny@mcmaster.ca
- Registrar/Operations Manager: G. Loveys, B.A.
- E-mail: loveys@mcmaster.ca
- Installation/Preservation Officer: J. Petteplace, B.A.
- Secretary: L. Parker, B.A.
- Exhibitions Assistant: C. Wiginton, B.A., MMST
- Head of Information: R.A. Prevec, B.A.
- Information Staff: D. Hammond, K. Hogue, B.A., C. Hulienaar, B.A.

A new facility was officially opened to the public in June 1994. Located at the west end of Mills Library on University Avenue, the new Museum contains five Exhibition Galleries, a Paper Centre and an Educational Access Gallery. The Museum offers a year-round programme of exhibitions ranging from the historical past to present-day artistic investigations either organized by the McMaster Museum or loaned by such institutions as the Art Gallery of Ontario or the National Gallery of Canada, as well as lunchtime talks, Visiting Artist talks, seminars and concerts.

McMaster's permanent art collection contains 5500 Canadian, American and European art works with a specialized collection of over 230 German Expressionist prints and the Levy Collection of Impressionist and Post Impressionist paintings. The central emphasis is on collections access and use of the collection as a cultural learning resource.

Contact the Museum for exhibition listings. Hours: Tuesday to Friday, 11:00 a.m. - 6:00 p.m.; Thursday evening, 7:00 p.m. - 9:00 p.m.; Sunday, 12:00 p.m. - 5:00 p.m. Voluntary admission fee of $2.00; free for students and seniors. Museum Memberships available. Wheelchair accessible.

STUDENT SERVICES

- Student Affairs Web Address: http://www.access.mcmaster.ca
- Information on the following organizations may also be accessed through the above address:
- Centre for Student Development, Career Planning and Employment Centre, International Students' Advisor, Student Exchanges/Work and Study Abroad, Student Financial Aid and Scholarships, Housing Services and Hospitality Services.

ASSISTANT PROVOST (STUDENT AFFAIRS)

Mary E. Keyes, Ph.D.

The Assistant Provost (Student Affairs) heads a variety of specialized student service offices. The Assistant Provost is happy to meet with individuals and representatives of student organizations with problems, concerns, questions or suggestions on any matter relating to student life and services on campus. The Assistant Provost is located in Gilmour Hall, Room 207, ext. 27455.

CENTRE FOR STUDENT DEVELOPMENT

- Hamilton Hall, Room 409, ext. 24711
- Web Address: http://access.mcmaster.ca/csd/
- Staff:
  - Programme Coordinator, Learning Specialist: Caroline Cayuga
  - Manager, Ability and Access: Bill Hoch
  - Administrative Assistant: Noreen Myers
  - Psychologist: Debbie Nifakis
  - Programme Coordinator, Student Accommodations: Tim Nolan
  - Academic Skills Coordinator: David Palmer
  - Psychologist: Bill Wilkinson

The Centre provides services to all McMaster students to promote their academic effectiveness and personal well-being. It also provides specific kinds of assistance to students with disabilities. (For more details see Students with Disabilities below.)
Students are encouraged to seek assistance from the Centre if they experience any of the following:

- Personal, emotional, social, family or relationship concerns.
- Feelings of stress, anxiety, loneliness, depression, low self-esteem or loss of motivation.
- Concerns about academic performance, study habits, time management, effective learning, reading memory, concentration, tests and exams, writing essays, making class presentations.
- The need for disability-related support services.

The Centre also provides services to international students wishing to improve their English.

Counselling, individual help, skill-development workshops and short courses are available. Peer helpers (trained and experienced students) provide some services, under staff supervision. Contacts between students and counsellors are voluntary and confidential. Students in urgent situations are given priority and seen as soon as possible. Students are given assistance in locating other specialized help on or off campus when required. All personal, health or disability-related information will be treated as confidential.

Students with Disabilities

The University encourages people with disabilities to apply for admission to its programmes. Applicants must meet the University's academic criteria for admission. All students are expected to satisfy the normal requirements for courses and programmes (including final examinations), but the Associate Deans (Studies) may authorize accommodations to assist students with disabilities in the completion of assignments, tests, examinations and other course requirements.

The Centre for Student Development can provide advice to potential students and applicants with disabilities. Once admitted to the University, students with disabilities are encouraged to contact the Centre at an early date (two or three months prior to registration) to ensure sufficient time to make arrangements regarding special needs. Even if accommodation or assistance is not immediately required, students are encouraged to maintain contact with the Centre in case a need for assistance should arise at a later date.

The Centre assists students with issues concerning the accessibility of campus facilities, the provision of special equipment and alternative media formats, referral to professional services or community resources. It provides counselling, advice, support and workshops to help students meet their educational objectives.

SEXUAL HARASSMENT/ANTI-DISCRIMINATION OFFICE (S.H.A.D.O.)

Kenneth Taylor Hall, Room 118
Voice: (905) 529-7070
TTY: (905) 529-7070
Fax: (905) 522-7102
Web Address
http://shado.mcmaster.ca

E-Mail Address
shado@mcmaster.ca

Officer
Cindy Player
ext. 23641
E-mail: playerc@mcmaster.ca

Administrative Assistant
Elaine Hay
ext. 27581
E-mail: hayeain@mcmaster.ca

This office administers the Sexual Harassment and Anti-Discrimination policies for McMaster University. The goal of this office is to ensure that students, staff and faculty can learn and work in an environment free from all forms of harassment and discrimination.

Cindy Player (Sexual Harassment/Anti-Discrimination Officer) is available to any member of the university community with questions or concerns regarding situations that may involve sexual harassment or human rights. Assistance is provided for complaint resolution and the design and facilitation of workshops concerning all forms of harassment and discrimination.

The McMaster University Sub-Post Office is located in the Bookstore. The Post Office is open weekdays from 9:00 a.m. to 4:00 p.m. Post Office boxes may be rented by faculty, staff, and students for the duration of the term at McMaster.

The McMaster University Sub-Post Office is located in the Bookstore. The Post Office provides full postal service, Monday to Friday, from 9:00 a.m. to 4:00 p.m. Post Office boxes may be rented by faculty, staff, and students for the duration of the term at McMaster.

The Safer Space Programme offers a number of services including a network of: First Contacts, An After Hours Help Line and an Off-Campus Shelter. It is available to all women of the McMaster community—students, staff, faculty and their partners from 9:00 a.m. to 5:00 p.m. on weekdays, from September through April, by calling (905) 522-9140, ext. 23641. (After hours and weekends call (905) 719-7786.)

ATHLETICS AND RECREATION

Web Address
http://www.athrec.mcmaster.ca

E-Mail Address
iwynne@mcmaster.ca (Customer Service Line)

Director of Athletics and Recreation
Therese Quigley

The Department of Athletics and Recreation provides a wide variety of opportunities for students involved in high performance athletic competition, intramural and club competition as well as recreation, fitness and instructional programmes. A diverse programme of recreational activities is available for those who wish to keep fit, compete in active pursuits at their own level, and enjoy sports and active living opportunities of their choice. Access to the various facilities on campus is open to all McMaster students.

The facilities include a 50-metre pool, an outdoor 400-metrechevron track, eight tennis courts, several gyms, dance studio and a fitness centre known as The Pulse. It features computerized cardiovascular equipment, circuit training, aerobic floor and a comprehensive strength training area.

Many different club activities are available, along with instructional assistance. Off-campus field trips in canoeing, rock climbing, horseback riding, hiking and many other opportunities are offered.

A highly developed intramural programme is a very popular outlet for student activity. Intramurals run from early fall until late spring and provide students with a competitive environment that still fosters social interaction.

The varsity programme at McMaster fields 33 teams competing at the provincial and national (CIAU) level. There are also six inter-university club teams competing at various levels. Highly skilled coaches help McMaster athletes achieve their potential while competing against other universities in Ontario and across Canada. The outstanding efforts of McMaster's student-athletes and the social involvement of student supporters are focal points of student life on campus. Varsity events are a major source of school spirit for competitors and spectators alike.

BOOKSTORE

Web Address
http://bookstore.services.mcmaster.ca

E-Mail Address
bookstr@mcmaster.ca

The University Bookstore is owned and operated by the University. First and second year textbooks are located in the auxiliary store located in Togo Salmon Hall, Room B203. Third and fourth year textbooks are located in the lower level of Gilmour Hall. A Microcomputer Centre and a Post Office are located within the Bookstore. A Health Sciences Branch is located in the McMaster University Medical Centre. In addition to course books, the Bookstore maintains a wide range of supplementary reading materials, both academic and general. Stationery and computer supplies and other items are also stocked. Charge accounts may be opened after registration.

POST OFFICE

The McMaster University Sub-Post Office is located in the Bookstore. The Post Office offers full postal service, Monday to Friday, from 9:00 a.m. to 4:00 p.m. Post Office boxes may be rented by faculty, staff, and students for the duration of their stay at McMaster.

STUDENT COUNSELLORS

shado@mcmaster.ca

Phone: 905-522-7070

TTY: 905-529-7070

Fax: 905-522-7102

http://shado.mcmaster.ca
CAREER PLANNING AND EMPLOYMENT CENTRE

➢ Hamilton Hall, Room 302

Web Address
http://access.mcmaster.ca/cpec

E-mail Address
cpec@mcmaster.ca

Career Counsellors
Laurie Barlow Cash
David Lawson

Career Information Coordinator
Joanne Connell

Employment Services Coordinator
Ariene Fajutrao

Intake/Office Manager
Susan Collard

The Career Planning and Employment Centre (CPEC) offers assistance on an individual and small group basis in all phases of career planning, education planning and the work search process. The Centre’s role at McMaster is to assist students in making successful transitions, for example, from school to employment, to self employment, or to further education. CPEC’s staff are experienced and knowledgeable professionals who have assisted thousands of students in choosing and pursuing their career goals. The CPEC team includes specially trained Peer Helpers, who also provide individual and group assistance.

McMaster students are encouraged to visit the office for:
• help in identifying and choosing career and educational goals
• the opportunity to complete career testing; interest and personality indicators
• individual, confidential counselling with counsellors and peer helpers
• job postings and help in applying to full-time, summer and part-time jobs
• a resource centre of career, educational and job search information
• information about government employment programmes
• assistance with resume writing, job search and interview preparation
• workshops on applying to graduate and professional schools (teaching, law, medicine, etc.)
• the chance to talk with recent McMaster graduates through the Alumni Network

CPEC has recently implemented leading edge technology to make its extensive employment listings available to McMaster students and alumni through our web site. Students, alumni, staff and faculty are encouraged to pay CPEC visits to view job listings, update information on CPEC programmes and services, and links to other career/educational Internet resources.

The office is open 8:30 a.m. to 4:30 p.m. Monday, Tuesday, Thursday and Friday, and 8:30 a.m. to 7:00 p.m. on Wednesday. The phone number is (905) 525-9140, ext. 24253 and fax numbers are (905) 525-7114 (general use) and (905) 529-8972 (employment listings only).

OFFICE OF THE INTERNATIONAL STUDENTS’ ADVISOR/STUDENT EXCHANGES/WORK AND STUDY ABROAD

Office of the International Students’ Advisor
➢ Hamilton Hall, Room 405, ext. 24748

The major purpose of the Office is to assist international students, visiting scholars, post-doctoral fellows and faculty. The Office provides a number of services such as:
• reception and orientation for newly arriving students
• preliminary information concerning immigration matters
• liaison with sponsoring agencies, foreign governments, consulates and embassies
• general advising and counselling regarding personal, financial and academic problems

The Office produces a Pre-Departure Bulletin and International Students’ Handbook which provide basic information for international students in preparation for their life in Canada. The International Students’ Advisor is also the Plan Administrator for the University Health Insurance Plan (UHIP) which is mandatory for all undergraduate international students.

Student Exchanges/Work and Study Abroad
➢ Hamilton Hall, Room 405, ext. 24748

The Office provides information on a range of options from independent study and externally sponsored programmes, to summer session and McMaster’s formal student exchanges. As well, information concerning opportunities for working and volunteering abroad is provided.

McMaster University has formal student exchanges with universities in 26 countries abroad and participates in the Group of Ten Student Exchange Programme (GOTSEP). This programme includes the following 10 Canadian universities:
• McMaster University
• McGill University
• Queen’s University
• Université Laval
• Université de Montréal
• University of Alberta
• University of British Columbia
• University of Toronto
• University of Waterloo
• University of Western Ontario

In addition, the University participates in two government-sponsored multi-institution exchange programmes:
• Ontario/Rhône-Alpes Exchange (France)
• Ontario/Baden-Württemberg Exchange (Germany)

STUDENT FINANCIAL AID AND SCHOLARSHIPS

Coordinator
D. Ellis

The Office administers a variety of programmes which are accessed by nearly half of all full-time students as well as a large number of part-time students attending University. These programmes include the Ontario Student Loan Programme, Canada Student Loan Programmes, Undergraduate Scholarships Programme, Ontario Work Study Programme, Ontario Special Bursary Programme, University Bursary and Emergency Loan Programme. In addition, the Office provides administrative support to outside agencies providing scholarships and bursaries to students attending McMaster.

The office offers financial and budget counselling, assessment and information service to current and potential students designed to help identify and address post-secondary education expenses. All discussions with students are voluntary, private and confidential. Appointments and drop-in style counselling is available. The Office is located in Hamilton Hall, Room 404, telephone ext. 24319.

For more detailed profiles of programme offerings, please refer to Undergraduate Academic Awards and Student Financial Aid sections in this Calendar.

STUDENT HEALTH SERVICE

Director
Bill Kreutzweiser

Health care is available to all university students year-round at the Student Health Service, located on the ground floor of McKay Hall Residence. The health service is open Monday through Wednesday from 8 a.m. to 7:00 p.m.; and Thursday and Friday from 9 a.m. to 4:20 p.m. Appointments may be made by calling 529-7070, ext. 27700.

Staffed by family physicians and nurses, the Student Health Service provides comprehensive primary medical care. Services include medical assessment and treatment; annual health examinations (physcials); birth-control counselling; assessment and treatment of depression, eating disorders, anxiety and other mental or emotional health problems; allergy injections; immunization; wart treatment; on-site laboratory; pregnancy tests; and information or counselling for any personal health concerns. A specialist in sports medicine is available for sports related injuries and other problems. Physiotherapy for sports injuries is also available at Irv Wyne Centre on referral from one of the physicians. A staff psychiatrist is available to students on referral from one of the clinic physicians or from
a counselling service psychologist. The psychiatrist provides consultation for assessment and management recommendations as well as for ongoing therapy.

Birth-control pills are dispensed at a reduced cost to Student Health Service patients who have a current prescription for oral contraceptives from a SHS staff physician.

A computerized health risk appraisal programme can be taken by students on several laptop units available at The Trunk in the Commons Building. These programmes estimate a person's current level of health and their chances of developing serious health problems in the future. An individual health summary with recommendations is printed at the end of this computer programme.

Staff physicians and nurses are available for lectures, seminars, or small group discussions on health-related issues, on request by students. As well, an education and support group for students with eating disorders is conducted for six weeks during either or both the fall and winter terms. Further information can be obtained by calling the Student Health Service office at (905) 529-7070, ext. 24441.

HOSPITALITY SERVICES

General Manager, Hospitality Services
Albert Y. Ng

McMaster University provides many dining areas on campus offering a wide variety of nutritious food at reasonable prices. Students living in residence (except the Bates apartment-style building) are required to purchase a meal plan. Off-campus students and other members of the University community may purchase an off-campus meal plan for any amount over $100 at the MAC Express Centre, located in the Commons Building, Room B101B.

McMaster has a self-operated food service that includes five full-service cafeterias with dining rooms located strategically around campus in Togo Salmon Hall, Kenneth Taylor Hall, A.N. Bourns Building, Commons Building, and the Refectory. All dining facilities accept meal cards and cash. Students can obtain meals anytime from 7 a.m. to midnight.

MAC Express Coffee Shops are located in the Chester New Hall basement, the John Hodgins Engineering Building foyer, and the Burke Science Building—2nd floor. Vending machines at many locations around campus supplement these facilities. Inquiries are welcomed by Hospitality Services at ext. 24836.

Campus Dining Locations as follows:

- **Commons Marketplace** (Located in the Commons Building);
- **Arts Quad Cafe** (Located in the basement of Togo Salmon Hall, formerly TSH Cafeteria);
- **The Wokery** (Located in the basement of Kenneth Taylor Hall, formerly KTH Cafeteria);
- **Refectory Dining Hall**;
- **Rathskellar** (located in the lower level of Refectory)

Hours of operation vary among locations.

HOUSING SERVICES

Director, Housing Services
Catherine Miller, ext. 24036
E-mail: millerc@mcmaster.ca

Manager, Admissions and Conferences
Leanne Piper, ext. 24070
E-mail: pipert@mcmaster.ca

Residence Life Team
Tony Conte/Residence Life Coordinator, ext. 24875
E-mail: contea@mcmaster.ca
Danielle Stayzer/Residence Life Coordinator, ext. 23200
E-mail: dgrande@mcmaster.ca
Andrea Thyret-Kidd/Residence Life Coordinator ext. 23032
E-mail: thyreta@mcmaster.ca

Residence Facilities Team
Cindy Chemish, ext. 24451
E-mail: chernis@mcmaster.ca
Craig MacDonald, ext. 23764
E-mail: macdoncr@mcmaster.ca

David J. Speagle, ext. 24779
E-mail: speagle@mcmaster.ca

Conference Coordinator
Wendy Read, ext. 24783
E-mail: readwen@mcmaster.ca

RESIDENCES

The University owns and operates ten on-campus residence buildings, accommodating a total of 2,790 students. The nine traditional-style residences consist of two women's residences (248), one men's residence (101), five co-educational residences (1,688), and Matthews Hall, consisting of a co-educational International House and a Maison Française (123) and a co-educational Halcyon (Quiet) House (133). Seventy percent of the spaces in traditional residences are reserved for incoming first-year students. In past years, admission offers to residence have been based on a student's admission average to his/her academic programme. The average has typically ranged from the high 70s to low 80s.

All students in the traditional-style residences are required to purchase one of the following meal plans: light, small, regular and large. Students receive a meal card which is debited only for food purchased and which may be used at all Hospitality Services locations on campus. (Note: Residence fees and meal plans do not include the Christmas vacation period.)

In addition, a residence-style residence (Bates Residence) accommodates approximately 500 male and female students. The apartments are unfurnished (except for a stove, refrigerator, carpeting and drapes) and are set aside for students above first year, including a limited number of graduate, exchange students and special cases. A limited number of furnished rooms are reserved for exchange students. Bates students can purchase an off-campus meal plan directly from the Express Centre, Commons Bldg., room B101B.

The University is unable to provide any on-campus facilities for married students. Students in this category may wish to use the services of the Off-Campus Housing Office (see below).

Students will receive a residence application and a letter of instruction regarding application procedures with their letter of acceptance from the University. Guaranteed offers of residence will be confirmed upon receipt of a Residence Application form and a deposit before a specified deadline which will be applied to the student's residence fees. Students who do not receive an offer of residence, but wish to be placed on a waiting list, must return the completed Residence Application form before the specified deadline. If a student is assigned residence space but no longer requires it, the student is responsible for advising Housing Services in writing by the specified deadline. Failure to do so will result in forfeiture of the full amount of the deposit.

The responsibility for policy, budget and the overall administration of the University residence system lies with the Director of Housing Services. Housing Services has four distinct functional units: Admissions, Residence Life, Facilities and Conferences.

RESIDENCE ADMISSIONS

This area is responsible for admission systems and policies, withdrawals, room assignments, medical and grade appeals, waiting lists and housing publications. Enquiries about residence information should be directed to the Manager, Residence Admissions, Housing Services, Commons Building 101, extension 24070, e-mail: housing@mcmaster.ca.

RESIDENCE LIFE TEAM

Residence Life is responsible for 16 Hall Directors who live in the residences and are familiar with the McMaster community. They are available for both academic and personal counselling. Residence Life works with the student government and Hall Directors to fashion a mature residence community in which self-discipline is maximized.

Residence Life provides leadership training, residence life activities, social, educational, and personal development programmes for students and residence student leaders, as well as overseeing discipline matters, student government and the Residence Security Team.
The Residence Facilities Team is responsible for maintenance, renovations, student damages, safety and security needs, work orders, repairs, furnishings, cleaning, residence recreational facilities, and the 24-hour Quad Service Desks located in Moulton Hall (west campus, ext. 24898) and the Commons Building (north campus, ext. 27222).

OFF-CAMPUS HOUSING

The Off-campus Housing office is a listing service provided jointly by Housing Services and the McMaster Students Union. This office maintains updated lists of available accommodation in Hamilton and the surrounding area. It also provides area maps, transit maps, free telephones for local calling and personal assistance with the housing search. The Off-Campus Housing Office is operated by student staff on a year-round basis and is located in Wentworth House, Room 118, (905) 525-9140 ext. 24086.

CONFERENCE OFFICE

During the summer months, accommodation, food and meeting facilities are available on campus for conferences, conventions, and touring groups, in addition to residence for summer students and casual visitors.

The Conference Front Desk, located in the Commons Building, is open for guest registration from 7:00 a.m. to 11:00 p.m. daily, from early May to mid-August. Telephone (905) 525-9140 ext. 27222.

PARKING

Web Address
http://www.mcmaster.ca/parking

Campus parking facilities are limited and the availability of spaces cannot be assured.

Travel to and from the University on foot, by public transportation and in car pools is encouraged.

Students wishing to park a motor vehicle or motorcycle on campus are required to complete and submit a parking application. Applications are accepted between June 1 and the last business day of July. Completed application forms, accompanied by cheque or money order, payable to McMaster University, in the amount required for the full period must be forwarded to:

Parking and Transit Services
E.T. Clarke Centre, McMaster University
Hamilton, Ontario L8S 4K1

Completed applications from eligible applicants will be processed beginning in August. If any applicable zone is oversubscribed, there will be a lottery draw.

Undergraduate students not in residence may apply for available spaces in Zones 1 and 6 only. The procedure for allocation of these spaces will be developed in consultation with the MSU Executive. Students in residence requiring parking can apply for Zone 7 only, and may apply at any time of the year.

Special arrangements can be made for disabled parking privileges. Copies of the complete rules and regulations concerning parking at McMaster University are available at the Parking and Transit Services Office.

The Parking and Transit Office has the overall responsibility for dealing with parking matters. If you have a problem, parking personnel will assist you. The office is located in the E.T. Clarke Centre and is open Monday to Friday from 9:00 a.m. to 4:00 p.m. The telephone number is (905) 525-9140, ext. 24232 or 24921.

UNIVERSITY CHAPLAINS

E-mail Address: chaplain@mcmaster.ca

The McMaster Chaplaincy Centre, located in Wentworth House, Room 108 is open to all students and the campus community. The Chaplaincy Centre is staffed by Carol Wood, Ecumenical Chaplain; Aren Geisterfer, Christian Reformed Chaplain; Father Jack Hurley, Roman Catholic Chaplain and Donna Higson, Assistant to the Chaplains. The Office is usually open between 9:00 a.m. and 5:00 p.m., Monday through Friday and appointments outside of these hours are welcomed.

The Centre offers personal and confidential counselling is offered for a wide range of concerns; groups to deal with topics such as bereavement support and marriage preparation; and an experience of community through cost suppers, worship and discussion groups. In addition, the Chaplaincy Centre provides advocacy for students in need; works co-operatively with a variety of student groups; and promotes interfaith events and dialogue on campus.

The Centre can be reached at (905) 525-9140, extension 24207 or by e-mail. In case of emergency, contact Aren Geisterfer at (905) 524-0488 (24 hours a day).

STUDENT GOVERNMENT AND ORGANIZATIONS

MCMASTERS STUDENTS UNION

Web Address
www-msu.mcmaster.ca

Purpose: The McMaster Students Union is a completely student-operated corporation with a cash flow exceeding 3.5 million dollars and extensive operations spanning over 30 unique departments. Over 12,000 full-time undergraduate students (enrolled in 18 units or more) belong to the MSU by virtue of their supplementary fees paid at registration.

Services of the MSU: Considered as one of the most extensive student unions in Canada, the MSU offers an array of services and volunteer opportunities for students at McMaster. These services include two campus bars (The Dowsntairs John and The Rathskeller), a convenience store (The Bread Bin), a games room, a Design & Copy Centre and advertising department (CAB), an Information Centre, a Day Care Centre, a yearbook (The Marmor), a Programming Department (which organizes Welcome Week, Homecoming and other special events), an Ombuds Office and an Off-Campus Housing Office. The MSU offers volunteer opportunities through the Emergency First Response Team (EFRT), a radio station (93.3 CFMU FM), a newspaper (The Silhouette), a Student Walk Home Attendant Team (SWHAT), a Student Health Education Centre (SHEC), and over 100 clubs, including academic, political, religious, cultural and general interest.

Student Government: The Student Representative Assembly (SRA) consists of 35 elected individuals who represent student needs in crucial matters. It meets bi-weekly to discuss issues varying from the fate of the campus radio station to the amount of study space on campus. The President is elected by the entire student body while the Vice-President and Treasurer are elected by the SRA.

Committees: Hundreds of energetic and ambitious volunteers from committees are the powerhouse of the Students Union. Established committees include Elections, Environment, Events, External Affairs, Finance, Gender Equity, Human Rights, Promotions, Teaching Awards, University Affairs, and Constitution, Bylaws and Policies.

Hamilton Hall: Currently this building is the Student Centre and the headquarters of the MSU. Most of the mentioned services are located here, including the President and student representatives. For further information, visit the MSU Info Centre located in Hamilton Hall Room 203, or call (905) 525-9140, ext. 21000.

Fraternities and Sororities are not recognized by McMaster University and are not permitted to associate with the University in any way. The University is not responsible for any acts by these groups.

OMBUDS OFFICE

The Ombudsperson provides information and advice relating to problems, complaints and appeals involving members of the McMaster community. This includes academic and non-academic matters as well as questions of human rights, freedom of expression and employment-related issues. It also can include disputes arising out of the provision of services such as parking, accommodation, security and financial aid.
The Ombuds Office is a service provided by the McMaster Students' Union in conjunction with the McMaster University Staff Association. The office is located in Hamilton Hall, Room 212, (905) 525-9140, ext. 24151.

**Web Address**
http://www.mcmaster.ca/maps/index.html

**E-mail Address**
maps@mcmaster.ca

MAPS exists to look after the special interests of part-time degree (taking less than 18 units) and certificate students, who have a different educational experience than full-time students. University fees for these students include an assessment to support the Association.

The Association's mission statement addresses a number of goals: automatic areas of McMaster University, involvement of alumni, recognition of alumni achievements, alumni services and benefits, alumni communication, and involvement of current students.

The Association also gives its members the chance to obtain unique or discounted products or services through its Services and Benefits portfolio. Alumni can experience fantastic trips, get unique McMaster merchandise, use their long-distance phone calls to help benefit the Association, receive high-quality home and auto insurance at group rates, or investigate the other services offered through the MAA.

The MAA also offers programmes in the Hamilton area. The McMaster Alumni Connection Luncheon Series brings high profile speakers to downtown Hamilton to talk with McMaster alumni and friends, and the Albert Lager Lecture Series expands your educational relationship with Mac into a lifelong affair by providing fun and unique opportunities to enjoy lectures, trips and seminars.

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The Ombuds Office is a service provided by the McMaster University Staff Association. The office is located in Hamilton Hall, Room 212, (905) 525-9140, ext. 24151.

**MCMASTER UNIVERSITY ALUMNI ASSOCIATION**

**E-mail Address**
alumni@mcmaster.ca

Following convocation, all graduates of McMaster University automatically become members of the McMaster Alumni Association (MAA) and join over 87,000 alumni living in over 100 countries. The Association’s mission statement addresses a number of goals: support of McMaster University, involvement of alumni, recognition of alumni achievements, alumni services and benefits, alumni communication, and involvement of current students.

Our alumni branch programmes create connections in geographic areas like Brantford, Vancouver, Ottawa, Toronto and Hong Kong. Branches also connect alumni to their faculty or department through groups like the Nursing Alumni Branch, MBA Alumni Association, Engineering Alumni Branch, or Social Work Alumni Branch. Still other branches create connections among Mac grads who share a common interest or affinity, like the MSU Alumni Branch or Lettermen’s Alumni Association, just to name a few.

The MAA also offers programmes in the Hamilton area. The McMaster Alumni Connection Luncheon Series brings high profile speakers to downtown Hamilton to talk with McMaster alumni and friends, and the Albert Lager Lecture Series expands your educational relationship with Mac into a lifelong affair by providing fun and unique opportunities to enjoy lectures, trips and seminars. Alumni Weekends are held every year in June and is the largest single alumni event. It incorporates class reunions and dozens of events designed to attract alumni, family, friends, students and the community to the McMaster campus.

The Association also gives its members the chance to obtain unique or discounted products or services through its Services and Benefits portfolio. Alumni can experience fantastic trips, get unique McMaster merchandise, use their long-distance phone calls to help benefit the Association, receive high-quality home and auto insurance at group rates, or investigate the other services offered through the MAA.

The McMaster Alumni Association also acts as your advocate, with representatives on the University Senate and Board of Governors. These representatives, along with other elected alumni, compose the MAA Board of Directors which, along with hundreds of other alumni volunteers, provides alumni programming in conjunction with the Office of Alumni Advancement. Both the Office and the Association can be contacted in Chester New Hall 111, or by phone at (905) 525-9140 ext 23900, or by fax at (905) 524-1733.

**CAMPUS NAMES**

The University’s Board of Governors has made provision for naming buildings, facilities, spaces and streets after individuals or organizations who have some connection with the University. Recommendations made according to the criteria outlined below are considered by the Advisory Committee on Campus Names. Policy of the Board of Governors on Campus Names

1. The names of distinguished members of the McMaster University community who are no longer actively involved in the affairs of the University.
2. Others in the following groups:
   a) Outstanding scholars outside the University who have had a close relationship with McMaster and whose academic disciplines relate to the structure or area being named.
   b) Major benefactors of the University, including foundations and corporations.
   c) Names that bear a special relationship to McMaster University, Hamilton or district.

(As approved by the Board of Governors, December 9, 1983)

Information concerning the nomination can be obtained from the Vice-President (Administration), Chair, Advisory Committee on Campus Names, Gilmour Hall, Room 202.)
STUDENT FINANCIAL AID

WEB ADDRESS: http://access.mcmaster.ca
E-MAIL ADDRESS: awards@mcmaster.ca

Coordinator
Denise Ellis

For information on any of the programmes which follow contact:
Student Financial Aid and Scholarships Office
Hamilton Hall, Room 404
McMaster University
Hamilton, Ontario, L8S 4K1
Telephone: (905) 525-9140, ext. 24319

ONTARIO STUDENT ASSISTANCE PROGRAMME

Financial aid to help students meet the costs of post-secondary education is available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP) which consists of four plans:

- Canada Student Loans Plan
- Ontario Student Loans Plan
- Ontario Special Bursary Plan
- Ontario Work-Study Plan

To be eligible for assistance under each plan, a student must be a Canadian citizen or permanent resident, determined by a need-testing programme.

It is strongly recommended that students complete their applications as soon as possible. Applications are processed by early December, and students will receive disbursement information by late January. Awards are available to cover a student's costs for tuition, books, and textbooks up to the amount of estimated need. The student must have graduated from a secondary school in the Regional Municipality of Hamilton-Wentworth and have completed high school with a minimum of 86 credits.

Canada Student Loans Plan

This is a federal government plan, administered by the Canada Student Loans Plan. It provides loans to needy students attending full-time study. Loans are available to full-time students in any post-secondary institutions anywhere in the world. The program provides Canada Student Loans for needy full-time students. The student must have graduated from a secondary school in the Regional Municipality of Hamilton-Wentworth and have completed high school with a minimum of 86 credits.

Ontario Student Loans Plan

This plan provides loans to full-time students whose financial needs are not fully covered by the Canada Student Loans Plan. This plan also helps part-time students or students enrolled in programmes not eligible for the Canada Student Loans Plan.

Ontario Special Bursary Plan

This plan helps exceptionally needy students who are unable to attend school full-time but need post-secondary training to improve their job prospects. Bursaries are available to such part-time students enrolled at recognized post-secondary institutions in Ontario only.

Work-Study Programme

The Work-Study Programme complements the original plans in the OSAP package. It offers part-time jobs to needy students during the school year to help them meet exceptional costs, often unexpected, not recognized under OSAP. It also helps students who lack the resources expected under OSAP criteria, whose assessed need under OSAP is not met because of loan maximums or who do not wish to borrow further due to high debt load.

Costs of this plan are share by the provincial government and a local sponsoring agency which must be a non-profit organization, such as the University.

BURSARIES

Most bursaries are awarded by the University Bursary Selection Committee on the basis of a general bursary application. Application forms are available from the Student Financial Aid and Scholarships Office, Hamilton Hall, Room 404, from November 1 to the last Friday in November of each academic year. Bursary awards are disbursed in January. Any person who is registered and in good standing as a student of McMaster University is eligible to apply.

THE AINSWORTH BURSARIES

Established in 1996. To be granted to undergraduate students in any programme who demonstrate financial need. Preference to be given to female students. (09578 402)

THE GARY ALLEN MEMORIAL BURSARY

Established in 1987 by friends and family of the late Gary Allen ('84) and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative, to assist a Commerce student in Year III or IV whose major area of study is accounting and who demonstrates financial need. Preference will be given to a mature student. (90501 234)

TOM ANDERSON MEMORIAL BURSARY

Established in 1988, a bursary to be awarded to a student attending his or her first year at McMaster in Business I who demonstrates financial need. The student must have graduated from a secondary school in the Regional Municipality of Hamilton-Wentworth or the City of Burlington. (90502 281)

THE BEALE-LINCOLN-HALL EXCHANGE PROGRAMME

Established in 1996 by Arnold A. Beale in memory of his parents, F. Arnold Beale and Margaret S. Beale. To be granted to students in any of the Beale-Lincoln-Hall exchange programmes. Preference will be given to students who have demonstrated financial need. (90569 392)

THE BARTEK BURSARIES

Established in 1996 by Bartek Ingredients Inc. of Stoney Creek in support of McMaster students. A variable number of bursaries to be granted to students enrolled in the Faculty of Engineering who demonstrate financial need. Preference to be given to students currently on the Dean's Honour List. (90672)

THE BEALE-LINCOLN-HALL EXCHANGE PROGRAMME BURSARIES

Established in 1996 by Arnold A. Beale in memory of his parents, F. Arnold Beale and Margaret S. Beale. This bursary is intended for students in any of the Beale-Lincoln-Hall exchange programmes. Preference will be given to students who have demonstrated financial need. (90677)

THE BECHTEL CANADA ENGINEERING BURSARY

Established in 1996 by Betchel Canada. A variable number of awards to assist students demonstrating financial need who graduated from a Secondary School in Canada, are currently enrolled in a programme in Engineering and who have completed Engineering I. (90573)
THE BETZNER FAMILY MEMORIAL BURSARY
Established in 1996 by the Betzner Family of Dundas, Ontario. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90580 404)

THE J.P. BICKELL BURSARIES
The J.P. Bickell Foundation provides a sum of money to assist students specializing in Geology. Recommendations are made by the Department of Geology. (90565 285)

THE SINDNEY L. BLUM BURSARY
Established in 1989 by friends and associates in memory of Sidney L. Blum. To be granted on the recommendation of the Director of the School of Social Work to any student in good standing in Levels III or IV of the Bachelor of Arts/Social Work programme or Level II of the Bachelor of Social Work programme. (90506 286)

THE BOWES FAMILY BURSARY
Established in 1996 by Eleanor and Terrence Aurini of Cambridge. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. Preference to be given to female students. (90581 405)

THE AL BRUNO BURSARIES
Established in 1996 by past and present student-athletes and friends of the McMaster Interuniversity Men's Football Programme in honour of Al Bruno, Marauder Football Coach from 1994-1996 and former coach of the Hamilton Tiger Cats. A variable number of bursaries to be granted to students who demonstrate financial need and leadership and respect for the principles of fair play through involvement in the McMaster Men's Intervarsity Football Programme. (90582 406)

THE JODIE ANNE BULL MEMORIAL BURSARIES
Established in 1996 by her family in memory of Jodie Anne Bull. A variable number of bursaries to be granted to students enrolled in the Faculty of Social Sciences who demonstrate financial need. At least one bursary to be granted to a student enrolled in Labour Studies. (90573)

BURSARIES FOR IN-COURSE VISA STUDENTS
Established in 1982 by the University to assist visa students in any programme. (90547)

THE MARIE IRELAND BUSH MEMORIAL BURSARY
Established in 1996 by Helen Ireland Caldwell in memory of Marie Ireland Bush, Class of '48 and dedicated teacher, who instilled in her students a love of learning. A variable number of bursaries to be granted to students enrolled in a programme in English who demonstrate financial need. (90583 407)

THE BUSINESS MANAGEMENT SERVICES BURSARY
Established in 1996 by staff of McMaster's Business Management Services who through their leadership, guidance and support, enable the University community to deploy its financial resources to the greatest advantage. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90584 408)

THE CANADA TRUST BURSARY
Established in 1996 by Canada Trust. In support of its belief that students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in the Environmental Science, Programme, the Environmental Studies Programme or the Engineering and Society Programme. (90667)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN'S (BURLINGTON) BURSARY
Established in 1988, a bursary to be granted to a mature female student who demonstrates financial need, and who is a resident of Hamilton-Wentworth or Halton Region, preferably from the Burlington area. (90545 223)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN'S (HAMILTON) BURSARY
Established in 1990 by the University Women's Club of Hamilton. To be granted to female students in any programme who demonstrate financial need. (90546)

THE NORMAN NATHANIEL CASKEY BURSARIES
Established in 1996 by June Caskey of Hamilton in memory of her father. A variable number of bursaries to be granted to students enrolled in a programme in Music who demonstrate financial need. (90585 406)

THE ANNE AND HAROLD CHALK MEMORIAL BURSARIES
Established by bequest of Anne Maria Luise Chalk and Harold Henry Chalk of Ottawa. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90566 410)

THE CHAWKERS FOUNDATION BURSARIES
Established in 1996 by The Chawkers Foundation, Ottawa, Ontario. To provide assistance to students who demonstrate financial need. Value: $1,800 (90587 411)

THE CITY OF HAMILTON BURSARIES
Established in 1959 by the City of Hamilton to commemorate the visit of Her Majesty Queen Elizabeth II and His Royal Highness Prince Philip to Hamilton in July 1959. To assist Hamilton students who demonstrate financial need. (90515)

THE DAVID CLARK BURSARIES
Established in 1996 by David I. Clark and Marilyn D. Eustace. A variable number of bursaries to be granted to students enrolled in a programme in Commerce who demonstrate financial need. Preference to be given to students demonstrating interest in Asian Studies. (90588 412)

THE CLASS OF '35 BURSARIES
Established by the Year '35 in honour of their 50th class reunion and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative. To be awarded to a student in good academic standing who is a Canadian citizen or permanent resident. (90507 180)

THE CLASS OF '46 BURSARIES
Established by the Year '46 in honour of their 40th class reunion. To be granted to a student in a programme in Gerontology. (90564 337)

THE CLASS OF '46 GOLDEN ANNIVERSARY BURSARIES
Established by the Year '46 in honour of their fiftieth reunion on June 1, 1996. A variable number of bursaries to be granted to students enrolled in any programme at McMaster who demonstrate financial need and are in good academic standing. (90589 413)

THE CLASS OF '47 GOLDEN ANNIVERSARY BURSARIES
Established by the Class of '47 in honour of their 50th Anniversary Reunion. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90590 414)

THE CLASS OF '49 GOLDEN ANNIVERSARY BURSARIES
Established by the Class of '49 in honour of their 50th Anniversary Reunion in 1999. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90591 415)

THE DORIS PARTRIDGE COLE BURSARY
Established in 1981, this bursary is to be granted to a worthy student in memory of Doris Partridge Cole ('45). (90568 002)

THE CONNOR, CLARK & LUNN BURSARY
Established in 1996 by Connor, Clark & Lunn in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a McMaster student in any programme who demonstrates financial need. (90666)

THE ARCHIBALD R. CROZIER BURSARIES
Established in 1992 in memory of Archibald (Archie) Crozier ('35), former professional football player and Chair of the Ontario Energy Board for 17 years. To be granted to a student who has demonstrated financial need and a sense of social awareness and shown interest in, and concern for, others. It is hoped that recipients, after graduation, will reimburse the fund to the extent of their award so that increasing numbers of students may be assisted. (90565 338)

THE AUBREY DALGLEISH BURSARY
Established in 1995. To be granted to a student in any programme who demonstrate financial need with special preference given to handicapped students and/or students in the Faculty of Business. (90509)

THE THOMAS DAILY BURSARY
Established in 1996 by family, friends and colleagues of Thomas Daly. A variable number of bursaries to be granted to students in any undergraduate programme who demonstrate financial need. (90592 415)

THE DAUGHTERS OF THE EMPIRE CLUB, HAMILTON LTD. BURSARIES
Established in 1996 in honour of The Daughters of the Empire Club, Hamilton, Limited (1911-1996) in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in financial need. Preference to be given to students enrolled in the Faculty of Humanities. (90593 417)

THE GORDON H. DEAN BURSARIES
Established in 1996 by Gordon H. Dean of Stoney Creek. Two or more bursaries to be granted based upon financial need: a) one to a student enrolled in Level III of a programme in Arts & Science and b) one to a student enrolled in Level III of a programme in the Faculty of Humanities. Preference to be given to students currently on the Dean's Honour List. (90594 416)
THE BEN F. DESROCHES BURSARY
Established in 1996 as a tribute to Ben F. DesRoches, Stelco employee from 1949 to 1966 and elected Municipal Councillor for Saffleit and Stoney Creek from 1969 to 1978, in recognition of his outstanding contributions to labour and to men and women in the greater Hamilton area. A variable number of bursaries to be granted to students enrolled in a programme in Labour Studies who demonstrate financial need. The value of this award shall be not less than $300. (90595 419)

THE DETENBECK FAMILY BURSARIES
Established in 1996 by family members Patricia Detenbeck and William Detenbeck in honour of the Detenbeck Family. A variable number of bursaries to be granted based upon demonstrated financial need in each of the following areas:

a) Detenbeck Family Bursaries for students enrolled in any programme. (90596 420)

b) Detenbeck Family Bursaries for students who demonstrate that they are residents of an Aboriginal community in Ontario. (90597 421)

PATRICIA ANNE DICIOCCO MEMORIAL BURSARY
Established in 1988 this bursary is to be granted to a student or students enrolled in a programme which includes Gerontology as a major, who is a Canadian citizen or permanent resident and who exhibits financial need. (90510 204)

THE DOFASCO INC. BURSARIES
Established in 1996 by Hamilton-based Dofasco Inc., one of Canada's and North America's leading steelmakers in support of students pursuing their post-secondary studies at McMaster. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90598 422)

THE DUNDAS BURSARIES
Established in 1996 from funds donated anonymously. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90599 423)

THE MICHAEL EARL MEMORIAL BURSARY
Established in 1991 by family and friends of Michael Earl. To be granted to a student enrolled in a programme in Psychology who demonstrates financial need. (90563)

THE EDITH E. FERRIE BURSARIES
Established in 1965 by the late Edith E. Ferrie. To be granted to students in any programme who demonstrate financial need. (90511 289)

THE EVANS, PHILIP BURSARY
Established in 1996 by the partners of Evans, Philip in support of McMaster students. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90671)

THE JOHN C. FORSTER BURSARIES
Established by bequest of John Clifton Henry Forster of Windsor, Ontario. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90600)

THE EMMA FOX BURSARIES
Established in 1961 by the Wallingford Hall Committee of which Emma Fox was treasurer from 1915 to 1956. To assist female students in any programme. (90512)

THE BILL FULLER BURSARY
Established in 1996 in commemoration of the 50th anniversary of the historic 1946 Stelco strike by William E. (Bill) Fuller, recognized by the City of Hamilton for his volunteer work which included serving as Vice-President of Labour Community Services of the United Way for six years, member of The Hamilton Foundation Board from 1991-94, Chairman of the Finance Committee of the Holy Family Church and Hamilton's Citizen of the Year in 1991. A variable number of bursaries to be granted to students enrolled in a programme in Labour Studies who demonstrate financial need. The value of this award shall be not less than $300. (90601)

LES AMIS DU DEPARTMENT DE FRANCAIS BOURSE
Established in 1995 by the Friends of the Department of French. To be granted to a student enrolled in a programme in French who demonstrates financial need. Preference will be given to students from the Regional Municipality of Hamilton-Wentworth. (90574)

THE GRAND & TOY BURSARIES
Established in 1996 by Grand & Toy in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90602)

THE JAMES EDWARD GRADER MEMORIAL BURSARY
Established in 1964 by his sister. To be granted to a student specializing in Geology. Application should be made to the Department of Geology. (90513)

THE JAMES R. (JAMIE) GREILICH MEMORIAL BURSARY
Established in 1991 in memory of Jamie Greilich (’88) by the Operating Committee on the Disabled through its Awareness Week Activities. To be granted to a disabled student in any programme who demonstrates financial need. (90674)

THE HAMILTON CITIZENS' MEMORIAL BURSARIES
Established in 1947 by the Hamilton Citizens' Committee for War Services. Proceeds to be used to assist undergraduate students who are residents of the Hamilton-Wentworth Region. (90516 207)

THE HARRWOOD BURSARIES
Established in 1990 by bequest of Dr. William Harwood of Hamilton in memory of his beloved wife Grace and devoted daughter Willa Ruth Laurie (’50). A variable number of bursaries to be granted to students studying Music who demonstrate financial need. Value: Not to exceed $1,000 (90517 058)

THE M.A. (JACK) HASSAL BURSARY
Established by the Hamilton and District Chartered Accountants' Discussion Group in 1982 in memory of M.A. (Jack) Hassal. To assist a student in Commerce who is a Canadian citizen or permanent resident of Canada. It is hoped that recipients, after graduation, will reimburse the fund to the extent of their award so that the fund may assist increasing numbers of students. (90518 207)

THE HAWKRIEG FOUNDATION BURSARIES
Established in 1958 and augmented by the Hawkrigg Family in 1997 in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to outstanding students in Business or Kinesiology who demonstrate financial need. (90514)

THE JACK AND THELMA HEATH MEMORIAL BURSARIES
Established in 1985 by Norton Canada Inc. in memory of Jack and Thelma Heath, former employees of the Company, who were tragically killed in a boating accident. The fund provides up to four awards to assist students, with demonstrated financial need, in Level III or IV of the B.Sc.N. programme (basic and/or post-diploma stream). (90519)

THE MIKE AND MURIEL HEDDEN BURSARY
Established in 1996 by Muriel Heddin in memory of her husband, D.M. (Mike) Heddin, former Vice-President (Administration), who faithfully served McMaster for over 25 years. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90603)

THE KARL W. HEINZ MEMORIAL AWARD
Established in 1992 by his wife in memory of Karl Walter Heinz, remembered for his compassion and love for people. To be granted to a student in a programme in Modern Languages who is a Canadian citizen or permanent resident of Canada. Value: $500 (90557 113)

THE RUDY HEINZL BURSARY
Established in 1996 by family, friends and colleagues upon his retirement as Dean of Student Affairs in recognition of 32 years of dedicated service to students and to the McMaster University Community. To be granted to students in any programme who demonstrate financial need. (90577)

THE EDWIN W. HILBORN BURSARY
Established in 1965 by bequest of Edwin W. Hilborn. To be granted to a student in any programme. (90520)

THE MARY A. HILL BURSARY
Established in 1976 by bequest of Mary A. Hill. To be granted to a female student in any programme who demonstrates financial need. Preference to be given to one who has graduated from a secondary school in Hamilton. (90521)

THE HAZEL MAY HINKS BURSARY
Established in 1996 by bequest of Hazel May Hinks of Burlington, Ontario. A variable number of bursaries to be granted to students enrolled in a programme in Nursing who demonstrate financial need. Recipients must have graduated from a high school located in the City of Burlington. (90604)
THE JULIA HURTG BURSARY
Established by family and friends of the late Julia Hurtig in 1985. This bursary will be granted to a student entering Level II of the Faculty of Humanities, in good standing, who has made a special contribution to the McMaster community through involvement in University affairs. Preference will be given to a female student. (90522 211)

THE INTER-RESIDENCE COUNCIL BURSARY
Established in 1995 by the McMaster Inter-Residence Council in recognition of the IRC's continued support of the University and its students. One or more bursaries to assist students with disabilities who demonstrate financial need and currently reside in one of McMaster's residences or someone who has made a significant contribution to the University life of residence students with disabilities. In a year that a suitable candidate is not found, the bursary will be awarded to a student without a disability demonstrating financial need who currently resides in one of McMaster's residences. Students with disabilities must have registered with the Office for Ability and Access. (90572)

THE INGLIS BURSARY
Established in 1998 by Paul F. Inglis of Mississauga. A variable number of bursaries to be granted to students enrolled in a programme in Commerce or Engineering Management who demonstrate financial need. Preference to be given to students enrolled in Engineering Management. (90605)

THE HARISH JAIN HUMAN RIGHTS IN EMPLOYMENT BURSARY
Established in 1996 by Professor Harleen C. Jain. A variable number of bursaries to be granted to students enrolled in the Faculty of Business or the Faculty of Social Sciences who demonstrate financial need. Preference to be given to students enrolled in Level III of a programme in Commerce. (90667)

THE JOHNS FAMILY BURSARY
Established by Marlin W. Johns and family. A variable number of bursaries to be granted to students enrolled in the Arts & Science programme who demonstrate financial need. (90668 432)

THE KPMG BURSARIES
Established in 1996 by KPMG in support of its belief that students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students enrolled in the Faculty of Business who demonstrate financial need. (90606)

THE PHILLIP GORDON KETTLE BURSARY
Established in 1996 in memory of Philip Gordon Kettle. To be granted to a student enrolled in a Nursing programme who demonstrates financial need. Preference to be given to a student studying herbal medicine as alternative therapies. (90678)

THE KHAKI UNIVERSITY AND YOUNG MEN'S CHRISTIAN ASSOCIATION MEMORIAL BURSARIES
Established in 1921 by the Khaki University of Canada and the Young Men's Christian Association. To assist students in any programme, preference to be given to children of war veterans. (90523 284)

THE RAYMOND C. LABARGE MEMORIAL BURSARIES
Established in 1973 by friends and associates in memory of Raymond C. Labarge (36) of Ottawa. Four bursaries are available for senior undergraduate students. Applicants should have a record of academic performance that normally brings them into the upper second-class level or higher. They should also have demonstrated a sense of social awareness, shown interest in and concern for others and been an active participant in University or general community affairs. Students should describe their qualifications for this bursary in the covering letter. (90524 212)

THE ALBERT ABRUM LAGER BURSARIES
Established in 1995 by the Albert Abram Lager Foundation in memory of Albert Lager, former University Senator and McMaster Alumni Association Director. Two awards to be granted to students enrolled in any programme who demonstrate financial need. Preference to be given to women students who are single parents. Value: $600 (90575)

THE LAIDLAW INC. BURSARIES
Established in 1996 by Laidlaw Inc. a major provider of environment and transportation services to municipalities and industries throughout Canada and the United States, in support of students pursuing their post-secondary studies at McMaster. A variable number of bursaries to assist students in any programme who demonstrate financial need. (90608)

THE BETTY MAY LAMB MEMORIAL BURSARY
Established in 1991 by family, friends, colleagues in memory of Betty May Lamb, an employee at McMaster University for 22 years, most recently as Executive Assistant to the Faculty Association from 1988-91. To assist students in any programme who demonstrate financial need. (90555 301)

THE LANDMARK CONSULTING GROUP BURSARY
Established in 1996 by The LANDMARK Consulting Group Inc. in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90609)

THE NORMAN D. LANE BURSARY
Established in 1996 by family and friends in honour of Dr. Norman D. Lane, distinguished geometer and member of the Department of Mathematics and Statistics from 1952 to 1987 and now Professor Emeritus. A variable number of bursaries to be granted to students enrolled in a programme in Mathematics who demonstrate financial need. (90610)

THE LANG FAMILY BURSARY
Established in 1996 by H. Murray Lang of Etobicoke, Ontario in honour of his family's connection to McMaster. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90611)

THE JAMES R.A. LANGS BURSARIES IN THE ARTS
Established by family in memory of James R.A. Langs, class of '37, a Hamilton business leader and great supporter of the Hamilton Community. A variable number of bursaries to be granted to students enrolled in a programme in Art, Drama or Music who demonstrate financial need. (90612)

THE GARY LAUTENS MEMORIAL BURSARY
Established in 1996 by Mrs. Jackie Laughton, the Toronto Star, family and friends, in memory of Gary Lautens (50), columnist and editor of the Toronto Star (1962-92), the Hamilton Spectator (1950-62) and the McMaster Silhouette (1948-50), remembered as a journalist with wit and insight. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90613)

THE BERTRAM LEGGAT MEMORIAL BURSARIES
Established in 1996 by his family and friends in memory of Bertram Leggat, O.C., as a tribute to his dedication to the community, his esteem in the legal profession and his devotion to his family. A variable number of bursaries to be granted to students who demonstrate financial need. (90614)

THE SADIE LUDLOW BURSARY
Established in 1996 by family and friends of Sadie Ludlow, former McMaster employee from 1957 to 1977, and an outstanding athlete who loved sports. A variable number of bursaries to be granted to students who have demonstrated financial need and involvement in either McMaster Intervarsity football or Intervarsity Women's tennis. (90615)

THE 3M CANADA INC. BURSARY
Established in 1980, two bursaries to be granted annually; one to an M.B.A. student and one to a student in Business or Science. (90525 220)

THE JOHN A. "JACK" MACDONALD BURSARY
Established in 1996 as part of the Hamilton Sesquicentennial Celebrations in honour of John A. "Jack" MacDonald for his 45 years of outstanding service and leadership to Hamilton and the region. A variable number of bursaries to be granted to students enrolled in a Political Science programme who demonstrate financial need and interest in extracurricular or community activities. (90616)

THE DIANNE MACISAAC MEMORIAL BURSARY
Established in 1994 by friends of the late Dianne MacIsaac and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to a student or students enrolled in a programme in Sociology who demonstrate financial need. Preference to be given to students with disabilities. (90571)

THE BOB MACKENZIE BURSARY
Established in 1996 by Bob MacKenzie of Hamilton. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90617)
THE MALLOCH FOUNDATION BURSARIES
Established in 1996 by the Malloch Foundation, Hamilton, in the belief that all students should be able to achieve their educational goals. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. Preference to be given to students from the Hamilton area. (90618)

THE ENRICO HENRY MANCINELLI BURSARY
Established in 1996 by the Labourers' International Union of North America, Local 837 in honour of Enrico Henry Mancinelli, LIUNA Canadian Director and President and Local 837 President. Two bursaries to be granted to students enrolled in a programme in Labour Studies who demonstrate financial need. Preference to be given to students attaining a Sessional Average of at least 7.0 at the most recent review. (90619)

THE DR. ALBERT MARTIN BURSARY
Established in 1996 by Joyce Beverly Krugel; a former student of Dr. Albert Martin who was a Professor of German in the Faculty of Arts and Science from 1939 to 1961. A variable number of bursaries to be granted to students enrolled in a programme in Modern Languages who demonstrate financial need. Preference to be given to female students. (90620)

THE RONALD E. MATERICK BURSARY
Established in 1996 by Ronald E. Materick, Class of '70. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. Preference to be given to a student enrolled in Civil Engineering. (90655)

THE LINDA MATTHEWS BURSARIES
Established in 1996 by Linda Matthews; Class of '69. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. Preference to be given to female students. (90664)

THE JOHN AND HELEN MAXWELL BURSARIES
Established in 1996 by John and Helen Maxwell of Ottawa. A variable number of bursaries to be granted to students enrolled in the Faculty of Science who demonstrate financial need. Preference to be given to students enrolled in a programme in Geology or Chemistry. (90521)

THE ANDREW MCFARLANE BURSARIES
Established in 1988 by bequest of Andrew McFarlane of Hamilton. To be granted to a student or students who are in good standing and have demonstrated financial need. (90626)

THE R. CRAIG MCIVOR BURSARY
Established in 1996 as a tribute to Professor R. Craig McIvor by his family, friends, colleagues and students. A variable number of bursaries to be granted to students enrolled in an Honours programme in Economics who demonstrate financial need. Preference to be given to students in Level II. (90622)

THE JANET MCKNIGHT MEMORIAL BURSARY
Established in 1986 in memory of Janet McKnight by the Pember Family. A variable number of bursaries to be granted to students enrolled in the final level of the Nursing programme who demonstrate financial need. (90623)

THE MCMASTER 1980 BURSARIES
Established in 1980 by the University to assist undergraduate students in any programme. (90527)

THE MCMAS TER 1996 BURSARIES
Established in 1996 by the University to assist undergraduate students in any programme who demonstrate financial need. (90624)

THE MCMAS TER ALUMNIAE CENTENNIAL BURSARIES
Established in 1989 by the McMaster Women's Alumni, Hamilton Branch, to be granted to a mature student in his or her graduating year, who is a Canadian citizen or permanent resident and who exhibits financial need. Preference will be given to a single parent. (90528 214)

THE MCMAS TER ASSOCIATION OF PART-TIME STUDENTS BURSARIES
Established in 1988 in celebration of McMaster's Centennial celebration to assist students currently enrolled in a degree or certificate programme who, without such assistance, would be unable to continue their studies. Consideration may also be given to students who would not otherwise enrol without such assistance. Applications will be reviewed by the MAPS Centennial Bursary Selection Committee. (90529 290)

THE MCMAS TER ATHLETICS BURSARIES
Established by past and present student-athletes and friends of Interuniversity Athletics. To assist students enrolled in any programme who demonstrate financial need and involvement in McMaster Interuniversity Athletics. (90625)

THE MCMAS TER MBA ALUMNI ASSOCIATION BURSARY
Established in 1996 by the McMaster MBA Alumni Association. A variable number of bursaries to be granted to students enrolled in the first year of the Michael G. DeGroote School of Business MBA programme who demonstrate financial need. (90626)

THE MCMAS TER SAVINGS AND CREDIT UNION LTD. BURSARIES
Established in 1993 by the McMaster Credit Union Limited. To assist students in any programme. Preference to be given to students who are members of the McMaster Savings and Credit Union or, in the absence of such members, children of employees of McMaster University or Checkers-McMaster Hospitals. (90561 334)

THE MCMAS TER STUDENT OPPORTUNITY FUND BURSARIES
Established in 1996 by McMaster University from general donations to the University bursary programme and matching funding provided through the Ontario Student Opportunity Trust Fund initiative. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90627)

THE MCMAS TER STUDENTS' UNION BURSARIES
Established in 1982 by the McMaster Students' Union. To assist those undergraduate MSU members who demonstrate financial need. (90530 292)

THE MCMAS TER WOMEN'S CLUB BURSARY
Established in 1983 by the McMaster Women's Club and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative to assist a student beyond Level I in the University's B.Sc.N. programme. (90531 291)

THE A.J. MELLONI MEMORIAL FUND
To be granted to a student in any programme. (90532)

THE MINICH FAMILY BURSARIES
Established in 1996 by E. A. Minich and family. A variable number of bursaries to be granted to students enrolled in Business I who demonstrate financial need. Preference to be given to students who demonstrate a lively interest in the university and community through their involvement in extracurricular activities. (90628)

THE JAMES C. MOORE MEMORIAL BURSARY
Established in 1989 by family and friends in memory of James C. Moore. To be granted to a student in Humanities or Social Sciences who demonstrates financial need and involvement in student government. (90568 399)

THE CHARLENE MORIARTY BURSARY
Established in 1996 by bequest of Dr. Alfred Valmore. A variable number of bursaries to be granted to students enrolled in the Faculty of Engineering who demonstrate financial need with preference to be given to students enrolled in the Engineering and Physics programme. (90530 292)

THE MOUNT HAMILTON ROTARY CLUB BURSARY
Established in 1997, this bursary is to be granted to a student or students who demonstrate financial need. (90533 217)

THE JOHN DOUGLAS MOYER BURSARY
Established in 1986 by bequest of John Douglas Moyer to assist needy students. (90534)

THE O'SHAUGHNESSY BURSARY
Established in 1986 by the family and friends of the late Margaret O'Shaughnessy, RN, to be used to alleviate financial need for students pursuing an education in Nursing (basic or post-diploma stream) in Level II, III, or IV. (90535 218)

THE ALFRED U. OAKIE BURSARIES
Established in 1996 by Dr. Alfred U. Oakie. A variable number of bursaries to be granted to students enrolled in Business I who demonstrate financial need. (90531)

THE OTIS CANADA BURSARIES IN ENGINEERING AND MANAGEMENT
Established in 1996 by OTIS Canada Inc., the world's largest elevator company with over 50,000 employees and more than 1,700 worldwide locations. A variable number of bursaries to be granted to students enrolled in Level II of a programme in Engineering and Management who demonstrate financial need. Preference to be given to students who demonstrate a lively interest in the university and community through their involvement in extracurricular activities. (90632)
THE MARION PEARCE BURSARIES
Established in 1990 by Dr. Sally Palmer in memory of her aunt Marion Pearce (20). Miss Pearce worked with New Canadians at the Beverly Street Baptist Church in Toronto. A variable number of bursaries to be granted to students enrolled in the Social Work programme who have demonstrated financial need. (90536 228)

THE PETRO-CANADA BURSARIES
Established in 1996 by Petro-Canada, the largest Canadian-owned oil and gas company and one of the country's leading refiners and marketers of petroleum products, in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90534)

THE PEVENING BURSARY
Established in 1996 by David Hanningford, class of '64. A variable number of bursaries to be granted to students enrolled in the penultimate year of an Honours programme in Economics who demonstrate financial need. (90576)

THE ROBERT AND RUTH PHILIP STUDENT BURSARY
Established in 1996 by Robert and Ruth Philip of Hamilton, Ontario. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90574)

THE MARC ANDRE ADRIEN PINEAULT BURSARY
Established in 1995 by family and friends in memory of Marc Pineault and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in a programme in Engineering who has demonstrated financial need and involvement in University activities including the McMaster Choir, varsity wrestling, karate club and issues related to the environment and social justice. (90567)

THE GEORGE PLUMB MEMORIAL BURSARY
Established in 1996 by David Plumb in memory of his father George Plumb. To be granted to a student enrolled in a programme in Gerontology who demonstrates financial need. Preference to be given to a mature student. (90568)

THE LES PRINCE BURSARIES
Established in 1996 in memory of Leslie A. Prince, dedicated teacher, coach and administrator at McMaster University remembered for his outstanding leadership and service in Athletics and Recreation, Student Life as well as the community-at-large. To assist student-athletes who demonstrate financial need. Preference to be given to students who demonstrate qualities of leadership and service to community through programmes such as "athletes helping athletes". (90569)

THE PROCTOR BURSARIES
Established in 1997 by Procor Ltd. in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in Engineering or Commerce who demonstrate financial need and undertake service to McMaster University and the community-at-large. (90660)

THE PROFESSIONAL ENGINEERS' WIVES ASSOCIATION BURSARY
Originally established in 1983 by the Professional Engineers' Wives Association to be granted to a female Engineering undergraduate student who demonstrates financial need and, because of extenuating circumstances, would be unable to continue her studies without such assistance. (90557 084)

THE GORD RAYMOND BURSARIES
Established in 1996 by the McMaster Association of Part-time Students and other friends and colleagues in honour of Gord Raymond in recognition of his 27 years of service to McMaster University including 15 years as Coordinator of Part-time Studies. A variable number of bursaries to assist part-time students enrolled in any programme who demonstrate financial need. (90651)

THE RICOH CANADA INC. BURSARY FUND
Established in 1996 by Ricoh Canada Inc. in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90650)

THE JAMES AND ELIZABETH ROBERTS BURSARIES
Established in 1957 by R.H. Roberts in memory of his parents to assist any male student of good academic standing. (90553)

THE RICHARD AND ROBERT RAY BURSARIES
Established in 1996 by Richard and Robert Ray of Toronto, Ontario. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90550)

THE ROBERTSON-YATES CORPORATION BURSARIES
Established in 1996 by the Robertson-Yates Corporation of Hamilton in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in a programme in Business or Engineering who demonstrate financial need. (90540)

THE MARY ROMEO BURSARIES IN ART HISTORY
Established in 1997 by Mary Romeo, a lifelong patron of the arts. To be granted to undergraduate and graduate students who have demonstrated financial need and are enrolled in a programme in Art History. (90668)

THE HELEN SANSONE BURSARY
Established in 1996 by bequest of Helen Sansone of Hamilton, Ontario. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90641)

THE WILLIAM F. SCANDLAN BURSARY
Established in 1996 by Terry Seawright, Lecturer in the Faculty of Business. To be granted to a student in the Commerce Programme who demonstrates financial need. Preference to be given to the student who has completed COMMERC: 2MA3 and attained a grade of at least B. (90643)

THE MYKOLA SEMENIUK BURSARIES
Established in 1991 by bequest of Mykola Semeniuksi to assist students who demonstrate financial need and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative. (90551 095)

THE SERTOMA CLUB BURSARY
Established in 1989 by the Sertoma Club of Hamilton. To be granted to a hearing disabled student in any programme who demonstrates financial need. In a year that a suitable candidate is not found, the bursary will be granted to a student with another disability provided they demonstrate financial need. Students must have registered with the Office for Ability and Access. (90540 021)

THE SAM SMURLOCK BURSARY
Established in 1979 by the Smurlock family in memory of Sam Smurlock (35). To be granted to a student in any programme who demonstrates financial need. (90641)

THE SMYRNIW BURSARY
Established in 1996 by Dr. and Mrs. W. Smyrniw. To be granted to students who are Canadian citizens or permanent residents who demonstrate financial need and are in good academic standing in any undergraduate programme of the Faculty of Humanities above Level I. (90661)

THE SOCIAL SCIENCES SOCIETY BURSARIES
Established in 1990 by the Social Sciences Society in recognition of the outstanding efforts of Dr. Peter George in establishing the Social Sciences Society. A variable number of bursaries to be granted to full-time students enrolled in the Faculty of Social Sciences who demonstrate financial need. (90542 029)

THE LILLIAN R. STEGNE MEMORIAL BURSARIES
Established in 1990 in memory of Lillian Rose Stegne (92) by family, friends and colleagues. Two or three bursaries to be granted to handicapped students in any programme who demonstrate financial need. (90643 013)

THE STELCO GROUP OF BUSINESSES BURSARY
Established in 1996 by Stelco - a market-driven, technologically advanced group of businesses committed to maintaining leadership roles as steel producers and fabricators-in support of students who, without financial aid, would be unable to pursue their educational goals. To be granted to students in any undergraduate programme who demonstrate financial need. (90644)
THE SUNCOR INC. 1988 BURSARIES
Established in 1988, this bursary is granted to a student who is a member of the federally designated groups for employment equity (women, native students, handicapped and the visible minorities) who is registered in a Chemical, Mechanical, Manufacturing or Materials Engineering program to a student (90645).

THE DONALD W. THOMAS BURSARY
Established in 1998 by Donald W. Thomas of Dundas, Ontario. A variable number of bursaries to be granted to students in the Faculty of Humanities who demonstrate financial need. (90645)

THE DR. JOHN THOMAS MEMORIAL BURSARY
Established in 1996 in memory of Dr. John Thomas by family, friends and colleagues. This bursary fund will be used to assist undergraduate and graduate students who are enrolled in a program in Philosophy and demonstrate financial need. Preference to be given to students showing promise in the field of applied ethics. (90675)

THE BROOKE F. TOWNSEND BURSARY
Established in 1996 by Brooke F. Townsend. To be granted to a student in any program who has demonstrated financial need. Preference to be given to a female student enrolled in the Faculty of Science. (90670)

THE TRADEPORT INTERNATIONAL CORPORATION BURSARIES
Established in 1997 by TradePort International. To be granted to students who have demonstrated financial need and are enrolled in a program in Engineering, Geography, Business or Economics and have demonstrated an interest in a career in transportation. Preference to be given to a student who elects to undertake a fourth year thesis on a topic related to the study of transportation. (90646)

THE TRESSILLA TRUBY MEMORIAL BURSARY
Established in 1992 from the bequest of Tressilla Truby (M.C.S.P.) and Past-President of the Zonta Club of Hamilton II. To be granted to a female student who has completed Level II of a program in Music. (90556 200)

THE TURSKSTRA LUMBER COMPANY LTD. BURSARY
Established in 1996 by the Turskstra Lumber Company Limited. A variable number of bursaries to be granted to students enrolled in either the Faculty of Engineering or the Faculty of Humanities who demonstrate financial need. Preference to be given to students attending a Sessional Average of at least 7.0 at the most recent review. (90647)

THE EDITH H. TURNER FOUNDATION BURSARIES
Established in 1986 by The Edith H. Turner Foundation in support of students pursuing their post-secondary studies at McMaster. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90648)

THE VALLEY CITY BURSARY
Established in 1996 by Valley City in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a student in any program who demonstrates financial need. (90662)

THE CATHERINE VASSAS-BROWN BURSARY
Established in 1996 by J. Allan Brown in honour of Catherine Vassas-Brown. A variable number of bursaries to be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. (90649)

THE SYLVIA AND BRIAN WALKER BURSARIES
Established in 1996 by Sylvia (Hunt) and Brian Walker. Two bursaries to be granted to students demonstrating financial need: a) one to a student enrolled in Humanities I and; b) one to a student enrolled in Nursing 1. Preference to be given to students who have demonstrated leadership and involvement in university and community activities. (90650)

THE WALLINGFORD HALL BURSARIES
Established through anonymous donations to assist students in any program who demonstrate financial need. (90648)

THE G.S. WARK LTD. BURSARY
Established in 1998 by G.S. Wark Ltd. General Contractors in support of its belief that all students should have the opportunity to pursue their educational goals. To be awarded to a student in any program who demonstrates financial need. (90663)

THE G.S. (SANDY) WATT MEMORIAL BURSARY
Established in 1993 by Zetlon Inc. of Burlington in memory of G.S. (Sandy) Watt. To be granted to a student in financial need enrolled in the Commerce program who is a Canadian citizen or permanent resident. Value: $500 (90562 335)

THE CLIFFORD JOHNSTON WEBSTER MEMORIAL BURSARIES
Established in 1993 by Viola Webster in memory of her brother Clifford Johnston Webster (‘41). To assist students who demonstrate financial need enrolled in the Honours English program who are Canadian citizens or permanent residents and who have graduated from a public secondary school in Ontario. Applicants should have a record of academic performance that has normally been at the upper second-class level or higher. If sufficient applicants are not eligible in the Honours English program, the bursaries are available, under similar conditions, to students in the Honours French programme. (90559 336)

THE LLOYD WERDEN MEMORIAL BURSARIES
Established in 1996 by bequest of Lloyd Werden of “Bonavista” in the Township of Louth in the County of Lincoln, former Physician. To be granted to enrolled students in any programme who demonstrate financial need. (90651)

THE WESTINGHOUSE CANADA INC. BURSARIES
Established in 1996 by Westinghouse Canada Inc. in support of students who, without financial support, would be unable to pursue their educational goals. A variable number of bursaries to be granted to students in a program in the Faculty of Business and the Faculty of Engineering who demonstrate financial need. (90652)

THE YATES BURSARIES
Established in 1963 by bequest of William Henry Yates of Hamilton. To assist students in any programme. (90648)

THE ZONTA CLUB OF HAMILTON I BURSARIES
Established in 1968 by the Zonta Club of Hamilton I to financially assist female students. Two bursaries to be granted to students in good academic standing: a) one to a student specializing in Commerce; and b) one to a student specializing in Gerontology. (90550 087)

SUPPLEMENTARY BURSARY AID FOR AWARD RECIPIENTS
The University wishes to acknowledge the generosity of several long-standing donors to McMaster’s Undergraduate Scholarships Programme and new donors to McMaster Community Contribution Awards Programme who, in response to the Student Opportunity Trust Fund Initiative of the Ontario Government, made donations in 1996-97 for the purpose of assisting a specific scholarship or award recipient who demonstrates financial need. To qualify for additional bursary support, scholarship and award recipients are required to demonstrate financial need in accordance with that required of applicants to the regular McMaster Bursary Programme:
- The Rudolf de Buda Scholarship (80003)
- The Dundas Scholarships (80022)
- The Inter-Residence Council Scholarship (80023)
- The Ivey Scholarship (80006)
- The A.I. Johnson Scholarship (80007)
- The Gary Lautens Memorial Scholarship (80005)
- The KPMG Scholarship (80010)
- The Gerald and Verna Simpson Scholarship (80013)
- The Graham Ronald Toop Scholarship (80024)
- The Thomas Truman Prize (80017)
- The Olga Tynowski Scholarship (80018)
- The Gladys A. Young Scholarship (80021)

EXCHANGE PROGRAMME BURSARIES
Bursary support may be available to students participating in McMaster approved exchange programmes. To be considered for this bursary support students must complete all application requirements for the exchange programme and, by March 31, 1997, submit a bursary application to the Office of Student Financial Aid and Scholarships, Hamilton Hall, Room 404. Final decisions regarding potential bursary support will be available on June 19, 1997 and are contingent upon acceptance to participate in an exchange.

For further information about exchange programmes, please refer to International Study in the General Academic Regulations section and Student Exchanges in the Academic Facilities, Student Services and Organizations section of this Calendar.
THE JAMES R.A. LANGS STUDENT EXCHANGE PROGRAMME BURSARIES
Established in 1996 by family in memory of James R.A. Langs, class of '37, a Hamilton business leader and great supporter of the Hamilton Community. A variable number of bursaries to be granted to students enrolled in a programme in Humanities who demonstrate financial need and who are participating in a formal McMaster Exchange Programme. (90655)

THE JAMES MASON YOUNG BURSARY
Established in 1996 by James Mason Young in honour of his family's longstanding association with McMaster University. A variable number of bursaries to be granted to students enrolled in the Faculty of Business who demonstrate financial need. Preference to be given to students participating in a formal McMaster Exchange Programme. (90653)

MCMASTER WORK STUDY PROGRAMMES
McMaster Work Study Programmes offer part-time jobs to students demonstrating financial need during the school year to help them meet costs not recognized under regular federal and provincial and/or state financial aid Programmes. In particular, Programmes are intended to assist students who lack resources relative to their assessed financial need and those who do not wish to borrow further due to a high debt load.

To apply for the McMaster Work Study Programmes identified below, students should obtain a Student Employment Application from the Office of Student Financial Aid & Scholarships.

THE HAMLIN FAMILY FOUNDATION WORK-STUDY PROGRAMME
Established in 1996 by the Hamlin Foundation. A variable number of employment opportunities made available in disciplines related to the fields of Health Sciences and Engineering to assist students who demonstrate financial need. To be eligible for consideration, students must be approved for Work-Study through the Office of Student Financial Aid and Scholarships. (90656)

THE SALLY HORSFALL EATON WORK STUDY PROGRAMME
Established in 1996, the Centre for Studies of Children at Risk, McMaster University has a variable number of employment opportunities made available to students demonstrating financial need. These jobs will provide an opportunity for students to pursue research and/or assist with activities sponsored by the Centre. To be eligible for consideration, students must be approved for Work-Study through the Office of Student Financial Aid and Scholarships. (90657)

THE HUMANITIES COMMUNICATIONS CENTRE WORK-STUDY ENDOWMENT
Established in 1997 by Edward and Margaret Lyons, McMaster alumni of the Class of '49 and later augmented by friends of the Centre. A variable number of employment opportunities will be made available in The Edward and Margaret Lyons Humanities Communications Centre to assist students demonstrating financial need. These jobs will provide an opportunity for students to pursue research in the fields of computing and human communication. To be eligible for consideration, students must be approved for Work-Study through the Office of Student Financial Aid and Scholarships. (90658)

THE MCMASTER "MWORK" STUDY PROGRAMME
Established in 1996 by the University with the goal of creating meaningful employment opportunities for current full-time students who demonstrate financial need. (90659)

THE MCMASTER ASSOCIATION OF PART-TIME STUDENTS WORK STUDY PROGRAMME
Established in 1996 by the McMaster Association of Part-time Students and the university to provide meaningful employment opportunities for current part-time students who demonstrate financial need. (90660)

SHORT-TERM EMERGENCY LOANS
Assistance in the form of short-term loans is sometimes available to graduate or undergraduate students. Such loans cannot be given to pay tuition, bookstore, residence or other university expenses. Repayment of any loan is expected within 90 days or before the end of the academic year.

Any student interested in obtaining a short-term loan must complete an application which is available in the Student Financial Aid and Scholarships Office. Once completed, the student will meet with a representative from this office to discuss the possibility of receiving a loan.

THE A.H. ATKINSON LOAN FUND
Established in 1967 by A.H. Atkinson to assist Engineering students.

THE DEAN OF WOMEN'S EMERGENCY FUND
Established and continued by the McMaster alumni and individual benefactors to assist female students. This fund is now administered by the Director of Student Financial Aid and Scholarships.

THE ENGINEERING INSTITUTE OF CANADA (HAMILTON SECTION) LOAN FUND
Established by the Hamilton Section of the Engineering Institute of Canada to assist Engineering students.

THE HAMILTON AUTOMOBILE CLUB PAST PRESIDENTS MEMORIAL LOAN FUND
Established in 1963 by the Hamilton Automobile Club as a tribute to its deceased past presidents. To be used to assist Engineering students.

THE LOUISE HOLMES MEMORIAL LOAN FUND
Established in 1958 by her parents in memory of Louise Holmes, B.A. '48. To assist female students in any programme or as specified.

THE IDE FUND.
Through the generosity of a number of the local Chapters, Imperial Order Daughters of the Empire, funds are provided to assist female students in any programme or as specified.

a. Edith M. Griffen Loan Fund
Established in 1967 by Paardeburg Chapter, IODE, in honour of Mrs. H.S. Griffen.

b. Princess Marina Chapter, IODE, Loan Fund
Established in 1975.

c. Emma Frances Pratt Chapter, IODE, Loan Fund
Established in 1958. To assist female students in Levels III or IV of any programme.

d. Muriel Clark Riddell Loan Fund
Established in 1964 by the Right Honourable Stanley Baldwin Chapter, IODE.

e. Sovereign Chapter, IODE, Loan Fund
Established in 1960. To assist female students in the final level of any programme.

f. Margaret B. Sutterby Memorial Fund
Established in 1955 by the 67th University Battery Chapter, IODE.

g. Wentworth Chapter, IODE, Loan Fund
Established in 1953.

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS LOAN FUND
Established in 1968 by the Hamilton Section of the Institute of Electrical and Electronics Engineers. To assist students in a programme in Engineering.

THE RUSSELL E. LOVE MEMORIAL LOAN FUND
Established in 1951 by bequest through the Optimist Club of Hamilton. To assist male students in the penultimate or final level of an Arts programme.

THE MCMASTER ENGINEERING SOCIETY LOAN FUND
Established in 1971 by the McMaster Engineering Society for the provision of loans to Engineering students.

THE PI BETA PHI FRATERNITY
Established in 1958 by the local alumni of Pi Beta Phi. To assist female students in any Level IV Honours Arts or Science programme.

THE PROFESSIONAL ENGINEERS' WIVES' ASSOCIATION LOAN FUND
Established in 1972 by the Professional Engineers' Wives' Association to provide loans for Engineering students.

THE SOCIETY OF AUTOMOTIVE ENGINEERS (ONTARIO SECTION) LOAN FUND
Established in 1962 by the Ontario Section of the Society of Automotive Engineers. To assist students in a programme in Engineering.

THE IVOR WYNNE MEMORIAL LOAN FUND
Established in 1971 in memory of Ivor Wynne, Dean of Students. To assist students in any programme.

THE UNIVERSITY LOAN FUND
Small short-term emergency loans from the University funds are available to assist students in any programme.
TERMINOLOGY

An explanation of the terminology used to describe Academic Awards is provided in the sections of the Calendar described below. Please refer to the Glossary section of this Calendar for definitions of Continuing Students, Cumulative Average (CA), Level, Full-time Students, Post-degree Students, Review and Reviewing Period.

Baccalaureate Degrees are those listed in the Degrees and Programmes section of this calendar, the abbreviations of which start with the letter B, such as B.A., B.Com.

Failures are determined by reviewing period, not by session. They include failures in Extra courses.

Full Load is calculated for Undergraduate In-Course Academic Awards and is the number of units specified in the Calendar for an individual level of a programme (e.g. Honours Biology and Psychology, Level II: 33 units). If the Calendar does not specify the programme requirements by individual levels, divide the total units for all levels by the number of levels, discounting the remainder. A full load is not required to be eligible for gradcand awards.

Graduand Awards are granted to eligible students on the completion of their graduating session.

In-Course Awards are granted to eligible students, based on academic achievement in other than their graduating session.

Part-time Studies Awards are referred to under Section 2, Category C. To be eligible for these awards, students must have been registered in at least 50% of all units attempted at McMaster, while fulfilling the University's definition of a part-time student as described in the Glossary section of this Calendar.

Session, for scholarship purposes, refers to the Fall/Winter session. The Fall/Winter session is the period from September to April as defined in the Sessional Dates section of this Calendar.

Full-load Average (FA) is the weighted average computed for Undergraduate In-Course Academic Awards. It is based on the successful completion of a full load of course units, as defined by programme and level. It includes only those courses taken in the Fall/Winter session. Overload courses (courses over and above full load) and Extra courses taken during the Fall/Winter session are included in the Full-load Average.

Reviewing Period for scholarship purposes, normally refers to work completed during the Fall/Winter session. Please refer to the Glossary section of this Calendar.
THE LILLIAN AND LEROY PAGE SCHOLARSHIPS
Established in 1982 by donation of the Lillian and Leroy Page Foundation for a student from the Hamilton area entering the Faculty of Science. (20030)

NATIONAL SCHOLARSHIPS

Students applying for admission within two years of completing required subjects at any secondary school in Canada will be automatically considered for these awards. Students studying abroad must submit their academic transcripts to the Student Financial and Scholarships Office by February 28, 1997 in order to be considered for these awards.

THE ALUMNI ASSOCIATION SCHOLARSHIPS
Established in 1961 by the McMaster University Alumni Association as a memorial to former members of the McMaster faculty in recognition of their contribution to higher learning. Two scholarships to be awarded on the basis of general proficiency in the subjects required for admission to students from any province or territory of Canada.

Value: $12,000 ($3,000 per year for up to four years) (20005)

THE CHARLES MURRAY BALL ENTRANCE SCHOLARSHIPS
Established in 1993 by bequest of May Alexandra Ball in memory of her brother. A variable number of scholarships to be awarded to students entering a full-time programme of study.

Value: $3,000 (20044 331)

THE CHANCELLORS’ SCHOLARSHIPS
Up to ten scholarships awarded to students entering a full-time programme of study.

Value: $3,000

THE FORTINOS SCHOLARSHIP
Established in 1990 by John Fortino. To be awarded to an outstanding full-time student entering the School of Business.

Value: $3,000 (20034 233)

THE H.P. FRID SCHOLARSHIP
Established in 1982 by the family of H.P. Frid in her memory. To be awarded to a promising student entering a full-time programme of study.

Value: $3,000 (20020 062)

MERRILL FRANCIS GAGE ENTRANCE SCHOLARSHIP
Established in 1982 from the estate of Merrill Francis Gage of Hamilton. To be awarded to a keyboard student entering Music I, who, in the judgment of the School of Art, Drama and Music, has attained outstanding musical proficiency.

Value: $1,000 (20031)

THE GOVERNORS’ SCHOLARSHIPS
A variable number to be awarded to students entering a full-time programme of study.

Value: $12,000 ($3,000 per year for up to four years) (20077)

THE ASMAHAN HAFEZ MEMORIAL SCHOLARSHIP
Established in 1993 by her family in memory of Asmaihan Hafez. To be awarded to a student entering the Faculty of Science.

Value: $3,000 (20042 329)

THE NELLIE P. HOGG SCHOLARSHIPS
Established in 1965 by bequest of Nellie P. Hogg of Hamilton. Two scholarships to be awarded to women students entering a full-time programme of study.

Value: $12,000 ($3,000 per year for up to four years) (20014)

THE JOSEPHINE MAGEE SCHOLARSHIP
Established in 1959 by bequest of Josephine Magee of Hamilton. To be awarded on the basis of general proficiency in the subjects required for admission to students from any province or territory of Canada.

Value: $12,000 ($3,000 per year for up to four years) (20012)

THE MONNEX INSURANCE BROKERS LTD. — MCMASTER ALUMNI ASSOCIATION SCHOLARSHIP
Established in 1994 by the MONNEX Insurance Brokers Ltd. of Toronto. To be awarded to an outstanding student entering a Level I Programme of Study.

Value: $5,000 (20045 251)

THE MOUNTST JAMES COLLEGE ENTRANCE SCHOLARSHIP
Established in 1980 from funds originally subscribed by the Alumni of Moulton College during the years 1946 to 1949. To be awarded to a woman student entering a full-time programme of study.

Value: $12,000 ($3,000 per year for up to four years) (20013 117)

THE ALVIN I. OGLIVIE SCHOLARSHIPS
Established in 1984 by bequest of Alvin I. Ogilvie of Hamilton. Five scholarships to be awarded to students entering a full-time programme of study.

Value: $3,000 (20017)
THE A.G. REILLY SCHOLARSHIPS
Established in 1991 by bequest of Lois E. Reilly of Toronto. A variable number of scholarships to be awarded to students entering a full-time programme of study.
Value: $3,000 (20040 231)

THE FRANK THOROLFSON MEMORIAL SCHOLARSHIPS
Established in 1976 in memory of Professor Frank Thorolfson, first Chair of the Department of Music. One or two scholarships to be awarded to students entering Music i who, in the judgment of the School of Art, Drama and Music, have attained high scholastic achievement and musical proficiency.
Value: $750 each (20028)

THE TYNOWSKI SCHOLARSHIP
Established in 1989 by the University, friends and colleagues of Olga Tynowski, for her outstanding contributions to McMaster University.
Value: $1,200 (20032 398)

THE WALLINGFORD HALL ENTRANCE SCHOLARSHIP
Established in 1953. To be awarded to a student entering a full-time programme of study.
Value: $3,000 (20043 328)

◆ SCHOLARSHIPS OPEN TO ONTARIO STUDENTS
The following scholarships are open to any student applying for admission from an Ontario secondary school within two years of completing the required OAC subjects. The recipients of these scholarships will be determined primarily on the basis of grades submitted for early admission in the OAC work.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS SCHOLARSHIP
Established in 1961 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded to students entering the Faculty of Engineering.
Value: $1,200 (20027 232)

THE CHANCELLORS’ SCHOLARSHIPS (UNIVERSITY)
A variable number to be awarded to students entering a full-time programme of study.
Value: $3,000 (20019 2018)

THE CHANCELLORS’ SCHOLARSHIPS (SPECIFIED LEVEL I PROGRAMMES)
A variable number to be awarded to students entering a Level I Programme in the Schools of Business and Nursing, and the Faculties of Humanities and Social Sciences.
Value: $3,000 (20041)

THE HELEN M. CURREY SCHOLARSHIP
Established in 1941 by bequest of Helen Maud Currey of Durnbo, Ontario. To be awarded every four years, the 13th award was made in 1952.
Value: $12,000 ($3,000 per year for up to four years) (20006)

THE DOFASCO SCHOLARSHIP
Established in 1955 by the Dominion Foundries and Steel Company. To be awarded to a student who is a Canadian citizen or permanent resident and who is entering Engineering I.
Value: $12,000 ($3,000 per year for up to four years) (20006)

THE DUNDAS SCHOLARSHIPS
Established in 1984 from funds donated anonymously. A variable number of scholarships to be awarded to students from Dundas and surrounding area entering a full-time programme of study.
Value: $3,000 (20019)

THE JUDITH HODGINS MEMORIAL SCHOLARSHIP
Established in 1985 by her wife, Jean, in memory of Dr. John W. Hodgins in recognition of his extraordinary contributions in founding the Faculty of Engineering which he served with distinction as the first Dean. To be awarded to an outstanding student entering the Faculty of Engineering.
Value: $3,000 (20021 078)

THE AMELIA MORDEN, PAARDENBURG CHAPTER, IODE, SCHOLARSHIP
Established in 1968 by the Paardenburg Chapter, IODE. To be awarded to a student from a secondary school in Hamilton who attains good standing in OAC subjects and who has a satisfactory record with respect to character, personality and activities. Preference to be given to children of service or ex-service personnel.
Value: $200 (20032 083)

THE JURY SCHOLARSHIP
Established in 1941 by bequest of J.H. Jury of Bowmanville, Ontario. To be awarded to a student from a Bowmanville high school. Preference will be given to students entering the Faculty of Humanities or of Social Sciences.
Value: $12,000 ($3,000 per year for up to four years) (20023)

THE LLOYD MEMORIAL SCHOLARSHIP
Established in 1956 in memory of Henry Hoyes and Lizzie Lloyd by their children. OAC subjects to be included are: Physics, Chemistry, two credits of Mathematics, and either Biology or a third credit of Mathematics.
Value: $12,000 ($3,000 per year for up to four years) (20015)

THE ALBERT MATTHEWS SCHOLARSHIP
Established in 1920. OAC subjects to be included are Latin and a language other than English.
Value: $12,000 ($3,000 per year for up to four years) (20004)

THE HAROLD MATTHEWS MEMORIAL SCHOLARSHIP
Established in 1917. OAC subjects to be included are three credits of Mathematics and Physics.
Value: $12,000 ($3,000 per year for up to four years) (20010)

THE D.E. THOMSON SCHOLARSHIP
Established in 1909 and augmented in 1915. OAC subjects to be included are English and either Latin or French.
Value: $12,000 ($3,000 per year for up to four years) (20006)

THE WHEELER SCHOLARSHIP
Established in 1915. OAC subjects to be included are: History, English and a language other than English.
Value: $12,000 ($3,000 per year for up to four years) (20016)

◆ MERIT AWARDS OPEN TO ONTARIO STUDENTS
Each year, allotments of Merit Awards are established for Arts & Science I, Business I, Engineering I, Humanities I (including Music I), Natural Sciences I, Nursing I and Social Sciences I (including Kinesiology I) in proportion to full-time undergraduate students enrolled in these Level I programmes. Applications from students completing OACs in the current school year are required by March 30, 1997. Applications must include a resume, and school assessment. Details may be obtained from the Student Financial Aid and Scholarships office.

THE MURRAY BALL ENTRANCE SCHOLARSHIP IN EARTH SCIENCES
Established in 1980 by May Ball in memory of her brother Murray Ball. To be awarded to the outstanding student entering the Faculty of Science who, in the judgment of the Department of Geology, has demonstrated interest in the study of Earth Sciences.
Value: $1,000 (20037 383)

THE ROBERTA BONDAR MERIT AWARDS
Established originally as a bursary in 1992 and revised to become a scholarship in 1996 by the Zonta Club of Hamilton. To be awarded to the outstanding student entering the Faculty of Science in recognition of Canada's first female astronaut. Two awards: (a) one for a student entering Engineering I and, (b) one for a student entering Natural Sciences I.
Value: $1,000 each (20046 398)

THE DE VILLIERS - MAHAFFY MERIT AWARDS
Established in 1991 in memory of Nina De Villiers and Leslie Mahaffy of Burlington, by contributions from the local community and the employees of several area companies including Searle Canada, Boehringer Ingleheim, SmithKline Beecham, Monsanto and the Royal Bank. Two scholarships to be awarded to outstanding students graduating from a secondary school in the Halton Region; (a) one to a student entering a full-time programme of study; and (b) one to a student entering full-time study in Natural Sciences I or Music I. Preference will be given to women students.
Value: $1,000 each (20039 251)

THE A. G. REILLY SCHOLARSHIPS
Established in 1991 by bequest of Lois E. Reilly of Toronto. A variable number of scholarships to be awarded to students entering a full-time programme of study.
Value: $3,000 (20040 231)

THE FRANK THOROLFSON MEMORIAL SCHOLARSHIPS
Established in 1976 in memory of Professor Frank Thorolfson, first Chair of the Department of Music. One or two scholarships to be awarded to students entering Music i who, in the judgment of the School of Art, Drama and Music, have attained high scholastic achievement and musical proficiency.
Value: $750 each (20028)

THE TYNOWSKI SCHOLARSHIP
Established in 1989 by the University, friends and colleagues of Olga Tynowski, for her outstanding contributions to McMaster University.
Value: $1,200 (20032 398)

THE WALLINGFORD HALL ENTRANCE SCHOLARSHIP
Established in 1953. To be awarded to a student entering a full-time programme of study.
Value: $3,000 (20043 328)

◆ SCHOLARSHIPS OPEN TO ONTARIO STUDENTS
The following scholarships are open to any student applying for admission from an Ontario secondary school within two years of completing the required OAC subjects. The recipients of these scholarships will be determined primarily on the basis of grades submitted for early admission in the OAC work.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS SCHOLARSHIP
Established in 1961 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded to students entering the Faculty of Engineering.
Value: $1,200 (20027 232)

THE CHANCELLORS’ SCHOLARSHIPS (UNIVERSITY)
A variable number to be awarded to students entering a full-time programme of study.
Value: $3,000 (20019 2018)

THE CHANCELLORS’ SCHOLARSHIPS (SPECIFIED LEVEL I PROGRAMMES)
A variable number to be awarded to students entering a Level I Programme in the Schools of Business and Nursing, and the Faculties of Humanities and Social Sciences.
Value: $3,000 (20041)

THE HELEN M. CURREY SCHOLARSHIP
Established in 1941 by bequest of Helen Maud Currey of Durnbo, Ontario. To be awarded every four years, the 13th award was made in 1952.
Value: $12,000 ($3,000 per year for up to four years) (20006)

THE DOFASCO SCHOLARSHIP
Established in 1955 by the Dominion Foundries and Steel Company. To be awarded to a student who is a Canadian citizen or permanent resident and who is entering Engineering I.
Value: $12,000 ($3,000 per year for up to four years) (20006)

THE DUNDAS SCHOLARSHIPS
Established in 1984 from funds donated anonymously. A variable number of scholarships to be awarded to students from Dundas and surrounding area entering a full-time programme of study.
Value: $3,000 (20019)

THE JUDITH HODGINS MEMORIAL SCHOLARSHIP
Established in 1985 by her wife, Jean, in memory of Dr. John W. Hodgins in recognition of his extraordinary contributions in founding the Faculty of Engineering which he served with distinction as the first Dean. To be awarded to an outstanding student entering the Faculty of Engineering.
Value: $3,000 (20021 078)
THE HELEN EMMERY ENTRANCE SCHOLARSHIP
FOR ENVIRONMENTAL SCIENCE
Established in 1990 by Miss Helen Emmy of Barrie, Ontario. To be awarded to the outstanding student entering the Faculty of Science who, in the judgment of the Department of Geography, has demonstrated interest in addressing environmental matters.
Value: $1,000 (20038 365)

THE CATHERYN E. KAASE MERIT AWARD
Established in 1986 in memory of Catheryn E. Kaase ('78) by family and friends.
Value: $1,000 (20022 010)

THE RAYMOND C. LABARGE MERIT AWARDS
Value: $1,000 (20035 239)

THE MCMASTER MERIT AWARDS
Made available from time to time by authorization of the Board of Governors of the University.
Value: $1,000 (20025)

THE LESLIE A. PRINCE MERIT AWARDS
Established in 1979 in honour of Leslie A. Prince, Dean of Students, by his friends and colleagues upon the occasion of his retirement and in recognition of his outstanding contribution to the University community.
Two to be awarded.
Value: $1,000 each (20024 139)

B. Awards for Full-time, In-Course Students
(Full Load)
The following awards are based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in June or November, are provided exclusively for first baccalaureate degree students registered for a full load qualifying on the basis of work included at the May review (or deferred examinations resulting therefrom) in other than graduating session. Students choosing to graduate at the subsequent Fall convocation forfeit any awards that they have been named to receive.

2. In addition to meeting the General Conditions listed in Section 1, a student must complete, during the Fall/Winter session immediately prior to the May review, a full load of work corresponding at least to:
   a) either the minimum number of units specified in the Calendar for their level and programme;
   b) or, if the Calendar does not specify the programme work by individual levels, the average number of units per level; and
   c) a Full-load Average of 8.0 and no failures.

3. For students who complete a full load of work in the Fall/Winter session and do not earn an A-Full-load Average will be computed, which is the weighted average of the grades in all courses taken during that session. Overload courses (courses over and above a full load) and Extra courses taken during the Fall/Winter session are included in the Full-load Average. The Full-load Average will be used to determine academic standing for the awards listed below, unless otherwise stated in the terms of a particular award.

4. The Full-load Average will be used to break any tie in the competition or awards which are based on another criterion.

MEDAL
THE CHANCELLOR’S GOLD MEDAL
Established in 1938. To be awarded to the student who has completed the penultimate year of any four or five-level programme at the most recent spring review, and who ranks highest in scholarship, leadership and influence. (30022)

GENERAL SCHOLARSHIPS AND PRIZES
THE AARON PRIZE
Established in 1964 by Fannie Aaron ('44). To be awarded to the student who has completed Level I and 30-45 units of the three-level English programme and who attains the highest Cumulative Average.
Value: $25 (30004 001)

THE ACI (ONTARIO CHAPTER) SCHOLARSHIP
Established in 1992 by the American Concrete Institute (Ontario Chapter). To be awarded to a student entering Level IV of the Civil Engineering programme who, in the judgment of the Department of Civil Engineering, has demonstrated outstanding academic achievement and knowledge of concrete technology.
Value: $300 (30251 319)

THE W.K. ALLAN MEMORIAL SCHOLARSHIP
Established in 1994 in memory of William Kellock Allan ('31) by his wife. To be awarded to a student entering the final level of a programme in Mathematics or Physics who attains the highest Full-load Average.
Value: $900 (30221 365)

THE AMOCO CANADA UNDERGRADUATE SCHOLARSHIP IN GEOLOGY
Established in 1990 by Amoco Canada Petroleum Company Limited to recognize outstanding students pursuing a programme of courses related to petroleum geology. To be awarded to a student entering Level III or IV of a Geology programme who, in the judgment of the Department of Geology, has demonstrated the greatest aptitude in such relevant areas as stratigraphy, sedimentology, structural geology, exploration geophysics, paleontology and geologically oriented computer applications.
Value: $1,500 (30181 230)

THE ASM INTERNATIONAL (ONTARIO CHAPTER) SCHOLARSHIP
Established in 1971 by the local Chapter of the American Society for Metals. To be awarded to the student who has completed Level I and 30-45 units of the Honours Materials Science or Materials Engineering programme who attains the highest Full-load Average (at least 9.5).
Value: $1,000 (30003 003)

THE ASSOCIATION OF PROFESSIONAL ENGINEERS UNDERGRADUATE SCHOLARSHIPS
Established in 1961 by the Ontario Professional Engineers Foundation for Education. Four scholarships: two to be awarded to students with the highest Full-load Average after completion of Engineering I, and two to be awarded to students with the highest Full-load Average in Engineering programmes after completion of Engineering I and 35-90 units.
Value: $850 each (30006 379)

THE A.H. ATKINSON PRIZE
Established in 1980 by Atkinson Engineering Consultants Limited. To be awarded to the student in a Civil Engineering programme who achieves the highest average in CIV ENG 3G03 and 3J04, taken in one session.
Value: $200 (30001 009)

THE MURRAY BALL SCHOLARSHIPS IN GEOLOGY
Established in 1991 by May A. Ball in memory of her brother Murray Ball. Seven scholarships to be awarded to students entering a programme in Geology who, in the judgment of the Department of Geology, have attained notable standing. Ordinarily, not more than one scholarship will be awarded in any one programme.
Value: $900 each (30782 188)

THE J. DOUGLAS BANKIER MEMORIAL SCHOLARSHIP
Established in 1977 in memory of Professor J. Douglas Bankier by his family, friends and colleagues. To be awarded to the student who has completed Level I and 60-75 units of the Honours programme in the Department of Mathematics and Statistics, who attains the highest Full-load Average and who in that session achieves a grade of at least B in STATS 3D06.
Value: $300 (30076)

THE M. BANKIER BATES SCHOLARSHIP
Established in 1975 by Dr. M. Bankier Bates and augmented in 1979 in his memory by his family, friends and colleagues. To be awarded to the student who has completed Level I and 60-75 units of an Honours programme in Commerce and who attains the highest Full-load Average.
Value: $350 (30073 457)

THE SCOTT BARTLETT MEMORIAL PRIZE
Established in 1985 in memory of Scott N. Bartlett by his family and friends. To be awarded to a student who has completed Level I and 60-75 units of the Honours Commerce Programme and who, in the judgment of the Faculty of Business, has achieved high standing in COMMERCE 3F03 and 3F03, taken in one session.
Value: $100 (30134 012)

THE BEAUTY COUNSELORS OF CANADA SCHOLARSHIP
Established in 1956 by Beauty Counselors of Canada Limited. To be awarded to the student who has completed Natural Sciences I with the highest Full-load Average and who is entering Level II of the Honours Biochemistry, Honours Chemistry or Honours Biochemistry and Chemistry programmes.
Value: $300 (30008 014)
THE LOUISE E. BETTGER SCHOLARSHIPS IN MUSIC
Established in 1982 in memory of Louise E. Bettger of New Hamburg, Ontario, by her nieces and nephews. Three scholarships to be awarded to students in an Honours programme in Music who, in the judgment of the School of Art, Drama and Music, are outstanding: (a) one in the area of choral or vocal music to a student who has completed Music I or an additional 30-75 units; (b) one to a keyboard student who has completed Level I and 30-75 units; and (c) one to a student who has completed Music I and who has demonstrated overall musical excellence.
Value: $400 each (30097 015)

THE J.P. BICKELL SCHOLARSHIPS
Established in 1955 by the J.P. Bickell Foundation to encourage interest in the study of geology and metallurgy. Two scholarships to be awarded, normally one to the student entering Level II of Honours Geology, Honours Geology and Physics, Honours Chemistry and Geology or Honours Materials Science, and the other to the student entering Level II of Chemical Engineering, Materials Engineering or Metallurgical Engineering, who attain the highest average in at least nine units in chemistry and physics in Level I and a Full-load Average of at least 9.5. A scholarship is tenable for three years provided the recipient maintains a Cumulative Average of at least 10.0.
Value: $3,000 each ($1,000 each year) (30078 016)

THE BRIAN BLAKEY MEMORIAL SCHOLARSHIP
Established in 1979 in memory of Dr. Brian Blakey, Professor of French, by his friends, colleagues and former students, on behalf of his wife, Dorothy. To be awarded to the student who attains the highest Full-load Average on completion of Level I and 60 to 75 units of an Honours programme in Classical Studies or Classics, Drama, English, French, or Modern Languages. Students in all programmes except Drama must have taken at some point a 100-level course in French. To be awarded to a woman student who is entering her graduating session and who qualifies on the basis of academic standing and interest in undergraduate activities.
Value: $600 (30013 018)

THE BRIEN SCHOLARSHIP IN PHILOSOPHY
Established in 1944 by Dr. J.W. Brien of Windsor. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Philosophy and who attains the highest Full-load Average.
Value: $450 (30014)

THE JOSEPHINE STAPLES BRIEN SCHOLARSHIP
Established in 1936 by Dr. J.W. Brien of Windsor. To be awarded to a woman student who is entering her graduating session and who qualifies on the basis of academic standing and interest in undergraduate activities.
Value: $300 (30091)

THE DR. AND MRS. F.R. BRITTON SCHOLARSHIP IN MATHEMATICS
Established in 1962 by Dr. and Mrs. F.R. Britton and augmented by Mrs. Britton's bequest in 1982. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Mathematics and who has demonstrated an outstanding level of academic achievement.
Value: $1,500 ($750 each year) (30051 019)

THE TEN BROEKE-BENSEN MEMORIAL SCHOLARSHIP
Established in 1990 in memory of Dr. James Ten Broeke and Dr. Roy C. Bensen, former Heads of the Department of Philosophy and Psychology. To be awarded to a student who has completed Level I and 30 to 75 units of an Honours Programme in Philosophy who, in the judgment of the Department of Philosophy, has demonstrated outstanding academic achievement.
Value: $1,100 (30195)

THE ROBERT BURNS SOCIETY SCHOLARSHIP
Established in 1993 by The Robert Burns Society of Hamilton. To be awarded to a student who has completed Level I and 60 units of a Humanities programme who, in the judgment of the Prizes and Scholarships Committee for the Faculty of Humanities, has demonstrated academic excellence and a scholarly interest in Scottish history, politics and culture.
Value: $500 (30218 327)

THE CRISPIN CALVO PRIZE
Established in 1978 in memory of Professor C. Calvo by his family and friends. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise in thermodynamics.
Value: $200 (30031)

THE ELLA HALSTEAD CAMPBELL PRIZE
Established in 1978 by Mrs. Vonra Caskey and Miss June Caskey in memory of Ella Halstead Campbell and augmented by Mrs. Edna M. Miller in 1987. To be awarded to a keyboard student, registered in any level of a solo performance course, who is outstanding in the judgment of the School of Art, Drama and Music.
Value: $200 (30048 023)

THE CANADIAN CERAMIC SOCIETY (WESTERN SECTION) PRIZE
Established in 1967. To be awarded to a student entering the Ceramic Engineering Stream who, in the judgment of the Department of Materials Science and Engineering, exhibits most promise in the area of structural clay products.
Value: $200 (30020 025)

THE CFUW (HAMILTON) PAST PRESIDENT'S PRIZE
Established in 1976 by the Past Presidents of the University Women's Club of Hamilton which became the CFUW (Hamilton) on the occasion of the Club's 50th anniversary. To be awarded to the woman student who has completed Level I and 70 to 90 units of a programme in Engineering with the highest Cumulative Average.
Value: $150, plus book ends (30149 020)

THE CFUW (HAMILTON) SCHOLARSHIP
Established in 1945 by the University Women's Club of Hamilton, now the Canadian Federation of University Women. To be awarded to the woman student who attains the highest Full-load Average in the penultimate level of any programme.
Value: $600 (30150 373)

THE CANADIAN SOCIETY FOR CHEMICAL ENGINEERING PRIZE
Established in 1947 by the Chemical Institute of Canada. To be awarded to the student who has completed Level I and 70 to 85 units of a programme in Chemical Engineering and who attains the highest Full-load Average.
Value: $50, medal and certificate (30016 027)

THE CANADIAN SOCIETY FOR CHEMISTRY PRIZES
Established in 1947 by the Chemical Institute of Canada. Two awards to be made to students who have completed Level I and 60 to 80 units: (a) one to a student in an Honours programme in Chemistry or Honours Applied Chemistry who attains high standing in chemistry; (b) one to a student in the Honours Biochemistry or Honours Biochemistry and Chemistry programme who attains high standing in biochemistry and organic chemistry.
Value: Medal and certificate (30017 028)

THE CANADIAN SOCIETY OF CIVIL ENGINEERS (HAMILTON SECTION) PRIZE
Established in 1987. To be awarded to a student entering the final level of a programme in Civil Engineering who, in the judgment of the Department of Civil Engineering and Environmental Mechanics, has demonstrated participation in extracurricular activities and has attained high academic standing.
Value: Plaque (30018 029)

THE NORMAN N. CASKEY MEMORIAL PRIZE
Established in 1983 by Mrs. Vonra Caskey and Miss June Caskey in memory of her husband and father. To be awarded to a student who has completed Music I or Level I and 30 to 75 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has demonstrated musical excellence.
Value: $100 (30115)

THE CERTIFIED GENERAL ACCOUNTANTS ASSOCIATION PRIZE
Established in 1983 by the Hamilton Chapter of the Certified General Accountants Association of Ontario. To be awarded to a student who has completed Level I and 30 to 45 units of a programme in Commerce and who, in the judgment of the School of Business, has attained an outstanding Full-load Average and a high standing (a grade of at least A-) in COMMERCE 2AA3.
Value: $150 (30021 034)

THE CHEMICAL INSTITUTE OF CANADA (HAMILTON SECTION) PRIZE
Established in 1984 by the Hamilton Section. Two prizes to be awarded to students who have completed Level I and 30 to 50 units: (a) one to a student in an Honours programme in Chemistry who, in the judgment of the Department, shows particular promise in Chemistry; and (b) one to a student in a programme in Chemical Engineering who, in the judgment of the Department, shows particular promise in Chemical Engineering.
Value: $50 each (30023 035)
THE CIVITAN-BELL SCHOLARSHIP
Established in 1986 by the Civitan Club of Burlington. To be awarded to a student who has completed Level I and 36 to 90 units of a Social Work programme with high standing and who, in the judgment of the School of Social Work, has demonstrated an interest in a career in working with the mentally handicapped.
Value: $500 (30068 036)

THE HUGH CLARK SCHOLARSHIP
Established in 1989 by Hugh Clark in celebration of McMaster’s fifteenth year since moving to Hamilton. To be awarded to the student who has completed Level I and 60 to 75 units of an Honours programme in Social Sciences and attains the highest Full-load Average.
Value: $1,200 (30068 239)

THE CLASS OF ‘37 SCHOLARSHIP
Established in 1987 by the Graduating Class of 1937. To be awarded alternately to the student who has completed Level I and 30 to 45 units of an Honours programme in Humanities and of an Honours programme in Science, and who has attained an outstanding Full-load Average.
Value: $750 (30068 375)

THE CLASS OF ‘43 GOLDEN ANNIVERSARY SCHOLARSHIP
Established by the Class of 1943 in celebration of their 50th anniversary. To be awarded to the student who has completed Level I and at least 60 units of an Honours programme in Drama who, in the judgment of the School of Art, Drama and Music, has achieved notable academic standing and has made a significant contribution to theatre on campus.
Value: $600 (30214 329)

THE CLASS OF ‘44 SCHOLARSHIP
Established by the Class of ‘44 in celebration of their 50th anniversary. To be awarded to the student entering the penultimate year of any programme who has attained the highest Full-load Average.
Value: $700 (30224 361)

THE CLASS OF ‘50 SCHOLARSHIP IN HONOURS ECONOMICS
Established in 1982 by the Graduating Class of 1950 in Honours Economics. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Economics, and who, in the judgment of the Department of Economics, has attained a high Full-load Average and has demonstrated leadership in undergraduate extracurricular activities.
Value: $400 and book (30027 036)

THE CLASSICS PRIZE
Established in 1978 by Professor D.M. Shepherd. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Classics and who, in the judgment of the Department of Classics, shows most promise.
Value: $100 (30028 040)

THE CONSULTING ENGINEERS OF ONTARIO (CEO) SCHOLARSHIP
Established in 1990 by the Consulting Engineers of Ontario. To be awarded to a student entering Level III of a programme in Engineering who, in the judgment of the Faculty of Engineering, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in extracurricular activities.
Value: $500 (30183 252)

THE CONSUMERS GLASS SCHOLARSHIP
Established in 1988. To be awarded to a student entering Level V of the Ceramic Engineering and Management programme who, in the judgment of the Department of Materials Science and Engineering, has attained notable academic standing.
Value: $1,000 (30029 545)

THE DR. RUDOLF DE BUDA SCHOLARSHIP
Established in 1989 in memory of Professor de Buda by family, friends and colleagues. To be awarded to a student who has achieved high standing after completion of Level I and 71 to 73 units of Electrical or Computer Engineering programme and who elects to do a fourth-year thesis on a topic in the field of Information Theory.
Value: $1,000 (30041 240)

THE D.M. DAVIES PRIZE
Established in 1984 by friends, colleagues and former students in recognition of Professor Douglas Davies for his outstanding contribution to the Department of Biology during 34 years of service. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Biology and who attains the highest average in at least 12 units of senior level courses in whole-animal biology, taken in one session.
Value: $300 (30032 047)

THE JOHN DEERE LIMITED SCHOLARSHIP
Established in 1992 by John Deere Limited. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Commerce programme who, in the judgment of the School of Business, has demonstrated outstanding academic achievement in courses offered by the Human Resource/Labour Relations Area and has displayed leadership and self-motivation in extracurricular activities.
Value: $2,000 (30207 305)

THE DELoitTE & touche SCHOLARSHIP
Established in 1962. To be awarded to the student who has completed Level I and 60 to 75 units of a programme in Commerce and who attains a high Full-load Average and in that session attains an average of at least 10.0 in COMMERCE 3A3 and 3B3.
Value: $500 (30148 177)

THE SCHOOL OF ART, DRAMA AND MUSIC SCHOLARSHIP IN MUSIC
Established in 1993 by the Department of Music which later became part of the School of Art, Drama and Music. To be awarded to a student who, in the judgment of the School of Art, Drama and Music, has demonstrated academic excellence in Music.
Value: $1,000 (30216 324)

THE ROSEMARY DOUGLAS-MERCER MEMORIAL PRIZE
Established in 1989. To be awarded to a student who has completed Level I and 30 to 45 units of an Honours programme in French and who has attained the highest average in FRENCH 2BB3 and one of 2J3 or 2J5 and one of 2W3 or 2W4.
Value: $225 (30124)

THE HORACE A. DULMAGE PRIZE IN PHILOSOPHY
Established in 1976 in honour of Professor Horace A. Dulmage by his colleagues and friends upon the occasion of his retirement from McMaster University. To be awarded to the student who has completed Level I and 60 to 75 units of an Honours programme in Philosophy and who, in the judgment of the Department of Philosophy, has attained the most notable standing.
Value: $150 (30066)

THE HELEN EMERY SCHOLARSHIPS IN ENVIRONMENTAL SCIENCE
Established in 1990 by Miss Helen Emery of Barrie, Ontario. Two scholarships to be awarded: (a) one to a student entering the Honours Geography and Environmental Science Programme; and (b) one to a student entering Level III of the Honours Geography and Environmental Sciences programme who, in the judgment of the Department of Geography, demonstrates leadership and influence in addressing environmental matters.
Value: $1,400 each (30185 360)

THE ERNST & young SCHOLARSHIP
Established in 1982 by Clarkson Gordon. Renamed in 1989. To be awarded to the student who has completed Level I and 30 to 45 units of a programme in Commerce and who attains the highest Full-load Average and in the session attains a grade of at least A- in COMMERCE 2A3.
Value: $500 (30050 241)

THE L.F. EULL PRIZE
Established in 1980 by Group Eight Engineering Limited. To be awarded to the student in a programme in Electrical Engineering who attains the highest average in ELEC ENG 3NA3 and 3SA3, taken in one session.
Value: $600 (30098 057)

THE 4 R’s ENVIRONMENTAL PROGRAMME AWARDS
Established in 1992 from the proceeds of awards recognizing McMaster University as recipient of the 2000 Canadian University Productivity Fund and a Regional Environmental Commitment Award. Two scholarships to be awarded: a) one to a student entering Level III of a programme in Engineering and Society; and b) one to a student entering Level III of the Honours Geography and Environmental Studies programme. In addition to notable academic standing, these awards will be granted to students who, in the judgment of the Faculty of Engineering or the Department of Geography, have demonstrated leadership and influence in addressing environmental matters.
Value: $1,500 each (30209 293)
THE BARBARA FRANCIS SCHOLARSHIP
Established in 1985 by Laura Dodson ('56) in memory of her sister. To be awarded to the student who has completed Level I and at least 30 units of an Arts and Science programme and who has demonstrated outstanding achievement in both arts and science.
Value: $350 (30007 572)

THE HAROLD AND GERTRUDE FREEMAN SCHOLARSHIP IN FRENCH
Established in 1961 by members of the Class of '43 as a grateful tribute to Harold A. and Gertrude Freeman: Professor Freeman was honorary president of the Class of '43 and was a long-time teacher of French at McMaster University. To be awarded to the student returned from completing Level III abroad as part of the Humanities Study Abroad Programme and entering the final session of an Honours programme in French who, in the judgment of the Department of French, has attained the highest level of accomplishment in knowledge of French language, literature and culture. The recipient must obtain a Cumulative Average of at least 8.0 and no failures in the review at the end of the Fall/Winter session immediately prior to entering the Humanities Study Abroad Programme.
Value: $1,200 (30054 059)

THE KLAUS FRITZE MEMORIAL PRIZE
Established in 1980 by friends of Professor K. Fritzke. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours Chemistry programme with the highest Full-load Average.
Value: $150 (30009 053)

THE MERRILL FRANCIS GAGE SCHOLARSHIP
Established in 1982 from the estate of Merrill Francis Gage of Hamilton. To be awarded to a student who has completed Level I and 30 to 75 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has demonstrated excellence in performance on a keyboard or orchestral instrument.
Value: $500 (30110)

THE J.W. GILL PRIZES
Established in 1944 by bequest of J.W. Gill, B.A., Principal of Hamilton Technical School. Nine scholarships to be awarded on the basis of Cumulative Averages to students who have completed Level I and 60 to 75 units of Honours B.Sc. programmes. Ordinarily, not more than one scholarship will be awarded in any one discipline.
Value: $300 each (30079)

THE GEORGE P. GILMOUR MEMORIAL SCHOLARSHIP
Established in 1987 by the Graduating Class of 1962 in honour of Dr. G.P. Gilmour (21), Chancellor of McMaster University from 1941 to 1959 and President and Vice-Chancellor from 1950 to 1961. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in the Arts and Science Programme and who, in the judgment of the Arts and Science Programme Admissions, Awards, and Review Committee, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in extracurricular activities.
Value: $900 (30059 069)

THE DAPHNE ETHERINGTON GRAHAM MEMORIAL SCHOLARSHIP IN ENGLISH
Established in 1989, in memory of a former student and dedicated servant of the University, by her friends, family, and Professor Emeritus R.P. Graham. To be awarded to the student, registered for a first degree after completing Level I, who attains the highest standing in 18 units of English including ENGLISH 2A06, all taken in the same session, with an average standing of at least A- provided that the recipient is not the holder of another scholarship of equal or greater value.
Value: $1,000 (30034 242)

THE H.B. GREENING BOOK PRIZE
Established in 1909 by bequest of Gladys Powis Greening in memory of her husband, Herald Benjamin Greening. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has demonstrated excellence in music.
Value: $100 for books (30062 069)

THE RUTH AND JACK HALL PRIZE
Established in 1983 by Jackie MacDonald in memory of her parents. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Computer Science, or Level I and 70 to 90 units of a programme in Computer Engineering, and who attains the highest Full-load Average.
Value: $200 (30131)

THE RONALD K. HAM MEMORIAL PRIZE
Established in 1971 in memory of Professor R.K. Ham by his friends and former colleagues. To be awarded to the student who has completed Level I and at least 60 units and who, in the judgment of the Department of Materials Science and Engineering, shows most promise as a materials scientist or engineer.
Value: $100 (30128)

THE HAMILTON CHEMICAL ASSOCIATION PRIZE
Established in 1953 by the Trustees of the Hamilton Chemical Association in memory of Dean C.E. Burke. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Chemistry and who attains the highest Cumulative Average.
Value: $200 (30063)

THE HAMILTON ECONOMIC DEVELOPMENT COMMISSION SCHOLARSHIPS
Established in 1976. (a) Two scholarships to be awarded on the basis of Full-load Average to students entering Level II of a Commerce programme: (b) Four scholarships to be awarded on the basis of Full-load Average: two to students who have completed Level I and 30 to 45 units, and two to students who have completed Level I and 60 to 75 units of a programme in Commerce. Recipients must have obtained all their secondary school education in the Hamilton-Wentworth Region.
Value: $800 each (six awards) (30064 072)

THE HAMILTON HARBOUR COMMISSIONERS SCHOLARSHIP
Established in 1994 by the Commissioners in recognition of outstanding Canadian students who continue their studies at McMaster University. To be awarded to a student who has completed Level I and 60-75 units of a programme in Commerce who, in the judgment of the Faculty of Business, has demonstrated outstanding academic achievement and involvement in the local community.
Value: $1,500 (30227 389)

THE HAMILTON PERFORMING ARTS SCHOLARSHIP
Established in 1992 by the Hamilton Performing Arts Council. To be awarded to a student who has completed at least 30 units of a programme in Art, Drama, or Music, who in the judgment of the Faculty of Humanities, has demonstrated outstanding academic achievement and excellence in the performing arts: theatra, drama, music or art.
Value: $500 (30219 348)

THE DONALD HART SCHOLARSHIP
Established in 1965 by Mrs. Pamela Hart and Joel Jordan in honour of Donald Neil Hart ('70). To be awarded to a student who has completed Level I and 30 to 45 units of a programme in Commerce and who, in the judgment of the School of Business, has achieved high standing in the required Level II Commerce courses, taken in one session.
Value: $350 (30037 073)

THE HELLENIC PRIZE
Established in 1955 by the Greek communities of Hamilton and Burlington. To be awarded to a student entering Level IV who has completed at least 12 units in subjects pertaining to Greek studies and who, in the judgment of the Faculty of Humanities, demonstrates outstanding academic achievement in Greek studies.
Value: $1,000 (30226 386)

THE ANNA MARIE HIBBARD SCHOLARSHIP
Established in 1992 from the bequest of Anna Marie Hibbard. To be awarded to the student completing Level I who attains the highest Full-load Average. The recipient may not hold another scholarship of equal or greater value.
Value: $1,600 (30208 300)

THE ROSE HILL SCHOLARSHIP
Established in 1985 by the alumni, faculty and staff of the School of Physical Education and Athletics as a tribute to Professor Rose Hill, long-time teacher, coach and administrator in the School. To be awarded to a student who has completed 60 units of the Kinesiology programme and who, in the judgment of the Department of Kinesiology, best demonstrates the philosophy of physical education espoused by Professor Hill throughout her career, namely, excellence in scholarship and leadership and participation in sport, dance or fitness.
Value: $1,200 (30130 077)

THE DR. THOMAS HOBLEY PRIZE
Established in 1936 by bequest of Mrs. A. McNee of Windsor. To be awarded to a woman student on the basis of the Full-load Average obtained in the penultimate level of a programme in Economics or Political Science.
Value: $200 (30042)
THE DR. HARRY LYMAN HOOKER SCHOLARSHIPS
Established in 1961, and resulting from the bequest of Dr. H.L. Hooker. Awarded for overall academic excellence (Full-load Average of at least 9.5) to students in undergraduate programmes, with the exception of those in their graduating session and those retaining scholarships of $1,000 or greater. Each year quotas are established for each Faculty and other academic units in proportion to the number of full-time undergraduate students who obtain a Full-load Average of 9.5 or greater. Seventy-six awards were given in 1986.
Value: $1,500 each (300438)

THE ICI CANADA INC. UNDERGRADUATE SCHOLARSHIPS
Established in 1986 by the Imperial Chemical Industries, Canada, Inc. Four scholarships to be granted: two to be awarded to students enrolled in a programme in Chemistry: a) one upon completion of Level I and 30-45 units and; b) one upon completion of Level II and 60-75 units. Two to be awarded to students enrolled in a programme in Chemical Engineering: a) one upon completion of Level I and 36-51 units and; b) one upon completion of Level I and 70-85 units who, in the judgment of the Department of Chemistry and Chemical Engineering, have demonstrated academic achievement in Chemistry or Chemical Engineering courses.
Value: $550 (30230 400)

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (HAMILTON SECTION) PRIZES
Established in 1961. Two prizes to be awarded to students entering the final level who qualify on the basis of high academic standing and, in the judgment of selection committees, demonstrate interest in university activities: a) one to a student in an Electrical Engineering Programme; b) one to a student in a Computer Engineering Programme.
Value: $200 and a book (30071 083)

THE INTERMECT LIMITED SCHOLARSHIP
Established in 1977. To be awarded to the student who has completed Level I and 70 to 90 units of a programme in Mechanical Engineering and who, in the judgment of the Department of Mechanical Engineering, has attained notable standing.
Value: $500 (30072 084)

THE INTER-RESIDENCE COUNCIL SCHOLARSHIP
Established in 1995 by the McMaster Inter-Residence Council in recognition of the IRC’s continued support of the University and its students. To be awarded to a student who has completed at least Level I of any programme who, in the judgment of an Awards Selection Committee of Undergraduate Council, has demonstrated notable academic achievement and has made a significant contribution to the University life of resident students with disabilities.
Value: $500 (30228 392)

THE ITCA COMMUNITY INVOLVEMENT PRIZE
Established in 1962 by the Canadian Community Involvement Incorporated. To be awarded to the student who has completed at least 30 units beyond Level I of a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in at least 9 units of Italian courses above Level I. The recipient must have graduated from a secondary school in the Hamilton area.
Value: $150 (30070 086)

THE IVEY SCHOLARSHIP
Established in 1971 by Professor and Mrs. G.S. French in memory of Mr. and Mrs. I.E. Ivey, the parents of Mrs. French. To be awarded to the student who has completed Level I and 60-75 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has attained notable standing.
Value: $125 (30074 087)

THE JOHNSON SCHOLARSHIP
Established in 1971 in memory of Dr. A.I. Johnson by his friends and former colleagues. To be awarded to a student who has completed Level I and 110 to 130 units of a programme in Engineering and Management. Award to be based on distinguished academic performance during the student’s undergraduate career. Consideration will also be given to noteworthy contribution in extracurricular activities.
Value: $500 and certificate (30022 259)

THE KATHLEEN MARY JOHNSTON MEMORIAL PRIZE
Established in 1963 by Lawrence D. Johnston in memory of his wife. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Religious Studies and who attains the highest Full-load Average.
Value: $125 (30094 090)

THE JURY PRIZE
Established in 1941 by bequest of J.H. Jury of Bowmanville. To be awarded to the student who has completed Level I and 30-45 units of the Honours History programme and who attains the highest Full-load Average.
Value: $150 (30093)

THE STANFORD N. KATAMBALA GEOLOGY PRIZE
Established in 1965 by contributions from friends and associates of Stanford N. Katambala, a Year III Honours Geology student from Tanzania, killed in a mine accident in Northern Ontario in September 1964. To be awarded to a student who has completed Level I and 60 to 75 units of the Honours Geology programme and who attains high standing in Geology.
Value: $50 (30143)

THE GEORGE P. AND LEATHA M. KEYS SCHOLARSHIPS
Established in 1982 by Mrs. Leatha Keys. Three scholarships to be awarded to students who, in the judgment of the Departments of Computer Science and Systems, and of Mathematics and Statistics, have demonstrated outstanding achievement in Honours programmes in these Departments: (a) one to a student who has completed Level I and 30 to 75 units of the Computer Science programme; (b) one to a student who has completed Level I and 50 to 75 units of a programme in Mathematics; and (c) one to a student who has completed Level I and 60 to 75 units of a programme in Statistics.
Value: $350 each (30057 091)

THE KIT MEMORIAL SCHOLARSHIP
Established in 1936 by the Hamilton Branch of the Canadian Women’s Press Club (now the Media Club of Canada, Hamilton Branch) in memory of the brilliant journalist and writer, the first president of the Canadian Women’s Press Club, Kathleen Blake Coleman, widely known on this continent as Kit. To be awarded to a woman student either on completion of Level I and at least 30 units on the basis of journalistic ability or on completion of Level I and 60 to 75 units of an Honours programme in English on the basis of Full-load Average.
Value: $175 (30095 092)

THE KPMG SCHOLARSHIP
Established In 1956 by Pettit, Hill and Bertram, Toronto, and continued after amalgamation of firms. To be awarded to an outstanding student on the basis of qualifications and academic record after the completion of Level I and at least 30 units of a programme in Commerce. Preference will be given to students who plan to continue their studies after graduation with a practising firm of chartered accountants.
Value: $350 (30146 175)

THE GARY LAUTENS MEMORIAL SCHOLARSHIP
Established in 1992 by family, friends and colleagues in memory of Gary Lautens (’50), columnist and editor of the Toronto Star (1962-92), the Hamilton Spectator (1959-62) and the McMaster Silhouette (1948-50), remembered as a journalist with wit and insight. To be awarded to a student who has completed any Level I programme who, in the judgment of a Selection Committee, has achieved notable academic standing and has demonstrated journalistic skills in the written media. The scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 8.0. Students who wish to be considered for this award should consult the Student Financial Aid and Scholarships office.
Value: $3,600 ($1,200 each year) (30212 321)

THE LAUTENS MEMORIAL SCHOLARSHIP
Established in 1996 by Mrs. Leatha Keys. Three scholarships to be awarded to students who, in the judgment of the Departments of Electrical and Computer Engineering, have demonstrated notable academic achievement in electrical and computer engineering courses.
Value: $500 each (30043 800)

THE LEE SCHOLARSHIP
Established in 1972 in memory of Dr. G. Lee in recognition of his work in Canada and in South Africa. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Electrical Engineering.
Value: $500 (30042 750)

THE LIBRARY SCHOLARSHIP
Established in 1977 in memory of Miss Gertrude and Mr. E. T. Forster. To be awarded to a student who has completed Level I and 30 to 45 units of an Honours programme in Statistics.
Value: $250 (30042 800)

THE LINKS OF CANADA SCHOLARSHIP
Established in 1984 by the Links of Canada. To be awarded to a student who has completed Level I and 30-45 units of an Honours programme in Modern Languages.
Value: $250 (30042 850)
<table>
<thead>
<tr>
<th>Scholarship Name</th>
<th>Established Year</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE HOWARD O. LAWRENCE SCHOLARSHIP</td>
<td>1988</td>
<td>To be awarded to a student entering Level IV of the Ceramic Engineering and Management programme and who, in the judgment of the Department of Materials Science and Engineering, has achieved high standing in Level III of the programme.</td>
<td>$500 (30067)</td>
</tr>
<tr>
<td>THE MEGAN LAWRENCE SCHOLARSHIP</td>
<td>1988</td>
<td>Established by the Zonta Club of Hamilton II in memory of Megan Lawrence, Zontian and educator in the City of Hamilton. To be awarded to a student who has completed 90 units of the Kinesiology programme and who, in the judgment of the Department of Kinesiology, demonstrates excellence in scholarship, leadership and participation in sport, dance and fitness.</td>
<td>$700 (30109 376)</td>
</tr>
<tr>
<td>THE RAY LAWSON SCHOLARSHIPS</td>
<td>1975</td>
<td>Established by the Honourable Ray Lawson, O.B.E., D.C.L., D.Cn.L., LL.D., K.G.ST.J., Lieutenant-Governor of Ontario from 1946 to 1952. Two scholarships to be awarded for the highest Full-load Averages in an Engineering and Management programme: (a) one to a student who has completed Level I and 70 to 90 units, and (b) one to a student who has completed Level I and at least 109 units beyond Level I.</td>
<td>$400 each (30126 099)</td>
</tr>
<tr>
<td>THE BETTY MACMILLAN PRIZE</td>
<td>1969</td>
<td>To be awarded to the student who has completed Level I and 60 to 75 units in an Honours programme in Sociology and who, in the judgment of the Department of Sociology, is the most promising student.</td>
<td>$100 (30010)</td>
</tr>
<tr>
<td>THE LIANNE MARKS SCHOLARSHIP</td>
<td>1980</td>
<td>Established by her family, in 1980 as a bursary and in 1985 as a scholarship, in honour of Lianne Marks, a student at McMaster University (1977-80). To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Sociology and who, in the judgment of the Department of Sociology, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in activities other than sports.</td>
<td>$700 (30100 102)</td>
</tr>
<tr>
<td>THE RONALD E. MATERICK SCHOLARSHIP</td>
<td>1987</td>
<td>Established by Ronald E. Materick ('70). To be awarded to a student who has completed Level I and 70 to 85 units of a programme in Civil Engineering and who, in the judgment of the Department of Civil Engineering and Mechanics, has attained notable academic standing.</td>
<td>$1,000 (30127 106)</td>
</tr>
<tr>
<td>THE MCGREGOR-SMITH-BURR MEMORIAL SCHOLARSHIP</td>
<td>1910</td>
<td>Established in 1910 by the Class of 1912 in Arts, in memory of their classmate, Percy Nell McGregor, Lee Wilson Smith and George William Burr, and supplemented in 1944 by bequest from Professor R. Wilson Smith, father of Lee Wilson Smith. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours English and History programme and who has the highest Full-load Average.</td>
<td>$425 (30105)</td>
</tr>
<tr>
<td>THE ALEXANDER GORDON MCKAY SCHOLARSHIP</td>
<td>1990</td>
<td>Established in 1990 by friends and colleagues of Professor A.G. McKay, first Dean of the Faculty of Humanities from 1968 to 1973, to mark his retirement after 33 years of service at McMaster University. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours Classics programme and who, in the judgment of the Department of Classics, has attained high academic standing. Preference will be given to students from the Regional Municipality of Hamilton-Wentworth.</td>
<td>$350 (30180 260)</td>
</tr>
<tr>
<td>THE A.B. MCLAY SCHOLARSHIP IN PHYSICS</td>
<td>1991</td>
<td>To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Physics and who, in the judgment of the Department of Physics and Astronomy, has attained notable standing.</td>
<td>$450 (30186 254)</td>
</tr>
<tr>
<td>THE BOYD MCLAY SCHOLARSHIP IN PHYSICS</td>
<td>1977</td>
<td>Established in 1977 to commemorate the contributions of Dr. A. Boyd McLay ('22) to teaching and research in optics and spectroscopy at McMaster University from 1930 to 1967. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Physics with a high Full-load Average.</td>
<td>$350 (30011 109)</td>
</tr>
<tr>
<td>THE MCMASTER UNIVERSITY RETIREES' ASSOCIATION SCHOLARSHIP</td>
<td>1991</td>
<td>Established in 1991 by the McMaster University Retirees' Association. To be awarded to the student who has completed Level I and at least 30 units of a programme in Gerontology and who attains the highest Full-load Average. The student must enrol in a programme in Gerontology in the subsequent Fall/Winter session.</td>
<td>$300 (30187 271)</td>
</tr>
<tr>
<td>THE MCNABB SCHOLARSHIP</td>
<td>1989</td>
<td>Established in 1989 in memory of Donald G. McNabb ('37) by friends, family and business associates. To be awarded to the student who has completed Level I plus 60 to 75 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, has attained notable academic standing. Preference will be given to students who demonstrate leadership, self-motivation, and practical aptitude appropriate for a future in the chemical industry.</td>
<td>$1,000 (30186 243)</td>
</tr>
<tr>
<td>THE SIMON MCNALLY SCHOLARSHIP</td>
<td>1972</td>
<td>Established in 1972 by S. McNally and Sons Limited, in honour of Simon McNally. One or two scholarships to be awarded to Canadian citizens who have completed Level I and 35 to 50 units of a programme in Civil Engineering. Awards are based on scholarship and evidence of practical engineering experience and background.</td>
<td>$650 each (30139 112)</td>
</tr>
<tr>
<td>THE PETER MCPHATER MEMORIAL SCHOLARSHIP</td>
<td>1988</td>
<td>Established by Peter McPhater's friends in recognition of his art, craftsmanship and humanitarianism. To be awarded to a student who has completed Level I and 60 to 75 units of a programme in Honours Art or Honours Art History and who, in the judgment of the School of Art, Drama and Music, is outstanding.</td>
<td>$500 each (30119 114)</td>
</tr>
<tr>
<td>THE J.J. MILLER PRIZE</td>
<td>1964</td>
<td>Established in 1964 by friends, colleagues and former students in recognition of Professor J.J. Miller for his outstanding contribution to the Department of Biology during 37 years of service. To be awarded to a student entering Level IV of the Honours Biology programme with an outstanding Full-load Average and a grade of at least A+ in BIOLOGY 3E03 in Level III.</td>
<td>$350 (30077 115)</td>
</tr>
<tr>
<td>THE MOLSON SCHOLARSHIP IN ENVIRONMENTAL STUDIES</td>
<td>1992</td>
<td>Established in 1992 by the Molson Companies Donations Fund. To be awarded to the student entering the final level of a programme in Geography and Environmental Studies, Geography and Environmental Science, or Engineering and Society, who attains the highest Full-load Average.</td>
<td>$700 (30213 191)</td>
</tr>
<tr>
<td>THE MORTON MEMORIAL BOOK PRIZE</td>
<td>1970</td>
<td>Established in memory of Dr. M.J. Morton. To be awarded to a student who has completed Level I and 60 to 75 units in an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, is outstanding in the field of inorganic chemistry.</td>
<td>$150 for books (30111)</td>
</tr>
<tr>
<td>THE ELIZABETH MOSGROVE SCHOLARSHIP</td>
<td>1959</td>
<td>Established in 1959 by bequest of John W. Mosgrove in memory of his mother. To be awarded to sons of members of Her Majesty's Canadian Armed Forces on the basis of Full-load Average.</td>
<td>$900 (30047)</td>
</tr>
<tr>
<td>THE MOULTON COLLEGE SCHOLARSHIP</td>
<td>1957</td>
<td>Established in 1957 from funds originally subscribed by the Alumnae of Moulton College during the years 1948 to 1949 for the expansion of Moulton College. Two scholarships to be awarded to the women students of Moulton Hall with the highest Full-load Averages: (a) one after completion of Level I and 30 to 45 units, and (b) one after completion of Level I and 60 to 75 units.</td>
<td>$1,000 each (30112 377)</td>
</tr>
<tr>
<td>THE ANNE MURRAY SCHOLARSHIP</td>
<td>1985</td>
<td>Established in memory of Anne M. Murray ('82) by her family. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in at least 3 units of German courses above Level I.</td>
<td>$300 (30005 119)</td>
</tr>
<tr>
<td>Scholarship Name</td>
<td>Eligibility</td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>THE NIEMEIER SCHOLARSHIP</td>
<td>Established in 1938 and augmented in 1952 by Dr. O.W. Niemeier. To be awarded to the student who attains the highest Full-load Average at the completion of Level I and 31 to 55 units of the Nursing programme.</td>
<td>Value: $500 (30114 244)</td>
<td></td>
</tr>
<tr>
<td>THE ROBERT NIXON SCHOLARSHIP</td>
<td>Established in 1991 by the Brant-Haldimand Liberal Association in honour of Dr. Robert Nixon (50, LL.D., 75). To be awarded to a student who, in the judgment of the Department of History, has demonstrated academic excellence and an active involvement in community life.</td>
<td>Value: $550 (30203 144)</td>
<td></td>
</tr>
<tr>
<td>THE FREDRIC P. OLESEN BOOK PRIZE</td>
<td>Established in 1974 in memory of Professor F.P. Olsen by his family, friends and former colleagues. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise as an experimental scientist.</td>
<td>Value: $100 for books (30053)</td>
<td></td>
</tr>
<tr>
<td>THE ONTARIO HYDRO SCHOLARSHIP IN ELECTRICAL ENGINEERING</td>
<td>Established in 1986. To be awarded to the student who has completed Level I and 35 to 55 units of a programme in Electrical Engineering and who, in the judgment of the Department of Electrical and Computer Engineering, has achieved notable standing (Full-load Average of at least 9.5), displayed strong communication skills, and demonstrated leadership ability and involvement in extracurricular activities.</td>
<td>Value: $2,400 (30116 127)</td>
<td></td>
</tr>
<tr>
<td>THE GLADYS BALLANTYNE PARKER PRIZE</td>
<td>Established in 1953 in memory of Gladys Ballantyne Parker by her father, Harry Ballantyne. To be awarded to the student enrolled in a programme in Classics who, in the judgment of the Department of Classics, demonstrates outstanding achievement in Greek or Latin.</td>
<td>Value: $200 (30117 131)</td>
<td></td>
</tr>
<tr>
<td>THE F.W. PAULIN SCHOLARSHIP</td>
<td>Established in 1981 by the Canadian Engineering and Contracting Co. Limited in honour of its founder. To be awarded to a student who has completed Level I and 70 to 85 units of the Civil Engineering programme, or Level I and 110 to 130 units of the Civil Engineering and Management programme. Award is based on scholarship Full-load Average of at least 9.5 and evidence of leadership, self-motivation, and practical aptitude.</td>
<td>Value: $50 (30060 133)</td>
<td></td>
</tr>
<tr>
<td>THE LEONA ALLERSTON RYAN AND GORDON HENRY STEVENS MEMORIAL SCHOLARSHIP</td>
<td>Established in 1995 by Elaine Keilir in memory of Leona and Gordon Stevens. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Geography and who, in the judgment of the Department of Geography, has attained high academic standing.</td>
<td>Value: $325 (30129 145)</td>
<td></td>
</tr>
<tr>
<td>THE LEONA ALLERSTON RYAN AND GORDON HENRY STEVENS MEMORIAL SCHOLARSHIP</td>
<td>Established in 1995 by Elaine Keilir in memory of Leona and Gordon Stevens. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Geography and who, in the judgment of the Department of Geography, has attained high academic standing.</td>
<td>Value: $325 (30129 145)</td>
<td></td>
</tr>
</tbody>
</table>
THE CHARLOTTE E. SEIDEL SCHOLARSHIP
Established in 1994 by Genevieve J. Heinz in memory of Charlotte E. Seidel. To be awarded to a student in a programme in Music who, in the judgment of the School of Art, Drama and Music, has attained high academic standing and has made significant contributions to the campus or community.
Value: $500 (30022 357)

THE LOUIS J. SHEIN SCHOLARSHIP
Established in 1990 by family and friends in memory of Dr. L.J. Shein, founding chair of the Russian Studies programme and faculty member from 1956 to 1990. To be awarded to the student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department has attained notable standing in at least 9 units of Russian courses above Level I.
Value: $400 (30199 258)

THE SHELL CANADA SCHOLARSHIPS IN ENGINEERING AND MANAGEMENT
Established in 1983. Three scholarships to be awarded to students who have completed Level I and at least 110 units of a programme in Engineering and Management. Awards will be based on scholarship and on the quality of and creativity shown in written and oral reports.
Value: $800 each (30137 384)

THE SHENSTONE PRIZE
Established in 1983 by J.N. Shenstone of Toronto, and continued by members of his family. To be awarded to the student who has completed Natural Sciences I and who attains the highest average in any four of the Level I courses in Chemistry, Physics and Biology.
Value: $125 (30138)

THE GERALD AND VERNIA SIMPSON MEMORIAL SCHOLARSHIP
Established in 1957 by the children in memory of their parents. To be awarded to the student who has completed Level I and 30 to 45 units of the Honours Physics or the Honours Chemistry and Physics programme with highest Full-load Average.
Value: $300 (30059 156)
The recipient of this award is eligible to receive additional aid through the corresponding Supplementary Bursary Aid Fund if he/she demonstrates financial need. Please see the section on Supplementary Bursary Aid for Award Recipients in the Student Financial Aid section of this Calendar.

THE PATRICIA L. SMYTHE MEMORIAL PRIZES
Established in 1972 by the Patricia Smythe Memorial Fund Committee. Two scholarships to be awarded to students who have completed Level I and 30 to 45 units and who attain the highest Full-load Average: (a) one in the three-level English programme and (b) one in the three-level Psychology B.A. programme.
Value: $250 each (30118)

THE SOCIETY OF MANAGEMENT ACCOUNTANTS OF ONTARIO SCHOLARSHIP
Established in 1993. To be awarded to the student who has completed Level I and 60 to 75 units of a programme in Commerce and who obtains the highest Full-load Average and in that Session attains a grade of at least A in Commerce 3A3.
Value: $500 (30140 158)

THE SONS OF ITALY OF ONTARIO SCHOLARSHIP
Established in 1971 by the Order Sons of Italy of Ontario. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the department, has attained notable standing in at least 9 units of Italian courses above Level I.
Value: $500 (30141 160)

THE SOUTH ONTARIO ECONOMIC DEVELOPMENT COUNCIL SCHOLARSHIP
Established in 1973 by the South Ontario (formerly Niagara) Economic Development Council. Two scholarships to be awarded, normally one in each of the B.A. and B.Sc. programmes, to the students who have completed Level I and 60 to 75 units of the Honours Geography programme and who elect GEOG 4C06 in their graduating session. Awards are based on scholarship and interest in undertaking a research project in the field of regional development and regional planning in the Niagara Peninsula.
Value: $1,200 each (30142 161)

THE MARNIE SPEARS SCHOLARSHIP
Established in 1993 by many friends, colleagues and alumni of McMaster University as a tribute to Marnie Spears (’69), Executive Director, Development and Public Relations from 1986-93 and dedicated alumnus who served as President of the McMaster Alumni Council in 1980, in recognition of her outstanding contribution to the University. To be awarded to the student who has completed Level I and at least 30 units of an Honours programme with notable academic standing and who, in the judgment of a Selection Committee, has demonstrated leadership in public, community or University alumni relations.
Value: $550 (3017 329)

THE SALVATORE SPIFITA MEMORIAL PRIZE
Established in 1984 by the Spijala family. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in at least 9 units of Italian courses above Level I and has demonstrated an active involvement in community life.
Value: $100 (30133 162)

THE S.L. SQUIRE SCHOLARSHIP
Established in 1928 by bequest of S.L. Squire of Toronto. Four awards to be made to students in any Level I programme who attain the highest standing in any two of MATH 1AA3, 1B03, 1H05, 1N93, and in other tests provided for this scholarship by the Department of Mathematics and Statistics.
Value: $400 each (30132)

THE CLARENCE L. STARR PRIZE
Established in 1948 in memory of Dr. C.L. Starr, M.D., LL.D., F.A.S.S., Professor of Surgery at the University of Toronto, and an honorary alumnus of McMaster University (LL.D. 1922). To be awarded to the student who has completed Nursing I and who attains the highest Full-load Average.
Value: $150 (30025)

THE MABEL STOAKLEY SCHOLARSHIP
Established in 1987 by the Young Women’s Canadian Club of Toronto (now the Career Women’s Canadian Club of Toronto). To be awarded to a woman student who has completed Nursing I and who attains the highest Full-load Average and who gives evidence of outstanding academic achievement and leadership.
Value: $425 (30103)

THE MARIE L. STOCK SCHOLARSHIP
Established in 1967 by the French Section of the Department of Romance Languages in honour of Marie L. Stock, Professor Emeritus of French, and Chair of the Department of Romance Languages from 1962 to 1985. To be awarded to the student who has completed Level I and 60 to 75 units of an Honours programme in French and who, in the judgment of the Department of French, has achieved notable academic standing.
Value: $400 (30104 166)

THE JUANITA LEBARRE SYMINGTON SCHOLARSHIP
Established in 1981 by The Women’s Art Association of Hamilton in memory of Juanita LeBarre Symington. To be awarded to the student entering the graduating session of the Honours Art programme with the highest Full-load Average. The recipient must be from the Hamilton-Wentworth Region.
Value: $300 (30082 169)

THE T.H.B. SYMONS SCHOLARSHIP IN CANADIAN STUDIES
Established in 1978. To be awarded to the student who attains the highest Cumulative Average in Canadian Studies after completion of Level I and 60 to 75 units of a programme in Canadian Studies.
Value: $250 (30144 170)

THE HUGH R. THOMPSON MEMORIAL PRIZE
Established in 1960 in memory of Dr. Hugh R. Thompson. To be awarded to the student who has completed Level I and 30 to 45 units of the Honours Geography or the Honours Geography and Geology programme with the highest Full-load Average. The recipient must be from the Hamilton-Wentworth Region.
Value: $150 (30069 174)

THE DR. R.A. THOMPSON PRIZE IN MATHEMATICS
Established in 1964 by bequest of Dr. William Bethune, in memory of R.A. Thompson, B.A., LL.D., Principal of Central Collegiate Institute, Hamilton, from 1897-1919, in recognition of his contribution to education in Hamilton. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Computer Science, Honours Computer Science and Mathematics, Honours Computer Science and Statistics, Honours Mathematics or Honours Statistics programme, and who attains a high Full-load Average.
Value: $225 (30040)

THE GRAHAM RONALD TOOP SCHOLARSHIP
Established in 1989 in memory of Graham Toop (’89) by family and friends. To be awarded to the student entering Level IV of the Honours Philosophy programme and who, in the judgment of the Department of Philosophy, has demonstrated leadership and influence in scholarly activities related to the field of philosophy.
Value: $300 (30190 258)
The recipient of this award is eligible to receive additional aid through the corresponding Supplementary Bursary Aid Fund if he/she demonstrates financial need. Please see the section on Supplementary Bursary Aid for Award Recipients in the Student Financial Aid section of this Calendar.

### TRAC SCHOLARSHIPS
Established in 1994 by The Refactories Association of Canada. Two scholarships to be awarded to students who have completed Level I and 35 to 50 units and who attain a high Full-load Average in the Chemical Engineering programme.

Value: $500 each (30145 178)

### THE VALLEY CITY MANUFACTURING CO. LTD. SCHOLARSHIPS
Established in 1991 by the Valley City Manufacturing Co. Ltd. of Dundas, Ontario. Two scholarships to be awarded to the students enrolled in an Honours B.Sc. programme: one to the student entering Level II and one to the student entering Level III who attain the highest Full-load Average. Recipients may not hold another scholarship of equal or greater value.

Value: $1,500 each (30205 227)

### THE VAREY SCHOLARSHIP
Established in 1978 by J.C. Varey, Dundas, in memory of Albert E. Varey. To be awarded to the student who attains high standing in an Honours programme in Biology and who, in the judgment of the Department of Biology, shows an innovative approach to the study of ecology.

Value: $200 (30151 122)

### THE F.W. WATERS SCHOLARSHIP IN PHILOSOPHY
Established in 1990 by the former students, colleagues and friends of Dr. F.W. Waters, Professor from 1935 to 1959. To be awarded to the student entering Level IV of the Honours Programme in Philosophy who, in the judgment of the Department of Philosophy, shows the most academic promise.

Value: $800 (30197)

### THE WEISZ FAMILY FOUNDATION SCHOLARSHIP
Established in 1982. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Commerce programme and who attains the highest Full-load Average (at least 9.5).

Value: $1,500 (30152 182)

### THE MARJorie AND CHARLES WILKINSON SCHOLARSHIP
Established in 1991 by the family in honour of Marjorie Wilkinson, author of many books and addresses on religion, and co-founder of the Hamilton Lay School of Theology at McMaster in 1966, and Charles Wilkinson, religion editor and writer for the Hamilton Spectator from 1963-1985. To be awarded to the student who has completed at least 30 units beyond Level I of an Honours programme in Religious Studies and who, in the judgment of the Department of Religious Studies, has attained notable academic standing in courses in Christian thought.

Value: $425 (30191 272)

### THE EMANUEL WILLIAMS SCHOLARSHIP IN PHYSICS
Established in 1948 by Arabel M. Williams of Port Colborne as a memorial to her brother. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Physics with the highest Full-load Average.

Value: $900 (30049)

### THE JANICE WILSON MEMORIAL PRIZE
Established in 1961 in memory of Janice Mary Wilson of Stoney Creek. To be awarded to the woman student who has completed Level I and 30 to 45 units of the Honours History programme and who attains the highest Cumulative Average.

Value: $100 (30080 378)

### THE WOMEN'S ART ASSOCIATION SCHOLARSHIPS
Established in 1989. Two scholarships to be awarded: (a) one to a student entering Level II and (b) one to a student who has completed Level I and 30 to 45 units of a programme in Honours Art or Honours Art History with the highest Full-load Average. The recipients must be from the Hamilton-Wentworth Region.

Value: $200 each (30153 185)

### THE IVOR WYNN MEMORIAL PRIZE
Established in 1971 in memory of Ivor Wynn, Dean of Students. To be awarded to a student who has completed Level I and 60 units of the Kinesiology programme and has demonstrated outstanding achievement in the programme.

Value: $200 (30075 189)

### THE GLADYS A. YOUNG SCHOLARSHIP
Established in 1991 by T.G. Harvey in honour of his wife, Gladys (B.Sc. '37, M.Sc. '38), one of a group of researchers who commenced radio astronomy research with the National Research Council of Canada. To be awarded to the student who has completed Level I and 30 to 65 units of an Honours programme in Mathematics or Physics with the highest Full-load Average. The recipient must not hold another scholarship of equal or greater value.

Value: $1,600 (30206 303)

### THE LILIAN AND MANUEL ZACK SCHOLARSHIP
Established in 1984 by Lillian and Manuel Zack ('40) of Hamilton. To be awarded to a student who has completed Level I and 70 to 85 units of a programme in Nursing and who, in the judgment of the School of Nursing, has demonstrated achievement, initiative, and commitment to gerontological nursing through clinical practice, term papers, research interest, or community activities and who pursues these interests in Level IV.

Value: $900 (30101 190)

### SENATE SCHOLARSHIPS
The following scholarships are awarded for general academic proficiency at the discretion of the Undergraduate Council.

Every full-time student who is eligible for review in May but is not graduating in any programme in any Faculty or other academic unit will be eligible for consideration for a Senate Scholarship, provided that he or she attains a Full-load Average of 9.5 in addition to meeting the conditions noted in Category B, above.

In 1996, the value of a Senate Scholarship was $900. Each year, quotas of Senate Scholarships are established for each Faculty and other academic units in proportion to the number of full-time undergraduate students enrolled. In 1996, 170 Senate Scholarships were awarded, all of which were funded by the donors listed below.

### THE EDGAR R. ASHALL SCHOLARSHIP
Established in 1965 by bequest of his wife, Edith M. Ashall. (30162)

### THE EDWIN MARWIN DALLEY MEMORIAL SCHOLARSHIPS
Established in 1965 by bequest of Edwin Marwin Dalley of Hamilton. (30164)

### THE EDUCATION FOUNDATION OF THE FEDERATION OF CANADIAN PROFESSIONALS OF ONTARIO SCHOLARSHIPS
Established in 1986 by the Foundation. Two scholarships to be awarded: (a) one to a student in a programme in Arts and Science, and (b) one, on a rotating basis, to a student in a programme in Chemistry, Mechanical Engineering, and Physics. (30163 156)

### THE HAMILTON INDUSTRIAL SCHOLARSHIPS
Established in 1958. (30165)

### THE BERTRAM OSMER HOOPER SCHOLARSHIP
Established in 1957 by bequest of Isobel F. Hooper. To be awarded in Arts. (30161)

### THE NINA LOUISE HOOPER SCHOLARSHIP
Established in 1959 by bequest of Bertram O. Hooper. (30200)

### THE CLAude G. LISTER SCHOLARSHIP
Established in 1990 by bequest of Pauline Detwiler Lister in memory of her husband. To be awarded to a student in a programme in the School of Business. (30199 262)

### THE TONY PICKARD MEMORIAL SCHOLARSHIP
Established in 1973 by his wife and family, in honour of Caplain Antony F. Pickard, O.B.E., C.D., R.C.N. (Retd). (30172)

### ROTARY CLUB OF HAMILTON SCHOLARSHIP
Established in 1989. (30168 263)

### THE HILDA SAVAGE MEMORIAL SCHOLARSHIP
Established in 1990 by bequest of Bertha Savage. (30166)

### THE SOMERVILLE SCHOLARSHIPS
Established in 1996 by bequest of William L. Somerville, architect of the McMaster University buildings of 1930. (30169 159)

### THE STODO SCHOLARSHIP
Established in 1957 by bequest of William O. Stobo. (30170)

### THE MARGUERITE Z. YATES SCHOLARSHIP
Established in 1980 by bequest of Mrs. W.H. Yates of Hamilton. (30167)

### THE YATES SCHOLARSHIPS
THE A.G. ALEXANDER SCHOLARSHIPS
Established in 1938 and augmented in 1946 by Sir Douglas Alexander, and members of his family, in memory of Archibald Greg Alexander. Two scholarships to be awarded to students who have completed Level I and 60 to 75 units on the basis of excellence in a modern language or languages, English, History, and French (with emphasis on French). The purpose of the scholarships is to enable the winners to study abroad during the vacation before the final Fall/Winter session. Value: $5,500 each (30174)

THE CLASS OF '37 TRAVEL SCHOLARSHIP IN ARTS AND SCIENCE
Established in 1938 by the Graduating Class of 1937 in celebration of their 50th anniversary and augmented by friends of the Arts and Science program. To be awarded to a student who has completed Level I and 30 to 72 units of an Honours program in the Arts and Science Program. Applicants should have demonstrated a lively interest in developing countries. The purpose of this award is to enable the winner to spend the summer, immediately following its receipt, working and/or studying in a developing country.
Value: $900 (30175 037)

THE JOAN JACKSON DUNBAR TRAVEL SCHOLARSHIP
Established in 1960 by Mayor Lloyd D. Jackson (09), LL.D ('55) and Mrs. Jackson of Hamilton in memory of their daughter, Joan (40). To be awarded to a woman student who has completed Level I and 60 to 75 units of an Honours program in English for excellence in the program (with emphasis on English). The winner must have secured all her secondary school education in Canada. The award is to be used for study and travel in the United Kingdom and Continental Europe during the vacation before the final Fall/Winter session.
Value: $3,500 (30177 053)

THE JOHN P. EVANS TRAVEL SCHOLARSHIP
Established in 1991 by many friends, colleagues, students and graduates of McMaster University as a tribute to John (Jack) P. Evans upon his retirement as Associate Vice-President, University Services and Secretary of the Board of Governors in recognition of his 25 years of outstanding contribution to the University Community. To be awarded to a student who has completed at least 30 units beyond Level I of an Honours programme with notable academic standing and has demonstrated a scholarly interest in some aspect of Asian languages, history or cultures, with preference being given to a student wishing to study in China.
Value: $1 000 (30159 577)

THE MODERN LANGUAGES TRAVEL SCHOLARSHIP
Established in 1991 by the Department of Modern Languages. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in Modern Languages and who, in the judgment of the Department of Modern Languages, has attained notable academic standing. The purpose of the scholarship is to assist with travel expenses to study and travel abroad. Priority will be given to a student participating in the Humanities Study Elsewhere Program.
Value: $400 each (30188 274)

THE ALBERT SHALOM TRAVEL SCHOLARSHIP
Established in 1994 by family, friends and colleagues in memory of Albert Shalom, Professor of Philosophy at McMaster University from 1966 to 1991. To be awarded to a student who is enrolled in a programme in Philosophy, and has, in the judgment of the Department of Philosophy, attained notable standing. The award is to be used to help defray the costs of study overseas in Level III.
Value: $500 (30225 365)

THE E.T. SALMON SCHOLARSHIP
Established in 1991 by Mrs. Edward Togo Salmon in memory of her husband, world-renowned Roman historian and member of the Faculty for 43 years. To be awarded to the student who has completed Level I and 30 to 45 units of any Honours Classics or Honours History programme, including at least 12 units of Ancient History and Archaeology, and who, in the judgment of the committee, shows outstanding achievement and promise. The purpose of the scholarship is to enable the winner to travel and study abroad during the vacation before the final Winter Session, and/or to fund the final year of study at McMaster; candidates should submit to the committee a statement of their aims and plans for study.
Value: $2,000 (30204 304)

THE HARRIETT WHIDDEN SCHOLARSHIP
Established in 1991 by family, friends, and colleagues in memory of Harriett Whidden, with a view to fostering relations of friendship and understanding between French-speaking and English-speaking Canadians. To be awarded to a student in her penultimate Level who shows ability and promise in the use of the French language. The recipient will spend some weeks of residence and study in a French-Canadian home during the summer vacation.
Value: $900 (30176)

THE T. RUSSELL WILKINS MEMORIAL SCHOLARSHIP
Established in 1993 by bequest of Mrs. T. Russell Wilkins (B.A. '18 Brandon, M.A. '32), daughter of former Chancellor Howard P. Whidden, in memory of her husband, Dr. T. Russell Wilkins ('11). To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in any one of the following subject fields (singly or in combination): Biochemistry, Biology, Chemistry, Computer Science, Geology, Materials Science, Physics. Candidates for this scholarship must have attained high standing in the subjects of their programme and must, in addition, have demonstrated a lively interest in the humanities and in the human and social implications of scientific developments. The purpose of the scholarship is to enable the winner to spend the summer before the final Fall/Winter session in travel and study outside Canada.
Value: $6,000 (30178)

C. Awards for Part-time, In-Course Students (Part-Time Studies)

The following awards are based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in November, are provided exclusively for part-time first baccalaureate degree students who qualify on the basis of work included at the most recent review in other than their graduating session.
2. In addition to meeting the General Conditions listed in Section 1, a student must obtain at the most recent review a Cumulative Average of at least 8.0 and no failures.
3. The Cumulative Average will be used to break any tie in the competition for awards.

THE T. RUSSELL WILKINS MEMORIAL SCHOLARSHIP
Established in 1993 by bequest of Mrs. T. Russell Wilkins (B.A. '18 Brandon, M.A. '32), daughter of former Chancellor Howard P. Whidden, in memory of her husband, Dr. T. Russell Wilkins ('11). To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in any one of the following subject fields (singly or in combination): Biochemistry, Biology, Chemistry, Computer Science, Geology, Materials Science, Physics. Candidates for this scholarship must have attained high standing in the subjects of their programme and must, in addition, have demonstrated a lively interest in the humanities and in the human and social implications of scientific developments. The purpose of the scholarship is to enable the winner to spend the summer before the final Fall/Winter session in travel and study outside Canada.
Value: $6,000 (30178)
D. Single Achievement Awards for Full-time and Part-time Students

The following awards are granted based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in June or November, are provided for either full-time or part-time first baccalaureate degree students qualifying on the basis of achievement during the Spring/Summer or Fall/Winter sessions immediately preceding the May review (or deferred examinations resulting therefrom). Normally, these awards will be granted to In-Course students. A number of awards under this category are also listed under Category F for Second Degree Students.

2. In addition to meeting the General Conditions listed in Section 1, a student must obtain, at the most recent review, a Cumulative Average of at least 8.0 and no failures.

3. The Cumulative Average will be used to break any tie in the competition for these awards.

THE ALUMNI CANADIAN GEOGRAPHY PRIZE
Established in 1985 by the Geography Branch of the McMaster University Alumni Association in recognition of Dr. Lloyd G. Reeds for his contribution to teaching during more than 35 years of service. To be awarded to the student who attains the highest grade in GEOG 2E03 (Geography of Canada).
Value: $175 (40001 004)

THE ALUMNI SOCIAL WORK PRIZE
Established in 1991 by the Social Work Branch of the McMaster Alumni Association. To be awarded to the student who attains the highest standing in SOC WORK 4P03.
Value: $50 for books (40056 275)

THE AMERICAN-STANDARD PRIZE
Established in 1978. To be awarded to the student in the Ceramics stream of the Materials Engineering programme who attains the highest grade in GEOLOGY 2BC04.
Value: $100 (40002 007)

THE ARTS & SCIENCE PROGRAMME BOOK AWARD
Established in 1995. To be awarded from time to time to an Arts & Science student who, in the judgment of the Arts & Science Programme Awards Committee, has demonstrated outstanding academic achievement in both arts and science.
Value: $75 (40075 390)

THE MURRAY BALL PRIZES IN GEOLOGY
Established in 1991 by May A. Ball in memory of her brother Murray Ball. Two scholarships to be awarded to students in Natural Sciences I, who, in the judgment of the Department of Geology, attained notable standing in ENVIR SC 1G03.
Value: $200 each (40057)

THE ABE BLACK MEMORIAL PRIZE
Established in 1982 by friends and colleagues of Dr. A. H. Black in memory of a distinguished member of the Department of Psychology from 1958 to 1978. To be awarded to the student who, in the judgment of the Department of Psychology, has demonstrated outstanding achievement in PSYCH 4D06 (Honours Thesis).
Value: $100 (40076 381)

THE CFWU (HAMILTON) RUBY BROWN BOOK PRIZE IN ENGLISH
Established in 1970 by bequest of Mrs. Edgar Brown. To be awarded to a student in any Level I programme for the most creative essay in a Level I English course.
Value: $50 (40046 248)

THE CANADIAN INSTITUTE OF INTERNATIONAL AFFAIRS PRIZE
Established in 1994 by the Canadian Institute of International Affairs (Hamilton Branch). To be awarded to a student who has completed Level I and at least 30 units of a programme in Political Science who, in the judgment of the Department of Political Science, has achieved notable standing in at least six units of International Politics courses including an outstanding essay dealing with a topic related to the field of international politics.
Value: $300 (40071 349)

THE ELEANOR TURNEY CARMENT PRIZE
Established in 1982 in memory of James Robertson Carruthers ('74) by his family and friends. To be awarded to the student who, in the judgment of the Department of History, attains notable standing in HISTORY 2H05 (United States History).
Value: $300 (40025 032)

THE CITIZEN ACTION GROUP PRIZE
Established in 1984 by the Citizen Action Group, Hamilton, to honour Professor Harry L. Penny, founding Director of the School of Social Work, and Board Member of Citizen Action Group. To be awarded to the student in a programme in Social Work who submits an essay or report based on the student's field work experience that addresses the need for innovative or non-traditional social work practice.
Value: $250 (40006 031)

THE JOHNSON BURNS CLINARD SCHOLARSHIP
Established in 1994 by friends and colleagues as a tribute to John Clinard in recognition of his outstanding contribution to the choral field, especially through his association with the Bach Elgar Choir. To be awarded to an in-course student who has completed Level I of a programme in Music and who, in the judgment of the School of Art, Drama and Music, is outstanding in the area of choral or vocal music.
Value: $500 (30220 350)

THE COMPARATIVE LITERATURE PRIZE
Established in 1998. To be awarded to a student in an Honours programme in Comparative Literature who, in the judgment of the Department of Modern Languages, has achieved notable standing in Level II courses in Comparative Literature.
Value: $225 (40068)

THE CONSUL GENERAL OF ITALY BOOK PRIZE
Established in 1982. To be awarded to in-course students for excellence in Italian studies. (40010 041)

THE EDITH GRACE COOMBS MEMORIAL SCHOLARSHIP
Established in 1969 by Lois Brown. To be awarded to a full-time or part-time student entering Level IV of an Honours Programme in Art or Art History who, in the judgment of the School of Art, Drama and Music, is outstanding. Preference will be given to a student from the Regional Municipality of Hamilton-Wentworth.
Value: $500 (30046 043)

THE BEATRICE CORRIGAN MEMORIAL BOOK PRIZE
Established in 1980 in memory of Professor Beatrice Corrigan by her friends and colleagues. To be awarded to the student who achieves the highest standing in either ITALIAN 3NN3 or ITALIAN 4R03, or MOD LANG 3SS3.
Value: $75 (40004)
THE CRANSTON PRIZES
Established in 1956 by William H. Cranston of Midland in honour of his parents, J. Herbert Cranston ('05) and Eva Wilkins Cranston ('07). Two prizes to be awarded for excellence in the study of Canadian literature: (a) one for the highest grade in ENGLISH 2G06, and (b) one for the highest grade in ENGLISH 2C03.
Value: $150. (b) $100 (40011)

THE DRAMA BOOK PRIZE
Established in 1974 by Professor Ronald W. Vince. To be awarded to the student who attains the highest standing in DRAMA 1A06. (40014 OS2)

THE ENVIRONMENTAL ISSUES PRIZE
Established in 1993 by the Regional Municipality of Hamilton-Wentworth in recognition of Metal Recovery Industries and Philip Environmental, Industrial Filter Fabrics Ltd., and Laidlaw Waste Systems. To be awarded to the student who attains the highest grade in GEOG 4V06.
Value: $100 (40070 341)

THE NEIL FORSYTH PRIZE
Established in 1992 by The Steel Founders’ Society of America in honour of Neil Forsyth, president of the organization in 1990 and 1991, in recognition of his outstanding service to the steel castings industry. To be awarded to the student who attains the highest grade in MATLS 3I05.
Value: $105 (40067 121)

THE FRENCH GOVERNMENT BOOK PRIZES
To be awarded from time to time to in-course students for proficiency in Level I and in Level II French. (40017)

THE R. LOUIS GENTILCORE PRIZE
Established in 1989 by the family and friends of Professor R. Louis Gentilcore on the occasion of his retirement from the Department of Geography.
To be awarded to a student in an Honours programme in Geography who, in the judgment of the Department, has demonstrated exceptional achievement in historical-cultural geography.
Value: $400 (40062 064)

THE GERMAN EMBASSY BOOK PRIZE
To be awarded from time to time to in-course students for proficiency in Level II or III German. (40018)

THE GILMOUR MEMORIAL PRIZE
Established in 1927 by Year '27, in memory of Dr. Joseph Leeming Gilmour, Honorary President of their first year in 1923, and subsequently enlarged by his children.
To be awarded to a student who attains the highest standing in RELIG ST 2E06.
Value: $100 (40019)

THE GREEK COMMUNITY OF BURLINGTON AND DISTRICT SCHOLARSHIP
Established in 1983. To be awarded to the student who obtains the highest standing in GREEK 1Z06.
Value: $250 (40020 068)

THE HAMILTON ENGINEERING INSTITUTE PRIZE
Established in 1962 by the Hamilton Section of the Engineering Institute of Canada and continued by the Hamilton Engineering Institute. To be awarded to the student in Engineering I who attains the highest grade in ENGINEER I C04.
Value: $250 (40023 073)

THE HUGHES SCHOLARSHIP
Established in 1993 by Heidi Dickansen-Hughes in memory of her husband Peter Hughes ('99). To be awarded to a student who has completed Level I and 30-75 units of the Music Programme who, in the judgment of the School of Art, Drama and Music, has displayed outstanding achievement in Music Education.
Value: $225 (40069 330)

THE WILLIAM D.G. HUNTER PRIZE
Established in 1989 by family, friends and colleagues in memory of Professor William D.G. Hunter, member of the Department of Economics from 1951 to 1984.
To be awarded to the student who attains the highest standing in ECON 3LL3.
Value: $200 (40080 394)

THE PAUL HYPHER PRIZE
Established in 1988 in memory of Paul F. Hypher by his friends and classmates.
To be awarded to the student in a programme in Commerce who attains the highest standing in COMMERCE 2MA3.
Value: $150 for books (40039 080)

THE MUNICIPAL CHAPTER OF HAMILTON, IODE, PRIZE
Established in 1944 by the Municipal Chapter of Hamilton, Imperial Order Daughters of the Empire. To be awarded to the student who attains the highest standing in a Level I History course.
Value: $150 (40026 081)

THE INTER NATIONES (BONN) BOOK PRIZE
To be awarded from time to time to in-course students for proficiency in German studies. (40024)

THE H.L. JACKSON MEMORIAL SCHOLARSHIP
Established in 1989 in memory of Professor H.L. Jackson by his friends and colleagues. To be awarded to the student who has completed Level I and at least 60 units of an Honours programme in the Department of Mathematics and Statistics, who in the judgment of the department has demonstrated achievement in MATH 3AA3.
Value: $400 (40021 311)

THE HERBERT M. JENKINS PRIZE
Established in 1990 as a tribute to Dr. Herbert M. Jenkins, first Director of the Arts and Science Programme, by his many friends, colleagues and students on the occasion of his retirement from McMaster University.
To be awarded to a student in an Arts and Science Programme whose work, in the judgment of the Arts and Science Programme Awards and Review Committee, best reflects scholarship and the spirit of inquiry.
Value: $175 (30185 249)

THE JEAN JONES PRIZE
Established in 1986 in recognition of the distinguished service of Professor Jones to the School of Social Work.
To be awarded to the student who attains the highest grade in SOC WORK 2806.
Value: $50 (40026 086)

THE KINESIOLOGY PRIZES
Established in 1982. Two prizes to be awarded to students who have completed the courses in Level III of the Kinesiology programme: (a) one to a student who, in the judgment of the Department of Kinesiology, has submitted an outstanding paper or project, and (b) one to the student who, in the judgment of the Department of Kinesiology, has demonstrated outstanding achievement in academic standing throughout the programme.
Value: $50 each (40041)

THE LATIN PRIZE
Established in 1987 by Dr. John B. Clinard. To be awarded to a student who, in the judgment of the Department of Classics, has demonstrated notable achievement in LATIN 1206.
Value: $100 (40031 096)

THE SAM LAWRENCE PRIZE
Established in 1997 by the East Hamilton Independent Labour Party C.C.F. Club in honour of Sam Lawrence.
To be awarded to the student who, in the judgment of the Department of Economics, has demonstrated outstanding academic achievement in courses in labour economics.
Value: $150 (40048)

THE LINGUISTICS PRIZE
Established in 1968. To be awarded to a student in an Honours programme in Modern Languages and Linguistics who, in the judgment of the Department of Modern Languages, has achieved notable standing in Level II courses in Linguistics.
Value: $225 (40033)

THE MACGIBBON SCHOLARSHIP
Established in 1970 by bequest of Professor Duncan A. MacGibbon ('06). To be awarded to the student in a programme in Economics who, in the judgment of the Department of Economics, has attained the highest course in courses in economic history.
Value: $350 (40034 101)

THE WILLIAM MACKENZIE MEMORIAL PRIZE
Established in 1977 in memory of Professor William MacKenzie by his friends and colleagues.
To be awarded to the student who, in the judgment of the Department of Economics, has demonstrated outstanding academic achievement in either ECON 3T03 (Economic Development: Agriculture and Population) or ECON 3TT3 (Economic Development: Trade, Foreign Investment and International Finance) or, in exceptional circumstances, for work in a related area.
Value: $200 (40053 312)

THE ELEANOR MARPLES PRIZE IN ART HISTORY
Established in 1986 by Mrs. Barbara Niedermeier and her family in memory of her sister, Eleanor Marples.
To be awarded to a student who, in the judgment of the Department of Art and Art History, has demonstrated outstanding achievement in ART HIST 3V03.
Value: $100 (40015 103)
THE ELEANOR DORNBUCH MARPLES PRIZE IN DRAMA
Established in 1987 by Vaughan W. Marples in memory of his wife. To be awarded to the student who attains the highest grade in DRAMA 2MO6.
Value: $100 (40016 104)

THE H.W. MCCREADY PRIZE IN BRITISH HISTORY
Established in 1981 in memory of Professor H.W. McCreary, a member of the Department of History from 1943 to 1975, by former students, colleagues, and friends. To be awarded to the student who, in the judgment of the Department of History, attains notable standing in HISTORY 2N06.
Value: $100 (40022)

THE JANET MCKNIGHT AWARD
Established in 1994 by faculty, friends and students in memory of Janet McKnight, beloved colleague and teacher, a recognized expert in educational methodology and small-group, problem-based learning. To be awarded to a student entering Level IV of a programme in Nursing who, in the judgment of the School of Nursing has demonstrated notable academic achievement and leadership in clinical and educational aspects of gerontology or, problem-based, self-directed learning in nursing education.
Value: $400 (40077 385)

THE NOBBIT KINOSHTA ARCHITECTS INC. PRIZES
Established in 1990 by Moffatt Kinoshita Associates Inc. Two prizes to be awarded to: (a) the student who attains the highest grade in GEOG 4F03; and (b) the student who attains the highest grade in GEOG 4Z03.
Value: $175 each (40002 250)

THE JOHN F. MOORE PRIZE
Established in 1990 by the Steel Founders’ Society of America in honour of John Moore’s contributions to the Society over the past 25 years. To be awarded to the student who attains the highest grade in MATERIALS 4C03.
Value: $100 (40061 264)

THE NOSID CERAMIC ENGINEERING PRIZE
Established in 1978 by Norskid (Canada) Limited. To be awarded to the student who has completed Level I and at least 75 units of the Ceramic Engineering Stream of the Materials Engineering programme and who attains the highest standing in MATERIALS 3R03.
Value: $50 (40037 122)

THE P.L. NEWBIBIGGING SCHOLARSHIP
Established in 1994 by family, friends and colleagues in memory of Dr. P.L. Newbibbing, founding Chair of the Department of Psychology and member of the Faculty from 1955-1990, in recognition of his outstanding contributions to the Department and the University. To be awarded to the student entering Level II of an Honours programme in Psychology who has attained the highest average in PSYCH 1A03 and 1A13.
Value: $300 (40072 263)

THE ALAN G. NEWCOMBE PRIZE IN PEACE STUDIES
Established in 1991 in memory of Dr. Alan G. Newcombe (1923-1991), who devoted 30 years to Peace Studies and was co-founder, with Dr. Hanna Newcombe, of the Canadian Peace Research and Education Association and the Peace Research Institute - Dunas. To be awarded to a student who, in the judgment of the Coordinating Council of the Centre for Peace Studies, demonstrates leadership in extracurricular endeavours and high academic achievement in SOC SCI 2B06 or SOC SCI2C03 and 2D03.
Value: $200 (40064 308)

THE DERRY NOVAK SCHOLARSHIP
Established in 1984 by the Political Science alumni and colleagues in honour of Professor Derry Novak. To be awarded to the student in a programme in Political Science who, in the judgment of the Department of Political Science, has achieved high standing in Level III courses in political theory or political philosophy.
Value: $350 (40012 125)

THE CONNIE O’SHAUGHNESSY MEMORIAL PRIZE
Established in 1988 by family, friends and associates of Connie O’Shaughnessy (‘88), a part-time student who chose to return to complete her degree on a full-time basis. To be awarded to a student who has completed Level I and 30 to 60 units who, in the judgment of the Selection Committee for Part-Time Awards, has made a significant contribution to the University life of part-time students.
Value: $375 (40009 265)

THE PIONEER GROUP LTD. PRIZE
Established in 1990. To be awarded to a student in a Gerontology programme who, in the judgment of the Gerontology Committee of instruction, has achieved notable academic standing, and demonstrates practical aptitude for a career in health care of the elderly.
Value: $400 (40058 270)

THE PROCTOR LIMITED SCHOLARSHIP
Established in 1962. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in either MOD LANG 3R03 or MOD LANG 3R3R.
Value: $150 (40042 140)

THE RAND MEMORIAL PRIZE OF CLASS ‘98
Established by the Class of ’98 in Arts, on the occasion of the 25th anniversary of graduation, 1923, in memory of Chancellor Theodore Harding Rand. To encourage original literary work. To be awarded to the student who has completed Level I and 60 to 75 units and who, in the judgment of the Department of English, has made the most notable original contribution to student publications.
Value: $200 (40045)

THE ABRAHAM ROSENBERG MEMORIAL PRIZE
Established in 1986 by bequest of Abraham I. Rosenberg (‘34) of Hamilton and Kitchener. To be awarded to the student who attains the highest standing in ENGLISH 3B05 or 3C03.
Value: $150 (40000 147)

THE MORRIS AND SARAH ROSENHEAD MEMORIAL PRIZE
Established in 1968 by bequest of Sarah Rosenhead of Hamilton. To be awarded to the student who attains the highest standing in ENGLISH 1D06.
Value: $150 (40005 152)

THE NOEL SANDUSKY MEMORIAL PRIZE
Established in 1994 by family and friends in memory of Nois Sandusky. To be awarded to a student who has completed Level I and 30-45 units of a programme in History who, in the judgment of the Department of History, attains notable academic standing in at least 9 units of History courses.
Value: $150 for books. (40075 359)

THE LARRY SAYERS PRIZE IN CHINESE HISTORY
Established in 1983 in memory of Larry P. Sayers (‘82) by his friends. To be awarded to the student who, in the judgment of the Department of History, has demonstrated outstanding achievement in at least six units of courses work in Chinese History.
Value: $250

THE LARRY SEFTON SCHOLARSHIP
Established in 1985 by the Hamilton Steelworkers Area Council in memory of Larry Sefton, area supervisor (1946-53) and director of District 6 (1952-73) of the United Steelworkers of America, to recognize his commitment to education, to working people, to unions and to the City of Hamilton. Five scholarships to be awarded to students in the Labour Studies programme, who in the judgment of the Committee of Instruction for Labour Studies, have achieved notable standing: (a) one to a student entering Level II of a programme in Labour Studies as a full-time student; (b) one to student entering Level II of a programme in Labour Studies as a part-time student; (c) one to a student who has completed Level I and 30-45 units of a programme in Labour Studies as a full-time student; (d) one to a student who has completed Level I and 30-45 units of a programme in Labour Studies as a part-time student; (e) one to a student who has completed Level I and 60-75 units of an Honours programme in Labour Studies.
Value: $300 each (30009 151)

THE GRAACE SERRA FONTES MEMORIAL PRIZE
Established in 1989 by the graduating class (‘88) in association with the McMaster University Nursing Society and the McMaster Nursing Alumni Executive in memory of Grace Serra-Fontes (‘89) of Toronto. To be awarded to a student who has completed Level I and 70 to 85 units of the Nursing programme and who, in the judgment of the School of Nursing, best demonstrates excellence in scholarship and leadership, and has served as a valuable role model for those qualities deemed important to success in a nursing career.
Value: $250 (30061 246)
THE MARGARET A. SERVICE BOOK PRIZE
Established in 1990 by friends, colleagues and former students in memory of Margaret A. Service. To be awarded to the student who upon completion of Level I attains the highest average in BIOLOGY 1A03 and 1AA3. Value: $125 (40059 277)

THE SOCIAL WORK PRIZE
Established in 1982. To be awarded to the student who attains the highest grade in SOC WORK 2D03. Value: $50 (40050)

THE ANNE STEIN MEMORIAL PRIZE
Established in 1971 by friends and colleagues of Anne Stein. To be awarded to the student who successfully completes SOC WORK 3D03 and attains the highest average in SOC WORK 3D06 in the same session. Value: $100 (40003)

THE STO PRIZE IN GERONTOLOGY
Established in 1987 by the Superannuated Teachers of Ontario, District 13. To be awarded to the student who attains the highest standing in GERONTOL 1A00. Value: $100 (40047 163)

THE SWISS MINISTER TO CANADA BOOK PRIZES
Established in 1950. To be awarded from time to time to in-course students for proficiency in French, German, or Italian. (40051)

THE KENNETH W. TAYLOR BOOK PRIZE
Established in 1976 by his children in memory of Dr. Kenneth W. Taylor (‘21), L.L.D. (‘50). To be awarded to the student who, in the judgment of the Department of Economics, has demonstrated outstanding academic achievement in courses within the area(s) of monetary economics and financial institutions and public finance. Value: $100 (40029 171)

THE MICHAEL THOMSON MEMORIAL BOOK PRIZES
Established in 1975 by the members of the Departments of German and Russian in memory of Michael Thomson, Supervisor of the McMaster University language laboratories from 1961 to 1975. Two prizes to be awarded: (a) one to the student who attains the highest standing in GERMAN 1206 and (b) one to the student who attains the highest standing in RUSSIAN 2C06. Value: $50 each (40032 266)

THE JOHN TOTH MEMORIAL PRIZE
Established in 1983 in memory of John Toth by his friends. To be awarded to the student who attains the highest average in any six units of Level III or IV Latin courses. Value: $50 (40028 176)

THE JOHN H. TRUEMAN SCHOLARSHIP
Established in 1989 as a tribute to Professor John H. Trueman by his many friends, colleagues and students on the occasion of his retirement from McMaster University. To be awarded to the student who has completed Level I and who, in the judgment of the Department of History, has achieved notable academic standing in medieval history. Value: $300 (30081 179)

THE THOMAS TRUMAN MEMORIAL PRIZE
Established in 1992 by friends and colleagues in memory of Professor Thomas Truman, a member of the Department of Political Science from 1966 to 1990. To be awarded to the student entering the final level of an Honours programme in Political Science who, in the judgment of the Department of Political Science, has achieved notable academic standing in at least nine units of Comparative Politics courses. Value: $75 (40068 313)

The recipient of this award is eligible to receive additional aid through the corresponding Supplementary Bursary Aid Fund if he/she demonstrates financial need. Please see the section on Supplementary Bursary Aid for Award Recipients in the Student Financial Aid section of this Calendar.

THE UNIVERSITY PRIZES FOR SPECIAL ACHIEVEMENT
Established in 1973. Two prizes to be awarded in each Faculty and other academic units to students who exhibit exceptional skill and originality in a creative project (such as an essay, poem, sculpture, mathematical or scientific problem, engineering design) or a related series of such projects. Value: $150 each (40052)

THE MELINDA WAPSHAW ACHIEVEMENT AWARD
Established in 1993 by the Labour Studies Student Association and the Labour Studies Programme. To be awarded to a student who has completed Level I and 60-75 units of an Honours Programme in Labour Studies and who, in the judgment of the Committee of Instruction, demonstrates outstanding achievement. Value: $100 (40074 358)

THE RALPH WEEKES SCHOLARSHIP
Established in 1994 by the Investors Group Financial Services to recognize the accomplishments of Ralph Weekes (’73). To be awarded to a student enrolled in a programme in Economics who, in the judgment of the Department of Economics, has attained notable standing. Preference to be given to a student pursuing studies on a part-time basis. Value: $300 (40073 360)

THE WIDMAIER PRIZES FOR PROFICIENCY IN GERMAN
Established in 1990 by Dr. and Mrs. F. Widmaier. Two prizes to be awarded to students of GERMAN 1206 who, in the judgment of the Department of Modern Languages, have achieved notable proficiency in German. Value: $250 each (40054 278)

THE R.M. WILES MEMORIAL BOOK PRIZE
Established in 1975 in memory of Professor Roy McKeen Wiles by his friends and colleagues. To be awarded to the student who, in the judgment of the Department of English, has written the best essay on a topic relating to English literature of the period 1660-1800. Value: $200 for books (40044)

E. Awards for Graduating Students
The following awards are based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in May, are provided exclusively for graduating students qualifying on the basis of achievement in their first baccalaureate degree programme.

2. In addition to meeting the general conditions listed in Section 1, a student must obtain:
   a) Cumulative Average of at least 8.0;
   b) no failures in the courses last taken equal to:
      i) either the number of units specified in the Calendar for the final level of their programme;
      ii) or, if the Calendar does not specify the programme work by individual levels, the final 30 units of work.

◆ MEDALS

THE GOVERNOR GENERAL’S ACADEMIC MEDAL
Given by His Excellency the Governor General of Canada. To be awarded to the student graduating from a first baccalaureate degree programme who, in the judgment of the selection committee, has attained the highest standing throughout the programme. (50022)

THE E.H. AMBROSE GOLD MEDAL
Established in 1957 by Clarkson Gordon in memory of their former Hamilton partner; E.H. Ambrose, member of the University’s Board of Governors from 1957 to 1967 and 1965, his Chair, 1965 to 1967, and augmented by Mrs. E.H. Ambrose in 1987. To be awarded to the student in the graduating class of a programme in Commerce who, on the basis of scholarship and leadership, is judged to be the outstanding member of the class. (50014 006)

THE ASSOCIATION OF PROFESSIONAL ENGINEERS GOLD MEDAL
Established in 1961 by the Ontario Professional Engineers Foundation for Education. To be awarded to the graduating student in the graduating class of a programme in Engineering who attains the highest Cumulative Average. (50005 008)

THE BASU MEDAL
Established in 1984 in memory of Professor Sanjoy Basu by friends, colleagues and accounting organizations. To be awarded to the graduating student who, in the judgment of the School of Business, has displayed outstanding achievement in accounting and has attained an average of at least 10.0 in any four of COMMERCE 4A03, 4B03, 4AC3, 4AD3, 4AES3, 4AF3. (50006 013)

THE EZIO CAPPADOCIA MEDAL
Established in 1986 by Professor E. Cappadocia on the occasion of his retirement from the Department of History. To be awarded to a student graduating from an Honours programme in History who, in the judgment of the Department of History, has displayed outstanding achievement and has contributed to the Department’s activities. (50016 030)

THE J.E.L. GRAHAM MEDAL
Established by the Faculty of Social Sciences in 1982 in recognition of Professor J.E.L. Graham for his outstanding contributions to the Faculty and the University during 32 years of service. To be awarded to a student graduating from an Honours programme in History who, in the judgment of the Department of History, has displayed outstanding achievement and has contributed to the Department’s activities. (50016 030)
THE AMELIA HALL GOLD MEDAL
Established in 1968 by members of the Class of '36 in recognition of Amelia Hall ('36), D. Lit. ('75), one of the great pioneers of Canadian theatre and a consummate actress, who performed on Canadian stage, screen, radio and television for 35 years. To be awarded to a graduating student who, in the judgment of the Department of History, has displayed outstanding achievement in an Honours History programme.
Value: $50 (50003 070)

THE HURD MEDAL
Established in 1955 by Donald W. Hurd ('49) in memory of his father, Dean William Burton Hurd. To be awarded to a student at graduation for distinguished achievement in an Honours programme in which economics is a major field of study.
Value: $150 (50003 079)

THE JENSEN MEDAL
Established in 1995 by friends and colleagues as a tribute to Dr. Doris E.N. Jensen in recognition of her contribution in developing Cooperative Education programmes in the Faculty of Science and her 31 years of service in the wider university community. To be awarded to a student graduating from the Honours Biology and Pharmacology (Co-op) Programme who, in the judgment of the Committee of Instruction, demonstrates outstanding academic achievement and excellence in co-op placements.
Value: $75 (50007 357)

THE GERALD L. KEECH MEDAL
Established in 1994 by his friends and colleagues as a tribute to Gerald L. Keech in recognition of his outstanding contributions to McMaster University during his 33 years of service in Computer Science and computer services. To be awarded to the graduating student from a programme in Computer Science who attains the highest Cumulative Average.
Value: $75 (50069 344)

THE MAPS GOLD MEDAL
Established in 1982 by the McMaster Association of Part-Time Students. To be awarded to the graduating student completing studies primarily on a part-time basis and who attains the highest Cumulative Average.
Value: $75 (50076 397)

THE R.C. MCVIOR MEDAL
Established by the Faculty of Social Sciences in 1982 in recognition of Professor R.C. McVior, former Dean of the Faculty, for his outstanding contributions to the Faculty and the University during 35 years of service. To be awarded on the recommendation of the Faculty of Social Sciences to the full-time student in the graduating class who, on the basis of scholarship, is judged to be the outstanding member of the class of Social Sciences graduates.
Value: $150 (50003 070)

THE BURKE MEMORIAL RING
Presented by science graduates of the University in memory of Dean C.E. Burke. To be awarded to a graduate of a B.Sc. programme who is named to the Deans' Honour List and who has made the most outstanding contribution to undergraduate activities.
Value: $150 for books (50003 267)

THE CAMERON D. ALLEN BOOK PRIZE
Established in 1978 in memory of Cameron D. Allen. To be awarded to a student graduating from an Honours programme in Geography who, in the judgment of the Department of Geography, shows outstanding achievement in studies in climatology.
Value: $150 for books (50003 267)

THE AMBASSADOR OF SPAIN BOOK PRIZE
Established in 1982. To be awarded to a graduating student in a programme in the Department of Modern Languages who, in the judgment of the Department, has achieved notable proficiency in Spanish.
Value: $50 (50004 005)

THE ANTHROPOLOGY PRIZE
Established in 1982. To be awarded to the graduating student who has completed a programme in Anthropology primarily on a part-time basis and who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement.
Value: $50 (50004 005)

THE WILLIAM AND LIDA BARNES MEMORIAL PRIZE IN HISTORY
Established in 1969 by their son, William D. Barns, of Morgantown, West Virginia. To be awarded to the graduating student who, in the judgment of the Department of History, has attained notable standing in an Honours History programme.
Value: $200 (50060 368)

THE BARNS MEMORIAL PRIZE IN HISTORY
Established in 1982 by friends and colleagues of Dr. A.H. Black in memory of a distinguished member of the Department of Psychology from 1956 to 1978. Three prizes to be awarded: (a) to one student who attains the highest Cumulative Average in an Honours B.A. programme in Psychology; (b) to one student who attains the highest Cumulative Average in the Honours B.Sc. programme in Psychology; (c) to one student who attains the highest Cumulative Average in the Honours Biology and Psychology (Life Sciences) programme.
Value: (a) $75; (b) $75; (c) $75 (50000 017)

THE RUTH BURKE MEMORIAL PRIZE
Established in 1963 by Dr. and Mrs. Herbert S. Armstrong in memory of Mrs. Charles E. Burke. To be awarded to the student in the Nursing programme who attains the highest Cumulative Average. The Prize is a set of engraved sterling silver coffee spoons.
Value: $175 and book ends (50062 132)

THE DENTON COATES MEMORIAL SCHOLARSHIP
Established in 1982 in memory of Denton E. Coates ('70) by his friends. To be awarded to the graduating student who, in the judgment of the Department of Materials Science and Engineering, has demonstrated outstanding achievement in independent research as exemplified by the senior thesis in MATLS 4K04.
Value: $225 (50013 004)

THE LAURA DOCCON PRIZE
Established in 1965 by Laura Doccson ('56). To be awarded to the student graduating from the Honours Arts and Science programme who has displayed outstanding achievement in both arts and science.
Value: $150 (50031 049)

THE HELEN EMERY PRIZE IN ENVIRONMENTAL SCIENCE
Established in 1990 by Miss Helen Emery of Barrie, Ontario. To be awarded to a student graduating from the Honours Geography and Environmental Sciences programme who has displayed outstanding achievement.
Value: $250 (50053 237)

THE EUROPEAN HISTORY PRIZE
Established in 1986 by Professor Elio Cappadocia, on the occasion of his retirement from the Department of History in memory of his mentor, Professor Frank H. Underhill. To be awarded to a student graduating from an Honours programme in History who, in the judgment of the Department of History, has displayed outstanding achievement in European history courses consistently throughout the degree programme.
Value: $100 (50017 368)

THE FINANCIAL EXECUTIVES INSTITUTE PRIZE
Established in 1963 by the Hamilton Chapter of The Financial Executives Institute. To be awarded to the graduating student who, in the judgment of the School of Business, has demonstrated outstanding achievement in courses in finance.
Value: $500 (50019 060)
THE GERONTOLOGY PRIZES
Established in 1988 by the Pioneer Group Limited. Two prizes to be awarded (a) one to a full-time student and (b) one to a part-time student, both of whom are graduating from a programme in Gerontology who, in the judgment of the Gerontology Committee of Instruction, have demonstrated high academic achievement and leadership in extracurricular activities.
Value: $100 each (50021 069)

THE ICI CANADA INC. UNDERGRADUATE SCHOLARSHIPS
Established in 1996 by the Imperial Chemical Industries, Canada, Inc. Two awards: (a) one to a graduating student from a programme in Chemistry and; (b) one to a student graduating from a programme in Chemical Engineering who, in the judgment of the Departments of Chemistry and Chemical Engineering, have demonstrated academic excellence in Chemistry or Chemical Engineering courses.
Value: $500 each (50077 001)

THE IROQUOIS TROPHY
Established in 1970 by the Department of Mechanical Engineering. To be presented to a graduating mechanical engineer on the basis of academic excellence, participation in campus societies, clubs, or other activities, and general leadership. A replica of the Trophy is permanently held by each winner. (50028)

THE BURTON R. JAMES MEMORIAL PRIZE
Established in 1974 by his friends and colleagues in honour of Burton R. James ('39), Controller, 1963-71, Assistant Vice-President - Administration, 1971-73, McMaster University. To be awarded to the student who, in the judgment of the Faculty of Business, has attained an outstanding Cumulative Average in a programme in Commerce.
Value: $150 (50008)

THE W. NORMAN JEEVES SCHOLARSHIP
Established in 1987 by the French Section, Department of Romance Languages, in honour of W. Norman Jeeves, Professor of French from 1965 to 1987. To be awarded to a graduating student in a French programme, in the judgment of the Department of French, who has demonstrated outstanding academic achievement in the French component of the programme.
Value: $400 (50052 088)

THE FRANK E. JONES PRIZE
Established in 1982 in honour of Professor F.E. Jones for his outstanding contributions to the Department of Sociology. To be awarded to the full-time student with the highest Cumulative Average in an Honours programme in Sociology.
Value: $50 (50020)

THE KINESIOLOGY PRIZE
Established in 1982. To be awarded to the graduating student who, in the judgment of the Department of Kinesiology, has submitted an outstanding paper or project.
Value: $50 (50058)

THE RUTH LANDES PRIZE
Established in 1982 in honour of Professor Ruth Landes for her outstanding contributions to the Department of Anthropology. To be awarded to the graduating full-time student in a three-Level programme in Anthropology who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement.
Value: $50 (50048)

THE FELIKS LIKOWSKI PRIZE IN POLITICAL SCIENCE
Established in 1997 by Albert Likowski ('78) and Richard Likowski ('86) in honour of their father. To be awarded to a full-time student graduating from an Honours programme in Political Science who, in the judgment of the Department of Political Science, has demonstrated outstanding academic achievement.
Value: $350 (50032 000)

THE BERT MACKINNON MEMORIAL SCHOLARSHIP
Established in 1996 in memory of Bert Mackinnon, B.A. ('43), LL.D. ('77), first Associate Chief Justice of Ontario (1978 to 1986). One or two scholarships to be awarded to graduating students who enroll in a Bachelor of Laws degree programme in the academic session immediately following graduation. Students selected will have demonstrated high academic achievement and leadership in extracurricular activities. Applications and the name of two referees should be submitted to the Student Financial Aid and Scholarships Office by the first Friday in April.
Value: $700 each (50061 298)

THE AGNES AND JOHN MACNEILL MEMORIAL PRIZE
Established in 1946 by bequest of Annie May MacNeill ('03). To be awarded to the student graduating from an Honours programme in English who has attained the most notable standing in English throughout the degree programme.
Value: $150 (50001)

THE CATHERINE MACNEILL PRIZE
Established in 1946 by bequest of Annie May MacNeill ('03). To be awarded to a woman student in her graduating year who has attained notable standing in scholarship and has shown qualities of leadership.
Value: $150 (50011)

THE ESTHER MCCANDLESS MEMORIAL PRIZE
Established in 1984 by friends and colleagues in memory of Professor E.L. McCandless, a humanitarian and distinguished member of the Department of Biology from 1964 to 1985. To be awarded to a student who achieves an outstanding Cumulative Average in an Honours programme in Biology.
Value: $225 (50016)

THE JOHN R. McCARTHY SCHOLARSHIP
Established in 1967 by John R. McCarthy LL.D. ('65), former Deputy Minister of University Affairs and Deputy Minister of Education for the Province of Ontario. To be awarded to a student graduating from a programme in Arts & Science, Humanities, Sciences, or Social Sciences who enrolls in the Faculty of Education of an Ontario university in the academic session immediately following graduation. The student selected will have made a contribution to the life of the University by displaying leadership in student government, or student affairs and leadership and sportmanship in athletic endeavours. Applications and the name of two referees should be submitted to the Student Financial Aid and Scholarships Office by April 2.
Value: $700 (50030 107)

THE A.G. MCKAY PRIZE IN CLASSICAL STUDIES
Established in 1990 by Professor Emeritus A.G. McKay. To be awarded to a graduating student from an Honours programme in Classics who, in the judgment of the Department of Classics, has demonstrated outstanding academic achievement and leadership.
Value: $100 (50064 269)

THE WALTER SCOTT MCLAY PRIZE
Established in 1936 in honour of Dean McClay, by his daughter, Mrs. F.R. McLaughlin (Marjorie McClay '25) and further enlarged in 1950 by A.H. Wilson of Woodstock. To be awarded to the student who attains the highest Cumulative Average in an Honours programme in English.
Value: $250 (50057 279)

THE E.S. MOORE PRIZE IN GEOLOGY
Established in 1956 by Elwood S. Moore, LL.D. ('55). To be awarded to the student graduating in an Honours programme in Geology who, in the judgment of the Department of Geology, has attained the most notable standing in Geology.
Value: $150 (50015 116)

THE NATIONAL ASSOCIATION OF CORROSION ENGINEERS PRIZE
Established in 1989 by the Toronto Section of the National Association of Corrosion Engineers. To be awarded to the graduating student graduating from an Honours programme in Chemical Engineering who, in the judgment of the Department of Materials Science and Engineering, has submitted the outstanding thesis in the area of Corrosion Science and Engineering. In the absence of a qualified candidate, the award will be made to the student who attains the highest standard in MATLS 4D03 (Corrosion).
Value: $100 (50036 120)

THE P.L. NEWBIGGING PRIZES
Established in 1982 in recognition of Dr. Lynn Newbigging for his outstanding contributions to the Department of Psychology. Four prizes to be awarded to students with the highest Cumulative Average: (a) one to a full-time student in the three-level B.A. programme in Psychology; (b) one to a student in a B.A. programme in Psychology who has completed the programme primarily on a part-time basis; (c) one to a full-time student in the three-level B.Sc. programme in Life Sciences with a concentration in Psychology; and (d) one to a student in a B.Sc. programme in Life Sciences with a concentration in Psychology who has completed the programme primarily on a part-time basis.
Value: $50 each (50040 280)

THE ONTARIO ASSOCIATION OF PROFESSIONAL SOCIAL WORKERS PRIZE
Established in 1986 by the Hamilton Branch. To be awarded to the graduating student who attains the highest average in SOC WORK 4D06 and 4D06.
Value: $125 (50037 126)
THE ONTARIO PHYSIOTHERAPY ASSOCIATION BOOK PRIZE
Established in 1985 by the Ontario Physiotherapy Association (Hamilton Branch). To be awarded to the student who has attained the highest Cumulative Average in the Physiotherapy programme.
Value: $100 for books (50038 128)

THE HARRY L. PENNY PRIZE
Established in 1984 in recognition of Professor Harry L. Penny, founding Director of the School of Social Work, for his outstanding contribution to the School. To be awarded to the student with the highest Cumulative Average in a Social Work programme.
Value: $50 (50023)

THE PIONEER GROUP PRIZE IN NURSING
Established in 1989 by the Pioneer Group Limited in conjunction with the R. Samuel McLaughlin Centre for Gerontological Health Research. Two prizes to be awarded to students graduating from the Nursing programme who, in the judgment of the School of Nursing, have achieved notable standing and demonstrated pratical aptitude for a career in the health care of the elderly.
Value: $150 (50056 370)

THE POLITICAL SCIENCE PRIZE
Established in 1982. To be awarded to a graduating student who has completed a programme in Political Science primarily on a part-time basis and who, in the judgment of the Department of Political Science, has demonstrated outstanding academic achievement.
Value: $200 (50042)

THE POLITICAL SCIENCE HONOURS ESSAY PRIZE
Established in 1982. To be awarded to the student who, in the judgment of the Department of Political Science, has demonstrated outstanding achievement in POL SCI 4206.
Value: $50 (50059)

THE LLOYD REEDS PRIZES
Established in 1983 in recognition of Dr. Lloyd G. Reeds for his outstanding contributions to the Department of Geography during 35 years of service. Four prizes to be awarded: (a) to the student who attains the highest Cumulative Average in an Honours B.A. programme in Geography; (b) to the student who attains the highest Cumulative Average in an Honours B.Sc. programme in Geography; (c) one to the student who attains the highest Cumulative Average in a three-level B.A. programme in Geography or B.Sc. programme in Earth Sciences with a concentration in Geography; and (d) to the student who, in the judgment of the Department of Geography, has demonstrated outstanding achievement in GEOG 4C06.
Value: $50 each (50045)

THE RELIGIOUS STUDIES PRIZES
Established in 1982. Two prizes to be awarded to students who attain the highest Cumulative Average in a three- or four-level programme in Religious Studies: (a) one to a student who has completed the programme on a full-time basis, and (b) one to a student who has completed the programme primarily on a part-time basis.
Value: $50 each (50044)

THE SHELL CANADA PRIZES IN ENGINEERING AND MANAGEMENT
Established in 1983. Three prizes to be awarded to students graduating from an Engineering and Management programme. Awards will be based on scholarship and on the quality of and creativity shown in written communication.
Value: $225 each (50049 154)

THE RICHARD SLOBODIN PRIZE
Established in 1982 in honour of Professor Richard Slobodin for his outstanding contributions to the Department of Anthropology. To be awarded to the graduating full-time student in an Honours Anthropology programme to the graduating full-time student in an Honours Anthropology programme
Value: $50 (50048)

THE SOCIETY OF CHEMICAL INDUSTRY MERIT AWARDS
Established in 1961. Three plaques to be awarded: (a) one to a Chemical Engineering gradand, (b) one to an Honours Biochemistry or Honours Biochemistry and Chemistry gradand, and (c) one to an Honours Applied Chemistry, Honours Chemistry, Honours Chemistry and Geology, or Honours Chemistry and Physics gradand, who have attained the highest Cumulative Average (at least 9.5) and have completed the programme in the normal number of years. (50060 369)

THE SOCIOLOGY PRIZES
Established in 1982. Two prizes to be awarded to students with the highest Cumulative Averages: (a) one to a student who has completed the three-level programme in Sociology on a full-time basis; and (b) one to a student who has completed a programme in Sociology primarily on a part-time basis.
Value: $50 each (50051)

THE JOHN H. TRUEMAN PRIZE
Established in 1989 as a tribute to Professor John H. Trueman by his many friends, colleagues and students on the occasion of his retirement from McMaster University. To be awarded to the graduating student who demonstrates the most outstanding ability in medieval history based on achievement in HISTORY 4Q06 or HISTORY 4S06.
Value: $300 (50007 367)

THE HARRY WAGGLASS BOOK PRIZE
Established in 1988 in honour of Harry Wagglass, the first Director of the Labour Studies Education Programme at McMaster. To be awarded to a student graduating from a programme in Labour Studies who, in the judgment of the Committee of Instruction for Labour Studies, has demonstrated outstanding achievement.
Value: $50 (50024)

THE MARK WATSON MEMORIAL PRIZE IN HISTORY
Established in 1987 by friends in the Department of History in memory of Mark A. Watson ('86). To be awarded to a student graduating from a three-level programme in History who, in the judgment of the Department of History, has displayed outstanding achievement consistently throughout the degree programme.
Value: $100 (50035 183)

F. Awards for Second Baccalaureate Degree Students
The following awards are granted based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in June or November, are provided for either full-time or part-time second baccalaureate degree students qualifying on the basis of achievement during the Spring/Summer or Fall/Winter sessions immediately preceding the May review (or deferred examinations resulting therefrom).

2. In addition to meeting the General Conditions listed in Section 1, a student must obtain, at the most recent review, a Cumulative Average of at least 8.0 and no failures.

3. The Cumulative Average will be used to break any tie in the competition for these awards.

THE CANADIAN ASSOCIATION OF OCCUPATIONAL THERAPISTS BOOK PRIZE
Established in 1992 by the Canadian Association of Occupational Therapists. To be awarded to a graduating student who, in the judgment of the School of Rehabilitation Sciences, is most outstanding in the theory component of the Occupational Therapy programme.
Value: $75 (50065 316)

THE HAMILTON DISTRICT ONTARIO PHYSIOTHERAPY ASSOCIATION BOOK PRIZE
Established by the Hamilton District of the Ontario Physiotherapy Association. To be awarded to a student graduating from the Physiotherapy programme who has attained the highest Cumulative Average.
Value: $150 (50074 362)

THE KARL KINANEN ALUMNI PRIZE IN GERONTOLOGY
Established in 1992 by the Gerontology Alumni of McMaster University in recognition of Karl Kinanen for his leadership in the development of Gerontological Studies at the University. To be awarded to a student graduating from a programme in Gerontology who, in the judgment of the Gerontology Committee of Instruction, has demonstrated high academic achievement and leadership in community activities.
Value: $100 (50064 317)

THE ELEANOR LEES BOOK PRIZE
Established in 1994 in memory of Eleanor Lees by friends in Physiotherapy. To be awarded to a student graduating from the Physiotherapy programme who, in the judgment of the School of Rehabilitation Science, has demonstrated notable academic achievement and excellence in clinical fieldwork related to neurology. (50073 354)
THE ONTARIO ASSOCIATION OF PROFESSIONAL SOCIAL WORKERS PRIZE
Established in 1992 by the Hamilton Branch. To be awarded to the graduating student from the second baccalaureate degree program in Social Work who has attained the highest average in SOC WORK 4D06 and 4D08.
Value: $125
(The above award is offered in addition to the award in Category E with the same name and terms.)

THE PHYSIOTHERAPY SECTION OF THE CANADIAN LUNG ASSOCIATION BOOK PRIZE
Established in 1992 by the Canadian Physiotherapy Association. To be awarded to the graduating student who has attained the highest Cumulative Average in the Physiotherapy programme.
Value: $150 (50063 315)

SECTION 3. INDEX OF AWARDS

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THE SMITH AND NEPHEW INC. AWARD
Established in 1991. To be awarded to the student completing Year I of the B.H.Sc. (OT) programme who, in the judgment of the School of Rehabilitation Science, has demonstrated outstanding academic achievement and excellence in clinical fieldwork.
Value: $75 (40066 397)

The following awards are cross-listed with Section 2, Category D; see latter section for description of terms.

- THE ALUMNI SOCIAL WORK PRIZE.
- THE ABE BLACK MEMORIAL PRIZE.
- THE CANADIAN INSTITUTE OF INTERNATIONAL AFFAIRS PRIZE.
- THE JAMES ROBERTSON CARRUTHERS MEMORIAL PRIZE.
- THE COMPARATIVE LITERATURE PRIZE.
- THE CITIZEN ACTION GROUP PRIZE.
- THE CONSUL GENERAL OF ITALY BOOK PRIZE.
- THE BEATRICE CORRIGAN MEMORIAL BOOK PRIZE.
- THE CRANSTON PRIZES.
- THE ENVIRONMENTAL ISSUES PRIZE.
- THE NEIL FORSYTH PRIZE.
- THE GILMOUR MEMORIAL PRIZE.
- THE WILLIAM D. HUNTER PRIZE.
- THE INTER NATIONES (Bonn) BOOK PRIZE.
- THE JEAN JONES PRIZE.
- THE SAM LAWRENCE PRIZE.
- THE LINGUISTICS PRIZE.
- THE MacGIBBON SCHOLARSHIP.
- THE WILLIAM MACKENZIE MEMORIAL PRIZE.
- THE ELEANOR DORNBUSCH MARPLES PRIZE IN ART HISTORY.
- THE ELEANOR DORNBUSCH MARPLES PRIZE IN DRAMA.

- THE H.W. McCREADY PRIZE IN BRITISH HISTORY.
- THE MCKNIGHT SCHOLARSHIP.
- THE MCMASTERS NURSING ALUMNI PRIZE.
- THE CONNIE O’SHAUGHNESSY MEMORIAL PRIZE.
- THE PIONEER GROUP LTD. PRIZE.
- THE PROCTOR LIMITED SCHOLARSHIP.
- THE ABRAHAM ROSENBERG MEMORIAL PRIZE.
- THE NOEL SANDUSKY MEMORIAL BOOK PRIZE.
- THE LARRY SAYERS PRIZE IN CHINESE HISTORY.
- THE LARRY SEFTON SCHOLARSHIP.
- THE GRACE SENRA-FONTES MEMORIAL PRIZE.
- THE ANNE STEIN MEMORIAL PRIZE.
- THE SWISS MINISTRY TO CANADA BOOK PRIZES.
- THE KENNETH W. TAYLOR BOOK PRIZE.
- THE JOHN TOTH MEMORIAL PRIZE.
- THE JOHN H. TRUEMAN PRIZE.
- THE THOMAS TRUMAN MEMORIAL SCHOLARSHIP.
- THE UNIVERSITY PRIZES FOR SPECIAL ACHIEVEMENT.
- THE MELINDA WAPSHAW ACHIEVEMENT AWARD.
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Campus Buildings

Alumni Memorial Hall (and Faculty Club) (AMH)
A.N. Bourns Science Bldg. (ABB)
Applied Dynamics Bldg. (ADL)
Bates Residence (BR)
Biology Greenhouse (G.Hs.)
Burke Science Bldg. (BSB)
Campus Services Bldg. (Receiving) (CSB)
Chester New Hall (CNH)
Commons Bldg. (Food Services Receiving) (C)
Communications Research Lab (CRL)
Divinity College (DC)
Edwards Hall
E.T. Clarke Centre (Central Utilities Services) (CUC)
General Sciences Bldg. (GS)
Gilmour Hall (GH)
H.G. Thode Library of Science & Engineering (TL)
Hamilton Hall (HH)
Health Sciences Centre (HSC)
Hedden Hall (HHH)
Ivor Wynne Centre for Physical Education & Athletics (IW)
John Hodgins Engineering Bldg. (JHE)
Kenneth Taylor Hall (KTH)
Life Sciences Bldg. (LS)
Matthews Hall (MATH)
McKay Hall (McKH)
McMaster Day Care Centre Inc. (Sheila Scott House)
Michael G. DeGroote School of Business (MGD)
Mills Memorial Library (and McMaster Museum of Art) (MMA)
Moulton Hall
Norman (Pinky) Lewis
Field House (LTH)
Nuclear Reactor (REAC)
Nuclear Research Bldg. (NRB)
President's Residence
Psychology Bldg. (PC)
Refectory (REF)
Tandem Accelerator Building (TA)
Togo Salmon Hall (TSH)
University Hall (UH)
Wallingford Hall
Whitten Hall
Woodstock Hall
Drill Hall
Building T-Thirteen
Temporary Bldg.
Hamilton/Sourcge Project Lab

OTHER INFORMATION

Campus Shuttle Bus Service
The Shuttle Bus makes three passenger stops on the West Campus and transports people to and from University Hall, the Health Sciences Centre and A.N. Bourns Science Building.

Security
E.T. Clarke Centre (2nd Floor)
525-9140, ext. 24284

Parking
E.T. Clarke Centre, Room 102, ext. 24232

Lost and Found
E.T. Clarke Centre (2nd Floor), ext. 24266

Medical Services
Medical Emergency, ext. 88

Community Information
Gilmour Hall, Room 121, ext. 23699

Facilities for the Disabled
Most buildings are wheelchair-accessible with suitable washroom facilities. The campus has wheelchair building entry, access curbs, tactile lettering for the elevators and wheelchair-height telephones for many elevators. Arrangements can be made for transportation on the DARTS van. For further information regarding access and facilities for the disabled, contact the Office for Ability and Access, Kenneth Taylor Hall, Room 118, ext. 24028.
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Requests for the Undergraduate Calendar are handled by the university bookstore Titles. The cost of the calendar is $3.00 (including taxes) plus shipping and handling. The chart below will help you in determining the total cost of your calendar needs.

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For your convenience the McMaster University Undergraduate calendar is also available via the World Wide Web at http://www.mcmaster.ca. From our homepage, enter "Student Information" to access our calendar.