2008-2009

McMASTER UNIVERSITY
Undergraduate Calendar

◆ This Calendar covers the period from September 2008 to August 2009.

At McMaster our purpose is the discovery, communication and preservation of knowledge. In our teaching, research, and scholarship, we are committed to creativity, innovation and excellence. We value integrity, quality, inclusiveness and teamwork in everything we do. We inspire critical thinking, personal growth, and a passion for lifelong learning. We serve the social, cultural, and economic needs of our community and our society.

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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, Courses and Programs, Degrees by Program, Glossary, Admission Requirements, Application Procedures and Academic Regulations, Collection and Disclosure of Personal Information, Senate Policy Statements and Financial Information.

The next sections begin with descriptions of the Arts and Science Program, the DeGroote School of Business, the Engineering, Health Sciences, Humanities, Science, Social Science Faculties and the Combined B.A. Program in Indigenous Studies. The program section concludes with a description of Interdisciplinary Minors and Thematic Areas and Certificate and Diploma Programs. Each program section describes the undergraduate degree program 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, antirequisites, corequisites and cross-listings; they may have a significant impact on your program. 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 email or web addresses (where available) are described throughout the Calendar.

<table>
<thead>
<tr>
<th>Admissions Office (Undergraduate Studies)</th>
<th>Alumni Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate Registrar (Admissions): Lynn Giordano</td>
<td>Director of Alumni Advancement: Karen McQuigge</td>
</tr>
<tr>
<td>Gilmour Hall, Room 108, L8S 4L8, ext. 24796; Fax: (905) 527-1105</td>
<td>President's Residence, L8S 4K1, ext. 23900</td>
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<thead>
<tr>
<th>Student Liaison</th>
<th>Housing and Conference Services</th>
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<tbody>
<tr>
<td>Associate Registrar (Liaison): Patricia Harris</td>
<td>Director of Housing and Conference Services: Catherine Miller</td>
</tr>
<tr>
<td>Gilmour Hall, Room 102, L8S 4L8, ext. 23680; Fax: (905) 524-3550</td>
<td>Commons Building, Room 101, L8S 4K1, ext. 24342</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Student Financial Aid and Scholarships</th>
<th>Off-Campus Resource Centre</th>
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<tbody>
<tr>
<td>Director: Elizabeth Seymour</td>
<td>McMaster University Student Centre, Room B112, L8S 4S4, ext. 24086</td>
</tr>
<tr>
<td>Gilmour Hall, Room 120, L8S 4L8, ext. 24319</td>
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<tr>
<th>Transcripts and Records</th>
<th>Hospitality Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gilmour Hall, Room 108, L8S 4L8, ext. 24796; Fax: (905) 527-1105</td>
<td>Director: Albert Ng, ext. 23836</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Examinations, Schedules and Classroom Reservations</th>
<th>Commons Building, Room 116, L8S 4K1</th>
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<tbody>
<tr>
<td>Associate Registrar (Schedules and Examinations): Ruth Toth</td>
<td>Mac Express Inquiries: ext. 27448</td>
</tr>
<tr>
<td>Gilmour Hall, Room 114, L8S 4L8, ext. 24453; Fax: (905) 527-1105</td>
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<tr>
<th>Office of the Associate Vice-President (Student Affairs and Dean of Students)</th>
<th>Services for Students with Disabilities</th>
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</thead>
<tbody>
<tr>
<td>(Student Affairs and Dean of Students): Philip Wood</td>
<td>Manager, Disability Services and University Advisor</td>
</tr>
<tr>
<td>Gilmour Hall, Room 207, L8S 4L8, ext. 27455</td>
<td>on Disability Issues: Tim Nolan</td>
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<tr>
<th>School of Graduate Studies</th>
<th>Career Services</th>
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</thead>
<tbody>
<tr>
<td>Acting Dean of Graduate Studies: David Capson</td>
<td>Manager: Gina Robinson</td>
</tr>
<tr>
<td>Gilmour Hall, Room 212, L8S 4L8, ext. 23679</td>
<td>Gilmour Hall, Room 110, L8S 4L8, ext. 24254</td>
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<tr>
<th>Centre for Continuing Education</th>
<th>Advice for Overseas and Exchange Students</th>
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<tbody>
<tr>
<td>Director: Tracey Taylor-O'Reilly</td>
<td>International Student Services Manager/Advisor: Marcos Costa</td>
</tr>
<tr>
<td>Downtown Centre, Second Floor, ext. 24321</td>
<td>Gilmour Hall, Room 104, L8S 4L8, ext. 24748</td>
</tr>
</tbody>
</table>

- Undergraduate Studies
  - First Year Handbook
    (Available from the Office of the Registrar)
  - Many academic departments offer information booklets about their undergraduate programs. These may be requested directly from the departments.

- Graduate Studies
  - Calendar of the School of Graduate Studies
    (Available from the School of Graduate Studies.)
  - McMaster Divinity College Calendar
    (Available from Divinity College.)
  - Graduate Studies in Business (MBA and Ph.D programs)
    (Available from the DeGroote School of Business.)

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

- Certificate and Diploma Programs
  - The Centre for Continuing Education (CCE) Timetable which describes certificate and diploma programs and affiliated professional associations is available at http://www.mcmastercc.com

- Professional Development and Non-Credit Studies
  - Brochures about non-credit programs, such as languages, computer training, professional development workshops and managerial and leadership training, as well as the CCE Timetable are available at http://www.mcmastercc.com

Other Publications for McMaster Students

Ombuds Office
Ombuds: Shelley Lancaster, Carolyn Brendon
McMaster University Student Centre, Room 210, L8S 4S4, ext. 24151; Fax: (905) 529-3208; Email: ombuds@mcmaster.ca

The Ombuds 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 and the University.

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

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 programs through six faculties. The extensive activity in research, supported by approximately $332 million in grants and contracts, means there are first-class libraries and sophisticated facilities. Undergraduate teaching is conducted through the DeGroote School of Business, the Faculties of Engineering, Health Sciences, Humanities, Science and Social Sciences, and the distinctive Arts and Science Program. 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 Program offers B. Arts Sc. and Honours B. Arts Sc. degrees. It is possible to combine the program leading to the Honours B. Arts Sc. degree with programs that fulfill the requirements for Honours degrees in a number of different disciplines.

The DeGroote School of Business offers the Honours B.Com. and B.Com. degrees, which include work in the following areas: accounting, business policy, finance, management science and information systems, marketing and international business, and human resources and management.

The Faculty of Engineering offers the Bachelor of Engineering degree in Chemical Engineering, Civil Engineering, Computer Engineering, Electrical and Biomedical Engineering, Electrical Engineering, Engineering Physics, Materials Engineering, Mechanical Engineering, Mechatronics Engineering, Software Engineering, Software Engineering (Embedded Systems) and Software Engineering (Garnne Design). In addition, a Bachelor of Science is offered in Honours Computer Science and Honours Business Information Systems.

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

The Faculty of Engineering also offers four-year Bachelor of Technology programs in Automotive and Vehicle Technology, Biotechnology and Process Automation Technology and degree completion programs in Civil Engineering Infrastructure Technology, Computing and Information Technology of the Faculty of Engineering and Manufacturing Engineering Technologies and Manufacturing Engineering Technology. Each leads to a Bachelor of Technology degree and are 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 Michael G. DeGroote School of Medicine, the M.D. program, and through the School of Nursing, the B.Sc.N. degree program. A Bachelor of Health Sciences (B.H.Sc.) degree may be earned in Midwifery or Physician Assistant and a Bachelor of Health Sciences (Honours) (B.H.Sc. Hon.) program is also offered.

The Faculty of Humanities offers programs in Art, Art History, Classics, Communication Studies, Comparative Literature, Cultural Studies and Critical Theory, English, French, History, Indigenous Studies, Linguistic Cognitive Science, Linguistics, Multimedia, Music, Peace Studies, Philosophy, Theatre & Film Studies and Women's Studies leading to B.A. degrees, as well as a Bachelor of Music degree and a Diploma in Music Performance. Students pursuing Honours degree programs may complete and receive credit for the third level of the program in study abroad at a university in a country approved by the Faculty.

The Faculty of Science, in the Faculty of Science at the B.Sc. and B.Sc. Honours levels. Programs are offered in Biochemistry, Biology, Biophysics and Biomedical Sciences, Chemical Biology, Chemistry, Computational Biology, Earth and Environmental Sciences, Environmental Sciences, Integrated Science (effective 2009-2010), Kinesiology, Life Sciences, Mathematical Sciences, Mathematics and Statistics, Medical and Health Physics, Medical Radiation Sciences, Molecular Biology, Origins, Physical Sciences, Physics and Astronomy, Neuroscience and Behaviour. The Faculty of Social Sciences offers B.A. programs in Anthropology, Economics, Geography, Geography and Environmental Studies, Gerontology, Health Studies, Indigenous Studies, Labour Studies, Political Science, Psychology, Neuroscience and Behaviour, 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.

More than 22,500 full-time students attend McMaster University, 2,700 of whom are pursuing advanced degrees offered through the School of Graduate Studies. In addition, over 4,000 part-time students are registered in the Fall/Winter session, from September to April, and 6,300 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 1,200 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 programs are supported by some fine, and even unique, facilities. The University Library is a member of the Association of Research Libraries and contains more than two million volumes and has 3,162 current print journal titles, 23,725 current electronic journals, more than 218,840 e-books. The Library has an extensive special collections section which includes the Bertrand Russell Archives, 18th Century materials and major Canadian collections. Facilities for programs in the Humanities include modern language laboratories, music rehearsal rooms, art studios and seminar rooms. The work of the Faculties of Science and Engineering is supported by sophisticated facilities, which include a nuclear reactor. There are four general purpose Student Computing Centres on campus using MS Windows XP Pro Operating System based PCs and a variety of Windows software. As well there are numerous departmental computing clusters which operate a mixture of Windows, Linux or Solaris environments. Students in residence have convenient access to the McMaster network and the internet from their rooms.

The Recreation, fitness and intramural programs offer more than 30 different sports in which over 17,000 students participate. The Interuniversity Athletic Program features 41 varsity sport opportunities. The department also offers a full range of instructional and outdoor education programs throughout the calendar year. The athletic facilities include a new athletics and recreation complex featuring one of the largest collegiate fitness centres in Canada, seven gymnasiums, a 50-metre swimming pool, a 200-metre indoor track, squash courts and indoor climbing wall.

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 co-educational and single-sex residences are available for approximately 3,683 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 2008-2009 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.

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<tr>
<th>SESSIONS</th>
<th>TERMS</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
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<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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<td>FALL/ WINTER</td>
<td>Term 1</td>
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<td>17</td>
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<tr>
<td>SESSION</td>
<td>Term 2</td>
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<td>5</td>
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<td>Term 3</td>
<td>4</td>
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<td>28</td>
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<tr>
<td>SPRING/ SUMMER</td>
<td>Term 1</td>
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<tr>
<td>SESSION</td>
<td>Term 2</td>
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<td>Term 3</td>
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CONVOCATIONS

The exact time of the convocations will be determined four months prior to the specific convocation date.

Thursday, July 31, 2008
◆ Last day to file a Graduation Information Card and declare a minor for Fall 2008 Convocations

Friday, November 21, 2008
◆ Fall 2008 Convocations (all Faculties)

Friday, February 27, 2009
◆ Last day to change programs for Spring 2009 Convocations

Friday, February 27, 2009
◆ Last day to file a Graduation Information Card and declare a minor for Spring 2009 Convocations

Friday, May 22, 2009
◆ Health Sciences Convocation (excluding Nursing)

Monday, June 8 to Friday, June 12, 2009
◆ Spring Convocations

Friday, July 31, 2009
◆ Last day to file a Graduation Information Card and declare a minor for Fall 2009 Convocations

Friday, November 20, 2009
◆ Fall 2009 Convocations (all Faculties)

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 program 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.

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 program. This includes, but is not limited to, the McMaster University Intellectual Property Policy (http://ip.mcmaster.ca).
# Sessional Dates for 2008-2009

## Fall/Winter Session 2008-2009

The following schedule applies to both full- and part-time students.

### Term 1
- Registration (All Levels)
- Classes begin
- Last day for registration and adding or dropping courses
- Thanksgiving Day: No classes
- Mid-term recess
- Last day for cancelling courses without failure by default
- Good Friday: No classes or examinations
- Test and Examination ban: No tests or examinations may be held
- Classes end
- Mid-Session Tests (Level I)
- Final Examinations
- Deferred Examinations

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
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<tbody>
<tr>
<td>Thursday, September 4</td>
<td>Monday, January 5</td>
<td>Thursday, September 4</td>
</tr>
<tr>
<td>Monday, September 15</td>
<td>Wednesday, January 14</td>
<td>Monday, September 15</td>
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<tr>
<td>Monday, October 13</td>
<td>—</td>
<td>Monday, October 13</td>
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<tr>
<td>—</td>
<td>Monday, February 16 to Saturday, February 21</td>
<td>Monday, February 16 to Saturday, February 21</td>
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<tr>
<td>Friday, November 7</td>
<td>Friday, February 27</td>
<td>Friday, February 27</td>
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<td>—</td>
<td>Friday, April 10</td>
<td>Friday, April 10</td>
</tr>
<tr>
<td>Tuesday, November 25 to Tuesday, December 2</td>
<td>Wednesday, April 1 to Wednesday, April 8</td>
<td>Wednesday, April 1 to Wednesday, April 8</td>
</tr>
<tr>
<td>Monday, December 1</td>
<td>Tuesday, April 7</td>
<td>Tuesday, April 7</td>
</tr>
<tr>
<td>—</td>
<td>Wednesday, December 3 to Tuesday, April 28</td>
<td>Thursday, April 9 to Tuesday, April 28</td>
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<tr>
<td>Wednesday, December 3 to Wednesday, December 17</td>
<td>Monday, June 22 to Thursday, June 25</td>
<td>Monday, June 22 to Thursday, June 25</td>
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<tr>
<td>Tuesday, February 17 to Friday, February 20</td>
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</table>

### Term 2
- Classes begin
- Last day for registration and adding or dropping courses
- Victoria Day: No classes
- Last day for cancelling courses without failure by default
- Canada Day: No classes
- Civic Holiday: No classes
- Classes end
- Examinations
- Deferred Examinations

### Term 3
- To Be Announced
- To Be Announced
- To Be Announced

### Spring/Summer Session 2009

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
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<tbody>
<tr>
<td>Monday, May 4</td>
<td>Monday, June 22</td>
<td>Monday, May 4</td>
</tr>
<tr>
<td>Friday, May 8</td>
<td>Friday, June 26</td>
<td>Friday, May 8</td>
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<tr>
<td>Monday, May 18</td>
<td>—</td>
<td>Monday, May 18</td>
</tr>
<tr>
<td>Wednesday, June 3</td>
<td>Wednesday, July 22</td>
<td>Monday, July 6</td>
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<tr>
<td>—</td>
<td>Wednesday, July 1</td>
<td>Wednesday, July 1</td>
</tr>
<tr>
<td>—</td>
<td>Monday, August 3</td>
<td>Monday, August 3</td>
</tr>
<tr>
<td>Friday, June 19</td>
<td>Friday, August 7</td>
<td>Friday, August 7</td>
</tr>
<tr>
<td>December 2009 Examination period</td>
<td>December 2009 Examination period</td>
<td>December 2009 Examination period</td>
</tr>
<tr>
<td>During class time, as arranged by instructor</td>
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</table>
DEGREES, PROGRAMS AND COURSES

DEGREES AND PROGRAMS

McMaster University offers the following undergraduate degrees:

FACULTY AND DEGREE DURATION IN YEARS

ARTS & SCIENCE PROGRAM
B.A. Sc. ................................................................. 3
B.A. Sc. (Honours)* ............................................... 4
(*With the exception of the Combined Honours degree in Biology which requires five years of study.)

DEGROOTE SCHOOL OF BUSINESS
B.Com. ........................................................................... 4
B.Com. (Honours) ......................................................... 4

FACULTY OF ENGINEERING
B.A. Sc. ........................................................................... 4
B. Eng. ........................................................................... 4
B. Eng. Mgt. ................................................................. 5
B. Eng. Society ............................................................ 5
B. Eng. Biociences ......................................................... 5
B. Tech. ......................................................................... 2 or 4

FACULTY OF HEALTH SCIENCES
B.H.Sc. (Midwifery) ....................................................... 4
B.H.Sc. (Physician Assistant*) ....................................... 2
B.H.Sc. (Honours) .......................................................... 4
B.Sc. N. ........................................................................... 4
B.Sc. N. (Post Diploma RN Stream) ............................... **2
B.Sc. N. (Post Diploma RPN Stream) ............................ **3
B.Sc. N. (Basic-Accelerated) .......................................... **2
M.D. (Doctor of Medicine) ................................................. 3
(* Subject to Government approval.)

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

FACULTY OF SCIENCE
B.M.R.Sc. ........................................................................... 2
B.Sc. ............................................................................. 3
B.Sc. (Honours) ............................................................. 4
B.Sc. (Honours) ............................................................. 4
B.Sc. Kin. ......................................................................... 3
B.Sc. Kn. (Honours) ......................................................... 4
(*These are Co-op programs.)
(**In these programs, an academic year extends beyond the regular Fall/Winter session.)

FACULTY OF SOCIAL SCIENCES
B.A. ............................................................................. 3
B.A. (Honours) ............................................................. 4
B.Kin. (Honours) ......................................................... 4
B.A./B.S.W. ................................................................. 4
B.S.W. ......................................................................... 2
(*Follows completion of prior undergraduate degree)

Second Undergraduate Degree

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

Combined Programs

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.

ELECTIVE COURSES AVAILABLE TO LEVEL I STUDENTS

The following is a list of courses available as electives to Level I students, provided that any requisites have been satisfied, and subject to enrolment limitations. A brief description of each course can be found under the appropriate Department within the Course Listings section in this Calendar.

ANTHROP ................................................................. 1A03, 1B03, 1203
ART HIST ................................................................. 1A03, 1A3;
ASTRON ...................................................................... 1F03
BIOLOGY ................................................................... 1A03, 1M03, 1P03, 1X03
CAYUGA .................................................................... 1203
CHEM ....................................................................... 1A03, 1A3, 1P03
CLASSICS ................................................................. 1A03, 1B03, 1M03
CMST .................................................................... 1A03
COMP LIT ............................................................... 1A03, 1A3
COMP SCI ............................................................... 1FC3, 1MA3, 1MD3, 1TA3
CSCT ................................................................. 1B03, 1BB3
ECON ......................................................................... 1B03*, 1BB3
ENGLISH ................................................................ 1A03, 1AA3, 1B03, 1BB3, 1C06
ENVIR SC ............................................................ 1A03, 1B03, 1G03
FINISH ................................................................. 1A06, 1K06, 1L06
FOOD ................................................................. 1H03, 1J06, 1L06
GEOG ....................................................................... 1A03, 1B03, 1J06
GERMAN ................................................................ 1B03, 1BB3, 1J06
GERONTOL ............................................................ 1A03
GREEK .................................................................... 1Z03, 1ZZ3
HISTORY ................................................................. 1A03
HISPSC ................................................................. 1A03, 1AA3, 1B03, 1BB3, 1G03
ITALIAN ................................................................. 1A03, 1AA3, 1B03, 1BB3, 1C06
JAPANESE ............................................................. 1A03, 1AA3, 1B03, 1BB3, 1C06
KINESIO ................................................................. 1Y03, 1YY3
LABR ST ................................................................. 1A03, 1C03
LATIN ..................................................................... 1A03, 1C03
LINGUIST ............................................................... 1A03, 1AA3
MATHEMATICS ..................................................... 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MATICS ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MATL ST ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MEDICAL ............................................................... 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MNDIA ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MGT ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MORT ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
MUSC ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
NATUR ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
PHYSICS ............................................................... 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
POLISH ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
POL SC ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
PSYCH ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
RELIG ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
SOC WOK ............................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
SOCIO ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
STATS ................................................................. 1A03, 1AA3, 1B03, 1C03, 1D03, 1E03
THTR&FLM .......................................................... 1A03, 1B03
WOMEN ST ........................................................... 1A03, 1AA3

* Not acceptable for the six-unit complementary studies elective required in Engineering I.
** Note: Engineering I students interested in entering the Engineering and Management program must take ECON 1B03 as one of their complementary studies electives.
### Course Availability

The following are lists of upper-level courses available to students subject to enrollment limitations and the prerequisites as specified for each list. (Engineering students should refer to the website at [http://www.eng.mcmaster.ca/administration/electives.htm](http://www.eng.mcmaster.ca/administration/electives.htm).) A brief description of each course can be found under the appropriate Department within the Course Listings section in this Calendar.

#### Upper-Level Courses Available to All Students

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<tbody>
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<tr>
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#### Upper-Level Courses Available to Students Registered in Level II or Above in Any Program

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<td>2B03, 2CC3, 2G03, 2J03, 2M03, 2Y03, 2Y03, 3EE3, 3FF3, 3GG3, 3H03, 3MM3, 3SS3</td>
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<td>Computer Science Technology</td>
<td>2J03, 3D03, 3EE3, 3RR3, 3Y03, 3YY3</td>
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<tr>
<td>Earth Science</td>
<td>2GG3, 2MM3, 2WW3</td>
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<td>Economics</td>
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<td>Health Studies</td>
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#### Upper-Level Courses Available to Students Registered in Level III or Above in Any Program

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<td>Art History</td>
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<tr>
<td>Computer Science Technology</td>
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<tr>
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<td>History</td>
<td>3K03, 4BB3, 4I13, 4J03, 4O03</td>
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<td>Kinesiology</td>
<td>3DD3, 3M03, 3SS3, 3T03, 3Y03, 4M03</td>
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<td>Political Science</td>
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<tr>
<td>Religious Studies</td>
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<td>Theatre &amp; Film</td>
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DEGREES, PROGRAMS AND COURSES

### History

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### Inquiri

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### Italian

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<tr>
<td>Italian</td>
<td>2B03 (Taught in English)</td>
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**Note:** The courses listed above are subject to enrollment limitations and prerequisites as specified for each list. Engineering students should refer to the website at [http://www.eng.mcmaster.ca/administration/electives.htm](http://www.eng.mcmaster.ca/administration/electives.htm) for more information. A brief description of each course can be found under the appropriate Department within the Course Listings section in this Calendar.
## DEGREES BY PROGRAM

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<tr>
<th>SUBJECT</th>
<th>BACHELOR'S DEGREE</th>
<th>HONOURS DEGREE</th>
<th>COMBINED HONOURS</th>
<th>PROFESSIONAL DEGREE</th>
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<td>Arts &amp; Science</td>
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<td>Automotive and Vehicle Technology</td>
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* This degree program is also available through a combination of evening and summer study. The rate of completion however, will vary from program to program.
* A five-level co-op option is available.
* A co-op option is available.

The University also offers Thematic Areas of Study and a large number of Minors. 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 two interdisciplinary Minors. Other Minors are found in the program 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/Credit may be granted to an applicant who has completed work at another university or college or who has completed a certificate/diploma program at McMaster, 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 program 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 and Linguistics).

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

Extra Courses are those courses designated at the time of registration as “Extra”, which are not included as units toward completion of a student’s program. 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 programs 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 program (e.g. Commerce, Level II: 30 units). If the Calendar does not specify the program requirements by individual levels, divide the total units for all levels by the number of levels, discarding the remainder.

Full-load Average (FA) 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 and Engineering Co-op programs 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 progression through a program.

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

Mature Student has not attended secondary school or college on a full-time basis for at least two years; and has not previously attended university.

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

Program is a specific combination of courses that fulfills the requirements for a degree.

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

Readmission See Readmission in the Admission Requirements section in this Calendar.

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

Reinstatement See Reinstatement in the Admission Requirements section in this Calendar.

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

Requisite is an academic requirement that must be met to register in a course. A course requisite may comprise Prerequisites, Corequisites and Antirequisites.

Result of Session is the statement of the academic standing of a student at the end of a reviewing period. May continue in program, 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 program 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 attempted 18 units of work since the last review or is a potential graduate.

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 enrollment in a program of study and selected courses.

Undergraduate Student is a student enrolled in a program of study leading to a bachelor’s degree or to the degree Doctor of Medicine.

Units define the number of credits associated with a course. A unit is roughly equivalent to one lecture-hour per week for one term or two hours of laboratories or seminars per week for one term. Three-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, totalling 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 in this Calendar.)

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

1. ADMISSION FROM SECONDARY SCHOOLS

A. Ontario

General Requirements (For All Level 1 Programs)
To be considered for admission, you must satisfy the general requirements of the university and the specific subject requirements for the program to which you applied.

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

1. An Ontario Secondary School Diploma (OSSD) with acceptable standing;
   AND
2. An overall average in completed Grade 12 U and M courses which meets or exceeds the minimum set by the specific program to which you applied;
   AND
3. Satisfactory completion of six Grade 12 U and M courses including the subject requirements for your chosen program.

McMaster will use your complete Grade 12 grades to calculate your admission average. McMaster calculates averages to two decimal points and we do not round up averages. See Early Conditional Admission and Final Admission below for specific details.

Early Conditional Admission
Early conditional admission is granted annually to qualified applicants, depending on your academic standing at that time. McMaster normally begins making offers in early March. Early conditional admission is based on:

1. six appropriate midterm/interim Grade 12 U and M grades, OR
2. at least three final Grade 12 U and M grades PLUS enrolment in the appropriate additional three Grade 12 U and M courses.

If you do not receive an offer of admission in March, you will automatically be reassessed for admission after additional Grade 12 U and M grades are received from your secondary school.

Admission offers made in April and May will be based on updated Grade 12 U and M grades. Some Faculties may review information you may have provided on a supplementary application form.

If you are granted a conditional offer of admission, you must meet the general requirements of the university. See General Requirements (For All Level 1 Programs) above.

The University reserves the right to withdraw a conditional offer of admission due to any of the following:

1. if you do not meet the minimum final average prescribed for your chosen program;
   OR
2. if you do not receive an OSSD;
   OR
3. if you do not complete six Grade 12 U and M courses including all required subjects;
   OR
4. if you do not respond to the Ontario Universities' Application Centre (OUAC) within the response period indicated on your offer letter.
   OR
5. if you do not meet any other condition stipulated on your conditional offer of admission;
   OR
6. if you attend a post-secondary institution prior to beginning your studies at McMaster.

Minimum Final Average
If you are an Ontario secondary school applicant who receives a conditional offer of admission based on interim grades, you will be required to achieve an overall average (on six (6) final grades including all required courses for your desired program) as indicated on your offer of conditional admission.

If your final average falls below this level (or its equivalent), your offer of admission will be rescinded and your registration will be cancelled. The required minimum final average will vary from year to year and by program. This average will be stated clearly on the offer of conditional admission.

Supplementary Application Forms and Personal History
Certain Level I programs such as Arts & Science, Bachelor of Health Sciences, and Midwifery have mandatory supplementary application forms which must be completed by specific deadline dates. See Deadlines in the Application Procedures section of the Calendar for specific deadline dates.

At the discretion of the individual Faculties an optional supplementary application form may be available on-line to applicants to other Level I programs. Applicants who do not receive an offer of admission and wish to have their supplementary information reviewed must submit the on-line form by the specified deadline date. Applicants with special circumstances whose average falls slightly below the required admission average may instead forward a letter to the Admissions Office. Normally, supplementary information is reviewed by Faculty admission committees to aid in making decisions regarding applicants who are approximately 1-3% below the required admission averages in June. For further information refer to our web site at registrar.mcmaster.ca/future/hs-supp-apps.html.

Recent graduates from Ontario secondary schools are eligible to be considered for final admission based on their final grades in six Grade 12 U and M courses and achievement of the OSSD.

The University reserves the right to withdraw a final offer of admission due to any of the following:

1. if you do not respond to the Ontario Universities' Application Centre (OUAC) within the response period indicated on your offer letter;
   OR
2. if you attend a post-secondary institution prior to beginning your studies at McMaster.

Deferral of Admission
Applicants who receive both an offer of scholarship and an offer of admission and who have accepted the offer of admission through the OUAC and have satisfied all conditions of their offer of admission may apply to defer their entry for one year. Otherwise, McMaster does not normally grant a deferral of an admission offer unless special circumstances exist. Each case is evaluated on its own merits.

All requests for deferral of both admission and scholarship should be made in writing to the Office of the Registrar at McMaster by September 1, 2006 outlining the reasons for the request. Normally, decisions regarding deferral requests are not made until early August, after the receipt of all final grades and required documentation.

If a deferral is granted, it is conditional upon the student not attending a secondary or post-secondary institution during the deferral period. Students will be required to re-apply through the OUAC on the 105 application form to reactivate their application by no later than March 1st or the specific deadline date for the program, whichever is earlier.
Program Transfer After Admission

If you are admitted to one program and subsequently wish to transfer to another, you may be able to do so, provided space is available and you have met the average and subject requirements for the second program.

If you have not already registered, contact the Office of the Registrar to request a program transfer. If you have registered, contact the Faculty Office for your desired program to request a transfer.

Subject Requirements for Specific Level I Programs

All Level I programs 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 complete a mandatory Supplementary Application Form which must be submitted electronically via the web at www.mcmaster.ca/artsi/admissions.html. The information provided enters into the selection process. Only applicants with 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 Grade 12 U and M requirements:

1. English U
2. Advanced Functions U
3. Completion of four additional U or M courses of which two must be at the U level

> BUSINESS I (0725)

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Advanced Functions U
3. One of Calculus and Vectors U or Mathematics of Data Management U
4. Completion of three additional U or M courses

Principles of Financial Accounting M is recommended. In recent years, an average in the low 80s is expected to be required for an offer of admission.

> COMPUTER SCIENCE I (0145)

> COMPUTER SCIENCE I CO-OP (0145003)

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Calculus and Vectors U
4. Completion of two additional U or M courses to total six credits

Students are also expected to have completed Advanced Functions U.

> ENGINEERING I (0730)

> ENGINEERING I CO-OP (0730003)

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Calculus and Vectors U
3. Chemistry U
4. Physics U
5. Completion of two additional U or M course to total six credits

Students are also expected to have completed Advanced Functions U.

A minimum overall average in the low to mid-80s has been required for an offer of admission in recent years.

> ENVIRONMENTAL AND EARTH SCIENCES I (0211)

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Advanced Functions U
3. One of Biology U, Chemistry U
4. One of Biology U, Chemistry U, Physics U, Calculus and Vectors U
5. Completion of two additional U or M courses to total six credits

> HEALTH SCIENCES I (2276)

The selection method is by consideration of academic qualifications (minimum overall average of 90% is required for consideration) and a mandatory Supplementary Application. A review of the mandatory Supplementary Application is a very important component of the admission process. Applicants who do not complete the Supplementary Application are not considered for admission.

The following are the minimum Grade 12 U and M requirements:

1. English U
2. One of Advanced Functions U, Calculus and Vectors U, Mathematics of Data Management U
3. Biology U
4. Chemistry U
5. One U or M course from Social Sciences (Geography, History, Law, Psychology, Sociology) or Humanities (Art, Drama, English, French, Music, other languages)
6. Completion of one additional U or M course in any subject area to total six credits

Note: Courses in technological education, science or mathematics are not acceptable as the Social Sciences or Humanities course requirement.

> HUMANITIES I (0700)

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Completion of additional U or M courses to total six credits

In recent years an average in the mid-70s has been required for an offer of admission.

The Faculty of Humanities strongly recommends that you select at least one Grade 12 U or M course from Humanities subjects (Art, Drama, English, French, French, other languages, History and Music) in addition to Requirement 1 above.

Admission to Art:

When applying for admission using the OUA application, applicants who wish to study Art should select MH for the OUA code and choose FINE ARTS for the Subject of Major Interest. Honours Art programs have limited enrolments. Admission to any Honours Art program requires the permission of the School of the Arts.

Students who wish to enrol in ART 1F03 and 1FF3 in Level I must complete a portfolio interview to be eligible for permission to register in these courses. The portfolio should contain a variety of works in different media that represent the applicant’s creative abilities and interests. Applicants in art, academic ability and demonstrated commitment to the discipline are 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.

- Portfolio interviews occur between January and April each year for entrance in September of the same calendar year. Only those students who call the Office of the School of the Arts (ext. 27571) before March 1st to book appointments for portfolio interviews will be guaranteed consideration for entrance into ART 1F03 and 1FF3. (Late applicants will only be interviewed if space availability permits).
- Permission to register in ART 1F03 and 1FF3 will be verified with written confirmation from the School of the Arts. School of the Arts verification and a Letter of Admission to Humanities I from the University will guarantee a space in the program as long as the student meets the minimum academic requirements as outlined under Humanities I above. For further information see School of the Arts programs in the Faculty of Humanities section of the Calendar.

> HONOURS INTEGRATED SCIENCE I (0301)

(EFFECTIVE 2009-2010)

Candidates are required to complete a mandatory supplementary application form which must be submitted electronically via the web at www.mcmaster.ca/isci/admissions.html. The information provided enters into the selection process. Only applicants with high academic standing will be selected. Successful candidates will present a minimum average in the high 80s.

The following are the minimum Grade 12 U and M requirements:

1. English U
2. Advanced Functions U
3. Calculus and Vectors U
4. Two of Biology U, Chemistry U, Physics U
5. Completion of one additional U or M courses to total six credits
12 **ADMISSION REQUIREMENTS**

- **HONOURS KINESIOLOGY** *(0309)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Advanced Functions U
  3. Biology U
  4. Completion of three additional U or M courses to total six credits.
  5. One of Calculus and Vectors U, Chemistry U, or Physics U
  6. Completion of two additional U or M courses to total six credits

- **LIFE SCIENCES** *(0312)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Advanced Functions U
  3. Biology U
  4. One of Calculus and Vectors U, Chemistry U, or Physics U
  5. Completion of two additional U or M courses to total six credits

- **MATHEMATICS AND STATISTICS** *(0320)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Advanced Functions U
  3. Calculus and Vectors U
  4. Completion of three additional U or M courses to total six credits

- **MEDICAL RADIATION SCIENCES** *(0345)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Advanced Functions U
  3. Biology U
  4. Chemistry U
  5. One of Calculus and Vectors U or Physics U (both are recommended)
  6. Completion of one additional U or M course to total six credits

- **MIDWIFERY** *(6501)*
  As places in the Midwifery program are very limited, the admission process is competitive. **Application forms are due by February 1. No exceptions will be made.**
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. One of Biology U or Chemistry U (both are recommended)
  3. One U, or M course in Social Science (History, Sociology, Psychology, Geography, Law)
  4. Completion of additional U or M courses to total six credits
  5. To be eligible students must obtain a minimum grade of 70% in each of the three required courses listed in points 1 and 3 above AND an overall average including the required courses, that is acceptable to the Program.

In recent years, an average in the low to mid 80's has been required for an offer of admission.

- **MUSIC** *(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 (a level equivalent to at least honours standing in Grade 8 of the Royal Conservatory of Music)
  2. Performance (approximately 20 minutes duration) of two or three varied pieces of your choice (approximately Grade 8 honours level), including at least one from the 20th century
  3. Ear test appropriate to the Grade 8 performance level
  4. Written examination on rudiments of theory (Grade 2 level)
  5. Interview
  Auditions take place between February and April. You must make arrangements with the School of the Arts for your audition at sota@mcmaster.ca.

- **NURSING** *(6390)*
  **NURSING CONSORTIUM (Conestoga)** *(6385)*
  **NURSING CONSORTIUM (Mohawk)** *(6386)*
  Students interested in a McMaster (B.Sc.N.) Nursing degree have three location options: McMaster University, Mohawk College or Conestoga College. Each of the three sites offers the four-year program which uses the problem-based learning and small group tutorial educational model. For general information about the Mohawk and Conestoga sites refer to the Collaborative B.Sc.N. (D) Stream references throughout the School of Nursing in the Faculty of Health Sciences section of the Calendar. For application instructions see the Application Procedures section of the Calendar.

- **PHYSICAL SCIENCES** *(0435)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Advanced Functions U
  3. Calculus and Vectors U
  4. Chemistry U
  5. completion of two additional U or M courses to total six credits

- **SOCIAL SCIENCES** *(0720)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Completion of additional U or M courses to total six credits

  **TECHNOLOGY** *(0731)*
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. Advanced Functions U
  3. Chemistry U
  4. Physics U
  5. Completion of two additional U or M courses to total six credits

- **B. Other Canadian Provinces and Territories**

  McMaster welcomes applications from other provinces and territories. Applicants are required to meet the following minimum requirements and must also include the specified subject requirements for their chosen program. For a complete listing of our specific course requirements by province and Level I program you may refer to our website: http://registrar.mcmaster.ca/forms/canad.php.

  **Alberta, Northwest Territories and Nunavut**
  Grade 12 high school diploma with five acceptable courses numbered 30 or 31, including English 30 or 31.

  **British Columbia and Yukon**
  Grade 12 high school diploma with four acceptable provincially examinable Grade 12 courses (or the equivalent), including English 12. Provincial Exams are recommended but not required.

  **Manitoba**
  Grade 12 high school diploma with five acceptable courses numbered 40A or 40S, including one of English 40S or Anglais 40S.

  **New Brunswick**
  Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 120, 121, or 122, including English 121 or 122.

  **Newfoundland and Labrador**
  Grade 12 high school diploma with eleven acceptable Grade 12 credits at the 3000 level, including English 3201.

  **Nova Scotia**
  Grade 12 high school diploma with five acceptable Grade 12 courses (university preparatory Academic or Advanced), including English 12.

  **Prince Edward Island**
  Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 611 or 621, including English 621.

- **Academic Grade and Immunization**
  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 program.
  The following are the minimum Grade 12 U and M requirements:
  1. English U
  2. One of Advanced Functions U, Calculus and Vectors U, Mathematics of Data Management U
  3. Biology U
  4. Chemistry U
  5. Completion of two additional U or M courses to total six credits

  In recent years, an average in the mid-low 80s has been required for an offer of admission at the McMaster site and at least 70% for the Conestoga site and 75% for the Mohawk site.

  **B. Other Canadian Provinces and Territories**

  McMaster welcomes applications from other provinces and territories. Applicants are required to meet the following minimum requirements and must also include the specified subject requirements for their chosen program. For a complete listing of our specific course requirements by province and Level I program you may refer to our website: http://registrar.mcmaster.ca/forms/canad.php.
Quebec

Grade 12 Diploma with six acceptable Grade 12 academic courses in the 600 series, including English OR Year I CEGEP with twelve appropriate academic courses, including two English/anglais 603 courses. Students with Year II or III CEGEP who have achieved the DEC will be considered for advanced credit in their chosen program. The Côte de Rendement (R Score) will be used for admission consideration.

Saskatchewan

Grade 12 high school diploma with five acceptable Grade 12 academic courses numbered 30, including both English A30 and B30.

Subject Requirements for Level I Programs

In addition to the minimum requirements above, satisfactory completion of the specified subject requirements for the program to which you applied is also required. Please refer to the Ontario Secondary School Course Equivalents Chart and the Subject Requirements For Specific Level I Programs listed under Ontario in this section for more details.

Averages used to determine eligibility for admission and residence are calculated based on the minimum provincial requirements above, including the prerequisite courses for the program to which you have applied. The average must meet or exceed the minimum average set by the specific program.

Early Conditional Admission

Applications are reviewed for conditional admission as soon as all required documents with sufficient course and grade data are received by the Admissions Office. All Canadian applicants should ensure that their schools forward interim/ mid-year school grade reports showing marks for all courses taken during the Grade 12 year as soon as they are available. The terms and conditions of the offer of admission are stated clearly on the offer letter.

C. International Baccalaureate Diploma

Applicants who have completed the International Baccalaureate Diploma will be considered for admission to Level I, provided the completed diploma program includes the subject requirements of the program desired. An overall minimum score of 28 must be achieved in order to be eligible for admission. Diploma points will be included in the overall score. Some programs require a higher score than the minimum for admission.

At the discretion of the Faculty, advanced credit of up to 18 units may be granted for completed Higher Level courses with a minimum final score of 5.

D. Advanced Placement (A.P.) Courses/Examinations

Applicants who have completed Advanced Placement Courses will be considered for admission to a Level I program. Applicants who have completed Advanced Placement Examinations in acceptable courses with a minimum grade of 4 may be recommended for up to 18 units of advanced credit, subject to the discretion of the Faculty. An official copy of the final Advanced Placement Examination Results Report from ETS is required as part of the evaluation process.

E. Other International Secondary School Qualifications

McMaster welcomes applications from international students. See the admission requirements for applicants from educational systems below. Refer to Application Procedures for instructions on how to apply for admission.

Applicants must arrange for official matriculation certificates to be sent well in advance of the session to which they are applying. The equivalent of first-class standing may be required for some limited enrolment programs. Clear notarized photocopies of documents 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 and have fulfilled all conditions of admission.

American High School Curriculum

Applicants from the United States of America or international schools offering the American high school curriculum must satisfactorily complete a secondary school diploma with a minimum overall average of at least 80% in the Grade 12 academic program of an accredited American high school and must present all prerequisite courses for their chosen program. Refer to Subject Requirements for Specific Level I Programs listed under Ontario in this section. Admission is competitive and many programs will require grades/averages above the minimum 80% for admission consideration.

American Curriculum applicants must also present results from the S.A.T. I with a minimum combined score of 1200 (minimum 580 verbal, 520 mathematics) or from ACT with a minimum composite score of 27.

General Certificate of Education (G.C.E.)

Applicants from the General Certificate of Education system require:

1. Five GCE subjects, at least two of which must be at the Advanced Level with the balance of subjects at the Ordinary Level;
2. Advanced Level subjects appropriate for your chosen program, (refer to Subject Requirements for Specific Level I Programs listed under Ontario in this section). For Science and Engineering programs, Mathematics and one of Physics or Chemistry must be offered at the Advanced Level;
3. Grades of at least C must be presented in each of the Ordinary and Advanced Level subjects. Some programs will require higher grades.

Possession of the minimum grades does not guarantee admission.

Applicants with a minimum grade of C in Advanced Level subjects may be eligible for up to 12 units of Advanced Credit which will be determined on a case by case basis, at the discretion of the Faculty.

Advanced Placement (A.P.) Courses/Examinations

See the heading Advancement Placement (A.P.) Courses/Examinations in this section of the Calendar.

International Baccalaureate Diploma

See the heading International Baccalaureate Diploma in this section of the Calendar.

Other Countries or Educational Systems

For admission requirements from other education systems, please visit the Office of International Affairs web site at www.mcmaster.ca/oa/adreq.htm to view our Country Specific Admissions Requirements.

F. Home Schooled Applicants

Home schooled applicants who in addition to their home schooling experience have completed six Grade 12 U and M courses or equivalent from another recognized academic jurisdiction may be considered for their program of choice providing they present the academic and prerequisite courses on official transcripts from accredited schools and meet the required admission average.

All other home schooled applicants may apply for admission to Humanities I or Social Sciences I only and must present the following for consideration:

1. List of home school credentials including but not limited to structured curriculum completed through ACE (Accelerated Christian Education Program) or other such programs.
2. Portfolio of written work; normally, we will expect to see evidence of appropriate intellectual maturity.
3. Results of standardized tests such as SAT, ACT. For SAT I, we normally recommend a minimum requirement of 1200 combined score for the Critical Reading and Math Components of the SAT I Tests. For ACT, we normally recommend a requirement of a minimum composite score of 27.

Interested applicants should contact the Office of the Registrar for further information regarding admission criteria.

G. Prior-Year Secondary School Graduates

Applicants who have previously completed a secondary school diploma and have not attended a post-secondary institution since graduation, may be considered for admission by presenting satisfactory standing in six required Grade 12 U and M courses (or equivalent) as identified in the Subjects Requirements for Specific Level I Programs section in this calendar.
ADMISSION REQUIREMENTS

If you have attended a post-secondary institution after high school graduation, you would normally not be considered as an applicant from secondary school. See Admission/Transfer From Post-Secondary Institutions section in this calendar.

2. ADMISSION/TRANSFER FROM POST-SECONDARY INSTITUTIONS

A. From Universities

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

When you transfer to McMaster University, you will normally receive credit for courses in which you have obtained at least a C (third-class honours) 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. Admission will be considered on a case by case basis and is not guaranteed.

B. From Colleges of Applied Arts and Technology

McMaster welcomes applications from students who have attended a College of Applied Arts and Technology. See the minimum admission requirements for Level I programs as listed below. You are considered for admission on an individual basis. All GPAs listed below are based on a 4-point scale of grading.

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

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

Normally, unspecified elective credit is assessed at the time of admission. For further information regarding the available transfer credit, when transferring from a College of Applied Arts and Technology, refer to the heading Transfer Credits in this section.

ARTS AND SCIENCE
1. Completion of a two or three-year diploma.
2. Successful completion of one of Grade 12 Advanced Functions U or Calculus and Vectors U and Grade 12 English U (or equivalent).
3. Admission is by selection upon review of the mandatory supplementary application form and high school and college transcripts to determine eligibility.

BUSINESS
1. Completion of a two or three-year diploma.
2. A minimum cumulative GPA of 3.4.
3. Successful completion of three Mathematics courses at the college level or one Grade 12 U Mathematics course or equivalent.

COMPUTER SCIENCE (REGULAR AND CO-OP)
1. Completion of a three-year diploma.
2. A minimum cumulative GPA of 3.0. OR
1. Completion of a two-year diploma.
2. A minimum cumulative GPA of 3.0.
3. Successful completion of Grade 12 U Calculus and Vectors (or equivalent).

ENGINEERING (REGULAR AND CO-OP)
1. Completion of a three-year technology diploma program.
2. A minimum cumulative GPA of 3.2.

Technician programs are not recognized as eligible for admission consideration to Engineering I.

ENVIRONMENTAL AND EARTH SCIENCES
1. Completion of a minimum of a two-year diploma program.
2. A minimum cumulative GPA of 3.2.
3. Completion of Grade 12 U and M courses as specified under the heading Subject Requirements for Specific Level I Programs.
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

BACHELOR OF HEALTH SCIENCES (HONOURS)
Agreement is not assessed based on CAAT achievement. It is based on high school admission criteria only. See Subject Requirements for Specific Level I Programs section of the Calendar.

HUMANITIES
1. Completion of at least one year of work in a diploma program.
2. A minimum cumulative GPA of 3.2.
3. No transfer credit will be granted.
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

MATHEMATICS AND STATISTICS
1. Completion of a minimum two-year diploma program.
2. A minimum cumulative GPA of 3.0.
3. Completion of Grade 12 U and M courses as specified under the heading Subject Requirements for Specific Level I Programs.
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

LIFESCIENCES
1. Completion of a minimum of a two-year diploma program.
2. A minimum cumulative GPA equivalent to the required high school admission criteria.
3. Completion of Grade 12 U and M courses as specified under the heading Subject Requirements for Specific Level I Programs.
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

MEDICAL RADIATION SCIENCES
Admission is not assessed based on CAAT achievement. It is based on high school admission criteria only. See Subject Requirements for Specific Level I Programs section of the Calendar.

MIDWIFERY
For admission requirements see B.H.Sc. Midwifery Program in the Faculty of Health Sciences section of the Calendar.

MUSIC
1. Completion of a three year diploma program in Music from Mohawk College.
2. A minimum cumulative GPA of 3.0. (Audition will be waived and, depending on grades received, applicants may receive up to 51 units of advanced credit.)

NURSING
1. Completion of an Ontario diploma in Nursing or the equivalent.
2. A minimum cumulative GPA of 2.8.
3. Selection will be based on academic qualification and a rating obtained on a questionnaire completed by the applicant. An interview may also be required.
4. Completion of at least two semesters (two credits) of Biology, Chemistry, Mathematics and English.
5. Completion of at least two years of work in a diploma program.
6. A minimum cumulative GPA equivalent to the required high school admission average.

PRACTICAL NURSING
1. Completion of an Ontario diploma in Practical Nursing.
2. A minimum cumulative GPA equivalent to the required high school admission average.
3. Selection will be based on academic qualification and a rating obtained on a questionnaire completed by the applicant. An interview may also be required.

PHYSICAL SCIENCES
1. Completion of a minimum of a two-year diploma program.
2. A minimum cumulative GPA of 3.2.
3. Completion of Grade 12 U and M courses as specified under the heading Subject Requirements for Specific Level I Programs.
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

SOCIAL SCIENCES
1. Completion of at least one year of work in a diploma program.
2. A minimum cumulative GPA of 3.2.
3. No transfer credit will be granted.

TECHNOLOGY
1. Completion of at least one year of work in a related diploma program.
2. A minimum cumulative GPA of 3.0.

BACHELOR OF TECHNOLOGY (DEGREE COMPLETION PROGRAM)
1. Completion of a related three-year technology diploma program.
2. A minimum cumulative GPA of 3.0.

Post diploma experience would be an asset and will be taken into consideration if the GPA falls below the minimum requirement, on a case by case basis.

C. University 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. Please note three exceptions: B.H.Sc. (Bachelor of Health Sciences (Honours)), B.Com. (Bachelor of Commerce) and B.Com. (Honours) cannot be done as second degree programs. 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 there may be additional regulations for such a program. Please contact the Office of the Associate Dean (Studies) of the Faculty of Science for further information. If you are a McMaster graduate or potential graduate, you may be able to use the McMaster University Returning Student application. (See Application Procedures section of this Calendar.)

D. Continuing Students

To be eligible to take courses as a Continuing Student you will be expected to have an undergraduate university degree and 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 through part-time studies), and academic records which are satisfactory to the Department and the Office of the Associate Dean of the appropriate Faculty.

McMaster Graduates

If you are a graduate of a McMaster degree program and wish to become a continuing student, you do not need to apply for admission. You may submit a registration.

Graduates from Other Universities

As a continuing student with a non-McMaster degree, you need only apply formally for admission in the first instance. In subsequent sessions, you will only be required to register.

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

E. From Six Nations Polytechnic

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

F. From Post-Secondary Institutions with Religious Affiliation

Undergraduate general academic studies taken at Bible colleges, theological colleges, and seminaries that are member institutions of the Association of Universities and Colleges of Canada (AUCC), affiliated with an AUCC member institution, or accredited by the Association of Biblical Higher Education (ABHE), the Association of Theological Schools (ATS), the Association of Institutions for Higher Learning in Jewish Education (AHJLE) or Institutions recognized by the Canadian Information Centre For International Credentials (CICIC) and/or the International Association of Universities (IAU) will be considered for admission and transfer credit based on the following:

1. Applicants from accredited post-secondary institutions with religious affiliation:
   a) Applicants from an accredited post-secondary institution with religious affiliation completing academic work towards a recognized undergraduate degree program will follow the same policy for admission and transfer credit as for university transfer applications. For details see From Universities in this section of the Calendar.
   b) Applicants from an accredited post-secondary institution with religious affiliation completing academic work towards a diploma program will follow the same policy for admission and transfer credit as for applicants from Colleges of Applied Arts and Technology (CAAAT). For details see From Colleges of Applied Arts and Technology in this section of the Calendar.
   c) Applicants who did not previously complete the necessary minimum requirements for admission to the university will be considered for admission based on a minimum of one year of study in a diploma program at an accredited post-secondary institution with religious affiliation with an average of at least 3.0 (or 80%). A high school transcript will also be required. The completed academic work will serve as the basis of admission to the university. No transfer credit will be granted.

General Notes about Transfer Credit:

i) Only the academic courses will be considered for transfer credit;
ii) No credit will be granted for professional courses such as education, administration, pastoral studies, counselling or courses of a particular doctrinal or denominational belief;
iii) Courses in religious studies may not be considered for transfer credit;
iv) Applicants are required to present an official transcript from the post-secondary institution with religious affiliation and may be required to present copies of course descriptions (in English).

2. Applicants from non-accredited post-secondary institutions with religious affiliation:

Applications from a non-accredited post-secondary institution with religious affiliation will be considered for admission based on completion of a grade 12 high school diploma. Applicants will be required to meet the minimum requirements from high school. The course work completed at the post-secondary institution with religious affiliation will not be considered as a basis of admission or for transfer credit.

3. OTHER CATEGORIES OF ADMISSION

A. Part-time Admission

The University offers a broad range of educational opportunities if you wish to take degree studies on a part-time basis. In addition to 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 in the Spring/Summer session.

Students interested in beginning studies on a part-time basis should review the requirements and information found in the following sections Admission Requirements, Application Procedures, General Academic Regulations, and Sessional Dates as well as program descriptions found in the specific Faculty sections.

Students who wish to pursue undergraduate studies on a part-time basis at McMaster must meet one of the admission criteria outlined in the sections above. If applicants do not meet any of these criteria, they may qualify for Mature Student Admission as outlined under the heading Mature Student Admission below.

Students interested in studying on a part-time basis may contact the Office of the Registrar, Admissions at (905) 525-4600 for information about application procedures and admission regulations.
ADMISSION REQUIREMENTS

In addition, students with questions about part-time studies may seek assistance through the McMaster Associate of Part-Time Studies (MAPS). MAPS maintains an office and student lounge in the McMaster University Student Centre. For further information about MAPS see McMaster Association of Part-Time Students (MAPS) in the Academic Facilities, Student Services and Organizations section of the Calendar.

B. Mature Students 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:

1. You have not attended secondary school or college on a full-time basis for at least two years.
2. You have never attended university.
3. Applicants admitted as a mature student will not be granted transfer credit.

The following Level I programs have specific course requirements from secondary school as outlined:

- **Business I**: requires satisfactory completion of a Grade 12 Mathematics U course (or equivalent).
- **Computer Science I**: requires satisfactory standing in Grade 12 U Calculus and Vectors (or equivalent).
- **Environmental and Earth Sciences I**: requires satisfactory standing in three Grade 12 U mathematics and science courses (or equivalent) as specified under the heading Subject Requirements for Specific Level I Programs.
- **Life Sciences I**: requires satisfactory standing in three Grade 12 U mathematics and science courses (or equivalent) as specified under the heading Subject Requirements for Specific Level I Programs.
- **Mathematics and Statistics I**: requires satisfactory standing in two Grade 12 U mathematics courses (or equivalent) as specified under the heading Subject Requirements for Specific Level I Programs.
- **Midwifery I**: requires Grade 12 English U (or equivalent), one of Grade 12 Biology U (or equivalent) or Grade 12 Chemistry U (or equivalent), and one Grade 12 U or M course in Social Sciences (or equivalent) with a minimum of grade of 70% in each course.
- **Physical Sciences I**: requires satisfactory standing in four Grade 12 U mathematics and sciences courses (or equivalent) as specified under the heading Subject Requirements for Specific Level I Programs.

Nursing I does not offer mature admission directly to the program. However, students interested in Nursing may be admitted as a mature student to another program. In order to be reviewed for admission to Nursing, students must complete the following processes:

- Complete a minimum of 12 units of university level course work with a minimum cumulative average of 7.0.
- Fill out the supplementary application form by February 15th of the year in which they are planning to transfer.
- Fill out the Application for Admission for Nursing I on SOLAR (available on-line at the end of February) in the year in which they are planning to transfer.

Enrollment in this program is limited. Possession of the minimum admission requirements does not guarantee an offer of admission.

The following programs do not admit under the category of Mature Students Admission: Arts & Science I, Engineering I, Health Sciences I, Honours Kinesiology I and Medical Radiation Sciences I.

If admitted to a program as a mature student, you may register to take up to 18 units of course work (normally Level I courses) during the Fall/Winter session with no more than nine units in each term (three courses). Within the first 18 units, mature students will be limited to taking three units in each term of the Spring/Summer session.

Upon completion of 18 units, your performance will be reviewed according to the general academic regulations of the University. (See Level I Registration and Academic Standing Requirements under General Academic Regulations).

C. Senior Citizens

If you are 65 years of age or over, subject to meeting admissions and prerequisite requirements, you may register without payment of tuition and supplementary fees. The required full-time or part-time application fee must be paid and must accompany the appropriate application to the Ontario Universities’ Application Centre (OUAC) and the Faculty offering the course at McMaster. Approval of your application as a Visiting Student does not guarantee your registration in a course.

Subsequent requests to take courses on a Letter of Permission do not require another application, however you must send an updated Letter of Permission and a current official transcript from your home institution directly to the Office of the Registrar at McMaster. Upon receipt, your transcript will be reviewed to ensure you have met the prerequisites for courses you plan to take at McMaster as detailed in your Letter of Permission. Approval of your application as a Visiting Student does not guarantee your registration in a course.

Graduates of McMaster Certificate/Diploma Programs

If you have completed certificate or diploma programs from McMaster, you may be granted advanced credit up to maxima specified by Undergraduate Council upon successful completion of the certificate/diploma program. Faculties will take into account the subject matter of both the certificate and degree programs. 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 Programs section of this Calendar.

F. 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 you wish to take courses. You will register and pay fees as a graduate student.

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.

G. Listeners

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 applying for admission and registration in further courses for credit. Please note not all courses are available to Listeners.

For more information, please contact the Office of the Registrar. 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.

H. Enrichment Program for Secondary School Students

If you are an outstanding secondary school student and wish to enrol in a university-level course while completing Grade 12 U and M courses in your final year of study, you may apply for the Enrichment Program. For more information contact the Office of the Registrar.
I. Former McMaster Degree Students (Returning Students)

Readmission
If you are a former McMaster student who voluntarily withdrew from an undergraduate program 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 (have a record of course registrations) 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 program or another program for which you qualify.

Reinstatement
See the General Academic Regulations section in this Calendar.

Second McMaster Degree
See University Graduates Applying for a Second Bachelor's Degree in this section of the Calendar.

Continuing Studies
See Continuing Students in this section of the Calendar.

J. Deferral of Admission
Students whose country of residence is Canada and who received an offer of admission and accepted the offer prior to the specified deadline may apply to defer their entry to McMaster for one year. Each case is evaluated on its own merits.

All requests for deferral of admission should be made in writing to the Office of the Registrar at McMaster by September 1, 2008 outlining the reasons for the request. Normally, decisions regarding deferral requests are not made until August or September, after the receipt of all final grades.

If a deferral is granted, it is conditional upon the student not attending a secondary or post-secondary institution during the deferral period. Students will be required to re-apply through the OUAC on the 105 application form to reactivate their application by no later than March 1st or the specific deadline date for the program, whichever is earlier. Students whose admission is deferred and who have received an Entrance Award, will automatically have their award deferred as well.

4. TRANSFER CREDITS

A. General Policy on the Transfer of University Course Credits
To facilitate program completion by undergraduate students seeking to transfer course credit from an accredited university to McMaster, the University has implemented the following principles:

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 rigorous. 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 program 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;

3. Evaluation of all possible transfer credits available at the time of admission must be completed within one year of the date of admission to the University.

B. From Colleges of Applied Arts and Technology
Normally, if you are a well-qualified graduate of a three-year program and the college work is appropriate to your chosen university program, you could receive up to 30 units of transfer credit. If you have completed a two-year program and performed well, you could receive at least six units.

Credit beyond this may be given on an individual basis where the college and university programs are in similar areas, and where your academic record warrants special consideration.

Please note that for all programs, a diploma must be completed to be eligible to receive transfer credit and no transfer credit is given for one year of college.

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

1. Your performance in the college program;
2. The duration of the college program;
3. The program taken at the college and the program to which entry is sought;

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

C. Advanced Credit
Subject to the discretion of the Faculty, advanced credit may be granted if you have completed the International Baccalaureate (I.B.) Diploma, the Advanced Placement (A.P.) Program, or the General Certificate of Education (G.C.E.), and you have met the minimum requirements prescribed. Advanced credit may shorten your degree program at McMaster.

D. Credit in Courses by Special Assessment (Challenge Examinations)
If you have acquired knowledge at different 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 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. Unsuccessful 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 (i.e. no degree credit) will be at the discretion of the department.

5. ENGLISH LANGUAGE PROFICIENCY
If your first language is not English, you must demonstrate English language proficiency by achieving a score of at least 86 and a minimum score of 20 on each of the four component parts of reading, listening, speaking and writing on the IBT; or 237 on the computerized test (CBT); or 580 on the paper-based test (PBT) on TOEFL, or the equivalent on other recognized tests.

You may be exempted from this requirement if you meet one of the following requirements:

1. Attended, in full-time academic studies, an accredited Secondary School (High School) or Post-Secondary College in an English-speaking country for at least three years, OR

2. Attended, in full-time academic studies, an accredited English medium Secondary School (High School) or Post-Secondary College for at least three years, OR

3. Attended, in full-time academic studies, an accredited English medium University for at least one year, OR

4. Resided in an English speaking country for at least four years immediately prior to application to McMaster.

It is your responsibility to make all arrangements regarding the writing of the TOEFL test or other recognized tests and to have the official score report forwarded to the Office of the Registrar in a timely manner.
How to Apply
1. Determine the appropriate application form and/or procedures. (See Categories of Admission 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.
4. Complete and submit your application as directed.
5. Submit all required documentation to McMaster. (See Documents on following page.)
6. Once your application has been received, McMaster's Admissions Office will send you an acknowledgement.

1. CATEGORIES OF ADMISSION

A. Current Ontario High School Students
   If you are currently registered as a full-time day school student in an Ontario secondary school and wish to begin university studies in September:
   - Use the Compass 101 on-line application at www.ouac.on.ca/101/. Please consult with your secondary school guidance office regarding this application process.

B. All Other Canadian High School Students
   If you are currently attending secondary school outside of Ontario or have recently completed a secondary school diploma in any Canadian province or territory:
   - Use the OUAC 105 on-line application at www.ouac.on.ca/105/.

C. High School Students with International Qualifications
   If you are currently attending or have recently completed a secondary school program outside of Canada:
   - Use the OUAC 105F on-line application at www.ouac.on.ca/105F/.

D. University/College Transfer Students
   If you are currently registered in or have completed an undergraduate degree program at another university and wish to attend McMaster OR
   - If you are currently registered in or have completed a college diploma program and wish to attend McMaster:
     - Use the OUAC 105 on-line application at www.ouac.on.ca/105/.
     - Applicants residing in Canada (Canadian citizens, permanent residents or applicants studying in Canada on a student permit or other visa) should use the 105D form. Applicants currently residing outside of Canada who are not Canadian citizens should use the 105F form.

E. Students Applying to Nursing Consortium Programs
   If you are interested in applying to McMaster's Nursing B.Sc.N. program at the Mohawk College or Conestoga College sites:
   - Apply on-line through the Ontario College Application Services (OCAS) at www.ocas.on.ca/.

F. Previous McMaster Degree Students (Returning Students)

1. Readmission: If you are a former McMaster student with a record of course registrations who was in good standing and who voluntarily withdrew from an undergraduate program more than five years ago (providing you have not attended another university nor received a college diploma since last registered at McMaster). If you are a former nursing student, you must apply for readmission regardless of the amount of time that has elapsed.

2. McMaster Second Degree: If 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 Returning Student Application to apply on-line at registrar.mcmaster.ca/future/hs-retur.htm.

3. Reinstatement: If you are a former McMaster student who was previously ineligible to continue studies at McMaster:
   - Obtain the Reinstatement Request Form on-line at registrar.mcmaster.ca/future/hs-retur.htm or from the Office of the Registrar, Gilmour Hall, Room 108, McMaster University, Hamilton, Ontario, L8S 4L8.

4. Continuing Student: If you are a McMaster graduate and wish to become a Continuing student:
   - You do not need to apply for admission. Simply submit a Registration.

G. Visiting Students (Letter of Permission - For Credit at Another University)
   If you are currently registered at another university and wish to attend McMaster to take courses on a Letter of Permission for credit at that university:
   - Use the OUAC 105 on-line application at www.ouac.on.ca/105/ to apply for full-time studies.
   - Use the Part-Time Degree Studies application to apply on-line to McMaster only at registrar.mcmaster.ca/future/chs-part.htm to apply for part-time studies.

H. Students Seeking Part-Time Degree Studies at McMaster Only
   If you wish to begin undergraduate studies in September, May or June or if you wish to take undergraduate courses on a part-time basis (registered in 18 units or less):
   - Use the Part-Time Degree Studies application to apply on-line to McMaster only at registrar.mcmaster.ca/future/chs-part.htm. (If you wish to apply to other Ontario universities as well, use the OUAC 105 application to apply on-line at www.ouac.on.ca/105/.)

I. Students Seeking Post-Degree Studies
   If you wish to register as a post-degree student (taking graduate courses but not proceeding to an advanced degree):
   - Download the Post-Degree Studies Application from www.mcmaster.ca/graduate/depforms.html or contact the Graduate Studies Office, Gilmour Hall, Room 212, McMaster University, Hamilton, Ontario, L8S 4L8. Use the form to apply to the appropriate academic department(s).

J. Students Applying to the Medical Program
   See the heading Admission Policy for the Medical Program in the Faculty of Health Sciences section of this Calendar.
2. DOCUMENTS

A. Required Documents

A complete application includes: an application form, relevant transcripts, and all other documentation stipulated in the Admission Requirements and specific Faculty sections of this Calendar, in letters from the appropriate Faculty and/or in letters from the Office of the Registrar.

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

If you are currently attending secondary school, please see your guidance counsellor to obtain a transcript. If you have previously attended secondary school in another province, you may need to obtain the transcript of secondary school marks from the Ministry or Department of Education in that province.

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 languages, French, will be accepted. Clear notarized photocopies of documents in a language other than English should be accompanied by notarized English translations. Clear photocopies of English language certificates must be notarized.

The University may rescind an admission and cancel a registration if it finds that an applicant for admission has, in the process, provided false or incomplete information.

B. 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.

3. DEADLINES

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

A. FALL/WINTER SESSION (SEPTEMBER 2008 ENTRY)

Undergraduate programs which are not specified below: May 1
> International Applications ............................................. April 1
> Domestic Applications ................................................ May 1
> Domestic Documentation ............................................. May 15
> Arts & Science Applications ......................................... February 6
> Supplementary Applications ......................................... February 6
> Level III Science Cooperative programs ........................ February 1
> Gerontology Applications ............................................ May 1
> Health Sciences (Honours) Applications ......................... February 6
> Supplementary Applications (Level I) .................. February 6
> Supplementary Applications (Above Level I) .................. April 24
> Health Studies ......................................................... May 1
> Kinesiology ............................................................. May 1
> Labour Studies .......................................................... May 1
> Medicine ................................................................. October 1
> Midwifery Applications ............................................. February 1
> Official Transcripts .................................................... February 1
> Midwifery Application Forms** .................................... February 1
> Nurse Practitioner Certificate ..................................... March 1
> Nursing (Ontario Secondary School) ............................ May 1

Transfers from other university Nursing Programs
> McMaster Site ......................................................... June 30
> Mohawk and Conestoga Site .................................... May 15
> All Other Nursing Applicants ................................. February 15
> Supplementary Applications* ................................. February 15
> Physician Assistant+ ............................................. May 1
> Social Work
> McMaster Applicants ............................................. March 1
> All Others ............................................................. December 1
> Supplementary Applications** ............................... March 1
> Women's Studies ...................................................... April 15
> Nursing I applicants, with the exception of current secondary school students, need to complete the mandatory supplementary application. The form is available online at www.fhs.mcmaster.ca/nursing/docs/Undergraduate_Nursing_Education_Application.pdf.

** The Midwifery application form and application instructions are available at www.fhs.mcmaster.ca/midwifery/admissions/application.pdf.

*** Please contact the School of Social Work for supplementary applications.

†† The offering of this program is subject to Government approval.

B. FALL/WINTER SESSION (JANUARY ENTRY)

> Bachelor of Technology Degree Completion ........... November 15
> Documentation Deadline ........................................... December 1
> January entry is available for the above program only.

C. 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

D. Reinstatement or Readmission Deadlines

> September Entry (all programs, except Nursing††) Reinstatement Deadline ........................................ June 30
> Readmission Deadline ............................................. July 15
> Nursing Deadline ................................................... February 15

Application deadlines for May or June entry are as indicated under the corresponding headings above. January is not available as an entry point for Reinstatement or Readmission.

E. Academic Counselling for Admitted Students

If you are offered admission to a program at McMaster, you will be asked to confirm that you have accepted the offer of admission and you will attend the University. Your admission package will include information regarding registration procedures.

If you are admitted to Level I, your Faculty may also arrange a visit to the University so you may meet with a Faculty advisor to set up your program. 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 in September.

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

F. 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
www.macADM1T.ca
www.maciQ.ca
GENERAL ACADEMIC REGULATIONS

ACADEMIC COMMITMENTS

Students should expect to have academic commitments Monday through Saturday but not on Sunday or statutory holidays. Students who require accommodations to meet a religious obligation or to celebrate an important religious holiday should make their requests as soon as possible after the start of term to their Faculty/Program office.

STUDENT ACADEMIC RESPONSIBILITY

In its commitment to helping students achieve their academic goals, McMaster University makes available numerous tools and resources, including the Undergraduate Calendar, degree audits and academic advisors. However, students must assume certain responsibilities. They include:

• meeting admission requirements for a program
• applying to that program by the stated deadline
• selecting courses that meet the program requirements
• completing courses in an order that meets prerequisite requirements
• becoming familiar with and respecting University sessional dates (see Sessional Dates section of this Calendar), the general academic regulations (see General Academic Regulations section of this Calendar) and the Faculty/Program/School specific regulations as found in the appropriate section of this Calendar

Experience has shown that students who do not follow these guidelines may experience academic consequences such as cancellation of registration in courses, completion of courses that are not counted towards their degree, or delayed graduation.

In addition to the responsibilities listed above, students are expected to:

• become familiar with and respect the Senate Policy Statements (see Senate Policy Statements section of this Calendar)
• pay, within the prescribed deadline, undergraduate fees
• be aware that changes to course load and program may affect eligibility for government financial aid (e.g. OSAP and out-of-province student loan programs), University financial aid (e.g. bursaries and work programs) and scholarships
• consult with the Centre for Student Development in a timely manner to make the necessary accommodations for special needs.

STUDENT COMMUNICATION RESPONSIBILITY

It is the student’s responsibility to:

• maintain current contact information with the University, including address, phone numbers and emergency contact information.
• use the university provided e-mail address or maintain a valid forwarding e-mail address.
• regularly check the official University communications channels. Official University communications are considered received if sent by postal mail, by fax or by e-mail to the student’s designated primary e-mail account via their McMaster.ca alias.
• accept that forwarded e-mails may be lost and that e-mail is considered received if sent via the student’s @mcmaster.ca alias.

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.

Since the Academic Regulations are continually reviewed, we reserve the right to change the regulations in this section of the Calendar. This 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.

In the event there is a conflict between the program regulations and the general regulations in this chapter, the program regulations take precedence.

Faculties are authorized to use discretion in special situations by taking into account past practice, the spirit of the regulations, and extraordinary circumstances. Students who believe their situations warrant special consideration should consult the appropriate Office of the Associate Dean.

The Academic Regulations listed below are effective as of September 1993. These regulations apply to all undergraduate students admitted or readmitted to the University from September 1993 onward.

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 program-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

Policy on Access to Undergraduate Courses

McMaster’s policy on access to Undergraduate courses is designed to ensure that resources are properly managed while enabling students to register in required courses so that their program admission requirements and course requisites can be met, and that their program of study is not extended.

They include:

1. Enrolment capacities are set on all undergraduate courses taking into account enrolment projections along with resources, enrolment trends and type of course (required or elective).

2. If need exceeds approved capacity, enrolment capacities for courses will be reviewed and may be adjusted.

3. Faculties and Department Offices are responsible for determining which courses require seats held back. These holdback seats must be managed so that students are able to complete program admission requirements, meet course requisites and register in courses required to meet their program of studies in a timely manner.

4. Where students are selecting from a list of required courses, access to a specific course is not guaranteed when there is another course available to meet a specific degree requirement.

Registration:

The purpose of registration is to officially record your program and courses. Information on how to register is available online at: http://registrar.mcmaster.ca/gettingregistered/. You must register in courses during the official registration period designated for each session or term. You are responsible for ensuring that your registration information is complete, and that your course selections meet the requirements of your degree. Academic counselling is available from your Faculty or Program Office to assist you in course selections. You are not fully registered until you are Dean Approved and Financial Approval has been granted. You may not attend a course if you are not fully registered. (If you are unsure whether you are fully registered you should check MUGSI.)

Admission to Programs: Admission to and transfer between programs must be approved by the Office of the Associate Dean of your Faculty.
Selection of Courses: Before you select the courses you wish to take, please read the requirements for your program in the appropriate sections of this Calendar. You are responsible for ensuring that your course selection meets the requirements of your degree. If you fail to meet the program requirements, you will not be eligible to graduate.

Select the courses required for your program; then select your electives. Ensure that you have completed the courses which are listed as prerequisites, have completed or chosen courses that are listed as corequisites and that permissions have been obtained, if required. If you do not have the course requisites, you will not be able to take the course selected.

Changes to Registration: The last day for adding or dropping courses is approximately one week after classes begin for each term. (See the tables in the Sessional Dates section for the relevant dates for each term of the academic year.) After the above-mentioned period, you may cancel courses until the last day to withdraw without failure by default. Cancelled courses will be shown on your transcript with the notation CAN (Cancelled). After this date, you will remain registered in courses whether or not you attend classes. Your transcript will show a grade of F for any course not successfully completed.

You are responsible for ensuring that your course selection meets the requirements of your degree. You should review your personal degree audit on the working day following each time you drop or add courses, and contact a student advisor in the Office of the Associate Dean of your Faculty if you have questions. Changes to your course load may also affect your fees and your eligibility for scholarships and financial aid such as OSAP.

Limit on Level I Courses: In most Faculties, you may not obtain credit in more than 42 units of Level I courses in a three-level program, or more than 48 units in a four-level program.

Eligibility for Awards: (See Section 6 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 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 over-load work. (See Financial Information section.)

Load in Spring/Summer Session: If you wish to take more than 12 units in the Spring/Summer Session, or more than six units in either term of that Session, you may do so only with the permission of the Office of the Associate Dean of your Faculty.

Repetition of Courses: Students may repeat courses that have been failed or for which credit has been obtained a number of times, with the exception of the students in the Faculty of Business who may only repeat courses which they have failed. 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 are a currently registered student in a degree program and 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, audit the course. You must satisfy the prerequisite for the course, but will not complete assignments or 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 are in good academic standing at McMaster and you wish to attend another university to take courses for 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. Please take note of any conditions attached, including the requirements 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.

Withdrawal from the University: If you wish to withdraw from the University, you must consult the appropriate Office of the Associate Dean. Your student identity card must be surrendered to the Office of the Associate Dean. Your course record 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 Dean 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.

Calculation of Cumulative Average Following Reinstatement After Poor Academic Performance: Effective September 1997, if you are reinstated at the University, your Cumulative Average will be reset to 0.0 on zero units, although you may (at Faculty discretion) retain credit for prior work. If you are reinstated, you will be on academic probation. You must complete a minimum of 60 units of work after reinstatement to be eligible for Graduation With Distinction or other recognition based on the Cumulative Average.

International Study

If you wish to engage in international study, you may do so either by participating in one of the formal exchange programs that exist between McMaster and a number of universities in other countries; by participating in one of the programs available through specific Faculties; or by independent study abroad.

Formal exchange programs are those in which McMaster has an agreement with another institution, involving a temporary exchange of students. As an exchange student, you register and pay your tuition fees, and supplementary fees at McMaster. No tuition is paid at the foreign institution. If you are interested in participating in a formal exchange program, you can obtain further information and an application form from the International Student Services Office, Gilmour Hall, Room 104. Applications are normally due mid-January for exchanges expected to begin the following September. Admission is by selection. A registration checklist is available to assist you in making all necessary arrangements.

McMaster also offers other programs which allow you to spend all or part of your third year of a four-year program at another institution. You register but do not pay tuition at McMaster. These programs are not available at universities with which McMaster University has a formal exchange agreement. For more information on these programs, please see your Faculty advisor or the International Student Services Office.

Students must recognize and accept the fact that, in many countries of the world, especially the newly-emerging nations, change may be the only constant. There are no guarantees that certain courses will be offered or that housing will be as one might expect. Spending time on an exchange program or an independent study abroad program offers an opportunity to develop one's adaptability and resourcefulness in the face of new situations. McMaster University cannot be held accountable for unforeseen changes in the host country.

For information about programs and universities, please contact the International Student Services Office, Gilmour Hall, Room 104.

2. ACADEMIC STANDING AND PROGRAM REQUIREMENTS

Academic Standing

Academic standing is reviewed in May and August each year for students who
1. have attempted at least 18 units of work since the last review; or
2. may be eligible to graduate at the next Convocation; or
3. were admitted under the part-time mature student provision and have attempted the first 12 units of work.

In the review of academic standing, three sets of decisions are made:
1. whether a student may graduate;
2. whether a student may continue at the University; and
3. whether a student may continue in a program.
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 programs: Arts and Science I, Business I, Engineering I, Health Sciences I, Humanities I, Kinesiology I, Mathematics and Statistics I, Medical Radiation Sciences I, Midwifery I, Music I, Science I, Nursing I, or Social Sciences I. 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 studying part-time, the Office of the Associate Dean has the discretion to permit you to take some of the work in the higher levels prior to having completed 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 program, 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 program in another Faculty. If, at the end of the next reviewing period, you again do not qualify for admission to a program, 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 I should refer to the Arts & Science Program regulations listed below.

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

Minimum Requirements for Entering and Continuing in a Program Beyond Level I

Admission to the programs 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 program-specific requirements of each Faculty, as described in this Calendar.

ARTS & SCIENCE PROGRAM

- B.Arts Sc. (Honours) and B. Arts Sc. Programs: You must have a CA of at least 6.0 to continue in the program. If your CA is from 5.5 to 5.9, you may remain in the program, but will be placed on program probation for one reviewing period. You may be on program probation only once.
  
  If your CA is 3.5 to 5.4, you must transfer to another program for which you qualify, or register in the Art & Science Program as an irregular student for one reviewing period. During that period you cannot take Arts & Science Program courses. At the end of that period you may apply for readmission to the Arts & Science Program. If your CA is 3.0 to 3.4, you will be placed on academic probation. You may continue in the program for one reviewing period as an irregular student but cannot take Arts & Science Program courses. The purpose of this period is to prepare yourself for admission to a program outside the Arts & Science Program. You may be on academic probation only once. (Potential graduates may not continue at the University.)

SCHOOL OF BUSINESS

- Business I: For specific admission requirements to Commerce II see Program Notes under the heading Programs in the School of Business section of this Calendar.
  
  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 into a Commerce program either now or in the future, you are still in good standing at the University. You may continue at the University in a program outside the School of Business or as an irregular student in Business. To continue in a program outside the School of Business you must apply, for admission to that program through the Office of the Associate Dean appropriate for that program. 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 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 program outside the School of Business.

  If you have a CA of 3.0 to 3.4, you will be on academic probation and may continue at the University for one reviewing period as an irregular student in the School of Business but will not be permitted to take any Commerce courses. At the end of your probation period you will not be eligible for consideration for Commerce II or readmittance to Business I. The purpose of the probation period is to make yourself eligible for a program outside the School of Business.

  If you have a CA of less than 3.0 at the end of Business I you may not continue at the University either on a full-time or part-time basis.

- Commerce II: Upon satisfactory completion of Commerce II, qualified students may continue in one of the following programs:

  - Honours B.Com. Program: You must have a CA of at least 6.0 to enter the Honours B.Com. program in Level III or IV or to continue in the Honours B.Com. program. Once admitted, if your CA is 5.5 to 5.9, you may continue in the Honours B.Com. program, but will be placed on program probation. You may be on program probation for only one reviewing period (as specified in the Glossary section of this Calendar). If your CA is 3.5 to 5.4, you may transfer to the B.Com. program. If your CA is less than 3.5, you may not continue at the University. Regardless of your CA, if you receive more than six units of failure (in required or elective course work) after entry to Level II Commerce, you will not be permitted to continue in a program in the School of Business.

  - B.Com. Program: You must have a CA of at least 4.0 to continue in the B.Com. program. If your CA is 3.5 to 3.9, you are permitted to continue in the B.Com. program on program probation for one reviewing period (as specified in the Glossary section of this Calendar). If your CA is less than 3.5, you may not continue at the University. Regardless of your CA, if you receive more than six units of failure (in required or elective course work) after entry to Level II Commerce, you will not be permitted to continue in a program in the School of Business.

FACULTY OF ENGINEERING

- B.Eng., B.A.Sc. Programs: To be admitted to a Level II Engineering program, you must have completed all non-elective Engineering I courses with a minimum CA of 4.0. Admission to Level II Honours Computer Science or Honours Business Informatics requires completion of the minimum requirements for these individual programs as stated within the Faculty of Engineering section in this Calendar.

In Level II and above, you must maintain a CA of at least 4.0 to continue in an Engineering program or in the Honours Computer Science or Honours Business Informatics programs. 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.

- B.Tech Programs: For specific minimum requirements, please see the descriptions for the individual programs within the Faculty of Engineering section in this Calendar.

FACULTY OF HEALTH SCIENCES

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

FACTORIES OF HUMANITIES AND SOCIAL SCIENCES

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

Honours B.Kin. Program: To be admitted to a Level II Honours Kinesiology program, you must have completed all Kinesiology I program requirements with a Cumulative Average of at least 6.0 including an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3. Upon completion of Kinesiology I, students who have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and whose CA is between 5.5 and 5.9 may register in Level II Honours Kinesiology but will be placed on program probation for one reviewing period. A student may be on program probation only once. Upon completion of Kinesiology I, students who have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and whose CA is between 3.5 and 5.4 may register in Level II Kinesiology General and, with permission, take Level II Kinesiology required courses. At their next review, such students must achieve a CA of at least 6.0 to transfer to an Honours Kinesiology program.

Upon completion of Kinesiology I, students who have not achieved an average of 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and whose CA is between 3.5 and 5.4 may register in Level II Kinesiology General for one reviewing period. During that period a student may not take Level II Kinesiology courses but may upgrade or repeat Level I Kinesiology courses. At the end of that period, students who have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and have a CA of at least 6.0 may transfer to the Honours Kinesiology program.

Students who fail to meet the minimum requirements for transfer to Honours Kinesiology must transfer to a non-Kinesiology program for which they qualify.

B.A. Programs: You must have a CA of at least 3.5 to continue in, or graduate from, a three-level B.A. program. If your CA is 3.0 to 3.4, you may remain in the program, 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.

FACTORY OF SCIENCE

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

Honours B.Sc. Kinesiology Program: You must complete Honours Kinesiology I with a CA of at least 6.0 including an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3. If, upon completion of Honours Kinesiology I, you have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and have a CA of at least 3.5, you may register in Level II Honours Kinesiology but will be placed on program probation for one reviewing period. A student may be on program probation only once. If, upon completion of Honours Kinesiology I, you have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and have a CA between 3.5 and 5.4, you may register in Level II Honours Kinesiology General and, with permission, take Level II Kinesiology required courses. At your next review, you must achieve a CA of at least 6.0 to transfer to an Honours Kinesiology program.

If, upon completion of Honours Kinesiology I, you have not achieved an average of 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and have a CA between 3.5 and 5.4, you may register in Level II Honours Kinesiology General and, with permission, take Level II Kinesiology required courses. At the end of that period you may not take Level II Kinesiology courses but may upgrade or repeat Level I Kinesiology courses. If you have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1FO3, 1GO3 and have a CA of at least 6.0 you may transfer to the Honours Kinesiology program. If you fail to meet the minimum requirements for transfer to Honours Kinesiology, you must transfer to a non-Kinesiology program for which you qualify.

B.Sc. Programs: You must have a CA of at least 3.5 to continue in a three-level B.Sc. program. 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.

M.R.Sc. Program: You must complete all the course requirements prescribed for Medical Radiation Sciences I by the end of term 2 of Level I, with a CA of at least 6.0, or permission of the Committee of Instruction (Chair Medical Radiation Sciences (Mohawk), Coordinator Medical Radiation Sciences (McMaster), Coordinator Radiation Therapy Specialization, Coordinator Radiography Specialization, Coordinator Ultrasonography Specialization). For additional program-specific regulations, see Department of Medical Physics and Applied Radiation Sciences in the Faculty of Science section of this Calendar.

Reinstatement

I. MAY NOT CONTINUE AT UNIVERSITY

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 to a particular program, please contact the Office of the Registrar to obtain the appropriate application form. Students are considered for reinstatement for September entry or for May entry only. You will be required to submit the following information along with your application:

- A brief summary of the circumstances relevant to your lack of academic success.
- Reasons for selection of program indicated.
- Activities since last registered at the University, including all academic work. You should provide evidence that you will now be able to succeed in a post-secondary program. Please refer to the website of the Faculty offering your selected program for further advice.

If applicable, you should support your application with appropriate documentation (e.g., from a doctor, lawyer, therapist). Reinstatement is not guaranteed. There is limited room for students who have been unsuccessful in their previous studies. If at any review after reinstatement your CA falls below 3.5, you will be required to withdraw from the University for a period of at least 12 months.

II. REQUIRED TO WITHDRAW FROM UNIVERSITY

If you are required to withdraw from the University because your CA falls below 3.5 at any review after reinstatement, you may apply for reinstatement only after you have been away from the University for a period of at least 12 months. Please contact the Office of the Registrar to obtain the appropriate application form and follow the procedure above.

Transfer Between Programs

If you wish to transfer from one program to another, you should discuss the possibility with the appropriate Office of the Associate Dean 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 program (with the exception of the Medical Radiation Sciences program which is a three-level program offered over a four-year period), 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 program. You should check the calendar requirements statement for your program in the case of Science programs, or check with your Faculty in the case of other programs, for subject areas that are excluded from consideration as a Minor in your program.
SECOND BACHELOR'S DEGREE PROGRAMS

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

1. 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 program is required. If admitted, you must complete at least 30 units beyond the first degree, including all Honours requirements specified for the program. In some Faculties, this includes a minimum number of units of work in the discipline.

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

3. Honours B.A. or B.Sc. in Another Subject: For entry, you must meet the admission requirements for the program 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 program.

4. B.M.R.Sc.: Students will be required to complete a minimum of 24 units during Level I of the program. Some of these units may be extra to the degree requirements.

5. B. Eng. and B.A.Sc.: For entry, you must meet the admission requirements for the program. If admitted, you must complete at least 60 units beyond the first degree including all program requirements.

NOTES

1. All work for the second degree must be completed at McMaster University.
2. A second degree is not available in all subject areas. You will not be admitted to a second degree program where there is substantial overlap in the requirements. See the individual Faculty/Program regulations or consult the Faculty/Program Offices for exclusions or further information.
3. 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.)
4. Extra courses taken while you are registered in a first degree program, or courses completed as a Continuing Student, may be extra to the degree requirements.
5. You must see the same standards for continuation and graduation as are applied to students registered in a first degree program.
6. 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 program. 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 average of 9.5 on at least 30 units (usually their Sessional Average) are named to the Deans' Honour List. Students will be assessed at the reviewing period (either after the Fall/Winter or Summer session) when a minimum of 30 units has been completed since the previous Deans' Honour List review. At each review the assessment will be based on all units completed since the previous Deans' Honour List review.

PROVOST'S HONOUR ROLL

Each year outstanding students with a 12.0 average on at least 30 units (usually their Sessional Average) are named to the Provost's Honour Roll. Students will always be assessed at the same time and using the same average calculation as applied to the Deans' Honour List assessment. (See Deans' Honour List section above.)

3. PETITIONS FOR RELIEF FOR MISSED TERM WORK AND FOR DEFERRED EXAMINATIONS

The University wishes to assist students with legitimate difficulties. It also has the responsibility to ensure that degree, program and course requirements are met in a manner that is equitable to all students. Students may petition the Office of the Associate Dean of their Faculty (Faculty office) for special consideration when there are compelling medical, personal or family reasons to justify an exception to University regulations. Supporting documentation will be required but will not ensure approval of the petition. The authority to grant petitions lies with the Faculty office and is discretionary. It is imperative that students make every effort to meet the originally-scheduled course requirements and it is a student's responsibility to write examinations as scheduled.

PROCEDURE 1: PETITIONS FOR RELIEF FOR MISSED TERM WORK

1. A student may submit a Petition for Special Consideration through the Faculty office for relief from the academic consequences of missed term work based on compelling medical, personal or family reasons before or immediately after the work is missed, normally within five working days.
2. If the reason is medical, the approved McMaster University Medical Form must be used. The student must be seen by a doctor at the earliest possible date, normally on or before the date of the missed work and the doctor must verify the duration of the illness. Relief will not be available for minor illnesses.
3. If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within five working days.
4. Students should expect to have academic commitments Monday through Saturday but not on Sunday or statutory holidays. Students who require accommodations to meet a religious obligation or to celebrate an important religious holiday should make their requests as soon as possible after the start of term to their Faculty/program office.
5. In deciding whether or not to grant a petition, factors such as the following may be taken into account: the adequacy of the supporting documentation including the timing in relation to the due date of the missed work and the degree of the student's incapacitation.
6. After the third Petition for Special Consideration a student will be asked to meet with the Associate Dean (or delegate).
7. The University reserves the right to require students to obtain medical documentation from the Campus Health Centre.
8. It is the student's responsibility to check with the Faculty office for a decision on the petition.
9. If the petition is granted, the Faculty office will notify the instructor(s) recommending relief.
10. The student must contact the instructor promptly to discuss the appropriate relief.

It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.
Procedure 2: Petitions for Deferred Examinations

1. Once a student has completed an examination, no special consideration will be granted. A student who misses an examination or is unable to complete an examination may submit a Petition for Special Consideration asking for a deferral of the examination to a later date. The petition must be based on compelling medical, personal or family reasons.

2. The petition must be submitted to the Office of the Associate Dean of your Faculty, normally within five working days of the missed examination. The petition must be considered by a committee of Associate Deans or delegates, which will consider the students eligibility for a deferred examination.

3. If the petition is approved, the student will be notified of the new examination date, which will be within the same exam period. The student must then be available for the examination on the new date. Failure to meet the stated deadline may result in the denial of special arrangements.

4. If the petition is denied, the student may appeal the decision to the Senate Board for Student Appeals. The appeal must be submitted within five working days of the denial.

5. The appeals decision will be reported to the student and the Office of the Registrar.

Procedure 3: Petitions for Missed Deferred Examinations

A student who cannot write a deferred examination on the scheduled date may submit a Petition for Special Consideration to the Office of the Associate Dean of your Faculty. The petition must be based on compelling medical, personal or family reasons.

A committee of Associate Deans or delegates will consider the petition and may grant an alternative examination or may deny the request.

You are responsible for notifying the examiner and making all arrangements for the alternative examination. Failure to meet the stated deadline may result in the denial of special arrangements.

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. No examination books or supplies are to be removed from the room.

- No conversation or any form of communication between candidates is permitted in the examination room.

- No cell phones, pagers or any communicating devices are permitted.

- No food is permitted and drinks must be in a spill proof container.

- The University is not responsible for lost or stolen articles.

- Items (including back packs) that are not required to write the examination should not be brought into the examination as they must be left at the side of the room at your own risk.

- Handbags or small personal belongings may be left beneath your chair but not on your desk.

- You are expected to use the washroom before or after and not during an examination.

- You are responsible for writing the correct examination from the right instructor at the place and time indicated on the examination timetable.

- 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 Petition for Special Consideration form with supporting documentation of illness, personal or family reasons, to the Office of the Associate Dean of your Faculty, normally within five working days of the missed 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 Office of the Associate Dean of your Faculty. 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 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
  - December only - two consecutive examinations if the first examination is three hours long

- Application must be made at least 10 working days before the scheduled examination date and acceptable documentation must be supplied. Failure to meet the stated deadline may result in the denial of special arrangements.

- Students with disabilities are required to inform the Centre for Student Development of accommodation needs for examinations on or before the last date for withdrawal from a course without failure by default. (See the Sessional Dates section of this Calendar.)

- The University reserves the right to verify and arrange appropriate accommodation. Failure to meet the stated deadline may result in the denial of special accommodation. See Academic Facilities, Student Services and Organizations---Centre for Student Development section of this Calendar.

- Examinations are not rescheduled for purposes of travel. You must arrange to be available for the entire range of examination dates as listed in the Sessional Dates section.

Deferral Examinations

The decision to grant you a deferred examination will be reported on your grade report.

In the case of examinations written at an off-campus location, any fees incurred are the responsibility of the student. This includes the fee to courier the written examinations back to the Examinations Section of the Office of the Registrar.
Students who have been granted more than one deferred examination may be required by their Faculty/Program office to reduce their course load during the term in which the deferred examinations are being written. The decision on a reduced load will be made and communicated with the decision on the application for deferred examinations. Examination and confirmation deadline dates appear in the Sessional Dates section of this Calendar.

Students who have been granted more than one deferred examination may be required by their Faculty/Program office to reduce their course load during the term in which the deferred examinations are being written. The decision on a reduced load will be made and communicated with the decision on the application for deferred examinations.

For further information, please see Petitions for Deferred Examinations in this section of the Calendar or refer to the web site at: http://registrar.mcmaster.ca/internal/examt/deferexam.htm

5. 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 programs for which a higher grade is specified in the program regulations.

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</td>
<td>6</td>
</tr>
<tr>
<td>C+</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>B+</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

To calculate Average: 153/18 = 8.5

Since September 1982, the grading scale has been:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Equivalent Grade Points</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>70-72</td>
</tr>
<tr>
<td>C+</td>
<td>6</td>
<td>67-69</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>63-66</td>
</tr>
<tr>
<td>D+</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>F</td>
<td>0</td>
<td>0-49 — Failure</td>
</tr>
</tbody>
</table>

UNDERGRADUATE ACADEMIC AWARDS

The Fall/Winter Sessional Average will be used to determine your eligibility for these awards. Terms and conditions of awards for full-time and part-time studies are defined in the Undergraduate Academic Awards section.

7. GRADUATION

Graduation With Distinction standing may be awarded if a minimum CA of 9.5 is achieved in a degree program. The following Cumulative Averages are required to graduate:

- B.A. — 3.5
- B.A. (Honours) — 5.0
- B.A./B.S.W. and 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.H.Sc. — 6.0 (on all graded courses)
- B.H.Sc. (Honours) — 5.0
- B.Kin. (Honours) — 5.0
- B.Kin. Major — 4.0
- B.M.R.Sc.* — 4.5
- B.Mus. (Honours) — 5.0
- B.Sc. — 3.5
- B.Sc. (Honours) — 5.0
- B.Sc.Kin.* (Honours) — 5.0
- B.Sc.N. — 3.5
- B.Tech. — 3.5

* All requirements must be completed within five years from the time of registration in Level II.

Please see the graduation regulations for individual Health Sciences programs 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 program. If you are registered in Level III of an Honours program and wish to transfer to a three-level degree program to be eligible for graduation at the next Convocation, you must apply to the appropriate Office of the Associate Dean by April 15 for Spring Convocation, and by September 1 for Fall Convocation. If permission is granted, you must complete a Graduation Information Card.

If you are scheduled to graduate from a three-level program and wish to be considered to transfer to Level IV of an Honours program rather than graduate, you must apply to the appropriate Office of the Associate Dean by April 15 for Spring Convocation and by September 1 for Fall Convocation. You will receive the decision on your eligibility to transfer on your grade report and if you are not eligible to transfer, you will graduate from your three-level program as scheduled.

During the session in which you expect to complete your graduation requirements, you must complete a Graduation Information Card online at http://registrar.mcmaster.ca/internal/convocation/ by mid-February for Spring Convocation and by mid-July for Fall Convocation. Deadline dates appear in the Sessional Dates section of this Calendar.

If you wish to apply to receive a Minor in addition to your major program 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. Diplomas will not be released if you have an outstanding account with the University.

Diplomas held for students with an outstanding account or that have been returned in the mail will only be retained for a period of twelve months following the Convocation date. Students under the above circumstance requesting diplomas after this period will need to purchase a replacement diploma.
Duplicate and Replacement Parchments, Diplomas and Certificates

Graduates may request, with payment of the required fee, a duplicate or replacement degree parchment, diploma or certificate. A duplicate copy of the student's degree parchment, diploma or certificate will be issued when a student requires a second copy of the degree parchment, diploma or certificate. A degree parchment, diploma or certificate will be reissued (noting the date of reissue) when the original document has been lost, damaged or destroyed.

The words duplicate copy or reissued will be affixed to all degree parchments, diplomas or certificates requested in this manner. Degree parchments, diplomas or certificates will bear the signatures of the current Chancellor, President and Vice-Chancellor and Registrar.

8. 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

NOTE: Academic sessions do not appear on transcripts until a registration has been academically and financially approved and the first day of classes in the session has passed.

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.

There is no charge for transcripts. However, charges to have transcripts faxed or couriered from McMaster will be applied. Current fees for faxes and courier services can be found on our web site at http://registrar.mcmaster.ca/internal/services/transrequest.htm. Fees are due at the time that transcripts are ordered. All mail or fax requests must include a credit card number with the expiry date, name and signature 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 to seven days (up to 10 business days during the peak periods of January, June and September) for processing plus 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 programs 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 programs and courses, provide the basis 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).
McMaster University may also collect personal information from other relevant sources including, without limitation, the Ontario Universities’ Application Centre, secondary schools, colleges, universities and other institutions previously attended, including third-party services and test score providers where the items collected form a part of the application or admission process to a university program.

In addition to collecting personal information for its own purposes, McMaster University collects specific and limited personal information on behalf of the McMaster Student Union, the McMaster Association of Part-time Students and/or the McMaster Graduate Students Association. These constituent student groups use personal information for the purpose of membership, administration, elections, annual general meetings, health plans and other related matters only. Please contact the relevant Student Union/Association office if you have questions about this collection, use and disclosure of your personal information and their respective privacy policies.

NOTIFICATION OF DISCLOSURE OF PERSONAL INFORMATION TO STATISTICS CANADA

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

In order to carry out such studies, Statistics Canada asks all colleges and universities to provide data on students and graduates. Institutions collect and provide to Statistics Canada student identification information (student’s name, student ID number), student contact information (address and telephone number), student demographic characteristics, enrolment information, previous education and labour force activity.

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

Students who do not wish to have their information used are able to ask Statistics Canada to remove their identification and contact information from the national database. For further information, please see Statistics Canada’s web site at: http://www.statcan.ca or write to the Postsecondary Section, Centre for Education Statistics, 17th Floor, R.H. Coats Building, Tunney’s Pasture, Ottawa, K1A 0T6.
The University has defined its expectations of students in both the academic and non-academic life of the University community, and has developed procedures to ensure that all members of the community receive equitable treatment. Policies that govern academic and student life at McMaster can be found on the university website at the following address: http://www.mcmaster.ca/policy.

The University has defined its expectations of students in both the academic and non-academic life of the University community, and has developed procedures to ensure that all members of the community receive equitable treatment. Policies that govern academic and student life at McMaster can be found on the university website at the following address: http://www.mcmaster.ca/policy.

Following are some of the policies most relevant to undergraduate students:

- Academic Accommodation of Students with Disabilities
- Academic Integrity Policy
- Alcohol Policy
- Anti-Discrimination Policy
- First Year Student Guiding Principles
- General Regulations for McMaster University Libraries
- Petition for Relief for Missed Term Work and for Deferred Examinations
- Examinations
- Petitions for Special Consideration
- Residence Admissions Policies and Procedures
- Residence Code of Conduct
- Sexual Harassment Policy
- Student Appeal Procedures
- Student Code of Conduct
- Student Rights and Responsibilities
- Undergraduate and Graduate Awards Policy
- Undergraduate Course Management Policies
  - Course Outlines
  - Early Feedback
  - Assessment Ban
  - Turnitin.com
- Welcome Week Regulations

A number of these policies are under review and may be revised. Students are advised to check the Policies, Procedures and Guidelines (www.mcmaster.ca/policy) section of the University website for the most up-to-date information. Complete versions of the policies may also be obtained from the University Secretariat, Room 210, Gilmour Hall.

Academic Integrity and Academic Dishonesty

The Academic Integrity Policy 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.

The main purpose of a university is to encourage and facilitate the pursuit of knowledge and scholarship. The attainment of this purpose requires the individual integrity of all members of the University community, including all graduate and undergraduate students. Scholars at McMaster demonstrate integrity in many ways, including the following:

- Scholars practice intellectual honesty in the process of acquiring and extending knowledge. They do this by improving scholarly competence, and by exercising critical thinking and self-discipline.
- Scholars show respect for and courtesy to others in free discussions on academic topics and recognize the right to free inquiry and opinion.
- Scholars adhere to ethical requirements in their research.
- Scholars acknowledge fully the work of others by providing appropriate references in papers, essays and the like and declaring the contributions of co-workers. Scholars do not take credit that is not earned.
- Scholars strive to ensure that others are not put at a disadvantage in their pursuit of knowledge. They do not withhold material that should rightly be available to all.

The University states unequivocally that it demands scholarly integrity from all its members. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University; furthermore, it is unfair and discouraging to those students who pursue their studies honestly. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. In an academic setting, this may include any number of forms such as:

- copying or the use of unauthorized aids in tests, examinations, and laboratory reports,
- plagiarism, i.e., the submission of work that is not one's own or for which previous credit has been obtained, unless the previously submitted work was presented as such to the instructor of the second course and was deemed acceptable for credit by the instructor of that course,
- aiding and abetting another student's dishonesty,
- giving false information for the purposes of gaining admission or credit,
- giving false information for the purposes of obtaining deferred examinations or extension of deadlines, and
- forging or falsifying McMaster University documents.

For a complete definition and examples, please refer to the Academic Integrity Policy, Appendix 3.

Allegations of academic dishonesty will be handled according to the procedures described in the Academic Integrity Policy. Penalties may be imposed on students who have been found guilty of academic dishonesty. Examples of penalties include a mark of zero on an assignment, zero for the course with a transcript notation, and suspension or expulsion from the University, etc.
FINANCIAL INFORMATION

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, 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 academic requirement related supplementary fees. Fees charged by the University are approved annually by the Board of Governors for the academic year beginning September 1.


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

Base Per Unit Tuition Per Faculty

<table>
<thead>
<tr>
<th>Faculty/Program</th>
<th>Canadian/ Permanent Resident Status</th>
<th>Visa Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Science Level I</td>
<td>150.45 per unit 431.60 per unit</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Science Level II</td>
<td>149.73 431.60</td>
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<tr>
<td>Arts &amp; Science Levels III, IV</td>
<td>149.01 431.60</td>
<td></td>
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<tr>
<td>Business Level I</td>
<td>175.99 448.20</td>
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<tr>
<td>Commerce Level II</td>
<td>169.47 448.20</td>
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<tr>
<td>Commerce Levels III, IV</td>
<td>163.19 448.20</td>
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<tr>
<td>Engineering Level I</td>
<td>189.84 539.55</td>
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<tr>
<td>Engineering Level II</td>
<td>182.81 539.55</td>
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<tr>
<td>Engineering Levels III, IV</td>
<td>176.04 539.55</td>
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</tr>
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<td>Eng. Mgt. Levels II, IV</td>
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<td></td>
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<tr>
<td>Eng. Mgt. Levels III, V</td>
<td>176.04 539.55</td>
<td></td>
</tr>
<tr>
<td>Health Sciences (Honours) Level I</td>
<td>150.45 454.58</td>
<td></td>
</tr>
<tr>
<td>Health Sciences (Honours) Level II</td>
<td>149.73 452.40</td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>149.01 452.40</td>
<td></td>
</tr>
<tr>
<td>(Honours) Levels III, IV</td>
<td>150.45 457.60</td>
<td></td>
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<tr>
<td>Humanities Level I</td>
<td>149.73 379.60</td>
<td></td>
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<tr>
<td>Humanities Level II</td>
<td>149.73 379.60</td>
<td></td>
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<tr>
<td>Humanities Levels III, IV</td>
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<td></td>
</tr>
<tr>
<td>Kinesiology and Social Sciences Level I</td>
<td>150.45 379.60</td>
<td></td>
</tr>
<tr>
<td>Kinesiology and Social Sciences Level II</td>
<td>149.73 379.60</td>
<td></td>
</tr>
</tbody>
</table>

Supplementary Fees

STUDENTS TAKING 1 TO 17 UNITS PAY (PER UNIT):

Athletics and Recreation Activity Fee $4.45
Administrative Services Fee 1.04

McMaster Association of Part-Time Students Fees:
Organization Fee $5.00
Total Charge per unit $10.49

Nursing Students Add:
Learning Resource Fee $7.65
Immunization Fee $25.00
Respiratory Mask Fitting Fee $20.00

STUDENTS TAKING 18 UNITS 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 $100.19
Student Health Service $51.26
Ontario Public Interest Research Group (OPIRG) 6.76

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

McMaster Student Union Fees:
Student Organization Fee $106.63
Health Plan Premium* 45.00
Dental Plan Premium* 95.00
H.S.R. Bus Pass 71.50
WUSC Student Refugee Fee 1.32
Ancillary Fee for CFMU-FM 15.65
Ancillary Fee for MARMOR Yearbook 8.14
Incite Publication 0.85

Sub Total $502.30

*NOTE: Students who can prove comparable coverage may opt out of the McMaster Students Union Health Plan and Dental Plan Premiums. For deadline dates and detailed information, students should consult the MSU Insurance Plans web site at http://www.msu.mcmaster.ca/health.

Plus:
- McMaster Student Union's University Student Centre Building fee ($2.87 per unit), to a maximum of $86.10
- Student Services Fee ($3.91 per unit), to a maximum of $117.30
- Administrative Services Fee ($1.04 per unit), to a maximum of $31.20
- Athletics and Recreation Building Fee ($2.60 per unit), to a maximum of $78.00

And Faculty Specific Society/Support Fees as Follows:

<table>
<thead>
<tr>
<th>Faculty/Program</th>
<th>Canadian/ Permanent Resident Status</th>
<th>Visa Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Science</td>
<td>28.00</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Health Sciences (Honours)</td>
<td>28.00</td>
<td></td>
</tr>
<tr>
<td>Commerce</td>
<td>184.53</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>132.00</td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td>15.62</td>
<td></td>
</tr>
<tr>
<td>Kinesiology</td>
<td>50.00</td>
<td></td>
</tr>
<tr>
<td>Medical Radiation</td>
<td>83.23</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>213.34</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>35.00</td>
<td></td>
</tr>
<tr>
<td>Social Sciences</td>
<td>50.33</td>
<td></td>
</tr>
</tbody>
</table>
RESIDENCE AND MEAL PLAN FEES

REGULAR SESSION
If you live on campus, your residence fees cover the period from Labour Day weekend to 5 p.m. on the day following your final April examination, and exclude the December holiday break.

The fees below are those for 2007-2008.

RESIDENCES

<table>
<thead>
<tr>
<th>Traditional Residences</th>
<th>Full Payment</th>
<th>Installment Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bunk and Loft Triple Room</td>
<td>3,680.00</td>
<td>2,133.00</td>
</tr>
<tr>
<td>Quad Room</td>
<td>4,175.00</td>
<td>2,380.00</td>
</tr>
<tr>
<td>Double/Triple Room</td>
<td>4,350.00</td>
<td>2,468.00</td>
</tr>
<tr>
<td>Double Room with Washroom</td>
<td>4,625.00</td>
<td>2,605.00</td>
</tr>
<tr>
<td>Single Room</td>
<td>4,795.00</td>
<td>2,690.00</td>
</tr>
<tr>
<td>Single Room with Washroom</td>
<td>5,095.00</td>
<td>2,940.00</td>
</tr>
</tbody>
</table>

Apartment Style Residences

<table>
<thead>
<tr>
<th>Full Payment</th>
<th>Installment Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bates Apartment Room</td>
<td>5,545.00</td>
</tr>
<tr>
<td>Mary E. Keyes Suite Room</td>
<td>5,805.00</td>
</tr>
</tbody>
</table>

MEAL PLANS

The Residence Meal Plan is an integral component of living in any of the McMaster University residences and all students living in residence must purchase a mandatory meal plan.

If living in a traditional residence you must purchase a meal plan from Group A. Students living in Bates and the Mary E. Keyes Residence must purchase a meal plan from either Group A or Group B.

The fees below are those for 2007-2008.

Group A Full Meal Plan
(Available to all residence students)

<table>
<thead>
<tr>
<th>Full Payment</th>
<th>Installment Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>2,425.00</td>
</tr>
<tr>
<td>Small</td>
<td>2,650.00</td>
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<tr>
<td>Regular</td>
<td>2,850.00</td>
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<tr>
<td>Large</td>
<td>3,050.00</td>
</tr>
<tr>
<td>X-Large</td>
<td>3,250.00</td>
</tr>
</tbody>
</table>

Group B Reduced Meal Plan
(Available to Bates and Mary E. Keyes Residence students only)

<table>
<thead>
<tr>
<th>Full Payment</th>
<th>Installment Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>1,775.00</td>
</tr>
<tr>
<td>Small</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Regular</td>
<td>2,200.00</td>
</tr>
<tr>
<td>Large</td>
<td>2,400.00</td>
</tr>
<tr>
<td>X-Large</td>
<td>2,600.00</td>
</tr>
</tbody>
</table>

For more information on meal plans visit our web page at http://housing.mcmaster.ca or contact Residence Admissions, Commons Building, Room 129, telephone (905) 525 9140, ext. 27442, email resnote@mcmaster.ca.

Summer Residence

McMaster University offers residence accommodation for summer students and casual guests from early May to late August each year.

For further information, contact Conference Services, McKay Residence, Room 124, 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. McMaster University is committed to providing maximum flexibility to meet the financial needs of as many students as possible. McMaster University offers a wide variety of:

- Funding Options
- Payment Plans
- Payment Methods

Our web site at http://www.mcmaster.ca/bms/student contains valuable information about your fees, various payment options and important deadline dates.

Students selecting a payment option that does not cover full fees, will be charged interest at an annual rate of 14.4% (1.2% per month) subject to change. A full month's interest is calculated on any balance outstanding on the last day of each 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 $35.00 for the first occurrence and an additional $10.00 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 $100.00 reinstatement fee.

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.
### 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 $100.00. Level I Nursing students are also required to purchase a stethoscope at approximately $100.00.

**Registration Examinations**

Graduates of the B.Sc.N. program can expect to pay fees (approximately $461.23 in 2007) 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 responsibility 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.*
ARTS & SCIENCE PROGRAM

WEB ADDRESS: http://www.mcmaster.ca/artssci/
Commons Building, Room 105
Ext. 24655, 23153

Director
P.G. Sutherland/B.Sc., M.S., Ph.D.
Program Administrator
D. Con/ac/B.A.

The Arts & Science Program 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 in practice of methods of inquiry. The program also allows for substantial specialization in a discipline or area through the use of electives. The philosophy of the Arts & Science Program 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 relevance 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 Program, 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 Program offers preparation for advanced study in many professional schools, including those of business, health administration, journalism, law, medicine and teaching; and for research in many disciplines and interdisciplinary areas.

Students in this program 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 programs, which are available in many subjects (see below), combine the core curriculum of the Arts & Science Program 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

STUDENT ACADEMIC RESPONSIBILITY
You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES
All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that their program of study is not extended. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students from particular programs or Faculties. All students are encouraged to register as soon as MUGS/SOLAR is available to them.

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

General Academic Regulations

The Program begins in Level I and leads to the degree, Bachelor of Arts & Science (Honours) on completion of Level IV. The four-level program provides an opportunity for specialization through electives and through an individual study or thesis course. Students who decide to conclude their studies in the program 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 program. In the case of some Combined Honours programs, the average must include specified courses. Registration in Level I of the Arts & Science Program is limited to approximately 60 students.

INQUIRY SEMINAR REQUIREMENTS
Inquiry seminars comprise 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 3C at the beginning of the course code (3CE6, 3CF3, 3CG3, etc.) and are described in the program 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 Program may undertake Combined Honours programs in many disciplines within the Faculties of Humanities, Science and Social Sciences. The combined program with Biology needs five years for completion. Combined programs that are already established are listed below. Students should consult the Director of the Arts & Science Program for consideration of other possible combinations. Application for Admission to Level II (March) is required for all Combined Honours Programs.

Individual Study/Thesis: Students in the B.Arts Sc. (Honours) Program are required to complete either Individual Study or Thesis (ARTS & SCI 4A06 or 4C06). For students in some Combined Honours programs, this requirement must be met by a Depart- mental course.

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

INTERNATIONAL/CANADIAN EXCHANGE PROGRAMS

One calendar year before study abroad: Interested students should consult the Director, Arts & Science Program.

Calendar year of planned travel: No later than the end of December, students must propose a program 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.

Information concerning student exchanges can be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Centre for Student Development, International Student Services. Inquiries can be directed to the office at:

CENTRE FOR STUDENT DEVELOPMENT
INTERNATIONAL STUDENT SERVICES
GILMOUR HALL, ROOM 104
TELEPHONE: (905) 525-9140, EXTENSION 24748
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.
3. Level I students who have not successfully completed Ontario Grade 12 Calculus and Vectors U or its equivalent are advised to take MATH 1F03 followed by MATH 1A03 rather than ARTS&SCI 1D06.

COURSE LIST 1
ARTS&SCI 1E03; BIOLOGY 1A03, 1M03; CHEM 1A03, 1A3; ENVIR SC 1A03, 1B03, 1G03

COURSE LIST 2
ARTS&SCI 3A06, 3B03, 3BB3, 3L03, 3S03

REQUIREMENTS
LEVEL I: 30 UNITS
24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06 (See Note 3 above.)
6 units Electives or Course List 1 (requirement must be completed by the end of Level II)
1 course SCIENCE 1A00

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 Course List 1 (if not completed in Level I)

LEVEL III: 30 UNITS
6 units from Course List 2
6 units Electives, or Upper-level Inquiry (if not already completed)
18 units Electives

LEVEL IV: 30 UNITS
6 units from Course List 2
6-12 units from ARTS&SCI 4A06, 4A12, 4C06, 4C12, 4EE6
12-18 units Electives
THE COMMERCE PROGRAMS

In Level I, a student who wishes to pursue either of the Commerce programs establishes a foundation in behavioural science, 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 program of another Faculty may be considered for admission to Level II (Commerce II).

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, and management information systems are introduced and further course work 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 programs diverge at Level III. In the Honours Commerce program, about two-thirds of the work is in Commerce courses, with the remainder of the load coming from electives outside the Faculty. In the Commerce program the work is approximately evenly divided between Commerce and non-Commerce courses.

INTERNATIONAL/CROSS-CULTURAL/LANGUAGE MENU

In its revised programs, 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 successfully complete two courses from an International/Cross-Cultural/Language menu. NOTE: Students who participate in an official McMaster University exchange are required to successfully complete one course from an International/Cross-Cultural/Language menu prior to graduation. Students must satisfy the normal prerequisites for the courses listed on the menu. Students follow the menu requirements of the Calendar in force when they enter Business I, however, when a later Calendar expands the menu options, students may choose from those additional courses as well. The menu for 2008-2009 is as follows:

All Anthropology courses except ANTHROP 1A03 if completed as part of the Business I requirements.

All courses in the Faculty of Humanities open to Commerce students, with the exception of all Multimedia courses, PHILOS 2N03 and English courses other than those listed below.

All Indigenous Studies courses

All Political Science courses, except POL SCI 1G06, 3F03, 3FF3, 3S03, 4006

All Religious Studies courses

ECON 2F03 The Political Economy of Development

ECON 3H03 International Monetary Economics

ECON 3H04 International Trade

ECON 3J03 Economic History of the United States

ECON 3L03 History of Economic Theory

ECON 3T03 Topics in Economic Development

ENGLISH 1B03 Cultural Studies and Visual Culture

ENGLISH 1BB3 Cultural Studies and Consumer Culture

ENGLISH 2C03 Contemporary Canadian Fiction

ENGLISH 2F03 Studies in American Literature

ENGLISH 2J03 Contemporary Popular Culture

ENGLISH 3D03 Science Fiction

ENGLISH 3EE3 African American Fiction

ENGLISH 3Y03 Children's Literature

GEOG 1HA3 Human Geographies: Society and Culture (if not completed as part of the Business I requirements) (formerly GEO 1HS3)

GEOG 1HB3 Human Geographies: City and Economy (formerly GEO 1HU3)

GEOG 3RJ3 Geography of Japan (formerly GEO 3HJ3)

GEOG 3RW3 Geography of a Selected World Region (formerly GEO 3HR3)

GEOG 3UR3 Urban Residential Geography (formerly GEO 3HZ3)

KINESIOL 3SS3 Body, Mind, Spirit

SOCIO 2C06 Deviant Behaviour

SOCIO 2E66 Racial and Ethnic Group Relations

SOCIO 3Z03 Ethnic Relations

All courses included under the Peace Studies Minor (see Minor in Peace Studies in the Faculty of Humanities section of this Calendar)

FULL-TIME/PART-TIME STUDIES

Students can take Business I and the Commerce programs on a full-time or part-time basis. Progression to the next level is at the end of the successful completion of the 24 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 programs or one of the Engineering and Management programs may take, as part-time students, Level III and IV Commerce courses (not previously taken, to a maximum of 18 units), subject to space availability, excluding COMMERCE 4AG3, 4AH3, 4AI3. (See Continuing Students in the Admission Requirements section of the Calendar.)
QUALIFYING FOR HONOURS COMMERCE shall be subject to the following School of Business Regulations.

SECOND UNDERGRADUATE DEGREE

A student with an undergraduate degree will not be admitted or readmitted to either of the Commerce programs. Such a student may wish to apply for admission to the M.B.A. program.

CREDIT TOWARDS PROFESSIONAL DESIGNATIONS

Educational requirements toward a variety of professional designations can be met in varying degrees within the Commerce programs and the Engineering and Management programs. The professional accounting designations C.A., C.S.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.P. is awarded by the Human Resources Professionals Association of Ontario.

Further opportunities for meeting educational requirements for professional designations are available to students in all Commerce and Engineering designations. A Minor consists of at least 18 units of Level II, Program. 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

STUDENT ACADEMIC RESPONSIBILITY

You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES

All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that their program of study is not extended. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students from particular programs or Faculties. All students are encouraged to register as soon as MUGS/SOLAR is available to them.

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

QUALIFYING FOR HONOURS COMMERCE

To be considered for entry to Level III of the Honours Commerce program, students must have successfully completed Business I and have successfully completed at least 24 units of course work for Level II Commerce (as described in this section of the Calendar) with a C.A. of at least 6.0 and no more than six units of failures (in required and/or elective course work) after entry to Level II Commerce.

If a student did not qualify for the Honours Commerce program upon entry to Level III, there is one final opportunity for consideration. To be considered for Level IV of the Honours Commerce program, students must have successfully completed at least 24 units of course work for Level III Commerce (as described in this section of the Calendar) with a C.A. of at least 6.0 and no more than six units of failures (in required and/or elective course work) after entry to Level II Commerce.

CHANGE OF PROGRAM

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

Students in good standing in the Engineering and Management program may transfer to a Commerce program with the permission of the Academic Programs Office. The conditions for eligibility for entrance to the Commerce programs are the same as for students registered in the School of Business.

WORKLOAD

In Business I, a full-time student must complete a minimum 24-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 program. A part-time student in Business I is permitted to take a maximum of 21 units in any Fall/Winter session.

Students who wish to take more courses than recommended for a single Level of their program may do so only if their Sessional Average on completion of the previous Fall/Winter session is at least 7.0. Students registered in the final Level of their program are permitted to overload by up to six additional units in order to become eligible to graduate.

DEFERRED EXAMINATIONS

See the heading Deferred Examinations under Examinations in the General Academic Regulations section of the Calendar for application procedures.

Students who are in a precarious position with respect to achieving the minimum C.A. or otherwise meeting the Commerce program requirements for continuation in the program will not necessarily be permitted to undertake further work before clearing deferred examinations.

REPEATED COURSES

Any failed course must be repeated if it is a required course for the program, or must be repeated or replaced if it is not required. The grades for both the failed course and its repetition or replacement, as applicable, will be included in the calculation of the C.A. Students who have extenuating circumstances may submit a Petition for Relief from the Faculty’s Academic Regulations to the Admissions Policy and Reviewing Committee for permission to repeat a course in which a passing grade has been obtained. The deadline for submission is June 30. If approved, 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 the degree.

LEVEL I COURSES

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

LEVEL OF REGISTRATION

A student is required to register in the lowest level for which the academic requirements of the new program can be met. A student with extenuating circumstances may submit a Petition for Relief from the Faculty’s Academic Regulations to the Admissions Policy and Reviewing Committee for permission to register in the lowest level for which the academic requirements of the new program can be met. Students who have extenuating circumstances may submit a Petition for Relief from the Faculty’s Academic Regulations to the Admissions Policy and Reviewing Committee for permission to register in the lowest level for which the academic requirements of the new program can be met.

COURSES NOT USED

Courses, in addition to those which constitute a student’s program requirements that are not otherwise designated as Extra courses, are classified as being Not Used course work. The Not Used course work would appear on students’ degree audit. Not Used course work may be taken only if students are in their final year of the program and are satisfying all the course requirements for their degree program. Not Used course work may not be scheduled in a manner which would delay completion of a student’s degree program.
READMISSION

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

Application for readmission must be made in writing to the Undergraduate Admissions Policy and Reviewing Committee by June 30 for entry in September. This application should explain why the applicant would expect to succeed in the program if readmitted. Forms for this purpose may be obtained from the Academic Programs Office in the DeGroote School of Business, Room 104.

A student who is readmitted after having become ineligible to continue in a Commerce program must repeat all the courses of the level at which he/she became ineligible to continue unless specific course exemptions or credits 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 program 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.

REINSTATEMENT

A student who May Not Continue at the University may apply for reinstatement.

There are two categories of students who may apply for reinstatement to Business I:

1. Applicants who have been registered in Business I within the past five years, and have not been registered in another McMaster program or at another University during that time, or

2. Applicants from other Faculties.

Students seeking reinstatement must complete the Reinstatement Request Form available at the Office of the Registrar. The completed form and the $50 fee must be submitted to the Office of the Registrar by June 30 for entry in September.

The form must clearly demonstrate extraordinary circumstances which caused inadequate performance and indicate whether the circumstances surrounding their academic situation have been resolved. They should also 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 grade. 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. Such exceptional cases will be considered on their merit. Reinstatement is not guaranteed.

Upon reinstatement, the Cumulative Average for a student is reset to 0.0 on zero units. If at any review after reinstatement the student's Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

FORMER COMMERCE STUDENTS

A student who was previously registered in a McMaster Commerce program, was in good standing and did not attend in the preceding year, but did attend another post-secondary institution must write to the Academic Programs Office 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 heading Readmission in the Admission Requirements section of this Calendar. A student who was last registered at McMaster must seek reinstatement and not apply as a former Commerce student. Graduates of McMaster's Commerce or Engineering and Management programs 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 Undergraduate Admissions Policy and Reviewing Committee with appropriate documentation attached. Guidelines for such requests may be obtained from the Academic Programs Office, in the DeGroote School of Business, Room 104.

COMMERCE INTERNSHIP PROGRAM

This program is designed to provide students with an opportunity to engage in career-oriented work terms. Positions begin after the successful completion of Level III and may continue for a period of eight, twelve or sixteen months. Upon completion of the Internship, students return to campus to complete their degree program. As a pre-requisite to Internship, students must register in and complete COMMERCE 31NO, a comprehensive eight-module career development course. Students compete for opportunities with participating companies through an application and interview process. After securing an Internship, students must successfully complete a minimum of an eight-month Internship, obtain a satisfactory employer evaluation and submit a detailed work term report upon return to campus. Meeting these requirements will result in a transcript notation indicating the successful completion of COMMERCE 31NO, the name of the Internship employer and dates of employment. For more information, please contact The Centre for Business Career Development, DeGroote School of Business, Room 112.

EXCHANGE PROGRAMS

There are a number of official exchange programs offered to undergraduate students registered in the School of Business. The countries involved are: Australia, Denmark, England, France, Japan, the Netherlands, Norway, Mexico and Singapore. Official exchange programs 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 with a Cumulative Average of at least 7.0 to be eligible to participate in an exchange. In most cases, students who participate in exchange programs go abroad for Level III of their program. Information is available from Prof. M. Mallik, Director, International Exchange Programs, in the DeGroote School of Business, Room 228.

Additional information may be found under International Study in the General Academic Regulations section of this Calendar. Information concerning student exchanges can be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Centre for Student Development, International Student Services. Inquiries can be directed to the office at:

CENTRE FOR STUDENT DEVELOPMENT
INTERNATIONAL STUDENT SERVICES
GILMOUR HALL, ROOM 104

TELEPHONE: (905) 525-9140, EXTENSION 24748

PROGRAMS

PROGRAM NOTES

1. Students in Business I are not eligible to take upper Level Commerce course work.

2. Students have only one opportunity to be reviewed for entry to Commerce II. Other options may be pursued through the Academic Programs Office.

3. To be considered for entry into Commerce II a Business I student must have met all of the following:
   a) achieved a CA of at least 5.0 on a minimum of 24 units of course work for first attempts only and these must include all required courses of the Business I program;
   b) successfully completed on first attempts only all Business I required courses (See Business I Requirements below);
   c) must successfully complete ALL required units of Business I course work and successfully complete enough units of elective course work where the total of successful units of course work equals 24 units;
   d) have successfully completed ECON 2X03 if registered in this course in Business I. (ECON 2X03 is not required for admission to Commerce II. Students who elect to register in ECON 2X03 in Business I and who do not successfully complete the course, will not be permitted to enter Commerce II.)

4. Refer to Workload under the Academic Regulations section in the School of Business for information on full-time and part-time Business I course loads.
5. Students seeking a Minor in Mathematics and Statistics must take MATH 1A03 and should refer to the Faculty of Science section of this Calendar for the requirements for a Minor in Mathematics and Statistics. Students neither seeking this Minor nor planning on a transfer to the Faculty of Science, are advised to take MATH 1M03.

6. Transfer students may be admitted to Commerce II from other universities or from other Faculties within McMaster University. Transfer students may be expected to complete COMMERCE 1E03 and 1P00, and one of ANTHROP 1A03, GEO 1H03, GEOG 1H03, PSYCH 1A03, 1X03 or SOCIOL 1A06 as part of the degree requirements. Academic requirements for admission of transfer students will be more demanding than those for Business I students.

7. Admission to either of the Commerce programs beyond Commerce Level II is not possible.

Business I

REQUIREMENTS
LEVEL I: 30 UNITS
Students admitted to Business I must complete 30 units as follows:
1 course COMMERCE 1P00
3 units COMMERCE 1E03
3-6 units from ANTHROP 1A03, GEOG 1H03 (or GEO 1H03), PSYCH 1X03 (or 1A03), SOCIOL 1A06
3 units COMP SCI 1A03
6 units from ECON 1A06, 1B03, 1B3
3 units from MATH 1A03, 1M03 (See Note 5 above.)
0-3 units MATH 1P03 (for those students without Grade 12 Calculus and Vectors U)
0-3 units MATH 1K03 (for those students without Grade 12 Advanced Functions and Introductory Calculus U, Grade 12 Advanced Functions U or equivalent or whose credit in same is older than five years)
0-3 units STAT 1L03 (for those students without Grade 12 Mathematics of Data Management U or equivalent or whose credit in same is older than five years)
3-12 units Electives to total 30 units. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Commerce II

REQUIREMENTS
LEVEL II: 30 UNITS
24 units COMMERCE 2AA3, 2BA3, 2FA3, 2KA3 (or 2QB3), 2MA3, 2QA3, 2S03
3 units ECON 2X03
3 units from COMMERCE 2SB3, electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Honours Commerce (Honours B.Com.)

REQUIREMENTS
LEVEL III: 30 UNITS
15 units COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3
6 units Level III or IV Commerce
9 units from COMMERCE 2SB3, 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
15 units Electives from non-Commerce courses, COMMERCE 2SB3 or Level III or IV Commerce courses from COMMERCE 2SB3, electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Commerce (B.Com.)

REQUIREMENTS
LEVEL III: 30 UNITS
15 units COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3
15 units from COMMERCE 2SB3, 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
6 units from COMMERCE 2SB3, electives from non-Commerce courses or Level III or IV Commerce courses from COMMERCE 2SB3, electives from non-Commerce courses. See also the International/Cross-Cultural/Language Menu in this section of the Calendar.

Minor in Business

NOTES
1. The Minor is not open to students registered in any Commerce or Engineering and Management program.
2. Enrollment in each of the Commerce courses comprising the Business Minor, (excluding students registered in Engineering and Management, Commerce and Labour Studies students enrolled in COMMERCE 2BA3 and 3BC3 and students admitted to the Minor in Finance and the Minor in Accounting and Financial Management Services) is limited to 40 students who are registered in a four- or five-level McMaster degree program. Places in these courses will be allocated on a first-come, first-served basis.
3. Effective September 1999, COMMERCE 2A3, 2FA3 and 2MA3 will also require completion of ECON 1A06 or 1B03 with a minimum grade of B- as a prerequisite; or completion of ECON 2G03 or 2X03 with a minimum grade of B- as a prerequisite.
4. For purposes of the Business Minor, KINESIOL 3L03 will be accepted as a substitute for COMMERCE 2FA3. All courses listed as anti-require for COMMERCE 2Q3 in the course listings section of the Undergraduate Calendar will be accepted as a substitute for COMMERCE 2QA3.

Minor in Finance

The School of Business will admit a maximum of 30 students in total to the Minor in Finance and the Minor in Accounting and Financial Management Services each year. Admission decisions are made on behalf of the Undergraduate Admissions Policy and Reviewing Committee.

NOTES
1. Application for admission (forms available from the Academic Programs Office) must be submitted to the Academic Programs Office by April 30.
2. Students seeking the Minor must have completed ECON 1A06 with a minimum grade of B- or an average of at least 7.0 in ECON 1B03 and 1BB3; or completion of Econ 2G03 or 2X03 with a minimum grade of B-.
3. The Minor is not open to students registered in any Commerce or Engineering and Management program.
4. Students seeking to obtain the Minor must complete either ECON 2G03 or 2X03, and both ECON 2B03 and 2H03 before undertaking any Level III or Level IV Finance courses.
5. For the purposes of this Minor, all courses listed as anti-require for COMMERCE 2Q3 in the course listings section of the Undergraduate Calendar will be accepted as a substitute for ECON 2B03.
REQUIREMENTS
33 units total

6 units from ECON 1A06, 1B03, 1BB3
3 units from ECON 2G03, 2X03 (See Note 4 above.)
6 units ECON 2B03, 2H03 (See Notes 4 and 5 above.)
9 units COMMERCE 2AA3, 2FA3 (or ECON 2L03), 3FA3
9 units from Levels III, IV Finance courses open to Commerce students

Minor in Accounting and Financial Management Services

The School of Business will admit a maximum of 30 students in total to the Minor in Accounting and Financial Management Services and the Minor in Finance each year. Admission decisions are made on behalf of the Undergraduate Admissions Policy and Reviewing Committee.

NOTES

1. Application for admission (forms available from the Academic Programs Office) must be submitted to the Academic Programs Office by April 30.

2. Students seeking the Minor must have completed ECON 1A06 with a minimum grade of B- or an average of at least 7.0 in ECON 1B03 and 1BB3; or completion of ECON 2G03 or 2X03 with a minimum grade of B-.

3. The Minor is not open to students registered in any Commerce or Engineering and Management program.

4. Students seeking to obtain the Minor must complete either ECON 2G03 or 2X03, and both ECON 2B03 and 2H03 before undertaking any Level III or Level IV Accounting courses.

5. For the purposes of this Minor, all courses listed as anti-requisite for COMMERCE 2QA3 in the course listing section of the Undergraduate Calendar will be accepted as a substitute for ECON 2B03.

REQUIREMENTS
33 units total

6 units from ECON 1A06, 1B03, 1BB3
3 units from ECON 2G03, 2X03 (See Note 4 above.)
6 units from ECON 2B03, 2H03 (See Notes 4 and 5 above.)
12 units COMMERCE 2AA3, 2AB3, 3AB3, 3AC3
6 units from COMMERCE 4AA3, 4AC3, 4AD3
Engineering is a profession concerned with the creation of new and improved systems, processes and products to serve human needs. The central focus of engineering is design, an art entailing the exercise of ingenuity, imagination, knowledge, skill, discipline and judgment based on experience. The practice of professional engineering requires a mastery of engineering methodology together with a sensitivity to the physical properties of materials, to the logic of mathematics, to the constraints of human, physical and financial resources, to the minimization of risk, and to the protection of the public and the environment.

**BACHELOR OF APPLIED SCIENCE PROGRAMS**

The Faculty of Engineering currently offers two four-year Computer Science programs leading to the Bachelor of Applied Science (B.A.Sc.) degree:

- Honours Business Informatics
- Honours Computer Science

Both programs have limitations on enrolment. Students are admitted to their program following successful completion of Computer Science I. Admission procedures and criteria can be obtained from the Office of the Associate Dean of Engineering.

**BACHELOR OF TECHNOLOGY PROGRAMS**

The McMaster University Faculty of Engineering and the Mohawk College School of Engineering Technology are collaborating in the development of a unique concept for the shared delivery of technological education in Ontario. The primary purpose of this endeavour is to offer Bachelor of Technology degree programs with a variety of technical specializations. It builds on the very successful Bachelor of Technology program in Manufacturing Engineering Technology that has been offered jointly by both institutions since 1997. This type of program is targeted to individuals whose technological interests are applications-oriented.

The programs being offered are of two kinds:

a) A four-year degree program (leading to both a Diploma in Technology from Mohawk and a Bachelor of Technology degree from McMaster) with entry directly from high school and

b) A degree completion program (leading to a Bachelor of Technology degree) for graduates of the Mohawk College three-year Diploma in Technology (or graduates of similar programs at other Colleges).

A major thrust of all of the programs is the inclusion of a significant component (seven one-term courses) of management education in order to ensure that graduates are able to perform supervisory and management responsibilities as they advance in their technical careers. The management component is designed to form a cohesive segment which complements the technical program content.

For information concerning the Bachelor of Technology programs, please see Programs for the Bachelor of Technology (B.Tech.) Degree in this section of this Calendar.

Four-year programs are offered leading to the Bachelor of Engineering degree in the following fields of specialization:

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Electrical and Biomedical Engineering
- Engineering Physics
- Materials Engineering
- Mechanical Engineering
- Mechatronics Engineering
- Software Engineering
- Software Engineering (Embedded Systems)
- Software Engineering (Game Design)

Five-year programs, leading to the Bachelor of Engineering and Society degree, are offered in:

- Chemical Engineering and Society
- Civil Engineering and Society
- Computer Engineering and Society
- Engineering Physics and Society
- Electrical Engineering and Society
- Materials Engineering and Society
- Mechanical Engineering and Society
- Mechatronics Engineering and Society
- Software Engineering and Society
- Chemical Engineering and International Studies
- Civil Engineering and International Studies
- Computer Engineering and International Studies
- Electrical Engineering and International Studies
- Engineering Physics and International Studies
- Materials Engineering and International Studies
- Mechanical Engineering and International Studies
- Mechatronics Engineering and International Studies
- Software Engineering and International Studies

In addition, and in conjunction with the School of Business, five-year programs leading to the Bachelor of Engineering and Management degree are offered in:

- Chemical Engineering and Management
- Civil Engineering and Management
- Computer Engineering and Management
- Electrical Engineering and Management
- Engineering Physics and Management
- Materials Engineering and Management
- Mechanical Engineering and Management
- Mechatronics Engineering and Management
- Software Engineering and Management

A five-year program leading to the Bachelor of Engineering and Biosciences is offered in:

- Chemical Engineering and Bioengineering

All programs have limitations on enrolment. Students are admitted to the program following successful completion of Engineering I. Admission procedures and criteria can be obtained from the Office of the Associate Dean of Engineering. The B.Eng., B.Eng.Biosciences, B.Eng.Mgt. and B.Eng.Society programs are honours degree programs.

McMaster baccalaureate degree programs in Engineering are accredited by the Canadian Engineering Accreditation Board (CEAB) of the Canadian Council of Professional Engineers, except the Mechatronics Engineering program which will be examined for the first time at the next accreditation review. Provincial Engineering Associations accept the accreditation as a major requirement for admission to the qualification Professional Engineer.

At McMaster, Engineering students take a Level I program comprising Mathematics, Materials, Physics, Chemistry, Engineering Graphics, Introduction to Professional Engineering and Design, Computation and complementary studies electives. The specialized programs are entered at Level II. Students interested in the Engineering and Management programs must take ECON 1803 as one of their electives in Level I. Students interested in one of the Engineering and Society programs are advised to choose the six units complementary studies in Level I to be consistent with their chosen focus of the program.
Programs 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 with subject matter that deals with central issues, methodologies and thought processes of the humanities and social sciences.

In addition to ENGINEER 4A03, or equivalent, and 4B03, complementary studies electives are required in all Engineering programs.

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 (http://www.ens.mcmaster.ca/electives/electvls.htm). Engineering I students should refer to the Degrees and Programs section of this Calendar to determine which Level I Complementary Studies electives are possible (http://www.ens.mcmaster.ca/electives/lvel_elec.htm).

**Technical Electives** are Engineering or Applied Science courses in subjects relevant to the particular program. A list is available in each Engineering Department office.

**Commodity Electives** are required in Level V of Engineering and Management programs.

**Engineering and Society Focus Electives** and International Studies 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 program, such that they form a proper sequence of the focus electives.

**ENGINEERING CO-OP PROGRAM**

Undergraduate students in the Faculty of Engineering can enroll in a Co-op or non-Co-op version of each program. Students enrolled in the former will be required to complete 12 months of industrial/practical experience prior to graduation. The 12-month experience may be acquired through a combination of three four-month experience terms, or a combination of a four-month and eight-month experience terms, or an experience term of 12 or 16 months duration. Engineering students may enter the Co-op version of their program at any time up to the beginning of Term 2 of their next-to-last level of undergraduate studies.

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

**Engineering Co-op Fees**

An Engineering Co-op fee will be charged for students registered in an Engineering Co-op Program.

**EXCHANGE PROGRAMS**

Formal exchange programs 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. Information concerning student exchanges can also be found in the Academic Facilities; Student Services and Organizations section of this Calendar under the heading Centre for Student Development, International Student Services.

**ENGINEERING STUDY ABROAD PROGRAM (ESAP)**

The Faculty of Engineering has two summer study abroad programs for undergraduate students, one in Europe (including Russia and Germany) and one in Brazil. Students must obtain approval from the Office of the Associate Dean of Engineering prior to participating in these programs.

Both programs are formal exchanges for 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. In addition to paying tuition and fees to McMaster University, students must pay all associated travel, student, visa, insurance and living expenses. See the General Academic Regulations section in this Calendar.

Students enrolled in any program in the Faculty of Engineering may apply to ESAP. To be eligible to take part in this program, students must have completed at least 31 units of work with a minimum Cumulative Average of 5.0.
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 program probation, and calculation of their Cumulative Average (CA) will begin anew. If at any review after reinstatement the student's Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

PROGRAM CHANGES
All program changes must be made through the Office of the Associate Dean of Engineering.

LEVEL I PROGRAMS

WEB ADDRESS: http://www.eng.mcmaster.ca/engineering/1/

ENGINEERING I: 37 UNITS
3 units CHEM 1E03
10 units ENGINEER 1C03, 1D04, 1P03
3 units MATHS 1M03
9 units MATH 1Z04, 1ZZ5
6 units PHYSICS 1D03, 1E03
6 units approved complementary studies electives. (See Elective Courses Available to Level I Students in the Degree, Programs and Courses section of this Calendar.)
1 course ENGINEER 1A00

COMPUTER SCIENCE I: 30 UNITS

NOTE
Computer Science I students interested in entering the Honours Business Informatics program must take ECON 1B03 and 1BB3 as six units of electives.

6 units from Levels III, IV Computer Science
15 units Electives (See Note above)
1 course ENGINEER 1A00

PROGRAMS FOR THE B.A.SC. DEGREE

Honours Arts & Science and Computer Science (B.A.Sc.; See Arts & Science Program)
Honours Economics and Computer Science (B.A.; See Faculty of Social Sciences, Department of Economics)
Honours Mathematics and Computer Science (B.Sc.; See Faculty of Science, Department of Mathematics and Statistics)

Admission to Level II Computer Science Programs

Admission to Level II Honours Computer Science and Honours Business Informatics require completion of all non-elective courses with a minimum Cumulative Average (CA) of 4.0. In addition, admission to the Honours Business Informatics program requires completion of ECON 1B03 and 1BB3.

NOTES
1. Both programs have limited enrolment.
2. For the purpose of admission to Level II B.A.Sc. programs, the three courses MATH 1A03, 1AA3 and 1B03 together are considered equivalent to both MATH 1204 and 1ZZ5.

Honours Business Informatics (B.A.Sc.)

Co-op (B.A.Sc.)
Business Informatics is the study of the design and application of information systems for use in business. It lies within the intersection of Computer Science and Business.

ADMISSION
See Admission to Level II B.A.Sc. Programs.

LEVEL II: 30 UNITS
15 units COMP SCI 2CS3, 2ME3, 2MJ3, 2003, 2SC3
9 units from COMP SCI 2CA3, 2ME3, 2MF3, 2MJ3, 2003, 2SC3
3 units Stats 2D03
3 units Electives

Honours Computer Science (B.A.Sc.)

Co-op (B.A.Sc.)

LEVEL III: 30 UNITS
18 units COMP SCI 3CN3, 3DB3, 3EA3, 3IS3, 3MH3, 3SR3
12 units COMMERC 2B3A, 2MA3, 2FA3, 2QA3

LEVEL IV: 30 UNITS
9 units COMP SCI 4AR3, 4HC3, 4WW3
3 units COMMERC 3BC3
6 units from COMMERC 4B3K, 4QB3
9 units Levels III and IV Computer Science
3 units Electives

Honours Computer Science (B.A.Sc.)

Co-op (B.A.Sc.)

NOTE
The Honours Computer Science (B.A.Sc.) program in the Faculty of Engineering is replacing the Honours Computer Science (B.Sc.), program in the Faculty of Science. The Honours Computer Science program in the Faculty of Science is being phased out and registration in Level IV of that program will be last available in September 2006. All new students should register in the Honours Computer Science (B.A.Sc.) program.

ADMISSION
See Admission to Level II B.A.Sc. Programs.

LEVEL II: 30 UNITS
21 units COMP SCI 2CA3, 2CS3, 2ME3, 2MF3, 2MJ3, 2003, 2SC3
3 units STAT 2D03
6 units Electives

LEVEL III: 30 UNITS
24 units COMP SCI 3CN3, 3DA3, 3DB3, 3EA3, 3IS3, 3MH3, 3SR3
6 units Electives

LEVEL IV: 30 UNITS
21 units COMP SCI 4CD3, 4HC3, 4MN3, 4TB3, 4WW3, 4ZP6
3 units from COMP SCI 4AR3, 4E03, 4003, 4TC3, 4TE3
6 units Electives

Minor in Computer Science

REQUIREMENTS
24 units total
6 units from COMP SCI 1FC3, 1MD3
12 units from COMP SCI 2CA3, 2ME3, 2MF3, 2MJ3, 2003, 2SC3
6 units from Levels III, IV Computer Science


Admission to Level II Engineering Programs

Admission to Level II Engineering programs requires completion of all non-elective Engineering I courses with a minimum Cumulative Average (CA) of 4.0. All programs have limited enrolment; should there be more applicants than the limiting number in any program, admission to that program will be based on a points system, computed as the product of the Sessional Average (SA) and the number of units taken in the session (a minimum of 31 units will be used in the calculation).

Students who do not meet the requirements to proceed to Level II in May will have a Pending flag put on their allocation. The Pending flag will be removed in August if the student completes the requirements over the summer.

In addition, admission to a B.Eng.Mgt. program requires the completion of ECON 1B03 with a minimum grade of 5.0; an interview may also be required.

Students admitted to a B.Eng.Society program are required to submit a statement indicating the educational objectives for the focus electives.

Students seeking admission to the Engineering and Management program, the Engineering and Society program, or the Engineering and International Studies program must first be admitted to the relevant department. Thereafter, they will be considered for admission to one of these three programs.
FACULTY OF ENGINEERING

Courses:
- **Chemical Engineering (B.Eng.)**
  - Common Admission Requirements
  - Required Courses
  - Complementary Studies
- **Chemical Engineering Co-op (B.Eng.)**
  - Admission Notes

**LEVEL I:**
- **36 UNITS**
  - Required Courses
  - Complementary Studies
- **LEVEL II:**
  - **36 UNITS**
  - Required Courses
  - Complementary Studies
- **LEVEL III:**
  - **32-38 UNITS**
  - Required Courses
  - Complementary Studies

**LEVEL IV:**
- **37-38 UNITS**
  - Required Courses
  - Complementary Studies

**LEVEL V:**
- **37-38 UNITS**
  - Required Courses
  - Complementary Studies

**ADMISSION NOTES**
1. Students may choose to follow a stream of recommended technical elective courses.
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

**LEVEL II:**
- **36 UNITS**
  - 15 units CHEM ENG 2A04, 2D04, 2F04, 2G03
  - 6 units CHEM 1AA3, 2A03
  - 6 units MATH 2M03, 2MM3
  - 3 units STAT 3N03
  - 6 units approved complementary studies electives

**LEVEL III:**
- **38 UNITS**
  - 29 units CHEM ENG 3D03, 3E04, 3G04, 3L02, 3M04, 3004, 3P04
  - 9 units 3-6 units from CHEM 2E03, or both CHEM 20A3 and 20B3
  - 3 units CHEM 3103

**LEVEL IV:**
- **37-38 UNITS**
  - 10 units CHEM ENG 4L02, 4N04, 4W04
  - 3 units from ENGINEER 4A03, 4H03
  - 12 units from CHEM ENG 4B03, 4E03, 4G03, 4K03, 4M03, 4T03, 4X03, ENGINEER 4U03
  - 3 units Level III or IV technical electives

**LEVEL V:**
- **37-38 UNITS**
  - 10 units CHEM ENG 4L02, 4N04, 4W04
  - 6 units ENGINEERING 3BC3, 4PA3
  - 9 units from CHEM ENG 4B03, 4E03, 4G03, 4K03, 4M03, 4T03, 4X03, ENGINEER 4U03
  - 6 units Commerce electives selected from Level III or IV Commerce

**Chemical Engineering Co-op (B.Eng.)**
- **4080003**

**ADMISSION NOTES**
1. Students may choose to follow a stream of recommended technical elective courses.
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.
3. A minimum of 18 units of focus elective courses is required for the program.
4. This does not include the six units of complementary studies elective in Level I.
FACULTY OF ENGINEERING

SOCIETY:
- 3 units ENGSOCTY 3Y03
- 3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
- 3-6 units from POL SCI 2A06, 2X03, RELIG ST 1B06
- 3-6 units International Studies focus electives

LEVEL IV: 36-40 UNITS
- 12 units CHEM ENG 3E04, 4G03, 4P04
- 6 units from CHEM ENG 4K03, 4M03, 4T03, 4X03, ENGRNEER 4U03
- 6 units from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 3I03
- 3-4 units Level III or IV technical electives from approved list or permission of the Department of Chemical Engineering

SOCIETY:
- 6 units ENGSOCTY 3X03, 3Z03
- 3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
- 6 units ENGINEER 3PM3, ENGSOCTY 3X03
- 3 units International Studies focus electives

LEVEL V: 34-35 UNITS
- 10 units CHEM ENG 4L02, 4N04, 4W04
- 9 units from CHEM ENG 4B03, 4E03, 4G03, 4K03, 4M03, 4T03, 4X03, ENGINEER 4U03
- 3-4 units Level III or IV technical electives from approved list or permission of the Department of Chemical Engineering

SOCIETY:
- 6 units ENGSOCTY 4X03, 4Z03
- 6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
- 6 units ENGINEER 4SC3, ENGSOCTY 4X03
- 6 units International Studies focus electives

Chemical Engineering and Bioengineering (B.Eng.Biosci.)
- 4080043

Chemical Engineering and Bioengineering Co-op (B.Eng.Biosci.)
- 4080433

ADMISSION
See Admission to Level II Engineering Programs.

NOTE
As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E00.

LEVEL II: 36 UNITS
- 15 units CHEM ENG 2A04, 2D04, 2F04, 2G03
- 3 units CHEM 1A03
- 3 units BIOLOGY 1A03
- 6 units HTH SCI 2L03, 2LL3
- 6 units MATH 2M03, 2MM3
- 3 units STATS 3N03

LEVEL III: 37-40 UNITS
- 24 units BIOLOGY 2EE3, CHEM ENG 3D03, 3G04, 3K04, 3L02, 3M04, 3Q04
- 3 units CHEM 2A03
- 3-6 units CHEM 2E03; or both CHEM 2A03 and 2B03
- 3 units BIOCHEM 2EE3
- 3 units approved complementary studies electives

LEVEL IV: 37 UNITS
- 22 units CHEM ENG 3BK3, 3BM3, 3E04, 3P04, 4L02, 4LL3, 4T03
- 3 units BIOCHEM 3G03
- 3 units from ENGINEER 4A03, 4H03
- 6 units CHEM 3I03, CHEM ENG 3Q03
- 3 units approved complementary studies electives

- 11 units CHEM ENG 4N04, 4P04
- 12 units from CHEM ENG 4B03, 4C03, 4E03, 4G03, 4K03, 4M03, 4X03, 4Z03
- 3 units ENGINEER 4U03
- 6 units approved technical electives from biosciences or bioengineering
- 3 units approved complementary studies electives
- 3-4 units Level III or IV technical electives from approved list or permission of the Department of Chemical Engineering

Civil Engineering (B.Eng.)
Structural/Geotechnical Engineering Stream
Water/Environmental Engineering Stream
Civil Engineering Co-op (B.Eng.)
Structural/Geotechnical Engineering Stream
Water/Environmental Engineering Stream

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. Students entering Level II can choose between a Structural/Geotechnical Engineering Stream (SIG Stream) and a Water/Environmental Engineering Stream (WIE Stream).
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.
3. Level IV Civil Engineering courses must be selected in accordance with regulations which require a minimum content of 10 units 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 Level IV Registration.
4. To meet the capstone project requirement, all students in their final level must take or complete one of the following project courses: CIV ENG 4C04 or 4R04.

LEVEL II: 37 UNITS
- 27 units CIV ENG 2A03, 2B03, 2C04, 2E03, 2I03, 2J04, 2O04, 2P03
- 4 units ENGINEER 2P04
- 6 units MATH 2M03, 2MM3

LEVEL III: 36 UNITS
- 25 units CIV ENG 3A03, 3B03, 3C03, 3Q03, 3I04, 3K03, 3M03, 3P03
- 4 units STATS 3J04
- 3 units approved complementary studies electives
- 6 units WIE Stream: CIV ENG 3R03, 3S03

LEVEL IV: 34-36 UNITS
- 3 units ENGINEER 4B03
- 3 units from ENGINEER 4A03, 4H03
- 3 units approved complementary studies electives
- 4 units from CIV ENG 4C04, 4R04
- 21-23 units WIE Stream: from approved list of Level IV Civil Engineering technical electives

Civil Engineering and Management (B.Eng.Mgt.)
Structural/Geotechnical Engineering Stream
Water/Environmental Engineering Stream
Civil Engineering and Management Co-op (B.Eng.Mgt.)
Structural/Geotechnical Engineering Stream
Water/Environmental Engineering Stream

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. Students entering Level II can choose between a Structural/Geotechnical Engineering Stream (SIG Stream) and a Water/Environmental Engineering Stream (WIE Stream).
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

3. Level V Civil Engineering courses must be selected in accordance with regulations which require a minimum content of 10 units 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 Level V Registration.

4. To meet the capstone project requirement, all students in their final level must take or complete one of the following project courses: CIV ENG 4C04 or 4R04.

5. A minimum of 18 units of focus elective courses is required for the program. (This does not include the six units of complementary studies elective in Level I.)

LEVEL II: 40 UNITS
- 21 units CIV ENG 2A03, 2B03, 2C04, 2J04, 2R04
- 3 units COMMERCIAL 2A03, 2MA3
- 4 units ENGINEER 2P04
- 6 units MATH 2M03, 2MM3

LEVEL III: 38 UNITS
- 18 units CIV ENG 2E03, 2Q03, 3A03, 3B03, 3G03, 3M03
- 9 units COMMERCIAL 2AB3, 2BA3, 2FA3
- 4 units ENGIN 2BB3
- 3 units approved complementary studies electives
- 1 unit ENGINEER 3AA1

LEVEL IV: 35 UNITS
- 13 units CIV ENG 3C03, 3J04, 3K03, 3P03
- 12 units COMMERCIAL 3BC3, 3FA3, 3MC3, 4QA3
- 3 units approved complementary studies electives from Level III or IV Commerce
- 1 unit ENGINEER 4A01
- 6 units SIG Stream: CIV ENG 3R03, 3S03
- 6 units ENGINEER 3P04
- 3 units from ENGINEER 4A03, 4H03
- 4 units from CIV ENG 4C04, 4R04
- 20-21 units SIG Stream: from approved list of Level IV Civil Engineering technical electives
- 6 units W/E Stream: from approved list of Level III and IV Civil Engineering technical electives

Civil Engineering and Society (B.Eng. Society)
- Structural/Geotechnical Engineering Stream {4110535}
- Water/Environmental Engineering Stream {4130535}

Civil Engineering and Society Co-op (B.Eng.Society)
- Structural/Geotechnical Engineering Stream {4110533}
- Water/Environmental Engineering Stream {4130533}

Civil Engineering and
International Studies (B.Eng.Society)
- Structural/Geotechnical Engineering Stream {4110125}
- Water/Environmental Engineering Stream {4130125}

Computer Engineering (B.Eng.) {4144}

Computer Engineering Co-op (B.Eng.) {4144003}

ADMISSION
- See Admission to Level II Engineering Programs.

NOTE
- As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

LEVEL II: 37 UNITS
- 16 units COMP ENG 2D14, 2DP4, 2SH4, 2SI4
- 17 units ELECTRONICS 2C15, 2CJ4, 2E15, 2EH3
- 4 units MATH 2P04

LEVEL III: 37 UNITS
- 11 units COMP ENG 3Q03, 3D04, 3K03
- 19 units ELECTRONICS 3C03, 3EJ4, 3TP4, 3TQ4, 3TR4
- 4 units SFWR ENG 3K04
- 3 units approved complementary studies electives
### FACULTY OF ENGINEERING

#### LEVEL IV: 37-39 UNITS

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<th>Units</th>
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<td>ENGINEER 4B03</td>
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<td>3-4</td>
<td>approved Level III or IV technical electives of the Faculty of Engineering</td>
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**Computer Engineering and Management (B.Eng.Mgt.)**

| 4144325 |

**Computer Engineering and Management Co-op (B.Eng.Mgt.)**

| See Admission to Level II Engineering Programs. |

**ADMISSION**

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

### LEVEL II: 38 UNITS

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**LEVEL III: 37 UNITS**

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**LEVEL IV: 39 UNITS (EFFECTIVE 2009-2010)**

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**LEVEL V: 40 UNITS**

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**Computer Engineering and Society (B.Eng.Society)**

| 4144535 |

**Computer Engineering and Society Co-op (B.Eng.Society)**

| 4144533 |

**Computer Engineering and International Studies (B.Eng.Society)**

| 4144125 |

**Computer Engineering and International Studies Co-op (B.Eng.Society)**

| 4144123 |

### LEVEL II: 37 UNITS

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**SOCIETY:**

| 6     | ENGSOCTY 2X03, 2Y03 |
| 3     | Engineering and Society focus electives |

**INTERNATIONAL STUDIES:**

| 9     | ANTHROP 1A03, ENGSOCTY 2X03, 2Y03 |

### LEVEL III: 35 UNITS

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**SOCIETY:**

| 6     | ENGSOCTY 3Y03, 3Z03 |
| 6     | Engineering and Society focus electives |

**INTERNATIONAL STUDIES:**

| 3-6   | from POL SCI 2A06, 2X03, RELIG ST 1B06, 6-9 |
| 6     | International Studies focus electives |

**LEVEL IV: 32-35 UNITS (EFFECTIVE 2009-2010)**

<table>
<thead>
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<th>Course Code</th>
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**LEVEL IV: 32-35 UNITS (EFFECTIVE 2009-2010)**

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**LEVEL V: 40 UNITS**

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**Electrical Engineering (B.Eng.)**

| 4170 |

**Electrical Engineering Co-op (B.Eng.)**

| 4170003 |

### ADMISSION

See Admission to Level II Engineering Programs.

### NOTES

1. A minimum of 18 units of focus elective courses is required for the program. (This does not include the six units of complementary studies elective in Level I.)
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

### LEVEL II: 37 UNITS

<table>
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<th>Units</th>
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<tr>
<td>12</td>
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**LEVEL III: 37 UNITS**

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<tbody>
<tr>
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<tr>
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</table>
LEVEL IV: 37-40 UNITS
6 units ELEC ENG 40I6
3 units ENGINEER 4B03
16 units from COMP ENG 3DQ4, 3DR4, 4DK4, 4DM4, 4DN4, 4DS4, 4TL4, ELEC ENG 4BD4, 4BE4, 4CL4, 4FJ4, 4PL4, 4PK4, 4TK4
6-8 units technical electives from an approved list of Computer Engineering or Electrical Engineering Level III or IV
3-4 units technical electives (from Level III or IV of the Faculty of Engineering)
3 units from ENGINEER 4A03; 4H03

Electrical and Biomedical Engineering (B.Eng.)

Electrical and Biomedical Engineering Co-op (B.Eng.)

ADMISSION
See Admission to Level II Engineering Programs.

NOTE
As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0E.

LEVEL II: 39 UNITS
14 units ELEC ENG 2C15, 2CJ4, 2E15
8 units COMP ENG 2SH4, 2S14
8 units MATH 2F04, 2G04
3 units BIOLOGY 1A03
3 units CHEM 1A03
3 units approved complementary studies electives

LEVEL III: 40 UNITS
20 units ELEC ENG 2FH3, 3BA3, 3BB3, 3CK3, 3EJ4, 3TQ4
8 units COMP ENG 2D14, 2DP4
6 units CHEM 2A03, 2B03
6 units HTH SCI 2L03, 2L31

LEVEL IV: 38 UNITS
4 units COMP ENG 4TL4
28 units ELEC ENG 3TQ4, 3TR4, 4BC3, 4BD4, 4BE4, 4BF3, 4B16
3 units from ENGINEER 4A03, 4H03
3 units ENGINEER 4B03

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

Electrical Engineering and Management Co-op (B.Eng.Mgt.)

ADMISSION
See Admission to Level II Engineering Programs.

NOTE
As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0E.

LEVEL II: 39 UNITS
12 units COMP ENG 2D14, COMP ENG 2SH4, 2S14
9 units ELEC ENG 2G15, 2GJ4
8 units MATH 2P04, 2Q04

SOCiETY:
6 units ENGSOC 2Y03, 2Y03
3 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
9 units ANTHROP 2A06, ENGSOC 2X03, 2Y03

LEVEL III: 32-41 UNITS
7 units COMP ENG 2D14, 2S14
15 units ELEC ENG 2E15, 2FH3, 3CK3, 3TQ4
4 units SFWR ENG 3K04

SOCiETY:
6 units ENGSOC 3Y03, 3Z03
3-6 units International Studies focus electives

INTERNATIONAL STUDIES:
3-6 units POL SCI 2A06, 2A07, RELIG ST 1B06
3-6 units International Studies focus electives

LEVEL IV: 39 UNITS (EFFECTIVE 2009-2010)
9 units COMMERCE 3BC3, 3FA3, 3MC3
20 units ELEC ENG 3EJ4, 3PK4, 3PI4, 3TP4, 3TR4
3 units from ENGINEER 4A03, 4H03
1 unit ENGN MGT 4A01
3 units STATS 3Y03
3 units Commerce electives selected from Level III or IV Commerce

Electrical Engineering and Society (B.Eng.Society)

Electrical Engineering and Society Co-op (B.Eng.Society)

Electrical Engineering and International Studies (B.Eng.Society)

Electrical Engineering and International Studies Co-op (B.Eng.Society)

ADMISSION
See Admission to Level II Engineering Programs.

NOTE
1. A minimum of 18 units of focus elective courses is required for the program. (This does not include the six units of complementary studies elective in Level I.)
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0E.

LEVEL II: 38 UNITS
12 units COMP ENG 2D14, COMP ENG 2SH4, 2S14
9 units ELEC ENG 2G15, 2GJ4
8 units MATH 2P04, 2Q04

SOCiETY:
6 units ENGSOC 2Y03, 2Y03
3 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
9 units ANTHROP 2A06, ENGSOC 2X03, 2Y03

LEVEL III: 32-41 UNITS
7 units COMP ENG 2D14, 2S14
15 units ELEC ENG 2E15, 2FH3, 3CK3, 3TQ4
4 units SFWR ENG 3K04

SOCiETY:
6 units ENGSOC 3Y03, 3Z03
3-6 units International Studies focus electives

INTERNATIONAL STUDIES:
3-6 units POL SCI 2A06, 2A07, RELIG ST 1B06
3-6 units International Studies focus electives

LEVEL IV: 32-35 UNITS
20 units ELEC ENG 3EJ4, 3PK4, 3PI4, 3TP4, 3TR4
3 units ENGINEER 4B03

SOCiETY:
3 units ENGSOC 3Y03
3 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGINEER 3PM3, ENGSOC 3X03
3-6 units International Studies focus electives
LEVEL V: 37-38 UNITS
6 units ELEC ENG 4016
16 units from COMP ENG 3DQ4, 3DR4, 4DK4, 4DM4, 4DN4, 4DS4, 4TL4, ELEC ENG 4BD4, 4BE4, 4CL4, 4FJ4, 4PK4, 4PL4, 4TK4
3-4 units technical electives from an approved list of Computer Engineering or Electrical Engineering Level III or IV

SOCIETY:
6 units ENGSOCTY 4X03, 4Z03
6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGINEER 4SC3, ENGSOCTY 4X03
6 units International Studies focus electives

Engineering Physics (B.Eng.) {4190325}
Engineering Physics Co-op (B.Eng.) {4190003}

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. The Department of Engineering Physics offers a common core with four streams of study:
   • Interdisciplinary Engineering (I Stream)
   • Nano- and Micro-Devices (M Stream)
   • Nuclear Engineering and Energy Systems (N Stream)
   • Photonics Engineering (P Stream)

   Level II is common to all streams. All students entering Level II will be enrolled in the Interdisciplinary Engineering Stream. Students entering Level III choose one of the four streams offered in Engineering Physics.

2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EEO.

3. Students entering Level II should register in the Engineering Physics program following the requirements outlined below. Students entering Levels III, IV or V may continue in their existing stream and should follow the program requirements as specified in the Undergraduate Calendar of the year of their entry into Level II. Such students are advised to refer to their degree audit form and consult with the Department of Engineering Physics for further information.

LEVEL II: 39 UNITS
4 units ENGINEER 2P04
18 units ENG PHYS 2A04, 2E04, 2H04, 2S03, 2Q03
8 units MATH 2P04, 2Q04
3 units PHYSICS 2D03
6 units approved complementary studies electives

LEVEL III: 38 UNITS
7 units ENG PHYS 3F03, 3W04
9 units MATH 3C03, 3D03, 4Q03
6 units PHYSICS 3BA3, 3BB3
3 units approved complementary studies electives
13 units Stream specific:
   I Stream ENG PHYS 3D03, 3E03, 3PN4; 3 units from ENG PHYS 3A03, 3ES3, 3MD3
   M Stream ENG PHYS 3E03, 3MD3, 3PN4; 3 units approved Level III or IV technical electives
   N Stream ENG PHYS 3D03, 3ES3, 3Q04, 3 units approved Level III or IV technical electives
   P Stream ENG PHYS 3A03, 3E03, 3G03, 3PN4

LEVEL IV: 37-38 UNITS
3 units ENGINEER 4B03
10 units ENG PHYS 4A06, 4U04
24-26 units Stream specific:
   I Stream ENG PHYS 4L04, 4MD4, 4S04; 12-14 units of approved Level III or IV technical electives
   M Stream ENG PHYS 4F03, 4MD4, 4Z03; 14-16 units of approved Level III or IV technical electives
   N Stream ENG PHYS 4D03, 4ES3, 4L04, 4NE3; 11-13 units of approved Level III or IV technical electives
   P Stream ELEC ENG 5FK4, 3TR4; ENG PHYS 4K03, 4S04; 9-11 units of approved Level III or IV technical electives

3 units ENGINEER 4PA3
6 units ENG PHYS 4A06
3 units Commerce electives selected from Level III or IV Commerce
24-25 units Stream specific:
   I Stream ENG PHYS 4L04, 4MD4, 4S04; 12-13 units of approved Level III or IV technical electives
   M Stream ENG PHYS 4F03, 4MD4, 4Z03; 14-15 units of approved Level III or IV technical electives
   N Stream ENG PHYS 4D03, 4ES3, 4L04, 4NE3; 11-12 units of approved Level III or IV technical electives
   P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S04; 9-10 units of approved Level III or IV technical electives
LEVEL V: 39-40 UNITS (EFFECTIVE 2009-2010)
3 units COMMERC 4PA3
3 units ENG MGT 5B03
10 units ENG PHYS 4A06, 4U04
23-24 units Stream specific:
  I Stream ENG PHYS 4L04, 4MD4, 4S904; 11-12 units of approved Level III or IV technical electives
  M Stream ENG PHYS 4F03, 4MD4, 4Z03; 13-14 units of approved Level III or IV technical electives
  N Stream ENG PHYS 4D03, 4E834, 4L04, 4NE3; 10-11 units of approved Level III or IV technical electives
  P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S04; 8-9 units of approved Level III or IV technical electives

Engineering Physics and Society (B.Eng.Society) {4190535}

Engineering Physics and Society Co-op (B.Eng.Society) {4190533}

Engineering Physics and International Studies (B.Eng.Society) {4190125}

Engineering Physics and International Studies Co-op (B.Eng.Society) {4190123}

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. The Department of Engineering Physics offers a common core with four streams of study:
   • Interdisciplinary Engineering (I Stream)
   • Nano- and Micro-Devices (M Stream)
   • Nuclear Engineering and Energy Systems (N Stream)
   • Photonics Engineering (P Stream)
2. Levels II and III are common to all streams in a five-level program. All students entering Level II will be enrolled in the interdisciplinary Engineering Stream. Students entering Level IV choose one of the four streams offered in Engineering Physics.
3. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.
4. Students entering Level II should register in the Engineering Physics program following the requirements outlined below. Students entering Levels III, IV or V may continue in their existing stream and should follow the program requirements as specified in the Undergraduate Calendar of the year of their entry into Level II. Such students are advised to refer to their degree audit for the program in which they are registered and to consult with the Department of Engineering Physics for further information.

LEVEL II: 39 UNITS
4 units ENGINEER 2P04
15 units ENG PHYS 2A04, 2E04, 2H04, 2QM3
8 units MATH 2P04, 2Q04
3 units PHYSICS 2D03

SOCIETY:
6 units ENGSOCTY 2X03, 2Y03
3 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
9 units ANTHROR 1A03, ENGSOCTY 2X03, 2Y03

LEVEL III: 34 UNITS
10 units ENG PHYS 2S03, 3F03, 3W04
9 units MATH 3C03, 3D03, 4Q03
6 units PHYSICS 3BA3, 3BB3

SOCIETY:
3 units ENGSOCTY 3Y03
6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2A06, 2XX3, RELIG ST 1B06
3-6 units International Studies focus electives

LEVEL IV: 34 UNITS
3 units ENGINEER 4B03
13 units Stream specific:
  I Stream ENG PHYS 3D03, 3E03, 3PN4; 3 units from ENG PHYS 3A03, 3E83, 3MD3
  M Stream ENG PHYS 3E03, 3MD3, 3PN4; 3 units approved Level III or IV technical electives
  N Stream ENG PHYS 3D03, 3ES3, 3PN4; 3 units approved Level III or IV technical electives
  P Stream ENG PHYS 3A03, 3E03, 3G03, 3PN4

SOCIETY:
9 units ENGSOCCTY 3X03, 3Z03, 4Z03
9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
9 units - ENGINEER 3PM3, 4SC3, ENGSOCTY 3X03
9 units International Studies focus electives

LEVEL V: 36-38 UNITS (2008-2009 ONLY)
6 units ENG PHYS 4A06
24-26 units Stream specific:
  I Stream ENG PHYS 4L04, 4MD4, 4S904; 12-14 units of approved Level III or IV technical electives
  M Stream ENG PHYS 4F03, 4MD4, 4Z03; 14-16 units of approved Level III or IV technical electives
  N Stream ENG PHYS 4D03, 4E834, 4L04, 4NE3; 10-11 units of approved Level III or IV technical electives
  P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S04; 9-11 units of approved Level III or IV technical electives

SOCIETY:
6 units ENGSOCCTY 4X03, 4Z03

INTERNATIONAL STUDIES:
6 units ENGINEER 4SC3, ENGSOCTY 4X03

LEVEL V: 37-39 UNITS (EFFECTIVE 2009-2010)
10 units ENG PHYS 4A06, 4U04
24-26 units Stream specific:
  I Stream ENG PHYS 4L04, 4MD4, 4S904; 12-14 units of approved Level III or IV technical electives
  M Stream ENG PHYS 4F03, 4MD4, 4Z03; 14-16 units of approved Level III or IV technical electives
  N Stream ENG PHYS 4D03, 4E834, 4L04, 4NE3; 10-11 units of approved Level III or IV technical electives
  P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S04; 9-11 units of approved Level III or IV technical electives

SOCIETY:
3 units ENGSOCCTY 4X03

INTERNATIONAL STUDIES:
3 units ENGSOCCTY 4X03

Materials Engineering (B.Eng.) {4315}

Materials Engineering Co-op (B.Eng.) {4315003}

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. Students entering Level III can choose between the Materials Engineering stream and the Nanomaterials Engineering stream. In addition, the Materials Engineering stream 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, i.e. electronic, metallurgical, and polymeric materials. The following combinations of electives are suggested for specific areas of specialization.
   • Metallurgy MATLS 4G03, 4D03
   • Polymer CHEM ENG 3G03, MATLS 4P03
   • Electronic Materials MATLS 3Q03
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

LEVEL II: 38 UNITS
5 units CHEM 1AA3, 2WW2
4 units CHEM 2A04
7 units ENGINEER 2M03, 2P04
13 units MATLS 2B03, 2D03, 2H04, 2X03
6 units MATH 2M03, 2M03
3 units approved complementary studies electives
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<td>approved Level III or IV technical electives, which must include CHEM ENG 3Q04 if not completed</td>
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</table>

**ADMISSION**

**Level II: 35 units**

1. CHEM 2W2
2. COMMERC 2MA3
3. ECON 1BB3, 2X03
4. ENGN MGT 2AA2
5. ENGINEER 2MM3
6. MATH 2M03, 2M3M
7. MATLS 2B03, 2D03, 2H04, 2X03

**Level III: 36-37 units**

1. COMMERC 2MA3
2. CHEM 2W2
3. ENGN MGT 2AA2
4. ENGINEER 2MM3
5. MATH 2M03, 2M3M
6. MATLS 2B03, 2D03, 2H04, 2X03

**Level IV: 36-37 units**

1. CHEM 2W2
2. COMMERC 2MA3
3. CHEM 1AA3
4. COMMERC 2A3, 2BA3, 2FA3
5. ENGN MGT 3AA1
6. ENGINEER 2P04
7. MATLS 3C04, 3F03, 3T04
8. MATH 3I03
9. STATS 3Y03

**Level V: 36-37 units**

1. COMMERC 2MA3
2. CHEM 2W2
3. COMMERC 2MA3
4. CHEM 1AA3
5. COMMERC 2A3, 2BA3, 2FA3
6. ENGN MGT 3AA1
7. ENGINEER 2P04
8. MATLS 3C04, 3F03, 3T04
9. MATH 3I03
10. STATS 3Y03

**ADMISSION**

See Admission to Level II Engineering Programs.

**NOTES**

1. A minimum of 18 units of focus elective courses is required for the program. (This does not include the six units of complementary studies elective in Level I.)
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

**International Studies**

9 units ANTHROP 1A03, ENGSOCTY 2X03, 2Y03

**LEVEL III: 34-37 units**

1. CHEM 2W2
2. COMMERC 2MA3
3. CHEM 1AA3
4. COMMERC 2A3, 2BA3, 2FA3
5. ENGN MGT 3AA1
6. ENGINEER 2P04
7. MATLS 3C04, 3F03, 3T04
8. MATH 3I03
9. STATS 3Y03

**LEVEL IV: 36-37 units**

1. CHEM 2W2
2. COMMERC 2MA3
3. CHEM 1AA3
4. COMMERC 2A3, 2BA3, 2FA3
5. ENGN MGT 3AA1
6. ENGINEER 2P04
7. MATLS 3C04, 3F03, 3T04
8. MATH 3I03
9. STATS 3Y03

**LEVEL V: 36-37 units**

1. CHEM 2W2
2. COMMERC 2MA3
3. CHEM 1AA3
4. COMMERC 2A3, 2BA3, 2FA3
5. ENGN MGT 3AA1
6. ENGINEER 2P04
7. MATLS 3C04, 3F03, 3T04
8. MATH 3I03
9. STATS 3Y03

**ADMISSION**

See Admission to Level II Engineering Programs.

**NOTES**

1. A minimum of 18 units of focus elective courses is required for the program. (This does not include the six units of complementary studies elective in Level I.)
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.
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3 units ENGSOCY 3Y03
3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2A06, 2XX3, RELIG ST 1B06
3-6 units International Studies focus electives

LEVEL IV: (MATERIALS ENGINEERING STREAM) 32-36 UNITS
4 units CHEM ENG 3004
10 units MATLS 3B03, 3E04, 3M03
6-7 units approved Level III or IV technical electives

SOCIETY:
6 units ENGSOCY 3X03, 3Y03
6-9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGINEER 3PM3, ENGSOCY 3X03
6-9 units International Studies focus electives

LEVEL V: (MATERIALS ENGINEERING STREAM) 33-37 UNITS
6 units ENGINEER 4B03, 4J03
8 units MATLS 4J04, 4L04
4 units from MATLS 4K04, 4Z04
6-7 units approved technical electives

SOCIETY:
6 units ENGSOCY 4X03, 4Z03
3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGINEER 4SC3, ENGSOCY 4X03
3-6 units International Studies focus electives

Materials Engineering and Society - Nanomaterials Stream (B.Eng.Society) \{4320535\}

Materials Engineering and Society Co-op - Nanomaterials Stream (B.Eng.Society) \{4320533\}

Materials Engineering and International Studies - Nanomaterials Stream (B.Eng.Society) \{4320125\}

Materials Engineering and International Studies Co-op - Nanomaterials Stream (B.Eng.Society) \{4320123\}

A minimum of 18 units of focus elective courses is required for the Society program. (This does not include the six units of complementary studies elective in Level I.)

LEVEL IV: 32-36 UNITS
4 units CHEM ENG 3004
13 units MATLS 3B03, 3E04, 3M03, 3Q03
3-4 units approved Level III or IV technical electives (MATLS 4G03, 4H03 are recommended if offered.)

SOCIETY:
6 units ENGSOCY 3X03, 3Z03
6-9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGINEER 3PM3, ENGSOCY 3X03
6-9 units International Studies focus electives

LEVEL V: 32-36 UNITS
6 units ENGINEER 4B03, 4J03
11 units MATLS 4F03, 4J04, 4L04
4 units from MATLS 4K04, 4Z04
2-3 units approved technical electives (MATLS 4G03, 4H03 are recommended if offered.)

SOCIETY:
6 units ENGSOCY 4X03, 4Z03
3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGINEER 4SC3, ENGSOCY 4X03
3-6 units International Studies focus electives

Mechanical Engineering and Management (B.Eng) \{4330\}

Mechanical Engineering Co-op (B.Eng.) \{4330003\}

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. Level IV Mechanical Engineering students must choose one of the following option areas and complete sufficient units of the listed required courses and technical electives.

PROGRAM OPTION COMPULSORY COURSES:

- GENERAL: two of MECH ENG 3D03, 4B03, 4E03, 4Q03, 4S03, 4Z03
- MECHANICS AND DESIGN: MECH ENG 4Q03; three of MATLS 4J04, 4T03, MECH ENG 4B03, 4BB3, 4CC3, 4E03, 4H03, 4K03, 4L03, 4T03, 4Z03
- MANUFACTURING: MECH ENG 4Q03; three of CHEM ENG 4X03, ENGINEER 4J03, MATLS 4J04, 4T03, MECH ENG 4B03, 4D03, 4E03, 4H03, 4K03, 4L03, 4T03, 4Z03
- THERMOFLUIDS AND ENERGY SYSTEMS: MECH ENG 4Q03, 4S03; two of CHEM ENG 4X03, MECH ENG 4B03, 4J03, 4K03, 4L03, 4T03, 4U03
- APPROVED TECHNICAL ELECTIVES: any of the required courses listed above, plus CHEM ENG 4T03, CIV ENG 3K03, COMMERCE 4QA3

2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

LEVEL II: 36 UNITS
6 units MATH 2M03, 2MM3
27 units MECH ENG 2B03, 2C03, 2D03, 2P04, 2Q04, 2W04, 3A03, 3C03
3 units Mechanical Engineering complementary studies elective

LEVEL III: 37 UNITS
6 units ENGINEER 2MM3, 3N03
3 units MATLS 3M03
3 units MATH 3I03
22 units MECH ENG 3E05, 3F04, 3M03, 3Q04, 3R03, 4R03
3 units STATS 3Y03

LEVEL IV: 36-37 UNITS
3 units ENGINEER 4B03.
3 units from ENGINEER 4A03, 4H03
3 units approved complementary studies electives
12 units MECH ENG 4M06, 4P03, 4V03
15-16- units approved technical electives, including 13 units from required option courses. (See Note 1 above.)

Mechanical Engineering and Management (B.Eng.Mgt.) \{4330325\}

Mechanical Engineering and Management Co-op (B.Eng.Mgt.) \{4330323\}

ADMISSION
See Admission to Level II Engineering Programs.

NOTES
1. Level IV and Level V Mechanical Engineering and Management students must choose one of the following option areas and complete sufficient units of the listed required courses and technical electives.

PROGRAM OPTION COMPULSORY COURSES:

- GENERAL: two of MECH ENG 3D03, 4B03, 4E03, 4Q03, 4S03, 4Z03
- MECHANICS AND DESIGN: MECH ENG 4Q03; three of MATLS 4J04, 4T03, MECH ENG 4B03, 4BB3, 4CC3, 4E03, 4H03, 4K03, 4L03, 4T03, 4Z03
- MANUFACTURING: MECH ENG 4Q03; three of CHEM ENG 4X03, ENGINEER 4J03, MATLS 4J04, 4T03, MECH ENG 4B03, 4D03, 4E03, 4H03, 4K03, 4L03, 4T03, 4Z03
- THERMOFLUIDS AND ENERGY SYSTEMS: MECH ENG 4Q03, 4S03; two of CHEM ENG 4X03, MECH ENG 4B03, 4J03, 4K03, 4L03, 4T03, 4U03
- APPROVED TECHNICAL ELECTIVES: any of the required courses listed above, plus CHEM ENG 4T03, CIV ENG 3K03, COMMERCE 4QA3
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E00.

### LEVEL II: 37 UNITS

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### LEVEL V: 36-37 UNITS

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### Mechanical Engineering and Society (B.Eng.Society)

#### ADMISSION

See Admission to Level II Engineering Programs.

#### NOTES

1. Level IV and Level V Mechanical Engineering and Society students must choose one of the following option areas and complete sufficient units of the listed required courses and technical electives.

#### PROGRAM OPTION COMPULSORY COURSES:

- **GENERAL**: two of MECH ENG 3D03, 4B03, 4E03, 4Q03, 4S03, 4Z03
- **MECHANICS AND DESIGN**: MECH ENG 4Q03; three of MATLS 4J04, 4T03, MECH ENG 4B03, 4BB3, 4CC3, 4E03, 4H03, 4I03, 4K03, 4L03, 4M03, 4T03, 4Z03
- **MANUFACTURING**: MECH ENG 4Q03; three of CHEM ENG 4X03, ENGINEER 4J03, MATLS 4J04, 4T03, MECH ENG 4B03, 4D03, 4E03, 4H03, 4K03, 4L03, 4T03, 4Z03
- **THERMOFLUIDS AND ENERGY SYSTEMS**: MECH ENG 3D03, 4S03; two of CHEM ENG 4X03, MECH ENG 4I03, 4J03, 4Q03, 4T03, 4U03
- **APPROVED TECHNICAL ELECTIVES**: any of the required courses listed above, plus CHEM ENG 4T03, CIV ENG 3K03, COMMERCE 4QAX

2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E00.

3. A minimum of 18 units of focus elective courses is required for the program. (This does not include the six units of complementary studies elective in Level I.)
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Mechatronics Engineering and Management (B.Eng.Mgt.)

Mechatronics Engineering and Management Co-op (B.Eng.)

ADMISSION

See Admission to Level II Engineering Programs.

NOTE

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

LEVEL II: 37 UNITS

6 units SFWR ENG 2MX3, 2S03
8 units ENG PHYS 2A04, 2E04
7 units MECH ENG 2B03, 2Q04
7 units ENGINEER 2MM3, 2P04
6 units MATH 2M03, 2M33
3 units COMMERCE 2MA3

LEVEL III: 37 UNITS

16 units SFWR ENG 3DX3, 3F03, 3K04, 3SH3, 3X03
3 units STATS 3Y03
3 units ENGN MGT 2AA2, 3AA1
6 units ECON 1BB3, 2X03
9 units COMMERCE 2AA3, 2BA3, 2FA3

LEVEL IV: 39 UNITS

3 units SFWR ENG 4AA3
8 units MECHTRON 3TA4, 3TB4
3 units MECH ENG 4H03
6 units ENGINEER 2H03, 3N03
12 units COMMERCE 2AB3, 2BC3, 3FA3, 3MC3
1 unit ENGN MGT 4AA1
3 units approved technical electives from List A (Contact the Department of Computing and Software.)
3 units approved technical electives from List B (Contact the Department of Computing and Software.)

LEVEL V: 36 UNITS

6 units MECHTRON 4TB6
3 units ENGINEER 4A03
3 units MECH ENG 4K03
6 units COMMERCE 4PA3, 4QA3
3 units ENGN MGT 5B03
3 units approved complementary studies electives
3 units approved technical electives from List A (Contact the Department of Computing and Software.)
3 units approved technical electives from List B (Contact the Department of Computing and Software.)
6 units Commerce electives selected from Level III or IV Commerce

Mechatronics Engineering and Society (B.Eng.Society)

Mechatronics Engineering and Society Co-op (B.Eng.Society)

Mechatronics Engineering and International Studies (B.Eng.Society)

Mechatronics Engineering and International Studies Co-op (B.Eng.Society)

ADMISSION

See Admission to Level II Engineering Programs.

NOTE

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.

LEVEL II: 37-40 UNITS

6 units SFWR ENG 2MX3, 2S03
8 units ENG PHYS 2A04, 2E04
7 units MECH ENG 2B03, 2Q04
7 units ENGINEER 2MM3, 2P04
6 units MATH 2M03, 2M33

SOCIETY:

3 units ENGSOCTY 2X03

INTERNATIONAL STUDIES:

6 units ANTHROP 1A03, ENGSOCTY 2X03

LEVEL III: 34-37 UNITS

16 units SFWR ENG 3DX3, 3F03, 3K04, 3SH3, 3X03
3 units ENGINEER 2H03
3 units STATS 3Y03

SOCIETY:

6 units ENGSOCTY 2Y03, 3X03

INTERNATIONAL STUDIES:

3 units ENGINEER 1B03
24 units SFWR ENG 4AA3, 4C03, 4D03, 4E03, 4G06, 4M03, 4O03
6 units from SFWR ENG 4F03, 4J03, 4TE3

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

Software Engineering and Management Co-op (B.Eng.Mgt.)

ADMISSION

See Admission to Level II Engineering Programs.

NOTE

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.
# FACULTY OF ENGINEERING

## LEVEL II: 37 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>COMMERCE 2AA3, 2MA3</td>
</tr>
<tr>
<td>3</td>
<td>ECON 1B3</td>
</tr>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
</tr>
<tr>
<td>22</td>
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</tbody>
</table>

### FACULTY OF COMMERCE

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>ENGINEER 2BA3, 2FA3</td>
</tr>
<tr>
<td>3</td>
<td>ENGN MGT 2AA2, 3AA1</td>
</tr>
<tr>
<td>3</td>
<td>ECON 2X03</td>
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<tr>
<td>26</td>
<td>SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3RA3, 3S03, 3X03</td>
</tr>
</tbody>
</table>

### INTERNATIONAL STUDIES

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>12</td>
<td>COMMERCE 2AA3, 2BC3, 2FA3, 2MC3</td>
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<tr>
<td>1</td>
<td>ENGN MGT 4A01</td>
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<tr>
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<td>SFWR ENG 4AA3, 4D03, 4M03</td>
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<tr>
<td>3</td>
<td>STATS 3Y03</td>
</tr>
<tr>
<td>3</td>
<td>from SFWR ENG 4F03, 4J03, 4TE3</td>
</tr>
<tr>
<td>3</td>
<td>approved technical electives from List C</td>
</tr>
<tr>
<td>3</td>
<td>approved complementary studies electives</td>
</tr>
<tr>
<td>3</td>
<td>Commerce electives selected from Level III or IV Commerce</td>
</tr>
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</table>

## LEVEL IV: 37 UNITS

### Software Engineering and Society (B.Eng.Society)

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>COMMERCE 4PA3, 4QA3</td>
</tr>
<tr>
<td>3</td>
<td>ENGINEER 4F03</td>
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<td>3</td>
<td>ENGN MGT 5B03</td>
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<tr>
<td>15</td>
<td>SFWR ENG 4C03, 4E03, 4G06, 4Q03</td>
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<tr>
<td>3</td>
<td>from SFWR ENG 4F03, 4J03, 4TE3</td>
</tr>
<tr>
<td>3</td>
<td>Commerce electives selected from Level III or IV Commerce</td>
</tr>
</tbody>
</table>

### Software Engineering and International Studies (B.Eng.Society)

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ENGINEER 3GA3</td>
</tr>
<tr>
<td>24</td>
<td>SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3GB3, 3GC3, 3RA3, 3S03, 3X03</td>
</tr>
<tr>
<td>3</td>
<td>STATS 3Y03</td>
</tr>
</tbody>
</table>

### Software Engineering and International Studies Co-op (B.Eng.Society)

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ENGINEER 4A03</td>
</tr>
<tr>
<td>24</td>
<td>SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3GB3, 3GC3, 3RA3, 3S03, 3X03</td>
</tr>
</tbody>
</table>

### ADMISSION

See Admission to Level II Engineering Programs.

### NOTES

1. A minimum of 18 units of focus elective courses is required for the program. (This does not include the 6 units of complementary studies elective in Level I.)
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0.

## LEVEL II: 37 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
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<tr>
<td>22</td>
<td>SFWR ENG 2AA4, 2C03, 2DA3, 2DM3, 2FA3, 2MX3, 2S03</td>
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</tbody>
</table>

### SOCIETY:

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>ENGSOCTY 2X03, 2Y03</td>
</tr>
<tr>
<td>3</td>
<td>Engineering and Society focus electives</td>
</tr>
</tbody>
</table>

### INTERNATIONAL STUDIES:

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>ANTHROP 1A03, ENGSOCTY 2X03, 2Y03</td>
</tr>
</tbody>
</table>

### LEVEL III: 35 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3RA3, 3S03, 3X03</td>
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</table>

### SOCIETY:

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ENGSOCTY 3Y03</td>
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<tr>
<td>6</td>
<td>Engineering and Society focus electives</td>
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### INTERNATIONAL STUDIES:

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<tr>
<th>Units</th>
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<tr>
<td>3-6</td>
<td>POL SCI 2A06, 2XX3, RELIG ST 1B06</td>
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<tr>
<td>3-6</td>
<td>International Studies focus electives</td>
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### LEVEL IV: 33 UNITS

<table>
<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>3</td>
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<tr>
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<td>SFWR ENG 4AA3, 4M03</td>
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<tr>
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### SOCIETY:

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<thead>
<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>6</td>
<td>ENGSOCTY 3X03, 3Z03</td>
</tr>
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<td>Engineering and Society focus electives</td>
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### INTERNATIONAL STUDIES:

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<tr>
<th>Units</th>
<th>Course</th>
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<td>ENGINEER 3PM3, ENGSOCTY 3X03</td>
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<tr>
<td>9</td>
<td>International Studies focus electives</td>
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</table>

## LEVEL V: 36 UNITS

### Software Engineering (Game Design) (B.Eng.)

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
</tr>
<tr>
<td>6</td>
<td>ENGINEER 2GA3, 2GB3</td>
</tr>
<tr>
<td>22</td>
<td>SFWR ENG 2AA4, 2C03, 2DA3, 2DM3, 2FA3, 2MX3, 2S03</td>
</tr>
<tr>
<td>3</td>
<td>approved technical electives from List C</td>
</tr>
</tbody>
</table>

### ADMISSION

See Admission to Level II Engineering Programs.

### NOTE

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0.

## LEVEL II: 37 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
</tr>
<tr>
<td>6</td>
<td>ENGINEER 2GA3, 2GB3</td>
</tr>
<tr>
<td>22</td>
<td>SFWR ENG 2AA4, 2C03, 2DA3, 2DM3, 2FA3, 2MX3, 2S03</td>
</tr>
<tr>
<td>3</td>
<td>approved technical electives from List C</td>
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### LEVEL III: 38 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>3</td>
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</tr>
<tr>
<td>3</td>
<td>STATS 3Y03</td>
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<tr>
<td>32</td>
<td>SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3GB3, 3GC3, 3RA3, 3S03, 3X03</td>
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</table>

### LEVEL IV: 36 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>ENGINEER 4A03, 4B03</td>
</tr>
<tr>
<td>3</td>
<td>ENGINEER 4GA3</td>
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</tr>
<tr>
<td>3</td>
<td>from SFWR ENG 4E03, 4F03, 4J03, 4O03, 4TE3</td>
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</tbody>
</table>

### Software Engineering (Embedded Systems) (B.Eng.)

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
</tr>
<tr>
<td>6</td>
<td>ENGINEER 2GA3, 2GB3</td>
</tr>
<tr>
<td>22</td>
<td>SFWR ENG 2AA4, 2C03, 2DA3, 2DM3, 2FA3, 2MX3, 2S03</td>
</tr>
<tr>
<td>3</td>
<td>approved technical electives from List C</td>
</tr>
</tbody>
</table>

### ADMISSION

See Admission to Level II Engineering Programs.

### NOTE

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0.

## LEVEL II: 37 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
</tr>
<tr>
<td>6</td>
<td>ENGINEER 2GA3, 2GB3</td>
</tr>
<tr>
<td>22</td>
<td>SFWR ENG 2AA4, 2C03, 2DA3, 2DM3, 2FA3, 2MX3, 2S03</td>
</tr>
<tr>
<td>3</td>
<td>approved technical electives from List C</td>
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### LEVEL III: 38 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ENGINEER 3GA3</td>
</tr>
<tr>
<td>3</td>
<td>STATS 3Y03</td>
</tr>
<tr>
<td>32</td>
<td>SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3GB3, 3GC3, 3RA3, 3S03, 3X03</td>
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</tbody>
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### LEVEL IV: 36 UNITS

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
</tr>
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<tbody>
<tr>
<td>6</td>
<td>ENGINEER 4A03, 4B03</td>
</tr>
<tr>
<td>3</td>
<td>ENGINEER 4GA3</td>
</tr>
<tr>
<td>24</td>
<td>SFWR ENG 3103, 4C03, 4D03, 4GA3, 4GC3, 4GP6, 4M03</td>
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<td>3</td>
<td>from SFWR ENG 4E03, 4F03, 4J03, 4O03, 4TE3</td>
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### Software Engineering (Embedded Systems) Co-op (B.Eng.)

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>6</td>
<td>MATH 2M03, 2MM3</td>
</tr>
<tr>
<td>6</td>
<td>ENGINEER 2GA3, 2GB3</td>
</tr>
<tr>
<td>22</td>
<td>SFWR ENG 2AA4, 2C03, 2DA3, 2DM3, 2FA3, 2MX3, 2S03</td>
</tr>
<tr>
<td>3</td>
<td>approved technical electives from List C</td>
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</table>

### ADMISSION

See Admission to Level II Engineering Programs.

### NOTE

As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1E0.
### Programs for the Bachelor of Technology (B.Tech.) Degree

**WEB ADDRESS:** [http://btech.mcmastermohawk.ca/](http://btech.mcmastermohawk.ca/)

**Communications Research Laboratory (CRL), Room 1128 Ext. 27056**

**Executive Director**
A.C. Heidebrecht/Ph.D., D.Sc., P.Eng.

**Associate Director (Four-Year B.Tech. Programs)**
I. Singh/B.Sc., M.Sc., Ph.D., F.C.I.C.

**Business Administrator**
B. Eftekhari

**Program Administrator (Four-Year B.Tech. Programs)**
G. Ferracuti

**Program Administrator (Degree Completion Programs)**
S.D. Verhage

The Bachelor of Technology (B.Tech.) programs provide a degree-level technological education that is distinct from that offered in Bachelor of Engineering programs. These programs are more oriented to applications in specific technologies, with less emphasis on broader mathematical and scientific foundations than a corresponding engineering program. Graduates will have considerably more breadth and depth in their area of technology than graduates of college technology diploma programs. For degree completion programs, a second objective is to provide a path for college diploma graduates to gain an education leading to a university degree.

- Process Automation Technology
- Automotive and Vehicle Technology
- Biotechnology

Two-year degree-completion programs for graduates of the Mohawk College three-year Diploma in Technology program (or graduates of similar programs at other Colleges) leading to a Bachelor of Technology degree from McMaster. The programs are:

- Civil Engineering Infrastructure Technology
- Computing and Information Technology
- Energy Engineering Technologies
- Manufacturing Engineering Technology

### Breadth of Learning

B.Tech. graduates will be functioning in an evolving world in which they will play an important role as "evolvers" or change agents. This means that their education cannot be narrowly focused on technical and management topics but must also enable them to develop important complementary skills, including human relations skills. The four-year B.Tech. program has an eight-course "breadth of learning" component which is designed to develop those skills in the context of broadening their knowledge of the economic, social, political, environmental, and cultural dimensions of the society in which they will live and work.

### Management Studies

All programs include a seven-course management studies component designed to develop management skills in a technology context. These courses (e.g., financial systems, human behavior, entrepreneurship, project management and formulating technology strategy) provide graduates with necessary skills for the development of their professional careers and provide employers with highly skilled graduates possessing a blend of technological and managerial capabilities required by business in order to strengthen competitiveness.

### Co-operative Education

Co-op placements are a mandatory component of all B.Tech. degree programs; co-op placements provide explicit experiential learning which is related to the technologically-oriented careers for which students are being prepared. Testing and enhancing their skills through a co-operative education experience is important in enabling graduates to function effectively in an industrial environment. The co-op component is administered by Engineering Co-Op and Career Services.

---

### Four-Year B.Tech. Programs

**Academic Regulations for Four-Year B.Tech. Programs**

**Student Academic Responsibility**

You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

---

**Minimum Requirements to Continue in a Program Beyond Level I**

In Level II and above, the student must maintain a Cumulative Average (CA) of at least 3.5 to continue in the B.Tech. program. If the student's CA is less than 3.5, the student may not continue at the University.

**Sequence of Courses**

Courses must be taken in the sequence specified in the requirements for the program as outlined in this Calendar. Students must register for all outstanding work of one level before attempting work for a higher level.

**Repeated Courses**

All failed courses must be repeated if they are required courses for the B.Tech. program or may be replaced if the courses are not explicitly required.

**Level of Registration**

A student is required to register in the lowest level for which more than six units of work are incomplete. Work of a higher level may be undertaken only with the permission of the Associate Director (Four-Year Bachelor of Technology Programs).

**Minimum Work Load**

The minimum workload for students registered in Level I of the Bachelor of Technology program is 36 units. The workload for students registered above Level I will range from 33 to 36 units per year and is specified within each academic program.

**Reinstatement**

A student who is ineligible to continue in a Bachelor of Technology program (May not continue at university) may normally not apply for reinstatement for one full academic year. Exceptions may be made where there are extenuating circumstances that are supported by documentation.

Students seeking reinstatement must complete the Reinstatement Request available at the Office of the Registrar. The completed form and the $50 fee must be submitted to the Office of the Registrar by June 30. The form 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 academic problems), reasons why the student would expect to succeed in the desired program if reinstated (i.e., what was the previous problem and what has been done to correct it), activities since last registered at McMaster including all academic work. Two letters of reference are also required. Reinstatement is not guaranteed.

A student who is reinstated after being ineligible to continue at a given level must repeat all courses of that level, unless specific course exemptions are granted explicitly in the letter of reinstatement. Students who are reinstated will be placed on program probation, and calculation of their Cumulative Average is to begin anew. If at any time after reinstatement the student's Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

**Transfers from Engineering**

Students who have successfully completed all courses in Engineering I with a CA of at least 3.5 can apply to transfer directly to Level II of any of the Four-Year Bachelor of Technology Programs. Depending upon the complementary studies electives taken in Engineering I and the Bachelor of Technology program to which they are transferring, students will be given credit for most or all of the Technology I...
program. Students who anticipate making such a transfer should consult with the Associate Director (Four-Year Bachelor of Technology Programs) at the earliest possible opportunity. Applications for transfer must be submitted to the Associate Director (Four-Year Bachelor of Technology Programs) no later than June 15.

REQUIREMENTS FOR MOHAWK DIPLOMA

Students registered in the Four-Year Bachelor of Technology Program may elect to leave the Program upon the successful completion of Level III. Students will be awarded a Mohawk College diploma.

LEVEL I PROGRAM

WEB ADDRESS: http://btech.mcmastermohawk.ca

NOTE

The Level I requirements for specific Level II B.Tech. programs are as follows:

- **Automotive and Vehicle Technology**: ENG TECH 1AC3, 1PR3
- **Biotechnology**: ENG TECH 1AC3, 1BI3
- **Process Automation Technology**: ENG TECH 1AC3, 1PR3

**TECHNOLOGY I: 36 UNITS (0731)**

18 units ENG TECH 1CH3, 1CP3, 1EL3, 1MC3, 1MT3, 1PH3
12 units GEN TECH 1CS3, 1FS3, 1OB3, 1IT3
6 units from ENG TECH 1AC3, 1BI3, 1ME3, 1PR3 (See Note above.)
1 course ENG TECH 1A00

PROGRAMS FOR THE FOUR-YEAR B. TECH. DEGREE

ADMISSION TO LEVEL II

To be admitted to a Level II B.Tech. program, students must have completed all non-elective B.Tech. courses with a minimum Cumulative Average (CA) of 3.5.

NOTE

Co-op Education: Students in the Four-Year Bachelor of Technology programs will be required to complete 12 months of co-op experience prior to graduation. The 12 months of co-op experience may be acquired through a combination of three four-month experience terms.

As well as completing the academic requirements as specified in this Calendar, students in co-op must also complete the following courses prior to graduation:

- ENG TECH 1EEO Introduction to the Technology Co-op Program
- ENG TECH 2EEO Four Month Co-op Experience I
- ENG TECH 3EEO Four Month Co-op Experience II
- ENG TECH 4EEO Four Month Co-op Experience III

ENG TECH 1EEO must be taken in the first year of the program. Depending upon the manner in which the co-op placements are organized, two of the four-month co-op experience courses may be taken in sequential calendar terms.

Automotive and Vehicle Technology (B.Tech.)

ADMISSION

Completion of Technology I including ENG TECH 1ME3 and 1PR3.

**LEVEL II: 36 UNITS**

15 units AUTOTECH 2AC3, 2AE3, 2CD3, 2MT3, 2TS3
12 units ENG TECH 2MA3, 2MT3, 3MN3, 3ST3
9 units GEN TECH 2EN3, 2TC3, 2TE3

**LEVEL III: 36 UNITS**

21 units AUTOTECH 3AE3, 3AV3, 3CT3, 3MP3, 3MV3, 3TS3, 3VD3
3 units ENG TECH 3FE3
12 units GEN TECH 2TL3, 2TM3, 3PM3, 3SF3

**LEVEL IV: 33 UNITS**

21 units AUTOTECH 4AE3, 4AT3, 4C13, 4DV3, 4EC3, 4MS3, 4TP3
9 units GEN TECH 2TP3, 3TL3, 4SS3
3 units from GEN TECH 1DM3, 1EE3, 1HR3, 2IS3, 4LM3, 4ST3

Biotechnology (B.Tech.)

ADMISSION

Completion of Technology I including ENG TECH 1AC3 and 1BI3.

**LEVEL II: 33 UNITS**

21 units BIOTECH 2BC3, 2BE3, 2BT3, 2CB3, 2TS3, 2MB3, 2OC3
9 units ENG TECH 2MA3
9 units GEN TECH 2EN3, 2TC3, 2TE3

**LEVEL III: 36 UNITS**

21 units BIOTECH 3BP3, 3EC3, 3FM3, 3FR3, 3IV3, 3MB3, 3PM3
3 units ENG TECH 3ST3
12 units GEN TECH 2TL3, 2TM3, 3PM3, 3SF3

**LEVEL IV: 33 UNITS**

21 units BIOTECH 4BI3, 4BL3, 4BM3, 4BS3, 4GP3, 4TB3, 4TR3
9 units GEN TECH 2TP3, 3TL3, 4SS3
3 units from GEN TECH 1DM3, 1EE3, 1HR3, 2IS3, 4LM3, 4ST3

Process Automation Technology (B.Tech.)

ADMISSION

Completion of Technology I including ENG TECH 1AC3 and 1PR3.

**LEVEL II: 36 UNITS (NOT OFFERED IN 2008-2009)**

21 units PROCTECH 2CA3, 2CE3, 2EC3, 2EE3, 2IO3, 2IC3, 2PL3
6 units ENG TECH 2MA3, 2MT3
9 units GEN TECH 2EN3, 2TC3, 2TE3

**LEVEL III: 36 UNITS**

18 units PROCTECH 3CE3, 3CT3, 3MC3, 3PL3, 3SC3, 3SD3
6 units ENG TECH 3MN3, 3ST3
12 units GEN TECH 2TL3, 2TM3, 3PM3, 3SF3

**LEVEL IV: 36 UNITS**

24 units PROCTECH 4AS3, 4CT3, 4IC3, 4IT3, 4MS3, 4MT3, 4SS3, 4TR3
9 units GEN TECH 2TP3, 3TL3, 4SS3
3 units from GEN TECH 1DM3, 1EE3, 1HR3, 2IS3, 4LM3, 4ST3

DEGREE COMPLETION B.TECH. PROGRAMS

ACADEMIC REGULATIONS FOR DEGREE COMPLETION B.TECH. PROGRAMS

STUDENT ACADEMIC RESPONSIBILITY

You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

Students enrolled in a degree-completion program for the B.Tech. degree, in addition to meeting the General Academic Regulations of the University, shall be subject to the following regulations.

ADVANCED STANDING

Advanced standing may be considered at the time of admission. However a minimum of 51 units of work must be completed at McMaster University in order to obtain a Bachelor of Technology degree.

SEQUENCE OF COURSES

Students in the degree completion program may register in any courses in the program for which they have achieved the specified prerequisite requirements.

REPEATED COURSES

All failed courses must be repeated if they are required courses for the B.Tech. program or may be replaced if the courses are not explicitly required.

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 Program Chair of the specific discipline.
MINIMUM WORK LOAD
Students may elect to register in the program full-time or part-time. Students wishing to study full-time evenings may register in up to 18 units (six courses) per academic term. Students working full-time should not attempt more than two or three courses per academic term. Part-time students have up to seven years to complete the program in its entirety. The minimum number of units that may be taken in one academic term is three units (one course).

REINSTATEMENT
A student who is ineligible to continue in a Bachelor of Technology program (May not continue at university) may normally not apply for reinstatement for one full academic year. Exceptions may be made where there are extenuating circumstances that are supported by documentation.

Students seeking reinstatement must complete the Reinstatement Request Form available at the Office of the Registrar. The completed form and the $50 fee must be submitted to the Office of the Registrar by June 30. The form 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 academic problems), reasons why the student would expect to succeed in the desired program if reinstated (i.e. what was the previous problem and what has been done to correct it), activities since last registered at McMaster including all academic work. Two letters of reference are also required. Reinstatement is not guaranteed.

A student who is reinstated after being ineligible to continue at a given level will repeat all courses of that level, unless specific course exemptions are granted explicitly in the letter of reinstatement. Students who are reinstated will be placed on program probation, and calculation of their Cumulative Average will begin anew. If at any review after reinstatement the student's Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

PROGRAMS FOR THE DEGREE COMPLETION B.TECH.

ADMISSION TO DEGREE COMPLETION PROGRAMS
The minimum academic requirement for admission to a Bachelor of Technology degree completion program is successful completion of a three-year technology diploma.

The degree completion programs will accept students with diplomas in a related technology program from Mohawk College or similar diploma programs at other Ontario Colleges; post-diploma experience would be an asset. Applicants with educational background equivalent to those completing Ontario college diplomas (i.e. overseas technology diploma or degree graduates) are encouraged to apply; such applications will be considered on an individual basis.

NOTE
Co-op Education: Students in the degree completion Bachelor of Technology programs who initially registered in a program in September 2006 or later will be required to complete eight months of co-op experience prior to graduation. The eight months of co-op experience may be acquired through a combination of two four-month experience terms. These co-op placement terms will be waived for diploma graduates whose programs are operated on a co-op basis (which would be the case for Mohawk College diploma graduates) and for diploma graduates who have achieved significant work experience in a related field.

As well as completing the academic requirements as specified in this Calendar, students in co-op must also complete the following courses prior to graduation:
- ENG TECH 1ET0 Introduction to the Technology Co-op Program
- ENG TECH 2ET0 Four Month Co-op Experience I
- ENG TECH 3ET0 Four Month Co-op Experience II
- ENG TECH 1ET0 must be completed at least one academic term prior to the term in which the first co-op placement is taken.

Civil Engineering Infrastructure Technology (B.Tech.)

ADMISSION
Admission requires satisfactory completion of a three-year Mohawk College Civil Engineering Technology or a three-year Mohawk College Architecture Technology diploma (or equivalent). Applicants with educational backgrounds equivalent to those completing Ontario college diplomas (i.e. overseas technology diploma or degree graduates) are encouraged to apply; such applications will be considered on an individual basis.

NOTES
1. Civil Engineering Technology graduates must complete CIV TECH 3FM3, 3GE3 and three units from the infrastructure Electives Course List. Civil Engineering Technology diploma graduates must select nine units from the Infrastructure Electives Course List. Civil Engineering Technology diploma graduates must select CIV TECH 4MD3 and nine units from the Infrastructure Electives Course List.
2. Architectural Technology graduates must complete CIV TECH 4MH3 and nine units from the Infrastructure Electives Course List. Civil Engineering Technology diploma graduates must select 12 units from the Infrastructure Electives Course List.
3. ENG TECH 1A00 must be completed in the first year of the program.

INFRASTRUCTURE ELECTIVES COURSE LIST
CIV TECH 3BD3, 3CS3, 3FR3, 3LJ3, 3ND3, 3PM3, 3RM3, 3TP3, 3UM3, 3WT3

LEVEL III: 36 UNITS
6 units ENG TECH 3MA3, 3ML3
15 units GEN TECH 1FS3, 1HR3, 1OB3, 2EN3, 3PM3
6 units CIV TECH 3ST3, 3SA3
9 units six units from CIV TECH 3FM3, 3GE3 and three units from Infrastructure Electives Course List (See Note 1 above.)
or
nine units from Infrastructure Electives Course List (See Note 1 above.)
1 course ENG TECH 1A00

LEVEL IV: 30 UNITS
3 units CIV TECH 3MN3
9 units CIV TECH 4E13, 4ES3, 4SD3
12 units three units from CIV TECH 4MH3 and nine units from Infrastructure Electives Course List (See Note 2 above.)
or
12 units from Infrastructure Electives Course List (See Note 2 above.)
3 units GEN TECH 3SF3
3 units from GEN TECH 1DM3, 1EE3, 2IS3, 4ST3

Computing and Information Technology (B.Tech.)

ADMISSION
Admission requires satisfactory completion of a three-year Mohawk College diploma in one of Software Engineering, Networking Engineering Security Analyst or Computer Engineering (or equivalent). Applicants with educational backgrounds equivalent to those applicants completing Ontario college diplomas (i.e. overseas technology diploma or degree graduates) are encouraged to apply; such applications will be considered on an individual basis.

NOTES
1. Software Engineering diploma graduates must complete COMPTECH 3IT3 and 3NT3.
2. Network Engineering Security Analyst diploma graduates must complete COMPTECH 3PD3 and 3PR3.
3. Students who have completed the equivalent of a Computer Engineering Program at Mohawk College must take COMPTECH 4CC3 and 4DM3. These students are not required to take COMPTECH 4AP3.
4. Students with a background in Software Engineering and NESA (Network Engineering Security Analyst) graduates must take COMPTECH 4AP3 and either COMPTECH 4C3 or 4DM3.
5. ENG TECH 1A00 must be completed in the first term of the program.
LEVEL III: 36 UNITS
6 units from COMPTECH 3IT3, 3NT3, 3PD3, 3PR3 (See Notes 1 and 2 above.)
15 units COMPTECH 3DS3, 3ET3, 3IA3, 3IN3, 3RQ3
6 units ENG TECH 3DM3, 3ST3
9 units GEN TECH 1F53, 1OB3, 2EN3
1 course ENG TECH 1A00 (See Note 5 above.)
LEVEL IV: 36 UNITS
18 units COMPTECH 4ES3, 4FD3, 4IN3, 4SD3, 4TM3, 4TR3 (See Note 4 above.)
6 units from COMPTECH 4AP3 4CC3, 4DM3 (See Note 4 above.)
9 units GEN TECH 2IS3, 3PM3, 3SF3
3 units from GEN TECH 1DM3, 1EE3, 1HR3, 1ST3

Energy Engineering {4175}
Technologies (B.Tech.)

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2008-2009 academic year, a Bachelor of Technology program in Energy Engineering Technologies will be offered.

ADMISSION
The degree completion programs in Energy Engineering Technologies will accept graduates in related technologies from Mohawk College or similar diploma programs at other Ontario colleges. Graduates from Ontario university engineering programs who seek to develop careers in the energy technology sector will be accepted. Applicants with educational backgrounds at least equivalent to those applicants completing Ontario college diplomas (i.e. overseas technology diploma or degree graduates) are encouraged to apply; such applications will be considered on an individual basis.

NOTES
1. Nuclear Energy Engineering Technologies students must complete ENR TECH 4EP3 (a project in Nuclear Energy Technology), 4NA3 and 4NP3.
2. Renewable Energy Engineering Technologies students must complete ENR TECH 4EP3 (a project in Renewable Energy Technology), 4RE3 and 4RT3.
3. ENG TECH 1A00 must be completed in the first term of the program.

LEVEL III: 36 UNITS
27 units ENR TECH 3CT3, 3EP3, 3FM3, 3IE3, 3IN3, 3M13, 3MP3, 3PD3, 3SG3
9 units GEN-TECH 1FS3, 1OB3, 2EN3
1 course ENG TECH 1A00 (See Note 3 above.)

LEVEL IV: 36 UNITS
24 units from ENR TECH 4EM3, 4EP3, 4NA3, 4NP3, 4PD3, 4PM3, 4PP3, 4PQ3, 4RE3, 4RT3
3 units GEN TECH 4PS3
6 units GEN TECH 3PM3, 3SF3
3 units from GEN TECH 1DM3, 1EE3, 1HR3, 1S3, 4SS3, 4ST3

Manufacturing Engineering {4319}
Technology (B.Tech.)

ADMISSION
Admission requires satisfactory completion of a three-year Mohawk College Mechanical Engineering Technology (or equivalent). Applicants with educational backgrounds equivalent to those applicants completing Ontario college diplomas (i.e. overseas technology diploma or degree graduates) are encouraged to apply; such applications will be considered on an individual basis.

NOTE
ENG TECH 1A00 must be taken in the first term of the program.

LEVEL III: 36 UNITS
18 units from ENG TECH 1CP3, 1SP3, 3CT3, 3FE3, 3FN3, 3MA3, 3ML3, 3MN3, 3SP3
9 units from MAN TECH 3CC3, 3CD3, 3MD3, 3TF3
9 units GEN TECH 1FS3, 1OB3, 2EN3
1 course ENG TECH 1A00 (See Note above.)

LEVEL IV: 36 UNITS
24 units from MAN TECH 4DM3, 4FB3, 4FM3, 4FT3, 4ID3, 4MC3, 4MT3, 4ST3, 4TF3
9 units GEN TECH 3PM3, 3SF3, 4LM3
3 units from GEN TECH 1DM3, 1EE3, 1HR3, 2IS3, 4SS3, 4ST3

Manufacturing Engineering {4317}
Technology (B.Tech.)

(Requirements for students who entered prior to September 2006)

This program is currently being phased out. All new applicants should apply to Manufacturing Engineering Technology 4319 as specified above.

NOTE
ENG TECH 1A00 must be taken in the first term of the program.

LEVEL II: 18 UNITS
9 units ENG TECH 3CT3, 3IE3, 3M13
9 units MAN TECH 3MD3, 4MT3, 4TF3

LEVEL III: 15 UNITS
9 units MAN TECH 4FB3, 4FM3, 4FT3
6 units MAN TECH 4MC3, 4ST3
FACULTY OF HEALTH SCIENCES

Dean and Vice-President
J. G. Kelton/M.D., F.R.C.P.(C.)
Associate Dean Research
S. Collins/M.B.B.S., F.R.C.P.(UK), F.R.C.P.C.
Associate Vice-president Academic and Associate Dean Education
J. S. Pollins/M.R.C.P. (UK), F.R.C.P.C.
S. Dean and Vice-president

C. Tompkins/B.Sc.N., M.Ed., Ph.D., R.N.
S. D. Denburg/B.A., M.A., Ph.D.
M. Law/B.Sc.OT, M.Sc., Ph.D., O.T. Reg (Ont)
Associate Dean (Debilitation Science)
M. Law/B.Sc.OT, M.Sc., Ph.D., O.T. Reg (Ont)

For information concerning Health Sciences education programs and admission requirements, contact:
Office of the Registrar
McMaster University
Gilmour Hall, Room 108
Hamilton, Ontario, L8S 4L8
Telephone (905) 525-4600

OVERVIEW

The concept of Health Sciences Education is based on the view that health is a broad subject encompassing both the problems of ill health and the impact of biology, environment and lifestyle on health. Each health professional has specific educational requirements, but by learning together in shared facilities there exists an opportunity to establish effective interprofessional working relationships.

The programs in the Faculty attempt to meet these goals through a variety of learning approaches. Emphasis is placed on problem-based, small group learning experiences. Other approaches to learning, including interdisciplinary educational experiences, are used where appropriate.

In July 1974, the School of Nursing and the School of Medicine were brought together to form the Faculty of Health Sciences. In 1989, the School of Occupational Therapy and Physiotherapy (School of Rehabilitation Science) was added and in 1993 the Midwifery Education Program was established. The Faculty offers the following undergraduate degree programs: Bachelor of Science in Nursing (B.Sc.N.), Bachelor of Health Sciences (Honours) (B.H.Sc. Honours), Bachelor of Health Sciences (B.H.Sc.), Midwifery (B.H.Sc.), Bachelor of Health Sciences (Physician Assistant), in addition to its undergraduate programs, the Faculty of Health Sciences also has responsibility for Residency Programs in Postgraduate Medical Education.

Through the School of Graduate Studies, the Faculty offers the Medical Sciences program, leading to the M.Sc. and Ph.D. degrees in the following research areas: Cell Biology and Metabolism; Hemostasis, Thromboembolism, Atherosclerosis; Molecular Virology and Immunology; Neurosciences and Behavioural Sciences; Physiology/Pharmacology; and Reproductive Biology and Human Genetics. M.Sc. and Ph.D. programs in Clinical Health Sciences (Health Research Methodology) and Clinical Health Sciences (Nursing) are available through Medical Sciences. A professional master's degree program in Rehabilitation Science (Occupational Therapy and Physiotherapy) has been established and replaces the respective baccalaureate-level professional programs.

Interprofessional programs, postprofessional in nature and leading to an academic diploma, include: Child Life Studies; Clinical Behavioural Sciences; Environmental Health; and Occupational Health and Safety.

The Faculty of Health Sciences collaborates with the Division of Health Sciences at Mohawk College in educational programs for other health professions based at the College.

Research programs encompassing the broad spectrum of health sciences have been established, including basic and applied research and various aspects of health-care delivery. The graduate programs in medical sciences 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 Site of Hamilton Health Sciences) with extensive ambulatory clinics for primary and specialized aspects of patient care. The building has been designed to bring into close proximity the programs 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 programs are based at other Hamilton Health Sciences sites (Chedoke, General, Henderson, St. Joseph's Centre for Mountain Health Services, St. Joseph's Hospital, St. Peter's Hospital, Hamilton Regional Cancer Centre and the Health Sciences Education Unit). The College. Extensive use is made of a variety of community agencies. A satellite site has been developed with institutions in Northwestern Ontario. In accordance with the plan to coordinate the delivery of specialized health services among the Hamilton and District hospitals, the Postgraduate Education programs in medicine have been developed on a regional basis.

UNDERGRADUATE HEALTH PROFESSIONAL EDUCATION PROGRAMS

ADMISSION AND REGISTRATION

Application to any program 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 programs.

Registration in any program in the Faculty of Health Sciences implies acceptance on the part of the student of the objectives of the program 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 programs, and should be considered in conjunction with specific admission requirements described on the following pages for the Bachelor of Health Sciences (Honours) program (B.H.Sc. Honours), School of Medicine (MD), the Midwifery program (B.H.Sc.), the School of Nursing (B.Sc.N.) and the Physician Assistant Education program (B.H.Sc.).

The following application deadlines are strictly enforced. Deadline dates are for consideration of admission to a program in the following September.

Program Deadline
- Bachelor of Health Sciences (Honours) (B.H.Sc. Honours) February 10
- Medicine (MD) September 15
- Midwifery (B.H.Sc.) October 1
- Nursing (B.Sc.N.) February 7
- Applicants directly from Ontario Secondary Schools May 1
- Diploma Registered Nurses February 15
- Applicants with Other Qualifications March 1
- Transfers from other degree Nursing programs February 15
- McMaster Site June 30
- Mohawk and Conestoga Site May 15
- Physician Assistant (B.H.Sc.) March 1
- Child Life Studies Diploma Program March 1
- Diploma Program in Clinical Behavioural Sciences August 1

* Deadline may be extended for 2008-2009.

The University reserves the right to change the admission requirements at any time without notice.

As places in the degree programs of the Faculty of Health Sciences are limited, admission is by selection, 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. In the event that admission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the program 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 program 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 program.

CLINICAL COURSE REQUIREMENTS
Where 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 any time during the academic year, until continuation in the course is reviewed.

INFORMATION AND ACADEMIC COUNSELLING
In certain programs, a faculty member is selected for each student. 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 the allied health professions are required to meet the licensing bodies for each of these professions. In addition students should be aware that a licence may be denied or revoked 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 their respective licensing body about such a situation.

POST-PROFESSIONAL HEALTH SCIENCES
EDUCATION PROGRAMS

CHILD LIFE STUDIES FULL-TIME DIPLOMA PROGRAM
This is an eight-month applied professional program in the Faculty of Health Sciences, focusing on the development of knowledge and skills for individuals working with infants, children, youth and families in a health care setting and community based programs.

The learning objectives are:
1. to examine the child life role in assessment, prevention, advocacy and documentation in situations critical to the child's development, at times of acute and chronic illness and potentially traumatic or life-changing events.
2. to examine the child life role in assessment, intervention, prevention, advocacy and documentation in situations critical to the child's development, at times of acute and chronic illness and potentially traumatic or life-changing events.

Coursework involves on-line tutorials, case studies and self-directed learning. Two eight-week internship placements in children's hospitals and community settings are a requirement of this program.

A related university degree with an overall B average is required, as well as relevant experience. Admission is based on the assessed strengths of each applicant as determined by the application package and interviews. Applicants 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 CBOS Office (Health Sciences Centre, Room 2E12) by August 1 for September courses and by December 1 for January and April courses. Personal interviews will be arranged if required. Upon completion of this diploma, students may be granted up to 24 units of credit towards a degree at McMaster University, as determined by the Faculty to which they are applying. For additional information visit the CBOS web site at http://www.fhs.mcmaster.ca/childlife. Applications can be obtained by contacting the CBOS Office at (905) 525-9140 ext. 22706.

DIPLOMA PROGRAM IN CLINICAL BEHAVIOURAL SCIENCES
The Clinical Behavioural Sciences (CBS) Post-Baccalaureate Diploma program is offered through the Department of Psychiatry and Behavioural Neurosciences. This part-time program 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. Successful completion involves from 10 to 20 weeks in length. 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 CBOS Office (Health Sciences Centre, Room 2E12) by August 1 for September courses and by December 1 for January and April courses. Personal interviews will be arranged if required. Upon completion of this diploma, students may be granted up to 24 units of credit towards a degree at McMaster University, as determined by the Faculty to which they are applying. For additional information visit the CBOS web site at http://www.fhs.mcmaster.ca/cbs. Applications can be obtained by contacting the CBOS Office at (905) 525-9140 ext. 22706.

DIPLOMA PROGRAM IN ENVIRONMENTAL HEALTH
The diploma program is a distance education program offered through the McMaster Institute of Environment and Health. Students are required to register on a full-time basis from September to April committing one day a week for self-directed learning, one hour per week for on-line tutorials and one day a week for completion of assigned work. The program is designed to provide new and/or upgraded skills and knowledge in the environmental health area to individuals who do not hold a recognized environmental health professional degree, and those who have been denied or whose licence has been suspended or rescinded. It is 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 come from a variety of disciplinary backgrounds. A relevant university degree or equivalent will normally be required. Admission is based on the number of places available and the experience of applicants. Those without environmental health experience will also be considered.

Applications, a Transcript Assessment Fee, original transcripts and other documents must be completed and submitted by the end of June for the program study period starting in September. Applications can be obtained by contacting the McMaster Institute of Environment and Health at (905) 525-9140, ext 27559. Applicants will be notified of admissions decisions in July. Further information is available on our web site (http://www.mcmaster.ca/mieh).

DIPLOMA PROGRAM IN OCCUPATIONAL HEALTH AND SAFETY
The program in Occupational Health and Environmental Medicine offers a diploma program designed to provide basic instruction in the principles of occupational health and safety. Students can enrol in the program on a full-time or a part-time basis. The full-time program starts in September catering to those who wish to complete the course in three months. The part-time program is designed for students within commuting distance from Hamilton wishing to continue their normal employment while enrolled in the program. The part-time program also begins in September and continues through to 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, successful completion of this program 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 March 31 each year for the course beginning in September. Applications can be obtained by contacting the Program in Occupational Health and Environmental Medicine at (905) 525-9140, ext. 22333 or emailing Jean Bodnar at bodnarj@mcmaster.ca. Further information can be obtained on our web site (http://www.mcmaster.ca/ohs).
THE BACHELOR OF HEALTH SCIENCES (HONOURS) PROGRAM

WEB ADDRESS: http://www.fhs.mcmaster.ca/bhsc

Michael G. DeGroote Centre for Learning and Discovery, Room 3308 Ext. 22815
Assistant Dean, Bachelor of Health Sciences (Honours)
D.G. Harnish/B.Sc., M.Sc., Ph.D., 3M Teaching Fellow
Program Administrator
T. M. Basilio

Program Overview

This program, first offered in September 2000, is an innovative interdisciplinary program in which students take responsibility for their learning and in which there is recognition that both the knowledge and skill sets developed by students are integral parts of preparing for either further study or entry into the workforce. The principles of independent learning and an emphasis on both content and process are central to the provision of education within the Faculty of Health Sciences, and are reflected in this program. In addition, this program reflects the established tradition within the Faculty of understanding health from biological, behavioural and population-based perspectives. The program will draw on individuals from within the Faculty of Health Sciences and the larger university community to provide students with exposure to basic and applied researchers as well as health care practitioners, enabling students to learn about and experience the study of health from these various perspectives. The program will utilize both a small group, inquiry-based format as well as traditional lecture, lab, and tutorial based teaching formats to provide students with a solid knowledge base in health related sciences as well as the skills necessary to critically evaluate and synthesize health related information.

The program is designed to emphasize flexibility, recognizing that students may use this program to prepare for a variety of post graduate options including graduate work in medical sciences, professional schools and entry into the workforce. Beyond the first year students may select to focus on one perspective of health and develop relative expertise in this area, while other students may find that their needs are better met by pursuing a broader based program of study through their senior years. The program begins in Level I and leads to the degree Bachelor of Health Sciences (Honours) upon successful completion of Level IV. The four-level program offers opportunity for specialization through electives and through individual study or thesis courses. Registration in Level I of the program is limited to approximately 160 students, with expansion to 180 students at Level II.

BIOMEDICAL SCIENCES SPECIALIZATION

The specialization in Biomedical Sciences in the Bachelor of Health Sciences (Honours) program will provide students with the option of concentrating their studies in biomedical research. Drawing on faculty from the Departments of Biochemistry and Biomedical Sciences and Pathology and Molecular Medicine, the specialization is designed to build on the existing principles of excellence in the B.H.Sc. (Honours) program, by incorporating fundamental concepts and experimental techniques used in biomedical research. This course of study will emphasize the development of essential skills in communication, problem-solving, critical thinking, scientific reasoning and logic, experimental design, and working both independently and in a group. These transferable skills and fundamental principles in biomedical sciences will prepare students for a future in professional school, industry, research or graduate studies. Applicants will indicate their interest in this specialization on the B.H.Sc. (Honours) Supplementary Application Form when they apply to the program for Level I. Upon acceptance into the B.H.Sc. (Honours) program and the completion of Level I, students will apply to this specialization in March.

PROGRAM GOALS

The overall goal of the program is to educate students in such a way that upon graduation students have a firm foundation in the health sciences, and the skills necessary to learn and adapt in subsequent educational or occupational environments.

> KNOWLEDGE

To acquire a broad knowledge base that reflects the Faculty’s commitment to studying health from biological, behavioural and population-based perspectives. This should include an understanding of the structure, function and behaviour of the human body, the environmental determinants of health and the ways that these factors interact to result in disease or illness.

> SKILLS

To acquire and apply the following skills as a student and member of society:

1. Self directed learning skills: The ability to identify gaps in one’s own knowledge that prevent solving a problem, to formulate a plan that uses appropriate educational resources, and to obtain and synthesize the information needed to solve that problem.

2. Critical thinking skills: The ability to evaluate the merit of information obtained in various ways and to present information in a way that shows evidence of a critical, reflective approach to information and problems.

3. Synthesizing skills: The ability to understand that most problems can be analyzed from a number of perspectives, to identify those perspectives and to formulate solutions that are comprehensive and adequate reflections of various levels of analysis.

4. Communication skills: The ability to communicate an issue in oral and written form, both effectively and concisely.

> PERSONAL QUALITIES

Individuals who successfully complete this program should be prepared to accept responsibility for a life-long process of learning and personal and professional growth. They should respect the various approaches to the study of health, and the beliefs associated with these studies, and should be open to new ways of learning and understanding. They should understand that health care is a collaborative process and be capable of working collegially with others, while being prepared to contribute to the well-being of those around them.

Admission Procedures and Requirements

The following are the requirements for admission in the academic year 2007-2008. Please note that the admission policy may be reviewed annually and the admission requirements may be changed in future years. As places in this program are limited, the admission process is competitive. Possession of the minimum requirements does not guarantee admission to the program.

Application to the B.H.Sc. (Honours) Program of the Faculty of Health Sciences implies acceptance of the admission policies, procedures and methods by which applicants are chosen.

Admission Procedures

APPLICANTS FROM ONTARIO SECONDARY SCHOOLS

Applicants currently completing Grade 12 U or M courses apply through the Ontario Universities’ Application Centre (OUAC)
170 Research Lane
Guelph, ON, N1G 5E2
http://www.ouac.on.ca

Applications for all studies beginning in September must be received by OUAC no later than February 8. Secondary schools will forward mid-term and final transcripts directly to OUAC in support of applications.

Applicants are required to complete a mandatory Supplementary Application Form on-line from the program website by February 8, 2008 (for September 2008 admission). Supplementary Applications are to be submitted electronically via the web at: http://bhsc.mcmaster.ca.

Applicants with Qualifications Equivalent to Ontario Secondary School

Applicants from other provinces should contact the Ontario Universities’ Application Centre (OUAC) for an application package for admission consideration. Please refer to the OUAC address above, Applicants must also have their official transcripts forwarded to the Admissions Office, McMaster University, Gilmour Hall, Room 108, 1280 Main Street West, Hamilton, Ontario, L8S 4L8. Applicants are also required to complete a mandatory Supplementary Application Form on-line from the program website by February 8, 2008 (for September 2008 admission). Supplementary Applications are to be submitted electronically via the web at: http://bhsc.mcmaster.ca.
Applicants from other countries should contact the Office of International Affairs at http://www.mcmaster.ca/oia or (905) 525-9140, ext 24211 for details.

Transfer Applicants
Transfer applicants from McMaster University are required to complete an Application for Admission to Level II on-line via MUGSI/SOLAR during early March to early April and a mandatory Supplementary Application on-line from the program web site by April 25th. Applicants from other post-secondary institutions are required to apply through the Ontario Universities' Application Centre (OUAC) (please refer to the OUAC address above) and complete a mandatory Supplementary Application by April 25th. Supplementary Applications are to be submitted electronically via the web at: http://bhsc.mcmaster.ca.

Biomedical Sciences Specialization
Students registered in Health Sciences I who are interested in this specialization will apply during early March to early April (beginning March 2009) via MUGSI/SOLAR by completing the Application for Admission to Level II. Enrollment is limited to approximately 40 students entering in Level II.

Admission Requirements
Applicants from Ontario Secondary Schools
The selection method for Ontario Secondary School applicants is by academic qualifications and a mandatory Supplementary Application. The majority of Level I offers of admission are made in Round 2 (early May). A minimum of 90% is required for consideration. In Round 2, the following grade information will be used:

a) Semester schools: all final Grade 12 U and/or M courses from first semester or minor years, and second semester mid-term grades for Grade 12 U and/or M courses.

b) Non-semester schools: second term grades for full-year Grade 12 U and/or M courses.

Offers based on interim and/or mid-term grades will be conditional upon maintaining satisfactory performance on final grades. Supplementary Applications are to be submitted electronically via the web at: http://bhsc.mcmaster.ca. A review of the mandatory Supplementary Application is a very important component of the admission selection process. Applicants who do not complete the Supplementary Application are not considered for admission.

REQUIREMENTS
The following are the minimum Grade 12 U and/or M requirements under the Ontario Secondary School curriculum:

1. English U;
2. Biology U;
3. Chemistry U;
4. one of Advanced Functions U, Calculus and Vectors U or Mathematics of Data Management U. For those applicants who present with more than one of these Mathematics courses, the highest grade on the transcript at the time of review will be used to calculate the admission average;
5. One U or M course from Social Sciences (Geography, History, Law, Psychology, Sociology) or Humanities (Art, Drama, English, French, Music, other languages);
6. One additional U or M course in any other subject area to total six courses.

Note: Courses in technological education, science or mathematics are not acceptable as the Social Sciences or Humanities course requirement.

Applicants with Qualifications Equivalent to Ontario Secondary School
Applicants from other provinces and countries must achieve the equivalent to the qualifications listed in the Grade 12 U or M course requirements in their secondary school graduation year.

Transfer Applicants
Transfer applicants will be admitted to the B.H.Sc. (Honours) Program from other programs at McMaster and from other post-secondary institutions. The process will be competitive and will be based on the student's academic qualifications and a Supplementary Application. Enrollment is limited. Students interested in being considered for admission to Level II of the B.H.Sc. (Honours) Program must have completed the equivalent of six units of university Level I Biology and six units of university Level I Chemistry. A cumulative average of at least 9.5 (minimum overall average of B+) will be required for admission consideration.

Curriculum

B.H.Sc. (Honours) {2277}

NOTE
While registration in HTH SCI 4X03 will occur in Level IV, students will begin studies in Level I. Detailed course information is available at http://www.fhs.mcmaster.ca/bhsc/courses/procourses.htm.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I: 30 UNITS
6 units HTH SCI 1106
6 units CHEM 1A03, 1A3
6 units HTH SCI 1E06
3 units HTH SCI 1G03
9 units Electives

LEVEL II: 30 UNITS
3 units HTH SCI 2A03
3 units HTH SCI 2E03
3 units HTH SCI 2F03
3 units HTH SCI 2G03
3 units HTH SCI 2J03
3 units HTH SCI 2K03
9 units Electives

LEVEL III: 30 UNITS
3 units HTH SCI 3G03
3 units HTH SCI 3K03
3 units HTH SCI 3X03
2 units HTH SCI 3X02
1 unit HTH SCI 3Z01
3 units from BIOCHEM 3A03, 3P03
3 units BIOCHEM 3D03
3 units BIOCHEM 4E03
6 units Electives

LEVEL IV: 30 UNITS
3 units HTH SCI 4A09 or 4B06
3 units HTH SCI 4X03 (See Note above.)

B.H.Sc. (Honours) - Biomedical Sciences Specialization {2277}

NOTES
1. Entry to this program begins in Level II. Students wishing to apply must successfully complete Health Sciences I.
2. While registration in HTH SCI 4X03 will occur in Level IV, students will begin studies in Level I. Detailed course information is available at http://www.fhs.mcmaster.ca/bhsc/registered/biomedcourses.htm.

REQUIREMENTS
121 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I: 31 UNITS
6 units CHEM 2O3, 2OB3; or CHEM 2BA3, 2BB3
3 units HTH SCI 2A03
3 units HTH SCI 2G03
3 units HTH SCI 2K03
3 units HTH SCI 2N03
1 unit HTH SCI 2P01
6 units BIOCHEM 2B03, 2BB3
6 units Electives

LEVEL II: 30 UNITS
3 units HTH SCI 3E03
3 units HTH SCI 3G03
3 units HTH SCI 3V03
3 units HTH SCI 3W03
2 units HTH SCI 3X02
1 unit HTH SCI 3Z01
3 units from BIOCHEM 3A03, 3P03
3 units BIOCHEM 3D03
3 units BIOCHEM 4E03
6 units Electives

LEVEL III: 30 UNITS

LEVEL IV: 30 UNITS
3 units HTH SCI 4L3
3 units HTH SCI 4X03
6 units from BIOCHEM 3H03, 3N03, 3Y03, 4H03, 4Q03, HTH SCI 4J03, 4L03, MOL BIOL 4H03
9 units BIOCHEM 4F09
9 units Electives

If a CA of 3.0 to 3.4 is obtained, a student will be placed on academic probation. A student may continue in the program for one reviewing period as an irregular student but cannot take B.H.Sc. (Honours) Program courses. The purpose of this period is to prepare a student for a program outside the B.H.Sc. (Honours) Program. A student may be on academic probation only once. If a CA of less than 3.0 is obtained, a student may not continue at the University.

WORKLOAD
Students who wish to take more courses than recommended for a single level of their program may do so if their CA on completion of the previous session is at least 7.0. Students registered in the final level of the program are permitted to overload by up to six additional units in order to become eligible to graduate.

LETTERS OF PERMISSION
Students enrolled in the B.H.Sc. (Honours) Program may apply to the Office of the Assistant Dean to take courses at another university on a Letter of Permission. Request for Letter of Permission Forms are available from the B.H.Sc. web site at http://www.fhs.mcmaster.ca/bhsc/registered/documents/LetterofPermission.pdf. Students must achieve a grade of at least C- to receive credit.

Students are responsible to forward the transcript from the other university directly to the Assistant Dean (MDCL-3308). If a grade of C- or better is attained, the transcript designation reads COM indicating complete, or NC indicating not complete if less than a C- grade is attained.

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 a Letter of Permission. Students must be in good standing to be eligible to take courses on a Letter of Permission.

LEVEL OF REGISTRATION
A student with six or more units incomplete at any level may proceed to the next level of the program only with the permission of the B.H.Sc. (Honours) Program Office.

REINSTATEMENT TO THE B.H.SC. (HONOURS) PROGRAM
A student who may Not Continue at the University may apply for reinstatement. Students seeking reinstatement should complete the Reinstatement Request Form available at the Office of the Registrar (Gilmour Hall, Room 108). The completed form and the $50.00 fee must be submitted to the Office of the Registrar by July 15 for September entry and November 30 for January entry.

The form should explain the reasons for the student's inadequate performance, corroborated by two letters of support, and should also include relevant documentary evidence such as, for example, a physician's letter documenting illness that may have impacted upon the student's prior academic performance. Reinstatement cases will be carefully screened and the evidence considered will include the student's academic performance before and following admission to McMaster, as well as the nature of the reasons cited in the letter, the letters of support and the accompanying documentation. Reinstatement is not guaranteed.

If students are reinstated to the University, their Cumulative Average will be re-set to 0.0 on zero units, although students may, at the discretion of the Faculty, retain credit for prior work. Following reinstatement, students will be on academic probation and must complete a minimum of 60 units of work after reinstatement to be eligible for graduation with Distinction or other recognition based on the Cumulative Average. If at any review after reinstatement the student's Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

REGISTRATION AND COURSE CHANGES
It is the responsibility of the student to ensure that the program of work undertaken meets the requirements for the degree. It is highly recommended that you review your personal degree audit via MUGSI on the working day following each time you drop or add courses and seek academic counselling from the B.H.Sc. (Honours) Program Office if you have any questions. Dates for final registration and course changes appear in the Sessional Dates section of this Calendar and are enforced.
UNDERGRADUATE MED PROGRAM GOALS

The Undergraduate MD Program at McMaster University fosters a cooperative, supportive and respectful environment. The curriculum evolves continuously, responsive to the changing needs of Ontario society, nurturing the development of the following competencies at the time of graduation:

1. **Medical expert** - students will be able to apply scientific principles from human biology, behaviour and population health to the solution of health problems; they will have the ability to seek and assimilate new information and critically evaluate health care research.

2. **Communicator/Collaborator** - students will demonstrate effective communication skills, sensitive to the needs of patients and cognizant of the roles of other members of the health care team in delivering patient care.

3. **Advocate/Resource Manager** - graduating students will be knowledgeable about the determinants of health and be proactive advocates for their individual patients and for healthcare public policy within the context of the healthcare system.

4. **Scholar/Learner** - students will be self-directed lifelong learners, whose exposure at McMaster to role models in research and clinical care will encourage them to apply innovative approaches to solving health care problems.

5. **Self-reflective Practitioner** - graduating students will be expected to have developed an awareness of the influence of their attitudes, values and assumptions, how these affect their practice of medicine and the impact of the practice of medicine on themselves as individuals.

THE COMPASS CURRICULUM

In September 2007, the Undergraduate MD Program at McMaster University inaugurated a completely new curriculum called the COMPASS curriculum. The curriculum focuses on the mastery of fundamental concepts in medicine. It continues the McMaster tradition of problem-based learning but incorporates research findings from cognitive psychology. The curriculum is structured on the integration of critical concepts and each step of the curriculum is based on the growth of important concepts learned previously. Tutorial problems are selected to illustrate these concepts in a clinical setting and when students are exploring tutorial problems, which remain the focus of learning, they will be directed towards asking questions of what and why and how as much as what is the diagnosis. The curriculum is specifically designed with designated curricular time for deliberate practice applying the concepts that have been learned.

The pre-clerkship curriculum is divided into five Medical Foundations as shown in the curriculum outline. A novel feature of the curriculum is a horizontal Professional Competencies curriculum which runs throughout the three years of the program. As in the Foundations curriculum, the Professional Competencies curriculum integrates study throughout the Professional Competencies curriculum which interdigitates and remains connected to the Foundations curriculum throughout the pre-clerkship and on into the clerkship. The core competencies of the Professional Competencies curriculum are effective communication, lifelong learning, self-awareness and personal values. Students will also develop an ethical judgment, professionalism and role recognition, social and community context of health care, using science to guide practice, basic clinical skills and clinical reasoning. The Professional Competencies curriculum is also problem-based and includes inter-professional education and competency-based assessment using portfolios and learning plans. Some of the content areas addressed in this component of the curriculum are medical ethics, health economics, communications, etc.

LEARNING METHODS

To achieve the objectives of the Undergraduate Medical Program, students are introduced to patients within the first Foundation 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 tutorial problems, requiring for their solution the understanding of underlying biological, population and behavioural principles, the appropriate collection of data and the critical appraisal of evidence. The faculty function as learning resources or guides. Learning by a process of inquiry is fostered, nurturing the development of this approach to learning that should apply throughout the physician's career. The components have been organized in sequential blocks with early exposure to patients and case management.
they are working. They also learn to work as a team, helping and
learning from peers. The study habits and sense of responsibility, self and others provide a basis for lifelong working and learning for mandatory teaching sessions, clinical placements and clerkship rotations. Students are responsible for their own transportation and associated costs in order to complete program requirements. It is anticipated that further rotations will be developed in rural, under-serviced and remote areas. In certain cases, there will be some external funding available.

For students who are accepted into the Waterloo Regional Campus and the Niagara Regional Campus, the first Medical Foundation will be spent in Hamilton and students will be expected to cover the cost of commuting and/or accommodations. The elective experience can be spent in various activities utilizing local, regional or distant resources. Students are expected to cover all transportation and associated costs for electives. Funding may be available for elective travel expenses through a number of funding programs.

**MEDICAL FOUNDATION 1:** The introductory components of this block of curriculum address patterns of determinants of health. The premise of this portion of the curriculum is that health care systems do not account for much of the systematic differences in health status within or among populations in advanced industrialized nations. Social and health care professionals need to understand why people get sick in the first place and why people get well. Social epidemiologists see that causes of ill health in populations are different from causes of ill health in individuals.

After this introductory look at determinants of health, the curriculum moves on to address the first of the major concept themes in the current curriculum, that of oxygen supply and demand, addressing problems that arise from inspired air right through to oxygen at the cellular level, students will learn much related to the respiratory, hematologic and cardiovascular systems.

**MEDICAL FOUNDATION 2:** This is the first of the two Foundations that addresses aspects of homeostasis, particularly that of energy balance, including issues related to the GI tract, endocrine systems and nutrition.

**MEDICAL FOUNDATION 3:** This Foundation covers the second part of homeostasis, including the balance of acid and base, blood pressure and renal function and then goes on to address reproduction and pregnancy and a number of issues in genetics related to reproduction.

**MEDICAL FOUNDATION 4:** This Foundation addresses host defense, which includes immunology and infectious disease, and then moves on to look at neoplasia and the genetics of neoplasia.

**MEDICAL FOUNDATION 5:** This covers the concepts of movement control and interacting and communicating, which includes the locomotor system, the nervous system and behaviour. Aspects of human development will run through all of the five Medical Foundations. An integration week between each of these Medical Foundations allows students to review on a continuous basis material learned up to each integration point. In this way, students can build their knowledge in a systematic way.

**The Clerkship:** While the Clerkship will be firmly linked to the pre-clerkship concept-based curriculum and will include continuing delivery of the Professional Competencies curriculum, this is now the time for students to participate in the direct care of patients as they learn about the management of health and illness. The tutorial cases are now real patients or complications. Students become self-sufficient in contemporary medicine, able to sense when today's medicine becomes out-of-date by adopting good habits of learning and assessment. The Clerkship program consists of rotations in medicine, geriatrics, orthopedic surgery, surgery, family medicine, anesthesiology, psychiatry, pediatrics, obstetrics and gynecology and emergency medicine. There is also elective time, one half of which must be spent in clinical activity. The compulsory components of the Clerkship are carried out in teaching practices and in all the teaching hospitals in the Hamilton region; in community hospitals, including those in St. Catharines, Guelph, Brantford, Burlington, Niagara Falls and the Kitchener-Waterloo region.

**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 Program are:

1. Block Electives: These are blocks of curriculum time dedicated to full-time elective activities. Their satisfactory completion is a mandatory requirement for graduation. Block Electives occur after Medical Foundation 4 and during the Clerkship. Clinical electives in the MD Program must be organized so that each student has an elective experience in a minimum of three different disciplines, each of which will take place for a minimum of two 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 program, but are used to explore or review a specific area of knowledge or practice in more detail. 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 enhance their professional backgrounds and their interest in medicine. Examples include: research training and experience; community health projects; international health opportunities. These experiences are often undertaken following Medical Foundation 5 or during the first half of Clerkship. Some experiences may potentially have a partial funding (e.g., by student research fellowships).

MD/PH.D. PROGRAM

Senate approved the establishment of the MD/Ph.D. in Medical Sciences or Biochemistry, which will provide an MD/Ph.D. curriculum in an integrated format offered by the Faculty of Health Sciences and the School of Graduate Studies. This program will take advantage of the excellence within both of the Faculty and the School, allowing students to complete all the requirements of the MD curriculum and the Ph.D. curriculum in shorter completion times. It is anticipated that the program will accept up to three students annually to reach a steady capacity of approximately 10-15. Direct admission to the combined program is possible for students with a four-year honours B.Sc. or B.H.Sc. (Honours) degree with a strong background in the biological sciences - Biochemistry, Biology, Microbiology, Molecular Biology. Applicants are required to apply through OMSAS for medical admission and separately to the Graduate Program/Department of interest (http://www.mcmaster.ca/graduate) and must be acceptable to both. Please note that the criteria for admission to the MD/Ph.D. Program are different than those for the MD Program. Applicants who are not selected by the MD/Ph.D. Program are still eligible that same year for the Undergraduate Medical Program.

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 a right, university graduates must be members of the Royal College of Physicians and Surgeons of the province in which they elect to engage, in practice. Students in Ontario medical schools will be required to register with the College of Physicians and Surgeons of Ontario (CPSO). 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 or the College of Family Physicians of Canada;

2. Parts I and II of the Medical Council of Canada Qualifying Examination;

3. Canadian Citizenship or Landed Immigrant Status.

In general, students are expected to obtain a certificate from either the College of Family Physicians of Canada or from the Royal College of Physicians and Surgeons of Canada in order to be licensed in the province of their choice.

CANADIAN RESIDENT MATCHING SERVICE (CARMS)

The Matching Service is a clearing-house designed to help final year medical students obtain the post-MD program of their choice, and to help program directors obtain the students of their choice. It provides an orderly method for students to decide where to train and for program directors to decide which students to accept. The service is administered by the Faculty of Health Sciences.

Further information is available from Cathy Oudshoorn, MD Program Administrator, (905) 525-9140, ext. 22141.
ADMISSION AND REGISTRATION

Registration in the Undergraduate Medical Program implies acceptance by the student of the objectives of the program, and the methods by which candidates are chosen for the program. The following describes the regulations governing admission and registration in the Undergraduate Medical Program. Candidates applying for entry in 2009 must register their intention to apply with the Ontario Medical School Application Service (OMSAS) by September 15, 2008. The final application deadline is October 1, 2008. The application is strictly enforced.

ADMISSION POLICY AND PROCEDURE

The intention of the McMaster Undergraduate Medical Program 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 involved in the admissions process. Application to the medical program implies acceptance by the applicant of the admissions procedure and, procedures, and the methods by which candidates are chosen for the program. Applications received in the Fall of 2008 are for the academic year commencing late August 2009. Applicants who will not be ready or able to begin studies at that time may withdraw their applications without prejudice. Application fees cannot be refunded.

Registration on the OMSAS web site must be completed by September 15, 2008. The final application deadline is October 1, 2008, 4:30 p.m. EDT. Several hundred applicants will be invited for interviews in Hamilton in March or April. From this group a class of 176 is selected.

All applicants are notified in writing, by McMaster University, of the results of their application. These letters are mailed to applicants on May 15, 2009.

FALSIFICATION OF ADMISSION INFORMATION

Applicants should understand that where it is discovered that any application information is false or misleading, or has been concealed or withheld, the application will be deemed to be invalid. This will result in its immediate rejection. If the applicant has already been admitted and registered as a student, withdrawal from the University may be required.

All applicants must fulfill the requirements described below in both a) and b).

A) By June 2009, applicants must have completed a minimum of three academic years of degree credit work at an accredited university. Only degree credit courses taken at an accredited university will be considered. To satisfy the minimum requirements, academic credentials obtained from a Canadian University must be from an institution that is a full member of the Association of Universities and Colleges of Canada (AUCC) or the Council of Ontario Universities (COU). The applicant must be able to demonstrate a high level of academic achievement consistently throughout their undergraduate career. A minimum of 15 full-courses, or 30 half-courses (three years) of Undergraduate university work from a recognized university is required. There is no requirement that applicants carry a full course load. 

B) By October 1, 2008, applicants must have achieved an overall simple average of at least 3.0 on the OMSAS 4.0 scale. While an overall simple average of at least 3.0 on the OMSAS 4.0 scale meets the minimal criterion for consideration for admission, prospective applicants should be aware that given the rapidly rising level of competition for a limited number of positions, a significantly higher GPA would provide them with a more reasonable chance of admission. Due to changes from year to year in the level of competitiveness, an exact figure in this regard cannot be provided.

ACADEMIC ELIGIBILITY REQUIREMENTS

Applicants must report on the Post-Secondary Education Form of the OMSAS application all grades received in the degree credit courses in which they have ever registered. Failure to report courses, programs or grades on the Post-Secondary Education Form will result in the disqualification of the application. All grades are converted by the applicant on the post-secondary residence will be based upon: 1) the province of Ontario; or 2) the rest of Canada and other countries.

GEOGRAPHICAL CONSIDERATION

The geographical status of the applicant 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 based upon: 1) the province of Ontario; or 2) the rest of Canada and other countries. To qualify for Ontario status, an applicant must be a Canadian citizen or permanent resident. If an applicant has lived in the above areas for at least three years in the province of Ontario since the age of 14 by the date of possible entry into the program.

ABORIGINAL APPLICANTS

Applicants who wish to be considered under the Aboriginal (Indian, Inuit or Metis, as recognized in the Constitution Act, 1982) application process will also be required to provide: 1) a letter declaring Aboriginal ancestry and giving specific information about First Nation, treaty, community or organizational affiliation. The letter should request consideration under the alternate process, and should expand on the candidate’s academic and personal background, and reasons and motivation for wishing to become a physician; 2) a letter of recommendation from their First Nation, Band Council, Tribal Council, Treaty, community or organizational affiliation; 3) proof of Aboriginal Ancestry.

ABORIGINAL applicants are required to complete the Undergraduate Medical Program application package as provided by the Ontario Medical School Application Service (OMSAS). Applicants must meet the same minimum academic criteria for admission as set out for the general pool of candidates and have an overall GPA of at least 3.0 as calculated on the OMSAS 4.0 scale.

TRANSCRIPT REQUEST FORMS (TRF)

All transcripts from Canadian universities must be ordered by OMSAS via the TRF. It is required that applicants will request all other transcript materials prior to September 15, 2008 to allow adequate time for processing requests and for receipt at OMSAS by the prescribed deadline. If an applicant is registered at a post-secondary institution and the application is received before the deadline and that registration is not reported on the transcript, the applicant must arrange to have the Registrar of the institution send a Statement of Registration to OMSAS by October 1, 2008. This statement must indicate the in-progress course name(s) and number(s). Evidence to show that applicants requested transcripts and Registrar statements in a timely fashion may be requested by McMaster University. Applicants should retain all receipts and correspondence related to their transcript request.

It is entirely the applicant’s responsibility to ensure that all of the above are received at OMSAS by October 1, 2008. Failure by the applicant to meet these requirements 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/programs attended at any post-secondary institution. This includes community college, CEGEPs, junior colleges, pre-university programs, etc.

Failure by the applicant to comply with the instructions or to meet the deadlines will result in disqualification of the application.
REGISTRAR STATEMENTS

Please note that transcripts do not always report the fall/winter/summer 2008/2009 courses in which applicants are registered. In this case, applicants must arrange to have the Registrar of the institution issue them an International Transcript of Registration and a list of courses to OMSAS by October 1, 2008. When undergraduate courses are in progress at the time of application and these are not reported on the transcript, applicants must submit a Registrar Statement by October 1, 2008. This is particularly important to establish that the applicant will have satisfied the minimum academic requirement by June 2008. A similar rule applies to graduate work in progress by October 1, 2008. Graduate students enrolled in a graduate program at the time of application must arrange for their Supervisor, a member of their Supervisory Committee, or the Chair of the Department to provide a letter indicating they are aware the applicant is intending to apply to medical school. Applicants should arrange for this letter to be received at OMSAS by October 1, 2008.

CREDENTIALING OF NON-CANADIAN GRADES

Applicants, Canadian or non-Canadian, who have not met the minimum course number criterion utilizing their Canadian data and require inclusion of their international education data to meet the minimum course number criterion are required to have their foreign transcript assessed by World Education Services (WES). Credentialing assessment means converting foreign academic credentials into their Ontario educational equivalents. A course-by-course evaluation along with the calculation of an overall GPA is required. Applicants must have their transcripts sent directly from their university to WES and OMSAS and be able to prove (with dated letter and dated post office receipt) that an attempt was made to have the transcript issued by their university and sent to OMSAS by October 1, 2008. Those requiring WES assessment must also ensure that transcripts are received by WES in time for their assessment to reach OMSAS by October 1, 2008.

AUTOBIOGRAPHICAL SUBMISSION

Applicants must provide an Autobiographical Submission which is a description about their preparedness for medicine and suitability for the McMaster Undergraduate Medical Program. The Autobiographical Submission Booklet is included in the on-line application provided by OMSAS.

Detailed instructions with regard to the length and format of responses to the Autobiographical Submission are provided on the OMSAS web site. Those instructions are considered to be part of the Admission Policy and Procedures for the McMaster Undergraduate Medical Program.

Failure to comply with the instructions for the Autobiographical Submission Package will result in disqualification of the application.

ENGLISH LANGUAGE PROFICIENCY

Each student granted admission to McMaster's Undergraduate Medical Program must be proficient in spoken and written English. All application materials must be submitted in English, including the Autobiographical Sketch, otherwise the application will not proceed further in the admissions process.

Applicants whose first language is not English must satisfy by October 1, 2008, at least one of the following conditions:

1. provide evidence that a score of at least 580 on the paper-based TOEFL or 237 on the computer-based test or 86 on the IBT with a minimum score of 20 in each of the four components, or the equivalent on other recognized tests has been achieved (McMaster University code is #0936); or
2. have attended an educational institution, where instruction was in English, for at least three years; or
3. have resided for at least four years in an English-speaking country.

INTERVIEWS

Several hundred applicants will be invited to Hamilton for an interview. Because the interviews involve many other people, applicants must attend on the date and time specified. Attendance at an in-person interview is mandatory in order to be considered for admission. Applicants are responsible for their own travel expenses. The interview portion of the McMaster Multiple Mini Interview (MMI) is primarily composed of a series of ten-minute encounters over a two-hour period. Due to the nature of the MMI, videoconference or telephone interviews are not possible.

SELECTION

All the information resulting from the process described above, as well as the Confidential Assessments from referees, may be reviewed and used in the final selection.

Applicants will be notified in writing by McMaster University of the results of their application. These letters are mailed to applicants on May 15, 2009.

Anyone accepting an offer of admission must provide, within two weeks of acceptance, a cheque in the amount of $1,000 (Canadian), non-refundable, which will subsequently be applied towards tuition.

APPLICATION FOR DEFERRED REGISTRATION

Deferred registration may be granted only under exceptional circumstances. Deferred registration may be requested only by those candidates offered a place in the class on May 15, and who have accepted that offer. The request for deferral must be submitted within two weeks of the offer of admission.

SPECIAL APPLICATIONS

The Special Applicant Pool is on hold this admission cycle.

INTERNATIONAL APPLICATIONS

Interested International applicants may apply through the regular process. International (Visa) students should be aware that admission to the Undergraduate MD Program does not confer eligibility to apply subsequently through the Canadian Residency Matching Service (CaRMS) for a residency training position in Canada. Applicants should check the CaRMS web site (http://www.carm.org) for further information.

ADVANCED STANDING/TRANSFER

The structure of the Undergraduate Program requires that all students begin in Medical Foundation 1. There is no provision for advanced standing or transfer into the program.

UNSUCCESSFUL APPLICANTS

Application files, including transcripts, 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 CaRMS Information Service, and the McMaster Autobiographical Submission for the new admission selection cycle.

RETENTION OF DOCUMENTS

All documentation submitted in support of an application for admission becomes the property of the University and is not returnable. If an applicant is not accepted, or fails to enroll following acceptance, the identifiable documentation will be destroyed at the end of the admissions cycle in keeping with university policy.

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.

In this situation, it is incumbent on students admitted to the MD Program 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 MD Program cannot assume this responsibility.

In 2007-2008, the academic fees (tuition and student supplementary fees) for a student in the McMaster-Undergraduate Medical Program were:

**CANADIAN CITIZENS AND LANDED IMMIGRANTS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>$17,565.80</td>
</tr>
<tr>
<td>II</td>
<td>$16,941.80</td>
</tr>
<tr>
<td>III</td>
<td>$16,340.68</td>
</tr>
</tbody>
</table>

**INTERNATIONAL (VISA) STUDENTS**

All Years $91,684.48

In addition, the cost of books and diagnostic equipment for a year's student was approximately $3,000. 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 Program (OSAP). To be eligible a student must be a Canadian Citizen or permanent resident of Canada and fulfill the following conditions:

1. provide evidence that a score of at least 580 on the paper-based TOEFL or 237 on the computer-based test or 86 on the IBT with a minimum score of 20 in each of the four components, or the equivalent on other recognized tests has been achieved (McMaster University code is #0936); or
2. have attended an educational institution, where instruction was in English, for at least three years; or
3. have resided for at least four years in an English-speaking country.

INTERVIEWS

Several hundred applicants will be invited to Hamilton for an interview. Because the interviews involve many other people, applicants must attend on the date and time specified. Attendance at an in-person interview is mandatory in order to be considered for admission. Applicants are responsible for their own travel expenses. The interview portion of the McMaster Multiple Mini Interview (MMI) is primarily composed of a series of ten-minute encounters over a two-hour period. Due to the nature of the MMI, videoconference or telephone interviews are not possible.
certain requirements for residency in Ontario. Students who are legal residents of other provinces need to check with their respective provincial financial aid programs about eligibility for support prior to acceptance. In addition, the following sources of funding are available to undergraduate medical students:

BURSARIES

There is an extensive bursary program which has been developed by the Faculty of Health Sciences and the central University campus. Bursaries are awarded to students who are Canadian citizens and demonstrate financial need. All bursaries are distributed during the late fall of each year. Bursaries are intended to offset provincial financial assistance and cannot supplement the full cost of medical education.

The following list of bursaries is available to Undergraduate Medical Students who are Canadian citizens. The following bursaries have been generously donated to assist medical students in financial need:

- Adrahes (Archie) Yian Moughal Memorial Bursary
- Altana Pharma Family Medicine Bursary
- Andrew Talalaa Memorial Bursary
- Burlington Medical Society Bursary
- Cholowsky Family Multiple Sclerosis Bursary
- CIBC Medical Bursary in Breast Cancer
- Daniel and Natalie Strub Bursary
- Daniel Giannini Bursary
- Dr. Leo Celini Bursary
- Dr. Leonard E. Levine Bursary
- Gail Henning Menopause Bursary
- Henry and Sylvia Wong Bursary in Medicine
- J.W. Harry Butcher Estate Bursary
- MD Class of '80 Gyan Ahujo Bursary
- Medical Student Opportunity Trust Bursary
- Michael G. DeGroote School of Medicine Bursary
- Ontario Medical Association Student Bursary Fund
- Ragonetti Family Bursary
- Ripley Estate Bursaries
- Ron and Gina Fraser Health Sciences Bursary
- Ronal Pye Bursary
- Ruth Tomlinson Memorial Bursaries
- Sou-Mi Lee Memorial Bursary
- Schenkel Medical Assistance Fund
- Scotiabank Breast Cancer Bursary
- Scotiabank McMaster Medical Bursary
- Scotiabank Pediatric Medical Bursary
- William A. Vanderburgh Estate Bursary

There are many bursaries available from estates and agencies who distinguish themselves and the University by virtue of their scholarship and their contribution to the University community. At the same time, the School has indicated that the terms of reference for such awards should never compromise the spirit of cooperative scholarship which characterizes its MD Program nor replace its priority of financial assistance awards.

A small but growing number of estates and agencies have donated funds to the University and the Undergraduate Medical Program for purposes of recognizing scholastic merit among medical students. In order to meet the requirements of these awards within the spirit of cooperative scholarship, these funds are available to support individual students in their pursuit of specific elective projects or activities.

Students are required to submit an application through the MD Program Office, outlining the nature of their work and the need for funds. For further information, contact Cathy Oudshoorn, (905) 525-9140, ext. 22141.

ACADEMIC AWARDS

The Undergraduate Medical Program has in the past indicated its preference to recognize students who distinguish themselves and the University by virtue of their scholarship and their contribution to the University community. At the same time, the School has indicated that the terms of reference for such awards should never compromise the spirit of cooperative scholarship which characterizes its MD Program nor replace its priority of financial assistance awards.

A small but growing number of estates and agencies have donated funds to the University and the Undergraduate Medical Program for purposes of recognizing scholastic merit among medical students. In order to meet the requirements of these awards within the spirit of cooperative scholarship, these funds are available to support individual students in their pursuit of specific elective projects or activities.

Students are required to submit an application through the MD Program Office, outlining the nature of their work and the need for funds. For further information, contact Cathy Oudshoorn, (905) 525-9140, ext. 22141.

MEDICAL OFFICER TRAINING PLAN

The Department of National Defence administers a program 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 residency. To qualify for enrolment a student must be acceptable without condition in a program in medicine in a Canadian university or in an accredited Residency Program.

Further information on this program and on the career opportunities in medicine in the Canadian Armed Forces may be obtained from local Canadian Forces Recruiting Centres. In Hamilton, the Recruiting Centre is at 55 Bay Street North. Telephone (905) 521-0928.

LOAN FUNDS

The Undergraduate Medical Program administers a small loans program to assist medical students with demonstrable need. Unfortunately, these funds are limited and cannot be relied on to meet a major portion of any student's financial obligations. The sources of these funds include: The William Andrew Vanderburgh Sr. Memorial Fund, the Ripley Estate Loan Fund, the Dr. Elizabeth Bagshaw Fund and the Dr. A. Bolt Memorial Fund.

For further information about loans contact Cathy Oudshoorn, (905) 525-9140, ext. 22141.

B.H.S.C. MIDWIFERY PROGRAM {6501}

WEB ADDRESS: http://www.fhs.mcmaster.ca/midwifery/

Michael G. DeGroote Centre for Learning and Discovery, Room 3103
Ext. 26654

Assistant Dean
E. Hutton/B.N.Sc., M.Sc.N., Ph.D.

Program Administrator
C. Fernie

Program Overview

The Midwifery Education Program at McMaster University leads to a Bachelor of Health Sciences (B.H.Sc.) in Midwifery. The program reflects the philosophy of midwifery in Ontario. Midwifery is potentially one of the most important components of women's health care in Ontario. Midwives' expertise in the care of normal pregnancy and childbirth arises from their understanding of childbearing as a social, cultural and biological process and from their ability to competently exercise clinical skills and decision-making. Midwifery education provides the base for sound professional practice. The educational program is an integral part of the evolution of the profession of midwifery in Ontario and Canada. The program helps create future leaders and teachers. It assures practice and teaching as a continuum so that learning environments become available across Ontario. Midwives, as primary health care providers, should have well-developed interpersonal skills.

They must be competent in areas of health education, counselling and interprofessional collaboration. Applicants to the program will be assessed for their ability to exhibit and further develop these important personal/professional qualities. Midwives provide care, and advice to women during pregnancy, labour and the postpartum period; conduct deliveries and provide care for newborn babies. The Midwifery Education Program is a collaborative venture shared by McMaster, Ryerson and Laurentian Universities.

Curriculum

The four year program which spans nine terms, includes courses from basic sciences, social sciences, health sciences, women's studies and electives, in addition to clinical courses. A variety of course formats include distance learning through webconferencing and print-based self-study courses. Teaching methods include lecture format, small group tutorials, self-directed activities and practical learning experiences.

INTENSIVES

Intensives provide the opportunity for the students to group together for several days for workshops/clinical skills sessions. All intensives are held at McMaster University and generally last one week. In Level IV, the intensive session includes students from all three institutions, intensives are part of the curriculum and therefore, attendance is mandatory.

CLINICAL COURSES

Clinical courses consist of a clinical placement and concurrent problem-based weekly tutorials. Students are assigned to a midwifery practice for an extended period of time to ensure continuity of care to expectant mothers and supervision from a clinical preceptor. Throughout the program, students will be placed in more than one midwifery practice and will gain clinical experience in a
hospital setting and with an obstetrician. Efforts are made to assist students in being assigned to the clinical practice of their choice, however, due to limited placements, students should expect to relocate to other clinical placements. Travel and living expenses are the responsibility of the student.

REQUIREMENTS

133 units total (Levels I to IV)

LEVEL I: 31 UNITS

6 units HTH SCI 1D06*
6 units HTH SCI 1C06
6 units WOMEN ST 1A03*, 1A03* or 1A03
4 units HTH SCI 3F04 (Term 2)*
3 units MIDWIF 1D03 (Term 1)*
3 units HTH SCI 1J03* (Term 1)
3 units Electives from the Faculties of Health Sciences, Humanities, or Social Sciences (Term 2)*

LEVEL II: 30 UNITS

3 units HTH SCI 2M03 (Term 1)
15 units MIDWIF 2H15 (Term 2)
3 units MIDWIF 2P03 (Term 1)
6 units MIDWIF 2G06 (Term 1)
3 units Electives from the Faculties of Health Sciences, Humanities, Social Sciences (Term I)*

LEVEL III: 42 UNITS (2008-2009 ONLY)

15 units MIDWIF 3G15 (Term 1)
9 units MIDWIF 3A09 (Term 2)
3 units MIDWIF 3P03 (Term 1)
15 units MIDWIF 3H15 (Spring/Summer) (Term 3)

LEVEL III: 45 UNITS (EFFECTIVE 2009-2010)

3 units MIDWIF 3I03 (Term 1)
6 units MIDWIF 3J06 (Term 1 or 2)
6 units MIDWIF 3K06 (Term 1 or 2)
9 units MIDWIF 3A09 (Term 1 or 2)
3 units MIDWIF 3P03 (Term 1 or 2)
3 units MIDWIF 3L03 (Term 3)
15 units MIDWIF 3H15 (Spring/Summer) (Term 3)

LEVEL IV: 30 UNITS

15 units MIDWIF 4A15 (Term 1)
15 units MIDWIF 4B15 (Term 2)

*Transfer credit may be available.

Admission Procedures and Requirements

Admission into the Midwifery Education Program is reserved for candidates who meet all requirements and who satisfy the academic regulations of the university. It is recommended that applicants have completed at least one year of university studies prior to application. All certified transcripts from secondary and post secondary institutions previously attended must be forwarded to the Office of the Registrar by February 1. All appropriate transcripts must be received by the Office of the Registrar by February 1 of the year in which they are applying. All appropriate transcripts from secondary and post secondary education must be submitted to the Office of the Registrar by February 1.

The purpose of this program is to provide internationally educated midwives with assessment and education which will prepare them to register as midwives in Ontario.

Aboriginal Applicants

Applicants who wish to be considered under the Aboriginal (Indian, Inuit or Metis, as recognized in the Constitution Act, 1982) application process will also be required to provide a letter of recommendation from their First Nation, Band Council, Tribal Council, Treaty, community or organizational affiliation.

Aboriginal applicants will also be required to apply to the Ontario Universities Application Centre (http://www.ouac.on.ca) and complete a Midwifery on-line application form by February 1 of the year in which they are applying. All appropriate transcripts from secondary and post secondary education must be submitted to the Office of the Registrar by February 1.

Applicants must meet the same minimum academic criteria for admission as set out for the general pool of candidates.

Transfer Credit

Students with previous university education may be eligible for transfer credits for non-clinical courses in Levels I and II. Transfer credits will be determined on an individual basis.

Selection Procedure

The Midwifery Education Program has a limited number of placements and the admission process is very competitive. The admission requirements stated are minimum requirements. Preference will be given to applicants with the best qualifications. The actual standing required for admission in recent years has been an average in the low to mid 80s. The program has a two step selection procedure:

1. Assessment of academic eligibility.
2. Admission interview — 60 applicants will be invited to Hamilton for an interview. The interview process will consist of ten, ten-minute interviews. Candidates must attend on the date and at the time specified.

Applicants must be successful at stage one to be considered for stage two.

Offers of admission will be made following the interview process. Offers based on interim grades will be conditional upon maintaining satisfactory performance on final grades.

Prior/Current College Diploma Studies

Applicants with prior or current college diploma studies from accredited Canadian colleges must have successfully completed:

1. One of Grade 12 English U;
2. One of Grade 12 Biology U or Chemistry U (both are recommended);
3. One Grade 12 U or M course in Social Science (Geography, History, Law, Psychology, Sociology); under the Ontario Secondary School curriculum with a minimum grade of 70% in each course. In addition, the applicant’s overall average from the ten best, most recent coursework, including the three required subjects, must be a minimum of 70%.

Prior/Current University Students

Applicants with prior or current university studies, at the time of application must have Grade 12 U or M courses from high school or equivalent university courses in three of the required subject areas noted above. Students must have 70% in each of the three required subjects. In addition, the applicant’s overall average from the ten best most recent course work must be a minimum of 70%.

Mature Students

Mature students must have completed the three required subjects as noted in the basic requirements, and have obtained a minimum grade of 70% in each course. Students who do not meet the basic academic requirements as listed below are advised to take Grade 12 U or M courses or introductory university level courses. The two years absence from formal studies clause may be waived for those who take Grade 12 U or M course upgrading. The following University requirements for Mature Students also apply. A student must:

1. have not attended secondary school or college on a full-time basis for at least two years;
2. have never attended university;

Prior Midwifery Education or Experience

For applicants with prior Midwifery Education or Experience, Ryerson University, through the division of Continuing Education, offers the International Midwifery Pre-Registration Program. The purpose of this program is to provide internationally educated midwives with assessment and education which will prepare them to register as midwives in Ontario.
UNSUCCESSFUL APPLICANTS
Applications are not held over from one year to another. If an unsuccessful applicant wishes to reapply to the Midwifery Education Program, a new application, including transcripts and supplementary materials must be submitted.

APPLICATION FOR DEFERRED REGISTRATION
Deferred registrations are not normally granted in the Midwifery Education Program.

APPLICATION DEADLINE
Submission of completed application forms to the Ontario Universities’ Application Centre and an on-line application to the program must be received by the University no later than February 1 of the year in which registration is expected. All certified transcripts from secondary and post secondary education previously attended must be forwarded to the Office of the Registrar and received by February 1. Applications received after February 1 will not be considered.

Financial Information
In 2007-2008 the tuition fees for a student in Level I of the Midwifery Education Program were $4,848.00 for an eight month academic term. Supplementary fees are estimated at $350.00 per year.

STUDENT ACADEMIC RESPONSIBILITY
You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES
All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses, and that a student have their program study not extended. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students from particular programs or Faculties. All students are encouraged to register as soon as possible.

In addition to meeting the General Academic Regulations of the University, students enrolled in the Midwifery Education Program will be subject to the following program regulations.

The Midwifery Education Program reserves the right, at any point during the term, to remove a student from a clinical placement or the laboratory setting if the student exhibits unsafe clinical practice or behaviour that places clients or others at risk and/or violates the Midwifery Act, 1991 and the Regulated Health Professions Act, 1991.

REGULATORY REQUIREMENTS
Regulatory requirements are subject to change from time to time.

In Good Standing
A student is considered to be in Good Standing when all of the following criteria are met. The student must:

1. achieve a minimum grade of C- in HTH SCI 1C06; and a minimum grade of B- in MIDWIF 1D03 and 2G06;
2. achieve all graded courses with a grade of C- or better;
3. achieve a minimum grade of 6.0 in courses and achieve a Pass/Satisfactory performance in all clinical courses at each review to continue in Good Standing in the program.

GOOD STANDING
A student is considered to be in Good Standing when all of the following criteria are met. The student must:

1. achieve a Cumulative Average (CA) of at least 6.0 in all graded courses;
2. achieve a minimum grade of C- in HTH SCI 1C06; and a minimum grade of B- in MIDWIF 1D03 and 2G06;
3. achieve a minimum grade of C- in HTH SCI 1C06, 1J03, 2M03, 3C04 and MIDWIF 2F03, with the exception that a grade of D+ or D is acceptable in one of those courses;
4. achieve a Pass/Satisfactory performance in all clinical courses;
5. receive a passing grade (minimum D-) in graded courses other than those stated in 2. and 3. above.

PROBATION
A student will be placed on probation if any of the following criteria is met. The student must:

1. obtains a CA less than 6.0 in graded courses;
2. obtains a grade of less than C- in HTH SCI 1D06 or a grade of less than B- in MIDWIF 1D03 and 2G06;
3. obtains a grade of less than C- in more than one of HTH SCI 1C06, 1J03, 2M03, 3C04 and MIDWIF 2F03;
4. receives an F or a Fail/Unsatisfactory in any clinical course;
5. fails any one course.

If a student receives a CA of less than 6.0 (5.5 to 5.9), he/she may remain in the program, but will be placed on program probation for one reviewing period. A student may be on program probation only once. A student on probation at the completion of Level II, Fall term, must undertake remedial course work and remove the probationary status before proceeding to MIDWIF 2H15. If a student receives a CA of 3.5 - 5.4, he/she may transfer to another program for which he/she qualifies.

A student must obtain a minimum pass grade (D-) except in courses with a higher minimum grade requirement (see item 2. under Good Standing above) when a course is repeated and receive an overall CA of 6.0 at the completion of a probation period. Planned course work for any student on probation must be approved by the Academic Review Committee.

REQUIRED TO WITHDRAW
A student will be required to withdraw from the program if any of the following criteria are met. The student must:

1. obtains a Cumulative Average (CA) of less than 6.0 at the end of a probation period;
2. fails two courses in an academic year;
3. fails any two clinical courses at any time throughout the program;
4. fails the second attempt at a course or receives a grade in the second attempt below B- for HTH SCI 1C06, 1H03, 2M03, 3C04, MIDWIF 2F03 or below B- for MIDWIF 1D03, 2G03 or 2G06;
5. fails to complete program requirements for graduation within the maximum allowable time (five years).

DEANS’ HONOUR LIST, GRADUATION WITH DISTINCTION, PROVOST’S HONOUR ROLL
Students will be evaluated for standing on the Deans’ Honour List, Graduation with Distinction and the Provost’s Honour Roll only upon completion of the program. Students will be named to the Deans’ Honour List and will Graduate with Distinction if they receive no failing, provisional or unsatisfactory grades in any courses throughout their program and achieve a CA of 9.5, on graded courses taken throughout the program.

For the Provost’s Honour Roll, students will be assessed if they have a CA of 12.0 and have not received a failing, provisional or unsatisfactory grade in any course throughout the program.

GRADUATION REQUIREMENTS
A student is eligible for graduation when all of the following criteria are met. The student must:

1. complete all required courses, including electives, with a CA of at least 6.0 including a minimum grade of C- in HTH SCI 1D06 and a minimum grade of B- in MIDWIF 1D03 and 2G03 or 2G06;
2. complete HTH SCI 1C06, 1J03, 2M03, 3C04, MIDWIF 2F03 with a minimum grade of C- with the exception of a D+ or D in one of those courses;
3. complete all clinical courses with a Pass/Satisfactory grade;
4. complete all courses for the degree within five years.

The practice of midwifery is regulated by the College of Midwives under the Midwifery Act, 1991 and the Regulated Health Professions Act, 1991.

The Midwifery Education Program monitors and documents students’ clinical experience in order that students meet minimum practice requirements to be eligible for registration to practice. Graduation from the Midwifery Education Program does not guarantee registration with the College of Midwives of Ontario. All applicants to the College must meet additional registration requirements. New graduates are required to work in an established practice for their first year of registration. Regulatory requirements are subject to change from time to time.
THE SCHOOL OF NURSING

WEB ADDRESS: http://www.fhs.mcmaster.ca/nursing

Assistant Dean, Undergraduate Nursing Education
J. Landeen/B.Sc.N., M.Ed., Ph.D., R.N.

Program Administrator
A. Cholewa/B.A.

Coordinator of Studies
O. Lunyk Child/B.Sc.N., M.Sc.N., R.N.

Student Advisors
E. Reeves (McMaster site)
M. Davis (Mohawk site)
J. Kehoe (Conestoga site)

In 1942, McMaster University began its first program in Nursing, a cooperative effort between the University and the Hamilton General Hospital. Since the establishment of McMaster University’s School of Nursing in 1996, students have received a Bachelor of Science in Nursing degree upon graduation. The program has functioned completely under the supervision of the University, while enjoying 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. Program was introduced. In 2005, the Post Diploma Registered Practical Nurse Stream began. These categories of admission were created to provide Diploma Registered Nurses and Diploma Registered Practical Nurses with the opportunity to work towards a B.Sc.N. degree. In 2007, the Basic-Accelerated Stream was implemented to allow students with significant university preparation in the sciences to pursue baccalaureate nursing education in a shorter time frame.

McMaster University is one of ten Ontario universities collaborating with the Council of Ontario University Programs in Nursing to offer a Primary Health Care Nurse Practitioner Program. The program, which commenced in September 1995, enabled diploma-prepared Nursing students to obtain a B.Sc.N. degree and a Nurse Practitioner Certificate. The final intake for diploma-prepared nurses was September 2004. Those students who hold a Nursing Baccalaureate degree receive the Nurse Practitioner certificate upon completion of the program.

In 1994, the first Ph.D. candidates entered the Clinical Health Sciences (Nursing) graduate program 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 Nursing graduate program should be directed to the Graduate Programs Office, HSC-3N10, (905) 525-9140, ext. 22983.

Information Sessions for high school students are hosted by the Office of the Registrar at either Mohawk or Conestoga College for additional information. In 2007 the B.Sc.N. Program and the Schools of Nursing at McMaster, Mohawk and Conestoga all received seven year accreditation from the Canada Association of Schools of Nursing, the highest level of accreditation possible.

The B.Sc.N. Program

The B.Sc.N. Program promotes the development of nursing as a caring, client-centered, scientific and humanistic profession. With an emphasis on problem-based, small group, self-directed learning, the program 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. Program 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. Program, they will find an increasing emphasis on interpersonal and communication 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 a life-long activity in an environment conducive to openness and sharing among faculty and students. Emphasis on small group tutorials, problem-based learning 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 and outpatient clinical practice experiences.

Evaluation by self, peers and faculty is part of an ongoing assessment process of the achievement of clinical, course and program objectives.

GOALS

Graduates of the McMaster University B.Sc.N. Program will be prepared to provide competent professional practice in a variety of health care contexts and with diverse clients across the lifespan (individual, family, group, communities, populations) who have stable and unstable outcomes and multi-factorial influences (internal and external) on their health status. Graduates will:

| 1. Practice nursing within a primary health care perspective and an ethic of professional caring. |
| 2. Demonstrate sensitivity to client diversity and recognize the influence this has on professional and personal meaning, clients’ health and healing practices and access to health care. |
| 3. Demonstrate ability to establish, maintain and terminate therapeutic relationships with clients. |
| 4. Demonstrate critical thinking in the assessment, planning and evaluation of client care through the synthesis and application of: validated knowledge and theories from nursing, the humanities, biological, psychological, social and public health sciences knowledge of the health care system knowledge of the client context knowledge of self. |
| 5. Engage in effective decision-making to set goals and establish priorities, going beyond the application of general rules to the application of unique combinations of principles and concepts. |
| 6. Provide safe, ethical, competent care within established professional standards and guidelines and relevant legislation. |
| 7. Assess, plan and evaluate programs of care with clients and an interprofessional health care team and with partners from multiple sectors (e.g. education, social services, politics, etc.). |
| 8. Demonstrate leadership and entry level competencies in managing a health care team, managing resources and coordinating health care. |
| 9. Access and manage relevant information, required for professional caring, through the effective use of information technology. |
| 10. Contribute to the body of nursing knowledge through demonstrating an inquiring approach to practice, identifying research questions, applying research findings, participating in research activities, and sharing research results with others. |

The Collaborative B.Sc.N. (D) and (E) Streams

72. FACULTY OF HEALTH SCIENCES

Access and manage relevant information, required for professional caring, through the effective use of information technology. 

The Collaborative B.Sc.N. (D) and (E) Streams

Assess, plan and evaluate programs of care with clients and an interprofessional health care team and with partners from multiple sectors (e.g. education, social services, politics, etc.). 

Demonstrate leadership and entry level competencies in managing a health care team, managing resources and coordinating health care. 

Contribute to the body of nursing knowledge through demonstrating an inquiring approach to practice, identifying research questions, applying research findings, participating in research activities, and sharing research results with others.
Applications: Undergraduate Admissions Office
Ontario Universities’ Application Centre (OUAC)
170 Research Lane
Guelph, ON, N1G 5E2
http://www.ouac.on.ca

Admissions Coordinator (Nursing)
McMaster University, HSC-2J34
1200 Main Street West
Hamilton, ON, L8N 3S5

Applicants must contact the Ontario College Application Services (OCAS) for specific directions.

Applicants apply online to the Ontario Universities’ Application Centre (OUAC) at http://www.ouac.on.ca. Applicants must also have official transcripts forwarded from their secondary school to the Office of the Registrar by May 1.

Ontario Universities’ Application Centre (OUAC)
170 Research Lane
Guelph, ON, N1G 5E2
http://www.ouac.on.ca

Applicants apply online to the Ontario Universities’ Application Centre (OUAC) at http://www.ouac.on.ca. They must download an application package from http://www.fhs.mcmaster.ca/nursing/ or contact the Admissions Coordinator (Nursing). Applications for all studies beginning in September must be received by February 15.

Ontario Universities’ Application Centre (OUAC)
170 Research Lane
Guelph, ON, N1G 5E2
http://www.ouac.on.ca

Admissions Coordinator (Nursing)
McMaster University, HSC-2J34
1200 Main Street West
Hamilton, ON, L8N 3S5

Any applicant to the (F) Stream who is a current or returning McMaster student should contact the Admissions Coordinator (Nursing) for specific directions.

Collaborative B.Sc.N. Program (D) and (E) Streams
Mohawk and Conestoga Sites

Applicants must contact the Ontario College Application Services (OCAS) for an application package. Applicants should also forward all official academic documentation, including all university transcripts if applicable, to the College they wish to attend.

Ontario College Application Services (OCAS)
370 Speedvale Ave. West
P.O. Box 810
Guelph, ON N1H 6M4
http://www.ucas.on.ca

Applicants for Basic-Accelerated (F) Stream

Applicants apply online to the Ontario Universities’ Application Centre (OUAC) at http://www.ouac.on.ca. The Supplementary Application must be downloaded from http://www.fhs.mcmaster.ca/nursing/ or contact the Admissions Coordinator (Nursing) (See above.). Applications for all studies beginning in September must be received by February 15.

Admissions Requirements

NON ACADEMIC REQUIREMENTS FOR ALL STREAMS

The B.Sc.N. Program is committed to ensuring that Standards of Practice in Nursing are adhered to by requiring students to maintain their certification in CPR, seek a police records check and comply with surveillance for infectious diseases.

IMMUNIZATION

The Ontario Public Hospitals Act requires all students working in a hospital setting to meet certain criteria related to surveillance for infectious diseases. Detailed medical information, including a record of completion of required immunizations, will be required upon acceptance and annually thereafter.

POLICE RECORDS CHECK

During the nursing program, all nursing students will work with vulnerable populations. As a result, in order to protect these vulnerable people from potential harm, the Council of Ontario University Programs in Nursing recommends and many clinical agencies require that all nursing students provide confirmation of the absence of a criminal conviction or outstanding criminal charges. The Police Records Check must include Vulnerable Sector Screening (VSS).
All students are required to have a satisfactory Police Record Check completed annually. Students may be required to produce documentation of this at some clinical placements. Students may elect to use the services of the Ontario Education Services Corporation (OESC) website (http://www.iesc-cseo.org) to request a Police Record Check. Expenses for the Police Records Check are the responsibility of the student. Registered students who have been convicted of an offense under the Criminal Code (Canada) for which they have not been pardoned may be denied the opportunity to enter clinical placement.

**CPR CERTIFICATION**

Students are required to provide evidence of a valid certificate in cardiopulmonary resuscitation at the Basic Cardiac Life Support for Health Care Provider level with training in AED. Please note that for health care providers, certification is valid for one year from the date of the course. As a result, annual re-certification is mandatory. Courses are readily available in most communities.

A student who plans to enter the Undergraduate Nursing Program may qualify under one of the categories described below.

**I. BASIC (A) STREAM**

**Applicants Directly from Ontario Secondary Schools**

Normally to be considered in this category, applicants to the program must:

1. **apply within two years of completion of the Grade 12 U or M course requirements and**

2. **not have attended any post secondary educational program during the two-year period.**

The selection method for Ontario secondary school applicants is by academic qualifications. Early conditional offers of admission are made in late March or early April based on the following:

**a)** six appropriate midterm/interim Grade 12 U or M course grades, or

**b)** at least three final Grade 12 U or M course grades plus enrolment in the appropriate three additional Grade 12 U or M courses.

Offers based on interim grades will be conditional upon maintaining satisfactory performance on final grades.

**REQUIREMENTS**

The following are the minimum Grade 12 U and M requirements under the OSS curriculum:

1. **English U;**

2. ** Biology U;**

3. **Chemistry U;**

4. **One of Advanced Functions U, Calculus and Vectors U or Mathematics of Data Management U;**

5. **Two additional Grade 12 U or M courses to total six.**

**Applicants with Qualifications Equivalent to Ontario Secondary School**

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**

For applicants not applying directly from Secondary School or without the necessary Grade 12 U or M or equivalents, selection is based on academic qualifications and a rating obtained on a questionnaire. 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. Applicants are responsible for their own travel expenses. Failure to attend the interview will result in cancellation of the application.

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 with a University Degree or with University Degree Credits**

Applicants normally should:

1. achieve a Cumulative Average of at least B- in all university degree credit courses taken. A minimum of 12 units or equivalents is required. These courses may be taken as a full-time or part-time student. University correspondence degree courses are acceptable.)

2. apply online to OUAC at http://www.ouac.on.ca using Form 105D and pay the required fees by February 15;

3. submit all secondary and post-secondary transcripts to the Office of the Registrar at McMaster University by February 15.

4. submit the completed supplementary application to the Admissions Coordinator, B.Sc.N. Program, McMaster University 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 program. Applicants with significant university science courses should refer to admission requirements for the Basic-Accelerated (F) Stream.

**Applicants From a Pre Health Sciences Program**

Applicants who have successfully completed a pre health sciences program at an Ontario College of Applied Arts and Technology (CAAT) will be considered for admission to Level I of the B.Sc.N. program at all sites. Applicants who are currently registered in a pre health sciences program may be given a conditional offer of admission based upon interim grades. The offer of admission will be withdrawn if the applicant does not complete the full program or does not meet the required admission cumulative average.

Applicants normally must:

1. complete a full pre health sciences program at any Ontario College of Applied Arts and Technology (CAAT) including at least two terms (two credits) of Biology, Chemistry, Mathematics and English. Applicants will not be considered from applicants who possess one credit only in the required subjects;

2. achieve a cumulative average in the pre health sciences program that meets the minimum cut-off average of Ontario secondary school applicants to the program;

3. apply online to OUAC at http://www.ouac.on.ca using Form 105D and pay the required fees by last day of February 15;

4. submit all secondary and post-secondary transcripts to the Office of the Registrar at McMaster University by February 15;

5. submit the completed supplementary application to the Admissions Coordinator, B.Sc.N. Program, McMaster University by February 15.

**Note:** Transfer credit will not be granted for any pre health sciences courses.

**Applicants From Other Degree Nursing Programs**

Applicants who are enrolled in a Nursing degree program at a university or in a college/university consortium may apply to transfer to the McMaster site to earn a McMaster B.Sc.N. degree. Applicants will not be considered for studies above Level II. Availability of space and placement in the program will be determined by the Admissions Committee and all potential applicants should contact the Admissions Coordinator (Nursing) to determine if there is space for transfer applicants.

Applicants must:

1. be currently enrolled in or have completed Level I of a B.Sc.N. Program with an overall Cumulative Average of at least B- (70%) and at least a B- average in nursing and science courses;

2. achieve a satisfactory score on a questionnaire comprised of two questions found on the Supplementary Application at http://www.fhs.mcmaster.ca/nursing/. Applications for transfer into the B.Sc.N. Program to commence studies in September must be received by the Ontario Universities Application Centre (OUAC) in Guelph no later than June 30. Applicants must submit the following to the Admissions Coordinator by June 30 (See address above.):

3. one official transcript for all university work taken;

4. two (4) copies of the response to the questionnaire found on the Supplementary Application at http://www.fhs.mcmaster.ca/nursing/;

5. an official letter from the Dean/Director of the program in which the applicant is currently enrolled stating that the applicant is in good standing in that program;

6. course descriptions and outlines for all nursing and science courses for assessment of advanced credit.

**II. POST DIPLOMA R.N. (B) STREAM**

**LAST INTAKE IS SEPTEMBER 2008**

Selection is based on academic qualifications and the rating obtained on a questionnaire. The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni, and the community.
Applicants will be informed of the admission decision by mid-June.

Applicants 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. have an Ontario diploma in nursing or the equivalent with a minimum overall average of 2.8 (B-).
3. apply online at http://www.ouac.on.ca using Form 105D to OUAC and pay the required fees no later than February 15;
4. submit all secondary and post-secondary transcripts to the Office of the Registrar at McMaster University by February 15;
5. submit a photocopy of the current College of Nurses of Ontario annual registration payment card to the Office of the Registrar at McMaster University by February 15;
6. submit the completed supplementary application to the Admissions Coordinator, B.Sc.N. Program, McMaster University 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 program.

Applicants From Other Degree Nursing Programs
Applicants enrolled in a Nursing degree program at another university who wish to apply to transfer to the McMaster (B) Stream should contact the Admissions Coordinator for (See address above.) for information.

III. COLLABORATIVE B.Sc.N. PROGRAM (D) STREAM

MOWAHK AND CONESTOGA SITES

Admission requirements for students applying to the Mohawk and Conestoga sites of the McMaster B.Sc.N. program are equivalent to those for students applying to the B.Sc.N. Basic (A) Stream.

Applicants Directly from Ontario Secondary Schools

Normally to be considered in this category, applicants to the program must:
1. apply within two years of completion of the Grade 12 U or M requirements and
2. not have attended any post secondary educational program during the two-year period.

REQUIREMENTS

The following are the minimum Grade 12 U and M requirements under the OSS curriculum:
1. English U;
2. Biology U;
3. Chemistry U;
4. One of Advanced Functions U, Calculus and Vectors U or Mathematics of Data Management U;
5. Two additional Grade 12 U or M courses to total six.

Applicants with Qualifications Equivalent to Ontario Secondary School

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

For applicants not applying directly from secondary school or without the necessary Grade 12 U or M course equivalents, selection is based on academic qualifications. 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.

Applicants With a University Degree or with University Degree Credits

Applicants should:
1. achieve a Cumulative Average of at least B- in all university degree courses taken. A minimum of 12 units or equivalent are required. (These courses may be taken as a full-time or part-time student. University correspondence degree courses are acceptable.) All university transcripts must be submitted to the College. Failure to do so will result in withdrawal of the offer of admission. University degree credit courses completed by December 31 of the year of admission will be assessed for advanced credit by the Coordinator of Studies Office following admission to the program.
2. apply to Ontario College Application Services (OCAS) along with the required fees by February 1. All applications must be received by OCAS on or before this date to be given equal consideration by the colleges. Please note that February 1 is not a deadline for submitting applications as OCAS will continue to process applications received after this date. You are encouraged, however, to submit your application as early as possible, especially in the case of oversubscribed programs where there are often enough applications from qualified applicants received by the equal consideration date (February 1) to fill the program.

Note: Transfer credit will not be granted for any pre health sciences courses.

Applicants From Other Degree Nursing Programs

Applicants who are enrolled in a Nursing degree program at another university or in another college/university consortium may apply to transfer to the Mohawk or Conestoga site to earn a McMaster B.Sc.N. degree. Applicants will not be considered for studies above Level II. The Post Diploma B.Sc.N. and the Basic Academic Credit Streams are not available at the College sites. Availability of space and placement in the program will be determined by the level Coordinator in consultation with course planners.

All potential applicants should contact the appropriate Department to determine if there is space for transfer applicants. For Mohawk, contact the Associate Dean, B.Sc.N. Program; for Conestoga, contact the Chair, Nursing Program.

Applicants must:
1. be currently enrolled in or have completed Level I of a B.Sc.N. Program with an overall Cumulative Average of at least B- (70%) and at least a B- average in nursing and science courses.
2. achieve a satisfactory score on a questionnaire comprised of two questions found on the Supplementary Application at http://www.fhs.mcmaster.ca/nursing/.

Note: Applicants do not complete the Supplementary Application form.

Applications for transfer into the B.Sc.N. Program to commence studies in September must be received by the Ontario Colleges Application Service (OCAS) in Guelph no later than May 15.

Applications must submit the following to the Registrar's Office at the appropriate College by May 15:
1. official transcripts of all university work taken;
2. an official letter from the Dean/Director of the program in which the applicant is currently enrolled stating that the applicant is in good standing in that program;
3. course descriptions and outlines for all nursing and science courses for assessment of advanced credit.

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 program.
PART-TIME STUDENTS

It is possible to complete the B.Sc.N. Program on a part-time basis. University and program 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.

UNSUCCESSFUL APPLICANTS ((A), (B), (E) AND (F) STREAMS)

Applications are not held over from one year to another. An unsuccessful applicant may reapply to the B.Sc.N. Program by submitting a new application, including supporting documentation.

APPLICATION FOR DEFERRED REGISTRATION

Deferred registration is granted only under exceptional circumstances to those candidates who have been admitted and have accepted the offer. Registration 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.

Curriculum for the B.Sc.N. Program

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 program. 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 timetable constraints, courses must be taken in the level indicated in the curriculum.

REQUIREMENTS FOR STUDENTS WHO ENTER IN 2008

ELECTIVES

Twenty-seven 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. Normally a maximum of nine units of electives may be selected from Nursing and Health Sciences elective courses. For some courses, the amount of duplication of required content will preclude their being used for elective credit in the B.Sc.N. Program. Basic (A) Stream students are eligible to enrol in the following COLLAB elective courses: COLLAB 2F03 (Mohawk site) and COLLAB 2K03 (Conestoga site). Please see COLLAB courses in the Course Listings section of this Calendar under Nursing Consortium (D) Stream for more information.

LEVEL I: 32 UNITS

(UNITS GRADED: 32)

9 units HTH SCI 1AA3, 1H06
8 units NURSING 1F04, 1G04
6 units PSYCH 1X03, 1XX3 (or 1A03, 1AA3)
9 units Electives
1 course NURSING 1A00

LEVEL II: 30 UNITS

(UNITS GRADED: 24; UNITS PASS/Fail: 6)

9 units HTH SCI 2H03, 2HF3, 2FR3
12 units NURSING 2L03, 2M03, 2N03, 2P03
3 units SOC SCI 2J03
1 course Electives

LEVEL III: 32 UNITS

(UNITS GRADED: 26; UNITS PASS/Fail: 6)

7 units HTH SCI 3BB3, 3C04
19 units NURSING 3QQ3, 3S03, 3T03, 3U02, 3X04, 3Y04
6 units Electives

LEVEL IV: 30 UNITS

(UNITS GRADED: 16; UNITS PASS/Fail: 14)

2 units HTH SCI 4L02
22 units NURSING 4J07, 4K07, 4P04, 4Q04,
6 units Electives

TOTAL UNITS: 124
REQUIREMENTS FOR STUDENTS WHO ENTERED IN 2007 OR PRIOR

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. Normally a maximum of nine units of electives may be selected from Nurs-
ing and Health Sciences elective courses. For some courses, the amount of duplication of required content will preclude their
being used for elective credit in the B.Sc.N. Program.

Basic (A) Stream students are eligible to enrol in the following
COLLAB elective courses: COLLAB 2F03 (Mohawk site) and
COLLAB 2K03 (Conestoga site). Please see COLLAB courses in the Course Listings section of this Calendar under Nursing
Consortium (D) Stream for more information.

REQUIREMENTS

LEVEL I: 32 UNITS

(UNITS GRADED: 32)
12 units HTH SCI 1AA3, 1BB3, 1H06
8 units NURSING 1F04, 1G04
6 units PSYCH 1A03, 1AA3
6 units Electives
1 course NURSING 1A00

LEVEL II: 30 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 6)
6 units HTH SCI 2H03, 2HH3
15 units NURSING 2L03, 2M03, 2N03, 2P03, 2Q03
9 units Electives

LEVEL III: 32 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 8)
7 units HTH SCI 3B03, 3C04
16 units NURSING 3S03, 3T03, 3U02, 3X04, 3Y04
9 units Electives

LEVEL IV: 30 UNITS

(UNITS GRADED: 18; UNITS PASS/FAIL: 14)
2 units HTH SCI 4L02
22 units NURSING 4J07, 4K07, 4P04, 4Q04
6 units Electives

TOTAL UNITS: 124

REGISTRATION TO PRACTISE NURSING

On receiving the B.Sc.N. degree after successful completion of the Program, graduates are eligible to write the Canadian Registered Nurse Examination which is administered by the College of Nurses of Ontario (CNO). Application to write the examination is made through Collaborative (D) Stream students as specified in prerequisite statements. If you have any questions related to the Regulated Health Professions Act, please contact the College of Nurses of Ontario directly at 1-800-387-5526.

DIPLOMA R.N. (B) STREAM

(LAST INTAKE IS SEPTEMBER 2008)

The program of study for Diploma Registered Nurses is inte-
grated with existing course offerings. The practice of nursing in
diverse clinical settings will occur in all academic terms. The
curriculum is designed to build on the existing knowledge and
skills of the students, to prevent duplication of learning experi-
ences and to prepare the students to function in an expanded
role in community and institutional settings.

The curriculum is planned for five academic terms if taken on a
full-time basis. If taken on a part-time basis, students are nor-
mally allowed six years after the first Nursing course to complete
the program requirements.

ELECTIVES

Twenty-four 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. Program.

REQUIREMENTS

ADVANCED CREDIT: 42 UNITS

LEVEL III: 45 UNITS

(UNITS GRADED: 45)

TERMS 1 AND 2: 33 UNITS
21 units HTH SCI 1CC7, 2C07, 3B03 (or 2RR3), 3C04
12 units NURSING 3M03, 3N03, 3T03, 3VV3
1 course NURSING 1A00

SPRING TERM: 6 UNITS
6 units Electives

SUMMER TERM: 6 UNITS
6 units Electives

LEVEL IV: 34 UNITS

(UNITS GRADED: 22; UNITS PASS/FAIL: 12)
TERMS 1 AND 2: 34 UNITS
2 units HTH SCI 4L02
20 units NURSING 4P04, 4Q04, 4S06, 4T06
12 units Electives

TOTAL UNITS: 121

COLLABORATIVE B.Sc.N. (D) STREAM

CONESTOGA SITE {6385}

MOHAWK SITE {6386}

The curriculum followed at both sites is equivalent to the cur-
riculum for the B.Sc.N. Basic (A) Stream.

ELECTIVES

The specified Psychology component and 15 units of elective
courses are college-based courses which have been assigned the McMaster designation COLLAB and are open only to Nursing
students at the Mohawk and Conestoga sites as specified in prerequisite statements. For course descriptions, please see COLLAB courses in the Course Listings section of this Calendar under Nursing Consortium (D) Stream.

REQUIREMENTS FOR STUDENTS WHO ENTER IN 2008

Mohawk and Conestoga students must take 15 units of COLLAB electives and 12 units of McMaster electives. Enrolment in some
COLLAB courses may be limited.

Twenty-seven units of electives are to be selected from disci-
plines of the student’s choice, of which a minimum of 12 units are to be chosen from courses designated as Level II or above.
Normally a maximum of nine units of electives may be selected from Nursing and Health Sciences elective courses. For some
courses, the amount of duplication of required content will preclude their being used for elective credit in the B.Sc.N. Program.

NOTE

Collaborative (D) Stream students complete COLLAB 1A03 and
1B03 (Mohawk Site) or COLLAB 1C03 and 1D03 (Conestoga Site) in place of PSYCH 1X03 and 1XX3 (or 1A03 and 1A3A).

LEVEL I: 32 UNITS

(UNITS GRADED: 32)
9 units HTH SCI 1AA3, 1H06
8 units NURSING 1F04, 1G04
6 units PSYCH 1X03, 1XX3 (or 1A03, 1A3A) (See Note above.)
9 units Electives
1 course NURSING 1A00

LEVEL II: 30 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 6)
9 units HTH SCI 2H03, 2HH3, 2RR3
12 units NURSING 2L03, 2M03, 2N03, 2P03
3 units SOC SCI 2J03
6 units Electives

LEVEL III: 32 UNITS

(UNITS GRADED: 25; UNITS PASS/FAIL: 6)
7 units HTH SCI 3BB3, 3C04
19 units NURSING 3QQ3, 3S03, 3T03, 3U02, 3X04, 3Y04
6 units Electives

LEVEL IV: 30 UNITS

(UNITS GRADED: 16; UNITS PASS/FAIL: 14)
2 units HTH SCI 4L02
22 units NURSING 4J07, 4K07, 4P04, 4Q04
6 units Electives

TOTAL UNITS: 124
REQUIREMENTS FOR STUDENTS WHO ENTERED IN 2007 OR PRIOR

Mohawk and Conestoga students must take 15 units of COLLAB electives and 15 units of McMaster electives. Enrollment in some COLLAB courses may be limited.

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. Normally a maximum of nine units of electives may be selected from Nursing and Health Sciences elective courses. For some courses, the amount of duplication of required content will preclude their use for elective credit in the B.Sc.N. Program.

LEVEL I: 32 UNITS

(UNITS GRADED: 32)
12 units HTH SCI 1AA3, 1BB3, 1H06
8 units NURSING 1FO4, 1G04
6 units COLLAB 1A03 and 1B03 (Mohawk Site) or COLLAB 1C03 and 1D03 (Conestoga Site)
6 units Electives
1 course NURSING 1A00

LEVEL II: 30 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 6)
6 units HTH SCI 2H03, 2H33
15 units NURSING 2L03, 2M03, 2N03, 2P03, 2Q03
9 units Electives

LEVEL III: 32 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 8)
7 units HTH SCI 3B03, 3C04
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 4J07, 4K07, 4P04, 4Q04
6 units Electives

TOTAL UNITS: 124

REGISTRATION TO PRACTICE NURSING

On receiving the B.Sc.N. degree after successful completion of the Program, graduates are eligible to write the Canadian Registered Nurse Examination which is administered by the College of Nurses of Ontario (CNO). Application to write the CRNE is made through the Faculty of Health Sciences. The CNO requires all applicants for registration to provide a recent Canadian criminal record synopsis (CIPC check) as part of the R.N. registration process. If you have any questions related to the Regulated Health Professions Act, please contact the College of Nurses of Ontario directly at 1-800-387-5526.

POST DIPLOMA R.P.N. (E) STREAM MCMASTER SITE

(6388)

POST DIPLOMA R.P.N. (E) STREAM CONESTOGA SITE

(6389)

POST DIPLOMA R.P.N. (E) STREAM MOHAWK SITE

(6384)

The program of study for Diploma Registered Practical Nurses Stream (E) prepares students for practice as Registered Nurses. It builds on the knowledge and skills acquired in the diploma practical nurse program. Stream (E) students receive 30 units of advanced credit and enter at Level II. The two Level II nursing courses are designed to assist in the transition of students to baccalaureate studies. Students are integrated with both Basic and Post-Diploma students for most courses. The curriculum is planned for three academic years of full-time study or six years of part-time study.

ELECTIVES

Twenty four 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 Level II or above. For some courses, the amount of duplication of required content will preclude their use for elective credit in the B.Sc.N. program. Normally a maximum of nine units of Nursing and/or Health Sciences electives may be selected. College site nursing students will take 12 units of Collab electives and 12 units of McMaster electives.

REQUIREMENTS FOR STUDENTS WHO ENTER IN 2008

LEVEL II: 31 UNITS

(UNITS GRADED: 27; UNITS PASS/FAIL: 4)
14 units HTH SCI 1CC7, 2C07
11 units NURSING 2A04, 2AA4, 3LL3
6 units Electives
1 course NURSING 1A00

LEVEL III: 32 UNITS

(UNITS GRADED: 25; UNITS PASS/FAIL: 7)
7 units HTH SCI 2RR3, 3C04
13 units NURSING 3Q03, 3S03, 3T03, 3X04
12 units Electives

LEVEL IV: 30 UNITS

(UNITS GRADED: 16; UNITS PASS/FAIL: 14)
2 units HTH SCI 4L02
22 units NURSING 4J07, 4K07, 4P04, 4Q04
6 units Electives

TOTAL UNITS: 123

REQUIREMENTS FOR STUDENTS WHO ENTERED IN 2007 OR PRIOR

ADVANCED CREDIT: 30 UNITS

LEVEL II: 31 UNITS

(UNITS GRADED: 31; UNITS PASS/FAIL: 0)
14 units HTH SCI 1CC7, 2C07
11 units NURSING 2A04, 2AA4, 3LL3
6 units Electives
1 course NURSING 1A00

LEVEL III: 32 UNITS

(UNITS GRADED: 25; UNITS PASS/FAIL: 7)
7 units HTH SCI 3B03, 3C04 (or 2RR3)
13 units NURSING 2Q03 (or 3QQ3), 3S03, 3T03, 3X04
12 units Electives

LEVEL IV: 30 UNITS

(UNITS GRADED: 16; UNITS PASS/FAIL: 14)
2 units HTH SCI 4L02
22 units NURSING 4J07, 4K07, 4P04, 4Q04
6 units Electives

TOTAL UNITS: 123

REGISTRATION TO PRACTISE NURSING

On receiving the B.Sc.N. degree after successful completion of the Program, graduates are eligible to write the Canadian Registered Nurse Examination (CRNE) which is administered by the College of Nurses of Ontario (CNO). Application to write the CRNE is made through the Faculty of Health Sciences. The CNO requires all applicants for registration to provide a recent criminal record synopsis (CIPC check) as part of the R.N. registration process. If you have any questions related to the Regulated Health Professions Act, please contact the College of Nurses of Ontario directly at 1-800-387-5526.

BASIC-ACCELERATED (F) STREAM

(6382)

The curriculum focuses on nursing context over five academic terms of full-time study. Students apply their previously acquired knowledge to develop their understanding of nursing practice. Students admitted to this stream will enter Level II of the B.Sc.N. Curriculum. Students are required to meet the residency requirement of the university as outlined in the General Academic Regulations section of this calendar.

REQUIREMENTS FOR STUDENTS WHO ENTER IN 2008

ADVANCED CREDIT: 54 UNITS

UNITS TAKEN AT MCMASTER: 69

LEVEL III: 45 UNITS

(UNITS GRADED: 33; UNITS PASS/FAIL: 12)

TERM 1: 16 UNITS
10 units HTH SCI 2H03, 2RR3, 3C04
6 units NURSING 2106
1 course NURSING 1A00

TERM 2: 16 UNITS
3 units HTH SCI 2H03
13 units NURSING 2J04, 3LL3, 3QQ3, 3S03

SPRING/SUMMER TERM: 13 UNITS
13 units NURSING 3T03, 3U02, 3X04, 3Y04

LEVEL IV: 24 UNITS

(UNITS GRADED: 10; UNITS PASS/FAIL: 14)

TERM 1: 11 UNITS
11 units NURSING 4J07, 4P04

TERM 2: 13 UNITS
2 units HTH SCI 4L02
11 units NURSING 4K07, 4Q04

TOTAL UNITS: 69
REGISTRATION TO PRACTICE NURSING

On receiving the B.Sc.N. degree after successful completion of the Program, graduates are eligible to write the Canadian Registered Nurse Examination (CRNE) which is administered by the College of Nurses of Ontario (CNO). Application to write the CRNE is made through the Faculty of Health Sciences. The CNO requires all applicants for registration to provide a recent criminal record synopsis (CIPC check) as part of the R.N. registration process. If you have any questions related to the Regulated Health Professions Act, please contact the College of Nurses of Ontario directly at 1-800-387-5526.

Nurse Practitioner Certificate Program {6399}

(Last intake is September 2008)

The Ontario Primary Health Care Nurse Practitioner Certificate Program is a post degree program. Degree-prepared nurses require 12 months on a full-time basis or up to 36 months on a part-time basis to complete the Nurse Practitioner Certificate.

ADMISSION REQUIREMENTS

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 must:
1. possess an Ontario baccalaureate degree in nursing or the equivalent with a minimum overall average of 70%. In cases where the minimum grade is not achieved, consideration may be given to university credit work completed following graduation which demonstrates equivalent academic ability;
2. hold a current College of Nurses of Ontario annual registration payment card;
3. have the equivalent of a minimum 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 a copy of the current College 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 program, copies of any additional professional registrations, memberships or certificates listed on the relevant professional experience form (i.e., RNNAO, CPR) to McMaster by March 1.

Preference will be given for:
• Ontario residents
• work experience in nursing that has been continuous
• 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
• hands-on practical experience.

ACADEMIC REGULATIONS

Students in the Nursing Leadership and Management Program are subject to the General Academic Regulations of the University and the regulations of the B.Sc.N. Program.

CURRICULUM

I ACCESS TO COURSES

All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that their program of study is not extended. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students from particular programs or Faculties. All students are encouraged to register as soon as MUGS/SOLAR is available to them.

In addition to meeting the General Academic Regulations of the University, students enrolled in the B.Sc.N. Program shall be subject to the following program regulations.

Registration in the B.Sc.N. Program implies acceptance on the part of the student of the objectives of that program and the methods 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. The B.Sc.N. Program reserves the right to remove a student from a clinical placement or laboratory setting at any point during the term if the student exhibits unsafe, unsafe or unsafe practice or behaviour that places the patient or others at risk. Such removal will result in the student receiving a grade of F in the course and may result in dismissal from the program. The clinical activities associated with any clinical course must be successfully achieved for attainment of a passing grade in the course. If a student drops a required course, the student must notify the Coordinator of studies office. Written confirmation of return must be submitted to the Coordinator of Studies by the end of the drop and add period of the term prior to the anticipated date of reregistration in the course. Failure to notify the Coordinator of Studies may result in students being refused registration in the course based on resource limitations.

B.Sc.N. Program Academic Regulations

Basic (A), (D); Post Diploma (B), (E); and Basic-Accelerated (F) Streams

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. A grade of D-, D or D+ is permissible in six units of Level I Health Sciences courses (Basic (A) (D) Streams) or one Level I Health Sciences course to a maximum of 11 units in total across all levels (Post Diploma (B) and (E) Streams) and in only one required Health Sciences course beyond Level I (all streams);
3. achieve a Pass designation in all clinical courses and the clinical component of NURSING 1F04 and 1G04; or NURSING 2A04. The following courses are designated clinical courses:
   - Basic (A) and (D) Streams: NURSING 2L03, 2P03, 3X04, 3Y04, 4J07, 4K07
   - Diploma Registered Nurses (B) Stream: NURSING 4S06, 4T06
   - Registered Practical Nurses (E) Stream: NURSING 2A04, 3X04, 4J07, 4K07
   - Basic-Accelerated (F) Stream: NURSING 2J04, 3X04, 3Y04, 4J07, 4K07

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.

(Course for which credit has not been given may be repeated only when approval is given by the Coordinator of Studies in consultation with the program Review Committee.)

4. Students who drop or cancel required Nursing or Health Science courses must notify the Office of the Coordinator of Studies.

5. Normally, Level I, II, III and IV Nursing courses are available only to students registered in the B.Sc.N. Program. Students in the Basic (A) and Streams: 3X04, 4J07, 4K07

6. Students are responsible for arranging their own travel to and from learning settings external to the University and for covering any costs incurred. All students who enrol in the B.Sc.N. program are expected to travel to any learning setting in Hamilton and the surrounding area, including Halton, Peel, Brant, Haldimand-Norfolk, Niagara and Wellington regions (McMaster and Mohawk); and Kitchener-Waterloo and surrounding area, including Wellington, Brant and Halton regions (Conestoga).

7. Students in any stream who register for a clinical lab course in Level III or above must also submit a placement request to the Placement Coordinator. Students who fail to meet the published deadline but who register for the course at least two months prior to the date it is to commence will be assigned a placement setting without consideration of their preferences. Students who do not register two months in advance and who fail to meet the submission deadline will normally be required to defer their placement until the next term in which the course is offered. The final assignment of learning settings and course is subject to the availability of the requested setting and faculty resources. Students may therefore be required to complete the practicum component of a course in a learning setting that is not of their choosing.

8. For Level IV students in Basic Streams (A), (D) and (E) who are interested in International or Outpost placements, one of the many prerequisites includes attaining a Cumulative Average of 7.0 for all required Level I and II Health Science courses and NURSING 3U02. For Post-Diploma R.N. Stream (B), students are required to attain a Cumulative Average of 7.5 upon completion of Level III (45 units) and a minimum grade of B- in NURSING 3V03.

9. Specialized/atypical placements in Level IV are only available to students with a Cumulative Average of 7.0 in the following Health Science courses: HTH SCI 1A03, 1BB3, 1H06 (or 1H03 and 1H03), 2H03, 2H13, NURSING 3U02.

10. The Leadership and Management courses are open only to students registered in the Leadership and Management program, which was previously administered and is currently endorsed by the Canadian Nurses Association. Students in the B.Sc.N. (B) Stream may apply to the Coordinator of the Leadership and Management program for permission to take these courses.

Nurse Practitioner Certificate Stream

Students 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. receive a Pass designation in the clinical component as well as a grade of B- in the theoretical component in each of NURSPRAC 4A05, 4A05, 4C13, 4T05, 4T05;
4. achieve a grade of B- in NURSPRAC 4P03, 4P03.

The following courses are designated clinical courses:
- NURSPRAC 4A05, 4A05, 4C13, 4T05, 4T05

CONTINUATION IN THE PROGRAM

Students are reviewed at the end of each term. To continue in the B.Sc.N. Program a student must obtain a CA of at least 3.5. A student whose CA is at least 3.0 may, at the discretion of the Coordinator of Studies in consultation with the program Review Committee, continue in the program. A student may be placed on program probation, A student may in the program. A student may be placed on program probation only once during the program.

FAILURE

A student whose CA is less than 3.5, and who has not been granted program probation, may not continue in the program. A student who fails to obtain a CA of 3.5 at the completion of the program probation may not continue in the program.

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 Coordinator of Studies in consultation with the program Review 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 program. A student may normally be allowed to repeat only one clinical and one non-clinical Nursing or Health Sciences course during the program.

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 may not continue in the program.

Collaborative B.Sc.N. (D) Stream, Post Diploma R.P.N. (E) Stream Mohawk and Conestoga Sites

In addition to meeting the General Academic Regulations of the University, (please refer to the General Academic Regulations section of the Calendar) as well as the academic regulations specific to the School of Nursing, (please refer to Academic Regulations in the School of Nursing outline in this section of the Calendar), Mohawk and Conestoga B.Sc.N. students are also subject to the following regulations.

Program Approval: Selection of courses must be approved by the Chair of the Program at the site to which the student is admitted. Where the Calendar indicates that a faculty office, Associate Dean or Dean of Studies must be contacted, students should...
The twenty-four month program begins in September. The first-year program comprises of clinical placements.

Academic Standing: The College Reviewing Committees shall be comprised of members from the Colleges and the University; these Committees shall be chaired by the Coordinator of Studies (McMaster).

Required to Withdraw: Students must follow the withdrawal procedures for the respective College.

Letters of Permission: Letters of Permission must be approved by the Student Advisor at the site to which the student is admitted.

Examinations: A Mohawk College, Conestoga College or McMaster student photo identification card is required at all examinations.

THE B.H.SC. PHYSICIAN ASSISTANT PROGRAM

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2008-2009 academic year, a B.H.Sc. (Physician Assistant) program will be offered.

WEB ADDRESS: http://fhs.mcmaster.ca/~physicianassistant

PROGRAM OVERVIEW

McMaster will be among the first institutions in Canada to launch a Physician Assistant Education Program. Twenty students will be admitted to the first class to pioneer a new role in health care provision in the province. The PA Education program will lead to the Bachelor of Health Sciences (Physician Assistant) degree. The program will be taught using inquiry and problem-based learning, which enhance each student's ability to think critically, solve problems, demonstrate initiative and independence in practice, and promote lifelong learning.

MISSION STATEMENT

The mission of the McMaster University Physician Assistant Education Program is to educate energetic, innovative, committed and caring individuals to become role models in a new health care delivery model practicing medicine under the supervision of a physician to expand health care access for the people of Ontario.

CURRICULUM PLAN

The twenty-four month program begins in September. The first year will focus on the study of the clinical sciences underpinning health care delivery. In the second year, students will enter clinical placements.

YEAR 1: CLINICAL SCIENCES

The clinical sciences curriculum is modeled on the McMaster Medical School COMPASS Curriculum and is designed to meet the competencies outlined in the *Ontario Physician Assistant Competency Profile* and the Canadian Medical Association accreditation requirements. The curriculum will be delivered in small group problem-based learning modules with a focus on the physician assistant's role in health care and the promotion of inter-professional education and training.

The clinical sciences curriculum consists of five Medical Foundations each composed of four components:

1. Clinical Sciences
2. Professional Skills
3. Professional Competencies
4. Longitudinal Clinical Experience Program

MEDICAL FOUNDATION 1

1. Clinical Sciences: Oxygen Transport: Cardiovascular, respiratory and blood, physiology and disease
2. Professional Skills: Basic history taking and physical examination
3. Professional Competencies: Role of the PA in patient care, responsibilities of the professional, scope of practice, the problem of uncertainty, self-awareness and lifelong learning
4. Longitudinal Clinical Experience Program

MEDICAL FOUNDATION 2

2. Professional Skills: Additional focus on the GI, endocrine history and on communication skills
3. Professional Competencies: Role of the PA in the health care system, organizational structure of the health care system, principles of health care in society, social and community context of health care, introduction to epidemiology

MEDICAL FOUNDATION 3

1. Clinical Sciences: Homeostasis 2: Fluid and electrolyte balance (including renal, acid base, BP) and reproduction, pregnancy and genetics
2. Professional Skills: Additional focus on obstetric and gynecologic history
3. Professional Competencies: Standards of care, laws and codes relevant to medical practice, organizational structure in institutions, institutional policies, health policy, ethics in genetics and reproduction

4. Longitudinal Clinical Experience Program

MEDICAL FOUNDATION 4

1. Clinical Sciences: Host defenses, neoplasia and genetics
2. Professional Skills: Additional focus on health care delivery
3. Professional Competencies: Mental health and society, negotiation and conflict resolution, charting, public reporting and accountability, consent and confidentiality

4. Longitudinal Clinical Experience Program

MEDICAL FOUNDATION 5

1. Clinical Sciences: Neurologic, psychiatric and musculoskeletal physiology and disease
2. Professional Skills: Additional focus on the neurologic, psychiatric and musculoskeletal history
3. Professional Competencies: Dealing with error, error prevention, breaking bad news, end of life decision making, resource allocation

4. Longitudinal Clinical Experience Program

YEAR II: CLERKSHIP

In the second year of the program students will undertake 50 weeks of supervised clinical placements. Core experiences will take place in family medicine, internal medicine, surgery, emergency medicine, and psychiatry. Placements will take place in Hamilton, in the expanded McMaster campuses of St. Catharines and Kitchener/Waterloo, and in the broader Ontario community. Elective placements will round out the balance of the clinical year and will allow students to pursue additional career interests.

CERTIFICATION

Graduates will qualify to take the national physician assistant certification examination in order to practice in the province of Ontario.

Admission Procedures and Requirements

ADMISSION REQUIREMENTS

By June 2008, applicants must have completed a minimum of two years of undergraduate work. Only degree courses at an accredited university will be considered. A minimum of 10 full-courses or 20 half-courses (two years) is required. Courses that employ small group, self-directed or inquiry learning are excellent preparation for the educational program. There is no requirement for applicants to have carried a full course load. By September 2007, applicants are expected to have achieved an overall simple average of at least 3.0 on the OMSAS 4.0 scale for consideration.

Upon acceptance, successful applicants will be required to provide detailed medical information, including a record of completion of required immunizations, evidence of Basic Cardiac Life Support certification (Adult and Child CPR) and a satisfactory Police Records Check (at the applicant's expense) upon entering the program and annually thereafter.

ADMISSION PROCEDURES (2008-2009 ONLY)

Application (including the appropriate fee) is to be made through the Ontario Universities' Application Centre (OUAC)

170 Research Lane
Guelph, ON, N1G 5E2
http://www.ouac.on.ca
This form, as well as a supplementary application form are both required and the deadline for receipt of both applications is May 1, 2008. (This deadline however might be extended for the 2008-2009 cycle.) Please refer to the program's web site for full application details and to download the required supplementary form. Upon receipt of the application and certified transcripts, selected applicants will be invited to an interview. The admissions committee will consider:

- University transcripts and GPA
- Supplementary application (to assess the applicant's previous clinical exposure, teamwork, aptitude for problem-based learning and understanding of the role of the PA)
- Interview

**APPLICATION FOR DEFERRED REGISTRATION**
Deferred registrations will not normally be granted in the PA Education Program. Deferred registration may be granted only under exceptional circumstances.

**ADVANCED STANDING/TRANSFER**
The structure of the PA Education program requires that all students complete the entire program starting with Medical Foundation 1. There is no provision for advanced standing or transfer into the program.

**FULL-TIME STATUS**
The structure of the program requires that all students be registered in the program on a full-time basis and attendance in all components of the program is mandatory.

**Financial Information**
In 2008-2009 the tuition fee for a student in Year 1 of the PA Education Program is expected to be approximately $9,000.00 for a 12 month academic term, plus supplementary fees estimated at $1,000.00 per year. Additional costs include books, diagnostic equipment and other learning resources estimated at $2,500.00. Students are also responsible for their transportation costs related to clinical study.

There is a bursary program which has been developed by the University. Bursaries may be awarded to students who are Canadian citizens based on demonstrated financial need. Bursaries are intended to offset provincial financial assistance and cannot supplement the full cost of education. For further information, please contact the Education program web site or the Student Financial Aid and Scholarships Office at McMaster University.

**Honours Biology and Pharmacology Program (Co-op).**
This is a joint program 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 Gynecology, and Pathology.

Please see the Faculty of Science, Department of Biology section of this Calendar for admission requirements.

**Medical Radiation Sciences Program**
This Diploma-Degree program is offered jointly in a fully integrated format by McMaster University in partnership with Mohawk College of Applied Arts and Technology. Graduates are awarded the McMaster Bachelor of Medical Radiation Sciences degree as well as the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk College.

Please see Medical Physics and Applied Radiation Sciences in the Faculty of Science section of this Calendar for admission requirements.
FACULTY OF HUMANITIES

Dean of Humanities
S. Crosta/B.A., M.A., Ph.D.
Assistant Dean of Humanities
D. Wright/B.A., M.A., D.Phil.
Assistant Dean (Studies)
P.A. Kalnins/B.A.

Academic Advisors
D. Hayward
J. Richardson/B.A.

Career Services, Liaison and Study Abroad Coordinator
R. Muhic-Day/B.A., M.A.

The Faculty of Humanities is dedicated to cultivating a teaching and research community which reflects the highest standards of our disciplines and to undertaking bold ventures in new arenas of interdisciplinary inquiry. We strive for a balance between the best traditions of Humanities education and the new forms of knowledge emerging within and at intersections of disciplines. By learning from past and current issues facing our world today, we promote advances in knowledge that make positive differences in peoples’ lives.

We provide a research-intensive educational environment in which students learn to value independent thinking and critical reflection on the nature of knowledge and how knowledge can be used to better the human condition. Our mission is to ensure that students acquire the analytical skills, historical depth, and appreciation of diverse cultures needed to assume leadership roles as responsible, ethical, and path breaking scholars, cultural workers, creative artists, or policy makers. We prepare our students to be thoughtful and engaged citizens in a global world.

The attainment of precise knowledge and fresh insights through lectures, class discussions, reflection, analysis and writing is the essence of study in the Faculty of Humanities.

Programs are offered in the following subjects: Studio Art, Art History, Classics, Communication Studies, Comparative Literature, Cultural Studies & Critical Theory, English, French, History, Linguistic Cognitive Science, Linguistics, Multimedia, Music, Peace Studies, Philosophy, Theatres & Film Studies and Women’s Studies. Additionally, Minors are available in German, Greek, Hispanic Studies, Italian, Japanese and Latin. Students may also take an interdisciplinary Minor in Archeology.

PROGRAMS AND DEGREES

A. Level I Programs

HUMANITIES I (0700)

PROGRAM NOTES
1. A full-course load for Humanities I is 30 units. (The final digit in course numbers indicates the unit weight of a course. A six-unit course is taught from September to April and a three-unit course is normally a half-year course which may be taught either from September to December or January to April).
2. Admission to a Level II program normally requires completion of six units of the relevant subject in Level I. In order to be considered for admission to a Level II program, students should consult the admission statements for Level II programs when selecting their Level I courses.
3. Humanities I students may take INQUIRY 1HU3, Inquiry in the Humanities, as an elective. For a course description see Inquiry in the Course Listings section of this Calendar.
4. Humanities I students are permitted to take up to 12 units of work in any single subject.
5. Students with a Grade 12 U course in Greek or Latin will register for six units of Level II Greek or Latin in lieu of the corresponding 1203 and 1223 courses.
6. Humanities I students may take no more than 12 units of introductory language courses.
7. ART 1F03, 1FF3: Honours Art programs have limited enrolments. Entering to an Honours Art program requires the permission of the School of the Arts and successful completion of ART 1F03 and 1FF3. Students who wish to enrol in ART 1F03 and 1FF3 in Level I must complete a portfolio interview to be eligible for permission to register in these courses.
   a. The portfolio should contain a variety of works in different media that represent the applicant’s creative abilities and interests. Aptitude in art, academic ability and demonstrated commitment to the discipline are 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.
   b. Portfolio interviews occur between January and April each year for entrance in September of the same calendar year. Only those students who contact the Office of the School of the Arts (905-525-9140 ext. 27671) before March 1st to book appointments for portfolio interviews will be guaranteed consideration for entrance into ART 1F03 and 1FF3. (Late applicants will only be interviewed if space permits).
   c. Permission to register in ART 1F03 and 1FF3 will be confirmed in writing by the School of the Arts. School of the Arts verification code and choose PINE ARTS as the Subject of Major Interest.
   d. Students wishing to take Music courses other than MUSIC 1A03 or 1AA3 must make arrangements with the School of the Arts for qualifying tests.

COURSE LIST 1

ART 1F03, 1FF3 (See Note 6 above.) Students in ART 1F03 and 1FF3 must also register in SCIENCE 1A00 when completing their registration.

ART HIST 1A03, 1AA3
CLASSICS 1A03, 1B03, 1M03
CMST 1A03
COMP LIT 1A03, 1AA3
CST 1B03, 1B03
ENGLISH 1A03, 1AA3, 1B03, 1BB3, 1C06
FRENCH 1A06, 1K06, 1Z06
GREEK 1Z03, 1ZZ3
HISTORY 1A03, 1AA3, 1B03, 1BB3, 1M03
LATIN 1Z03, 1ZZ3
LINGUIST 1A03, 1AA3
MMEDIA 1A03, 1B03
MUSIC 1A03, 1AA3
P.E. ST 1A03, 1B03
PHILOS 1A03, 1B03, 1C03, 1D03, 1E03
THTR&FLM 1A03, 1B03
WOMEN ST 1A03, 1AA3

COURSE LIST 2

(Humanities courses available to Level I students. These courses do not provide entry into a Level II program)

GERMAN 1B03, 1BB3, 1Z06
HISPANIC 1A03, 1AA3, 1Z06, 2D03, 2D30
INQUIRY 1HU3
ITALIAN 1A03, 1AA3, 1Z06, 1ZZ6
JAPANESE 1Z65
MUSIC 1B03, 1BB3, 1CC3, 1D03, 1EE6, 1G03 (See Note 8 above.)
POLISH 2A03, 2AA3
RUSSIAN 2A03, 2AA3

WEB ADDRESS: http://www.humanities.mcmaster.ca
EMAIL ADDRESS: humanities@mcmaster.ca

Chester New Hall, Room 112
Ext. 27423

FACULTY OF HUMANITIES
SECOND LANGUAGE PROFICIENCY

Students embarking on Humanities programs 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-graduate academic and employment opportunities.

For students wishing to acquire a reading knowledge of French, a summer course, FRENCH 4R06 is offered in May-June. This course is intended to prepare current and incoming graduate students for the French proficiency test administered by some departments. Certain graduate programs recognize a passing mark in this course as fulfillment of the second language requirement.

PRELIMINARY STUDY

Students wishing to enter any program offered by the Faculty of Humanities and pursue a program on a part-time basis should consult the appropriate Departmental Counsellor(s) before making their plans.

ACADEMIC REGULATIONS

STUDENT ACADEMIC RESPONSIBILITY

You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES

All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that they are able to complete program admission requirements, course requisites and courses required for their program of study in a timely manner. Unless otherwise specified, registration is on a first-come basis, and in some cases priority is given to students from particular programs or Faculties. Where students are selecting from a list of required courses, access to a specific course is not guaranteed when there is another course available to meet a specific degree requirement.

All students are encouraged to register as soon as MUGSI/SOLAR is available to them.
REINSTATEMENT TO THE FACULTY OF HUMANITIES

A student who may not continue at the University may apply for reinstatement; however, reinstatement is not automatic or guaranteed. Application for reinstatement must be made to the Office of the Registrar using the Reinstatement Request Form by the deadline for the session. See the Sessional Dates section of this Calendar.

The form should explain the reasons for the student’s inadequate performance, corroborated by two Letters of Reference from qualified professionals or employers, 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, the Letters of Reference, and the accompanying documentation.

If students are reinstated at the University, their Cumulative Average will be re-set to 0.0 on zero units, although students may (at Faculty discretion) retain credit for prior work. Following reinstatement, students will be on academic probation and must complete a minimum of 60 units of work after reinstatement to be eligible for Graduation with Distinction or other recognition based on the Cumulative Average.

If at any review after reinstatement the student’s Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

COURSE SELECTION AND COURSE CHANGES

Students are responsible for ensuring that their course selection meets the requirements of the degree program in which they are registered, that prerequisites have been met, and that, where necessary, permission to take courses has been obtained. They should review the Degree Audit Sheet of their program before applying for reinstatement, and contact an Academic Advisor in the Office of the Dean and Associate Dean of Humanities if they have questions, particularly if the degree audit shows unused courses. Students should also be aware that changes to their course load may affect their fees and eligibility for scholarships and financial aid such as OSA2.

OVERLOAD

Fall/Winter Session: Normally students may not register in more than 30 units during the Fall/Winter Session (33 units for students in Music!). A student with outstanding deferred examination or incomplete term work will not be permitted to overload in the following term. Students may take an overload up to six units under the following circumstances:

1. If a student has a Sessional Average of at least 7.0 in the immediately preceding review period; or
2. If their Level is registered in the final Level of their program.

Spring/Summer Session: Students wishing to register in more than 12 units during the Spring/Summer Session or more than six units in either term of that Session, may do so only with the permission of the Office of the Dean and Associate Dean of Humanities.

SUMMER SCHOOL

Students who have been granted deferred examination or term work privileges for courses taken in the preceding Winter session must secure the advance permission of the Office of the Dean and Associate Dean of Humanities before registering in Summer courses. A decision will be made based upon the academic record of the student and the amount of work outstanding.

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 apply through the Office of the Dean and Associate Dean of Humanities. A Letter of Permission is automatically cancelled if a student is placed on academic probation, program probation, or required to withdraw from the University. Students should take note of any conditions on the Letter of Permission that might apply, including the requirement that a C- for transfer credit. Courses taken at another university cannot be used to satisfy the University’s minimum residence requirement, will not be included in the calculation of the averages at McMaster, and therefore cannot be used to raise standing. The transcript designation will read COM, indicating Complete, when a C- or better is attained. It is the student’s responsibility to ensure that an official transcript from the host university is sent to the Office of the Dean and Associate Dean of Humanities to receive credit for work taken.

SUMMER IMMERSION PROGRAMS IN FRENCH

Students must obtain approval from the Office of the Dean and Associate Dean of Humanities prior to participating in any language immersion program.

The government-sponsored Explore summer language program 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 program must: (a) petition the Office of the Dean and Associate Dean of Humanities, (b) submit detailed course descriptions for assessment, and (c) obtain a Letter of Permission.

Students registered in a program in French may take a maximum of six units of credit in this manner as elective work only. Students not registered in a program in French may take up to 12 units of credit.

HUMANITIES STUDY ABROAD

Humanities Study Abroad During Level III of Honours Programs

There are two ways to undertake international studies during Level III of an Honours Program: (i) a Formal Exchange Program or (ii) a Third Year Study Elsewhere Program.

(i) Formal Exchange Program

During Level III of Honours Programs

Formal Exchange Programs are those where McMaster University has an agreement with another institution involving a temporary exchange of students. Exchange students register at and pay tuition fees and supplementary fees to McMaster. No tuition is paid to the other institution. See the General Academic Regulations section of this Calendar and the sections on Eligibility and Application below.

(ii) Third Year Study Elsewhere Honours Program

Qualified Level III students may undertake studies at a university abroad for one or two terms in the Third Year Study Elsewhere Program. This program is not available at universities with which McMaster University has a Formal Exchange Agreement. Students register at, but do not pay tuition to McMaster University. Students pay tuition fees to the other institution. See the General Academic Regulations section of this Calendar and the sections on Eligibility and Application below.

Eligibility for Study Abroad

Students registered in any Honours or Combined Honours program in the Faculty of Humanities may apply to replace all or part of the work of their third year with an acceptable program of study taken at a university or equivalent institution approved by the Faculty of Humanities.

To be eligible to take part in this program, students must have completed at least 60 units of work with a Cumulative Average of at least 7.0. Individual programs 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 program do not have the option of graduating with a three-year B.A. degree on the basis of work completed in this program, 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 transfer credit for work completed elsewhere may be confirmed only after the Office of the Dean and Associate Dean has 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 for Study Abroad

Students interested in applying for this program should consult Rowena Muhic-Day, the Career Services, Liaison and Study Abroad Coordinator, (Gilmour Hall, Room 106) approximately one year before they anticipate studying abroad (i.e. during the Fall term of the year in which they enter Level II). A plan for the completion of the academic program, approved by the program officer, must be submitted to the program officer by the published deadline (usually in January, although applications for some exchanges may be due as early as December).
Programs Offered by the Faculty of Humanities

School of the Arts

Web Address: http://sota.humanities.mcmaster.ca

The School of the Arts offers programs in:

- Art
- Art History
- Music
- Theatre & Film Studies

In addition, Minors are available in: Art History, Music and Theatre & Film Studies.

Programs 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 programs 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 program.

Honours Arts & Science and Art (Studio) (B.Arts.Sc.; See Arts & Science Program)

Honours Arts & Science and Art History (B.Arts.Sc.; See Arts & Science Program)

Honours Art (2029)

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March 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 program and: (a) a Cumulative Average of at least 6.0, (b) an average of at least 7.0 in ART 1F03 and 1FF3 and (c) the successful completion of ART HIST 1A03 and 1AA3.

Notes

1. Students in Honours Art must complete the following courses before registering in Level III or IV Art courses: ART 2A03, 2AA3, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2FF3.
2. Students must achieve a minimum grade of B- in ART 3E06 before registering in ART 4E12.
3. Students wishing to obtain a Minor in Art History should note that six, and only six, units of Art History required in the Art program may be counted toward the Minor of 24 units.

Requirements

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I program completed prior to admission into the program
- 45 units ART 2A03, 2AA3, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2FF3
- 6 units ART HIST 2D03, 3AA3
- 9 units Levels III and IV Art History
- 3 units Levels I, II or IV Art History
- 21 units Electives

Combined Honours in Art and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

Admission

Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program and: (a) a Cumulative Average of at least 6.0, (b) an average of at least 7.0 in ART 1F03 and 1FF3 and (c) the successful completion of ART HIST 1A03 and 1AA3.

Notes

1. Students in Combined Honours Art must complete ART 2A03, 2AA3, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E03 before registering in Level III or IV Art courses.
2. Because ART HIST 2D03 is required in all Art History programs, students registered in the Combined Honours Art and Art History program will substitute three units elective for ART HIST 2D03.
3. Students must achieve a minimum of B- in ART 3E06 before registering in ART 4C06.

Requirements

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I program completed prior to admission into the program
- 39 units ART 2A03, 2AA3, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E03, 3D06, 4C06
- 6 units ART HIST 2D03, 3AA3 (See Note 2 above.)
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 9 units Electives to total 120 units

Honours Art History

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

Admission

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in ART HIST 1A03 and 1AA3.

Notes

1. Before choosing Level III courses, students should become familiar with the prerequisites for Level IV courses.
2. Upper-level students may wish to pursue an internship in an art museum or gallery by completing HUMAN 3W03 or 4W03 and should consult with the Art History Counsellor for advice.

Requirements

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I program completed prior to admission into the program
- 18 units ART HIST 2A03, 2B03, 2C03, 2D03, 2I03, 2Z03
- 9 units Level III Art History
- 12 units Levels III and IV Art History
- 6 units from ART HIST 4AA3, 4BB3, 4C03, 4E03, 4H03, 4V03, 4X03
- 45 units Electives

Combined Honours in Art History and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

Admission

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in ART HIST 1A03 and 1AA3.

Notes

1. Students combining Honours Art History with Honours Art must not register in ART HIST 3P03. These students will be required to substitute three units of Level III or IV Art History in lieu of ART HIST 3P03.
2. Before choosing Level III courses, students should become familiar with the prerequisites for Level IV courses.

Requirements

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I program completed prior to admission into the program
- 18 units ART HIST 2A03, 2B03, 2C03, 2D03, 2I03, 2Z03
- 6 units Level III Art History
- 3 units from ART HIST 4AA3, 4BB3, 4C03, 4E03, 4H03, 4V03, 4X03
- 9 units Levels III and IV Art History
- 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

Notes

1. Students in Combined Honours Art must complete ART 2A03, 2AA3, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E03 before registering in Level III or IV Art courses.
2. Because ART HIST 2D03 is required in all Art History programs, students registered in the Combined Honours Art and Art History program will substitute three units elective for ART HIST 2D03.
3. Students must achieve a minimum of B- in ART 3E06 before registering in ART 4C06.
B.A. in Art History \(\{1029\}\)

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 3.5 including an average of at least 4.0 in ART HIST 1A03, 2H03, 2Y03, 2YY3 and 1AA3.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I

30 units from the Level I program completed prior to admission into the program

9 units ART HIST 2A03, 2B03, 2C03

6 units from ART HIST 2D03, 2I03, 2Z03

15 units Levels III and 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

**PROGRAMS IN DRAMA**

*(SEE PROGRAMS IN THEATRE & FILM STUDIES)*

**PROGRAMS IN MUSIC**

**NOTES**

1. Completion of a Music degree requires considerable daytime attendance.

2. Normally, students who possess an undergraduate degree in Music will not be admitted to a B.Mus. degree program as a second undergraduate degree.

**MUSIC I** \(\{0370\}\)

**NOTE**

Students interested in entering the Honours Music (Music Cognition) program must have completed Grade 12 Biology U, or enroll in BIOLOGY 1P03 in the first term of Level I concurrently with PSYCH 1X03.

**REQUIREMENTS**

Students admitted to Music I must complete 33 units of work as follows:

- 21 units MUSIC 1B03, 1BB3, 1CC3, 1D03, 1E06, 1G03

- 12 units Electives (Students intending to enter the Honours Music (Music Cognition) program must take PSYCH 1A03 and 1A03 or 1X03 and 1X03.)

**Honours Music (B.Mus.)** \(\{2370\}\)

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of Music I and a Cumulative Average of at least 6.0.

**NOTES**

1. The courses appearing in Course List 1 are specifically intended to prepare students to attend a Faculty of Education and for a career in school and music teaching. Students interested in Music Education are advised to consult the Music Counsellor during their first year for advice on fulfilling the entrance requirements of Faculties of Education.

2. Students who intend to pursue graduate studies in music or who wish to use the music degree as preparation for postgraduate studies in other professions should select a significant number of the courses in Course List 2.

**COURSE LIST 1**

MUSIC 3A03, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4O03, 4I03, 4P03, 4Q03, 4R03

**COURSE LIST 2**

MUSIC 3C03, 3CT3, 3H03, 3Y03, 3YY3, 4C03, 4H03, 4R03

**COURSE LIST 3**

MUSIC 2A03, 2F03, 2I03, 2II3, 2Z03, 3G03, 3T03, 3U03, 3Z03, 4G03, 4S03, 4U03, 4Z03, 4ZZ3

**COURSE LIST 4**

MUSIC 3E03, 3E06, 3SS3, 4E03, 4E06, 4SS3 (Lesson fees are charged to students taking these courses.)

**REQUIREMENTS**

123 units total (Levels I to IV), of which 51 units may be Level I

33 units Music I

24 units from MUSIC 2B03, 2BB3, 2CC3, 2D03, 2E06, 2G03, 2H03, 2Y03, 2YY3

3 units from MUSIC 2A03, 2F03, 2I03, 2II3, 3T03, 3U03

24 units from Course Lists 1 and 2

30 units from Course Lists 3 and 4

30 units Electives

**Honours Bachelor of Music (Music Cognition)** \(\{2377\}\)

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2008-2009 academic year, an Honours Bachelor of Music (Music Cognition) program will be offered.

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Enrolment in this program is limited and admission is by selection but requires, as a minimum, completion of Music I, a Cumulative Average of at least 6.0, and an average of at least 7.0 in PSYCH 1A03 and 1A03 (or 1X03 and 1X03). A written personal statement is also required.

**NOTES**

1. Students interested in this program must have completed Grade 12 Biology U, or enroll in BIOLOGY 1P03 in the first term of Level I, concurrently with PSYCH 1X03.

2. More advanced training in statistics is recommended for students in this program (especially if students plan to conduct independent research in the future), but is not required. Students wanting more advanced statistics training should take PSYCH 2RA3 and 2RB3.

3. The courses appearing in Course List 1 are specifically intended to prepare students to attend a Faculty of Education and for a career in school and music teaching. Students interested in Music Education are advised to consult the Music Counsellor during Level I for advice on fulfilling the entrance requirements of Faculties of Education.

4. Students who intend to pursue graduate studies in music or who wish to use the music degree as preparation for postgraduate studies in other professions should select a significant number of the courses in Course List 2.

**COURSE LIST 1**

MUSIC 3A03, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4O03, 4I03, 4P03, 4Q03, 4V03

**COURSE LIST 2**

MUSIC 3C03, 3CT3, 3H03, 3Y03, 3YY3, 4C03, 4H03, 4Y03

**COURSE LIST 3**

MUSIC 2A03, 2F03, 2I03, 2II3, 2Z03, 3G03, 3T03, 3U03, 3Z03, 4G03, 4S03, 4U03, 4Z03, 4ZZ3

**COURSE LIST 4**

MUSIC 3E03, 3E06, 3SS3, 4E03, 4E06, 4SS3 (Lesson fees are charged to students taking these courses.)

**REQUIREMENTS**

123 units total (Levels I to IV), of which 51 units may be Level I

33 units Music I

21 units MUSIC 2B03, 2BB3, 2CC3, 2E06, 2G03, 2H03, 2Y03, 2YY3

9 units MUSICCOG 2A03, 3A03, 3B03

3 units SOC SCI 2J03

3 units PSYCH 2E03

30 units from Course Lists 1, 2, 3 or 4

3 units from PSYCH 2A03, 2D03, 2F03, 2H03, 2TT3

6 units MUSICCOG 4D06

15 units Electives
Combined Honours B.A. in Music and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of Music I and a Cumulative Average of at least 6.0.

COURSE LIST 1

All Level III and IV Music courses except MUSIC 3T03, 3U03, 3Z03

COURSE LIST 2

MUSIC 2A03, 2F03, 2G03, 2H03, 2I03, 2J03, 3T03, 3U03, 3Z03

REQUIREMENTS

120 units total (Levels I to IV), of which 51 units may be Level I
33 units Music I program
21 units from MUSIC 2B03, 2BB3, 2CC3, 2D03, 2E06, 2H03, 2Y03, 2YY3
12 units from Course List 1
6 units from Course Lists 1 and 2
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

B.A. in Music

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of Music I and a Cumulative Average of at least 3.5.

NOTES

1. Students from another Level I program may be admitted with a Cumulative Average of at least 3.5, a weighted average of 4.0 in MUSIC 1A03 and 1A33, and a successful audition.
2. Students registered in the B.A. Music program who wish to transfer into the Honours B.Mus. program must apply through the Dean's Office before the end of classes in their final year of study.

COURSE LIST 1

All Level II, III and IV Music courses, except MUSIC 2G03, 3G03, 4G03

REQUIREMENTS

90 units total (Levels I to III), of which 45 units may be Level I
33 units Music I program
15 units from MUSIC 2B03, 2BB3, 2CC3, 2D03, 2H03, 2Y03, 2YY3
12 units from Course List 1
30 units Electives.

Minor in Music

24 units of Music of which no more than nine 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, or graduates of, a Music degree program at McMaster; and
2. Students enrolled in, or graduates of, other McMaster degree programs.

GROUP 1 - MUSIC MAJORS

ADMISSION

Registration in, or completion of, a degree program in Music. Students should meet with the Academic Counsellor for Music in the School of the Arts as early as possible in their degree program.

GROUP 2 - OTHER STUDENTS

ADMISSION

Completion of a music audition/examination consisting of:

1. Performance (approximately 20 minutes duration) of two or three varied pieces of your choice (equivalent to Honours standing at Grade 8 level of the Royal Conservatory of Music), including at least one from the 20th or 21st century;

2. Ear test appropriate to the Grade 8 RCM honours performance level;
3. Written examination of rudiments of theory (RCM Grade 2 level);
4. Interview; and
5. MUSIC 1EE6 or equivalent, e.g., A.R.C.T. (Associate of the Royal Conservatory of Music).

In lieu of the above, students concentrating in jazz must complete an audition demonstrating equivalent experience in jazz performance.

Auditions take place between January and March. Applicants must contact the School of the Arts to arrange for an audition. Advanced credit, up to a maximum of 15 units, may be determined on an individual basis.

REQUIREMENTS

The Diploma will require completion of 24 units as follows:

12 units MUSIC 2E06 (or 2EE6); 3E06 (or 3EE6)
9 units from MUSIC 3SS3, 4G03, 4SS3, 4U03
9 units MUSIC 4E09
6. Lesson fees: Lesson fees are charged over and above tuition for MUSIC 2E06, 2EE6, 3E06, 3EE6, 4G03, 4E09 and 4SS3. Students registered in Honours Music will not be charged extra fees for MUSIC 2E06.
7. MUSIC 4E09 must be taken over and above the total number of units required for a McMaster degree. Because this course may not be used for credit towards any McMaster degree, students pursuing the Diploma must plan their work to accommodate nine extra units.

The Diploma will be awarded at the Fall convocation of the Centre for Continuing Education following the completion of all requirements.

PROGRAMS IN THEATRE & FILM STUDIES

The School of the Arts offers a broadly based program of study in the history, theory, and critical understanding of dramatic performance in both live and recorded media. Program requirements at Level II are designed to expose students to the breadth of study. Level III courses offer more specific approaches to the study of theatre and film. A limited amount of student specialization within the program is possible at this level. The Honours Seminars at Level IV focus on independent research. 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.

NOTE

Students registered in Honours Theatre & Film Studies are encouraged to complete courses in related art forms.

Honours Arts & Science and Theatre & Film Studies

(B.Arts.Sc.; See Arts & Science Program) {2551}

Honours Theatre & Film Studies

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in THTR&FLM 1A03 and 1B03.

NOTE

A number of courses that directly pertain to Theatre & Film Studies are offered by other departments: Classics, Comparative Literature, English and Cultural Studies, French, Kinesiology and Women's Studies. These are recommended as electives listed at the end of the Theatre & Film course descriptions. Up to nine units from the list may be made available as substitutes for Theatre & Film courses, and counted toward the fulfillment of a program in Theatre & Film Studies. Students are advised that there may be restrictions on enrolment in these courses.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
12 units Level II Theatre & Film courses with at least nine units from THTR&FLM 2A33, 2BB3, 2C03, 2D03, 2E03, 2F03 (Students may take only one of THTR&FLM 2A33 or 2BB3.)
Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in THTR&FLM 1A03 and 1803.

NOTE
A number of courses that directly pertain to Theatre & Film Studies are offered by other departments: Classics, Comparative Literature, English and Cultural Studies, French, Kinesiology and Women's Studies. These are recommended as electives listed at the end of the Theatre & Film course descriptions. Up to nine units from the list may be made available as substitutes for Theatre & Film courses, and counted toward the fulfillment of a program in Theatre & Film Studies. Students are advised that there may be restrictions on enrolment in these courses.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program.
12 units Level II Theatre & Film courses with at least nine units from THTR&FLM 2AA3, 2BB3, 2C03, 2D03, 2E03, 2F03. (Students may take only one of THTR&FLM 2AA3 or 2BB3.)
18 units Level III or IV Theatre & Film
6 units Level IV Theatre & Film courses including at least three units from THTR&FLM 4C03, 4D03, 4E03, 4F03
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 Theatre & Film Studies {1551}

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION
Completion of any Level I program and a Cumulative Average of at least 6.0 and a grade of at least B- in three units of Level I Classics, Greek or Latin. (Students with Grade 12 Greek may substitute three units of Level II Greek; students with Grade 12 Latin U may substitute three units of Level II Latin.)

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
15 units Level II Classics, Greek, Latin (may include Level II Greek or Latin)
15 units Level III Classics, Greek, Latin (may include Level II Greek or Latin)
12 units Level IV Classics, Greek or Latin
42 units Electives

Combined Honours in Theatre & Film Studies and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION
Completion of any Level I program and a Cumulative Average of at least 6.0 and a grade of at least B- in three units of Level I Classics, Greek or Latin (may include Level II Greek or Latin). (Students with Grade 12 Greek may substitute three units of Level II Greek; students with Grade 12 Latin U may substitute three units of Level II Latin.)

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
12 units Level II Classics, Greek, Latin (may include Level II Greek or Latin)
12 units Level III Classics, Greek, Latin (may include Level II Greek or Latin)
9 units Level IV Classics, Greek, Latin (may include Level II Greek or Latin)
6 units Level IV Classics, Greek, Latin (may include Level II Greek or Latin)
9 units Levels II, III, IV Classics, Greek or 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
B.A. in Classics {1130}

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 3.5 and a grade of at least C in three units of Level I Classics, Greek or Latin courses. (Students with Grade 12 Greek U may substitute three units of Level II Greek; students with Grade 12 Latin U may substitute three units of Level II Latin.)

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I
30 units from the Level I program completed prior to admission into the program
9 units Level II Classics, Greek, Latin (may include Level II Greek or Latin)
9 units Level III Classics, Greek, Latin (may include Level II Greek or Latin)
6 units Levels II and III Classics, Greek, Latin (may include Level I Greek or Latin)
36 units Electives

PROGRAMS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2007

Honours Classics

(PROGRAM A: ANCIENT HISTORY AND ARCHAEOLOGY) {2131}

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
24 units from CLASSICS 2B03, 2C03, 2K03, 2LA3, 2LB3, 2LC3, 2LD3, 2Y03, 2Y23, 2Z03, 3EE3, 3G03, 3H03, 3HH3, 3M03, 3MA3, 3MB3, 3MM3, 3SO3, 3TT3, 3X03
6 units from CLASSICS 4B03, 4BB3, 4E03, 4F03, 4T03
24 units Levels II, III and IV Classics, Greek, Latin
36 units Electives

Honours Classics

(PROGRAM B: CLASSICAL LANGUAGES AND LITERATURE) {2132}

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
6 units from CLASSICS 2D03, 2E03, 3EE3, 3SO3, 3TT3, 3X03
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

Combined Honours in Classics and Another Subject

(PROGRAM A: ANCIENT HISTORY AND ARCHAEOLOGY)

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
21 units from CLASSICS 2B03, 2C03, 2K03, 2LA3, 2LB3, 2LC3, 2LD3, 2Y03, 2Y23, 2Z03, 3EE3, 3G03, 3H03, 3HH3, 3M03, 3MA3, 3MB3, 3MM3, 3SO3, 3TT3, 3X03
6 units from CLASSICS 4B03, 4BB3, 4E03, 4F03, 4T03
9 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

Combined Honours in Classics and Another Subject

(PROGRAM B: CLASSICAL LANGUAGES AND LITERATURE)

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
6 units from CLASSICS 2D03, 2E03, 3EE3, 3SO3, 3TT3, 3X03
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

B.A. in Classics {1130}

NOTE

Students are encouraged to include at least six units of Greek or Latin in their program. GREEK 1Z03, 1ZZ3 and LATIN 1Z03, 1ZZ3, if not completed in the Level I program, may be taken as elective courses.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I
30 units from the Level I program completed prior to admission into the program
12 units Level II Classics, Greek or Latin
12 units Level III Classics, Greek or Latin
36 units Electives

Minor in Classics

24 units of Classics, Greek or Latin, 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

INTERDISCIPLINARY MINOR IN ARCHAEOLOGY

See the Interdisciplinary Minors and Thematic Areas section of this Calendar.

DEPARTMENT OF COMMUNICATION STUDIES AND MULTIMEDIA

WEB ADDRESS: http://csmm.humanities.mcmaster.ca/

Honours Communication Studies {2163}

Communication Studies is an academic discipline which encompasses many fields of inquiry. Graduates of this program will have an advanced knowledge of the nature, function and evolution of communication, and will develop both practical and theoretical skills necessary to pursue careers in the field of communications. Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including a grade of at least B- in CMST 1A03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
9 units CMST 2A03, 2B03, 2C03
3 units from CMST 1B03, 2CC3
3 units MMEDIA 1A03 (must be completed by the end of Level II)
9 units from CMST 2DD3, 2K03, 2203, 3AA3, 3C03, 3D03, 3I03, 3K03, 3MM3, 3QQ03 which must include at least three units of Level II and three units of Level III courses

9 units from CMST 2BB3, 2G03, 2H03, 2I03, 2P03, 2RR3, 2S03, 3BB3, 3H03, 3SS3, 3UU3 which must include at least three units of Level II and three units of Level III courses

6 units from LINGUIST 1A03, 1AA3, CMST 2E03, 2F03, 3G03, 3V03, 3Y03, MMEDIA 2103 which may include no more than three units of Level I courses

6 units from Levels II or III Communication Studies, MMEDIA 2003, 3B03, 3E03, 3K03

6 units Level IV Communication Studies

39 units Electives

The Performance Studies Stream examines artistic and everyday performances. These performances range from theatre, concerts and performance art to story telling, ceremonies and public protests. Students will examine and analyze performances and their meanings and effects with particular emphasis on the relationships between these performances and their consequences with a particular emphasis on the role of actions in social communication.

The Mass Communication Stream focuses on the organization and functioning of information media such as television, radio, the Internet and the press as major institutions and sources of knowledge and understanding about society.

2. It is strongly recommended that students in the Language and Social Life Stream take LINGUIST 1A03 and 1AA3 in Level I or Level II in order to take upper level linguistics courses.

3. Some courses are listed in more than one Stream. Students can receive credit in only one stream for such courses.

4. It is recommended that students, especially those in the Language and Social Life Stream, take six units of a language other than English.

COURSE LIST 1 - LANGUAGE AND SOCIAL LIFE STREAM

6 units CMST 2E03, 3G03
3 units from CMST 4J03, 4L03
9 units from CMST 2F03, 2J03, 2V03, 2W03, 3C03, 3D03, 3E03, 3V03, 3WW3, 3Y03, 4D03, 4G03, 4H03, 4I03, 4J03, 4L03, 4R03, 4S03, 4T03; PSYCH 2C03, 2H03, 3J03, 3U03

COURSE LIST 2 - CULTURAL STUDIES STREAM

3 units CMST 2BB3
3 units from CMST 4C03, 4M03
12 units from CMST 2F03, 2I03, 2M03, 2N03, 2O03, 2P03, 2S03, 2T03, 2X03, 2Y03, 3B03, 3CC3, 3F03, 3P03, 3SS3, 3T03, 3TT3, 3UU3, 3WW3, 3X03, 4FF3

COURSE LIST 3 - PERFORMANCE STUDIES STREAM

6 units CMST 2G03, 4C03
6 units from CMST 2H03, 2P03, 2R03, 2RR3, 2S03, 3J03, 3U03
6 units from CMST 2F03, 2G03, 3H03, 3L03, 3M03; KINESIO 3JJ3, 3T03

COURSE LIST 4 - MASS COMMUNICATION STREAM

6 units CMST 2K03, 4E03, 4M03, 4P03, 4QQ3
3 units from CMST 2DD3, 2L03, 2Z03
3 units from CMST 3AA3, 3C03, 3D03
6 units from CMST 2F03, 2L03, 2Z03, 3C03, 3D03, 3I03, 3K03, 3MM3, 4D03

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
6 units CMST 2A03, 2B03, 2C03
3 units from CMST 1B03, 2CC3
3 units MMEDIA 1A03 (must be completed by the end of Level II)
3 units from CMST 2J03, 2K03, 2Z03
3 units from CMST 3AA3, 3C03, 3D03, 3I03, 3K03, 3MM3, 3QQ3
3 units from CMST 2BB3, 2G03, 2H03, 2I03, 2P03, 2RR3, 2S03
3 units from CMST 3BB3, 3H03, 3UU3, 3SS3
3 units from CMST 2E03, 2F03, 3G03, 3V03, 3Y03, MMEDIA 2103
3 units from Levels II or III Communication Studies, MMEDIA 2003, 3B03, 3E03, 3K03
3 units Level IV Communication Studies
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

PROGRAMS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2007

Honours Communication Studies

Communication Studies is an academic discipline which encompasses many fields of inquiry. Graduates of this program will have an advanced knowledge of the nature, function and evolution of communication and will develop both practical and theoretical skills necessary to pursue careers in the field of communications.

Students wishing to enter this program must complete an application for admission to Level II on MUGS in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 and a grade of at least B- in CMST 1A03.

NOTE

Because MMEDIA 1A03 is required for admission into the Honours Multimedia program, students registered in the Combined Honours Communication Studies and Multimedia program will substitute three units elective for MMEDIA 1A03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
9 units CMST 2A03, 2B03, 2C03
3 units from CMST 1B03, 2CC3
3 units MMEDIA 1A03 (must be completed by the end of Level II)
3 units from CMST 2J03, 2K03, 2Z03
3 units from CMST 3AA3, 3C03, 3D03, 3I03, 3K03, 3MM3, 3QQ3
3 units from CMST 2BB3, 2G03, 2H03, 2I03, 2P03, 2RR3, 2S03
3 units from CMST 3BB3, 3H03, 3UU3, 3SS3
3 units from CMST 2E03, 2F03, 3G03, 3V03, 3Y03, MMEDIA 2103
3 units from Levels II or III Communication Studies, MMEDIA 2003, 3B03, 3E03, 3K03
3 units Level IV Communication Studies
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

Combined Honours in Communication Studies and Another Subject

Communication Studies is an academic discipline which encompasses many fields of inquiry. Graduates of this program will have an advanced knowledge of the nature, function and evolution of communication, and will develop both practical and theoretical skills necessary to pursue careers in the field of communications.

1. Communication Studies is an academic discipline which encompasses many fields of inquiry. Graduates of this program will have an advanced knowledge of the nature, function and evolution of communication, and will develop both practical and theoretical skills necessary to pursue careers in the field of communications. Students in this program must complete two of the following Streams:

   The Language and Social Life Stream involves the study and discovery of patterns in human language and society. Focus is placed on the art and science of persuasion, linguistic methods and the importance of language in political and social life.

   The Cultural Studies Stream focuses on the critical analysis of popular culture through film, the visual arts and a variety of other forms. Unique to the Communication approach to Cultural Studies is a focus on empirical analysis as well as the social, political and cognitive significance of popular cultures.

   The Performance Studies Stream examines artistic and everyday performances. These performances range from theatre, concerts and performance art to story telling, ceremonies and public protests. Students will examine and analyze performances and their meanings and effects with particular emphasis on the relationships between these performances and their consequences with a particular emphasis on the role of actions in social communication.

   The Mass Communication Stream focuses on the organization and functioning of information media such as television, radio, the Internet and the press as major institutions and sources of knowledge and understanding about society.

2. It is strongly recommended that students in the Language and Social Life Stream take LINGUIST 1A03 and 1AA3 in Level I or Level II in order to take upper level linguistics courses.

3. Some courses are listed in more than one Stream. Students can receive credit in only one stream for such courses.

4. It is recommended that students, especially those in the Language and Social Life Stream, take six units of a language other than English.
The Performance Studies Stream examines artistic and everyday performances. These performances range from theatre, concerts, and performance art to story telling, ceremonies and public protests. Students will examine and analyze performances and their meanings and effects with particular emphasis on the relationships between these performances and their consequences with a particular emphasis on the role of actions in social communication.

The Mass Communication Stream focuses on the organization and functioning of information media such as television, radio, the Internet and the press as major institutions and sources of knowledge and understanding about society.

2. It is strongly recommended that students in the Language and Social Life stream take LINGUIST 1A03 and 1A33 in Level I or Level II in order to take upper level linguistics courses.

3. It is recommended that students, especially those in the Language and Social Life Stream, take six units of a language other than English.

### COURSE LIST 1 - LANGUAGE AND SOCIAL LIFE STREAM

<table>
<thead>
<tr>
<th>Units</th>
<th>Courses</th>
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<td>CMST 2E03, 3G03</td>
</tr>
<tr>
<td>3</td>
<td>from CMST 4J03, 4L03</td>
</tr>
<tr>
<td>9</td>
<td>from CMST 2F03, 2U03, 2V03, 2W03, 3C03, 3D03, 3E03, 3V03, 3W03, 3Y03, 4D03, 4G03, 4H03, 4I03, 4J03, 4L03, 4R03, 4S03, 4T03; PSYCH 2C03, 2H03, 3U03, 3U03</td>
</tr>
<tr>
<td>18</td>
<td>MMEDIA 2A03, 2B03, 2C03, 2D03, 2F03, 2G03, 2H03, 2J03, 3C03, 3D03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3K03, 4C03, 4D03</td>
</tr>
</tbody>
</table>

### COURSE LIST 2 - CULTURAL STUDIES STREAM

<table>
<thead>
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<th>Courses</th>
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</thead>
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<td>3</td>
<td>CMST 2B03</td>
</tr>
<tr>
<td>3</td>
<td>from CMST 4C03, 4M03</td>
</tr>
<tr>
<td>12</td>
<td>from CMST 2F03, 2I03, 2M03, 2M2M, 2N03, 2Q03, 2S03, 3B03, 3C03, 3F03, 3P03, 3S03, 3T03, 3TTT, 3U03, 3W03, 3XX3, 4F03</td>
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### COURSE LIST 3 - PERFORMANCE STUDIES STREAM

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<tr>
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<th>Courses</th>
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<tbody>
<tr>
<td>6</td>
<td>CMST 2G03</td>
</tr>
<tr>
<td>6</td>
<td>from CMST 2H03, 2I03, 2R03, 2R03, 2S03, 3U33, 3U03</td>
</tr>
<tr>
<td>6</td>
<td>from CMST 2F03, 2Q03, 3H03, 3L03, 3M03, KINESIOL 3JJ3, 3T03</td>
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### COURSE LIST 4 - MASS COMMUNICATION STREAM

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</tr>
<tr>
<td>3</td>
<td>from CMST 2DD3, 2L03, 2Z03</td>
</tr>
<tr>
<td>3</td>
<td>from CMST 3AA3, 3C03, 3D03</td>
</tr>
<tr>
<td>6</td>
<td>from CMST 2F03, 2L03, 2Z03, 3C03, 3D03, 3I03, 3K03, 3M33, 4D03</td>
</tr>
</tbody>
</table>

### REQUIREMENTS

- **120 units total** (Levels I to IV), of which 48 units may be Level I
- **30 units** from the Level I program completed prior to admission into the program
- **12 units** from CMST 2A03, 2B03, 2C03, 2D03
- **3 units** from CMST 3K03, 3N03, 3Q03
- **3 units** from CMST 4C03, 4D03, 4M03, 4N03, 4P03, 4Q03, 4R03
- **18 units** from one of the Course Lists (See Note 1 above.)
- **36 units** Courses specified for the other subject.
- **18 units** Electives to total 120 units

### Multimedia

**WEB ADDRESS:** [http://csmm.humanities.mcmaster.ca/](http://csmm.humanities.mcmaster.ca/)

### Honours Arts & Science and Multimedia

(B.Arts.Sc.; See Arts & Science Program)

### Honours Multimedia

<table>
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<tr>
<th>Units</th>
<th>Courses</th>
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<tbody>
<tr>
<td>2294</td>
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</table>

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2008-2009 academic year, an Honours Bachelor of Arts program in Multimedia will be offered.

Students wishing to enter this program must complete an application for admission to Level II on MUGS1 in mid-March to be considered for admission. (See Notes below.)

**ADMISSION**

Enrolment in this program is limited and highly competitive. Selection is based on academic achievement in Level I Multimedia courses but requires, as a minimum, completion of any Level I program and a Cumulative Average of at least 6.0 including a grade of at least B- in each of MMEDIA 1A03, 1B03.

**NOTES**

1. Students wishing to enter this program must complete an application for admission to Level II on MUGS1 in mid-March to be considered for admission. (See Notes below.)

2. Applicants must have completed Level I (30 units including MMEDIA 1A03 and 1B03) by April of the year in which application is made.

3. Decisions regarding admission into the Multimedia program are made in May when final grades for the previous Fall/Winter session are known. After this process, if spaces in the program are still available, interested students who are completing MMEDIA 1A03 and/or 1B03 during the Spring/Summer session and who meet the admission requirements may be considered for admission into the program.

4. The Combined Honours in Multimedia program is not available to students who already possess an undergraduate degree. As an alternative, such students may be interested in the Certificate/Diploma in Web Design and Development of...
COURSE LIST 1
CMST 2T03, COMP SCI 1MA3, 2SC3; LINGUIST 4D03; MMEDIA
2C03, 2D03, 2E03, 2F03, 2G03, 2H03, 2103, 2J03, 3C03, 3D03,
3E03, 3F03, 3G03, 3H03, 3103, 3J03, 3K03, 4C03, 4D03; MUSIC
2F03; THTTR&FLM 2ED3; WOMEN ST 2D03

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admis-
sion into the program
18 units MMEDIA 2A03, 2B03, 3A03, 3B03, 4A03, 4B03
3 units from MMEDIA 2C03, 3G03
15 units from Course List I
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

COMPARATIVE LITERATURE

WEB ADDRESS: http://www.humanities.mcmaster.ca/complit

Honours Arts & Science and Comparative Literature
(B.Arts.Sc.; See Arts & Science Program)

Combined Honours in Comparative Literature and Another Subject

Comparative Literature is the study of literature from an interna-
tional and interdisciplinary perspective. The Combined Honours
Program allows students to pursue both Comparative Literature
(taught in English) and another subject of their choosing.

Students wishing to enter this program must complete an
application for admission to Level II on MUGS1 in mid-March to
be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of
at least 6.0 including a grade of at least B- in COMP LIT 1A03 or
1AA3; whichever of these two courses was not completed in Level I
must be taken in Level II.

NOTES

1. Students registered in the Comparative Literature program
   are encouraged to substitute up to 12 units of a language other
   than English as part of the Comparative Literature require-
   ments, with the approval of the Director of the Program.
2. Graduate programs in Comparative Literature require profi-
   ciency in a second language. Students who plan to pursue
   graduate studies in Comparative Literature are strongly en-
   couraged to include a second language beyond the introduc-
   tory level in their program.
3. Upon completion of 60 units of work and with the approval of
   the Director of Comparative Literature and of the Office of the
   Dean of the Faculty of Humanities, one or both terms of Level III of
   this program may be replaced by courses of study at a university or
   universities under the Humanities Study Elsewhere Program.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admis-
sion into the program
15 units from COMP LIT 2A03, 2AA3, 2BB3, 2CC3, 2F03, 3BB3,
3EE3, 3G03, 3H+3, 3J03, 3MM3, 3N03, 3QQ3, 3SS3, 3VV3
6 units from COMP LIT 4A03, 4D03, 4E03, 4F03, 4T03
15 units Levels II, III, IV Comparative Literature (See Note 7 above.)
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

 Minor in Comparative Literature

24 units of Comparative Literature, of which no more than six
units may be taken from Level I

DEPARTMENT OF ENGLISH
AND CULTURAL STUDIES

WEB ADDRESS: http://www.humanities.mcmaster.ca/english

Programs Offered by the Department of English and Cultural Studies

Honours Arts & Science and English

(B.Arts.Sc.; See Arts & Science Program)

AREAS OF STUDY

The Department has defined four areas of study. Students
should consult the Program Notes for their specific program 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>ENGLISH COURSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA 1</td>
<td>Early British Literature</td>
</tr>
<tr>
<td></td>
<td>2B06, 3C06, 3D06, 3K06, 3L06, 3V06</td>
</tr>
<tr>
<td>AREA 2</td>
<td>Later British Literature</td>
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<td>2D06, 3G06, 3J06, 3M06</td>
</tr>
<tr>
<td>AREA 3</td>
<td>Canadian, American and Post-Colonial Literature</td>
</tr>
<tr>
<td></td>
<td>2G06, 2X06, 3Y06, 3R06</td>
</tr>
<tr>
<td>AREA 4</td>
<td>Theory and Cultural Studies</td>
</tr>
<tr>
<td></td>
<td>2A03, 2K03, 2M03, 2N03, 3A03, 3AA3, 3J03, 3JJ03, 3QQ3, 3Q03</td>
</tr>
</tbody>
</table>

Honours English (2200)

Students wishing to enter this program must complete an
application for admission to Level II on MUGS1 in mid-March to
be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of
at least 6.0 including an average of at least 7.0 in six units of
Level I English.

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; nine units
     of Level IV English seminars. (No student may
     take more than nine 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 ENGLISH
   4X03 should contact the faculty member chairing the ENG-
   LISH 4X03 committee early in the first term.
3. Most graduate programs in English require proficiency in a
   second language. Students who plan to pursue graduate
   studies in English are strongly encouraged to include in their
   program a second language beyond the introductory level.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admis-
sion into the program
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 English courses
Combined Honours in English and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I English.

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 6 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 4030 for three units of Level IV seminar work in second term. Students who are interested in taking ENGLISH 4030 should contact the faculty member chairing the ENGLISH 4030 committee early in the first term.

3. Most graduate programs in English require proficiency in a second language. Students who plan to pursue graduate studies in these areas are strongly encouraged to include in their program a second language beyond the introductory level.

Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>120 units total (Levels I to IV), of which 48 units may be Level I</td>
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</tr>
<tr>
<td>30 units from the Level I program completed prior to admission into the</td>
<td></td>
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<tr>
<td>program</td>
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<tr>
<td>6 units from Area 1 English courses</td>
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<td>6 units from Area 2 English courses</td>
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<tr>
<td>6 units from Area 3 English courses</td>
<td></td>
</tr>
<tr>
<td>6 units from Area 4 English courses</td>
<td></td>
</tr>
<tr>
<td>6 units from Areas 1-4 or ENVIRONMENT 2D03, 2R03, 2N03, 3C03, 3D03, 3ED03,</td>
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<td>3EE03, 3H03, 3RR3, 3S03, 3W03, 3X03, 3Y03</td>
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</tr>
<tr>
<td>6 units Level IV English seminars</td>
<td></td>
</tr>
<tr>
<td>36 units Courses specified for the other subject. (Combinations with Social</td>
<td></td>
</tr>
<tr>
<td>Sciences may require more than 36 units.)</td>
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</tr>
<tr>
<td>18 units Electives to total 120 units</td>
<td></td>
</tr>
</tbody>
</table>

Combined Honours in Cultural Studies and Critical Theory and Another Subject

Cultural Studies and Critical Theory (CSCIT) provides students with an opportunity to investigate the texts, practices, theories and concepts that animate modern individual and social experience. CSCIT examines a wide range of cultural forms, including those that have been typically overlooked in universities (e.g. television, popular film and fiction, and practices of everyday life), while paying attention to topics such as gender, sexuality and the body, class, race and ethnicity, postcolonialism, subjectivity and representation, ideology and power/knowledge, aesthetics and taste, and technology and culture.

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from CSCIT 1B03, 1B33, ENGLISH 1A03, 1A33, 1B03, 1B33, 1C06.

NOTES

1. When registering, students should distribute their required Cultural Studies and Critical Theory courses (see Requirements below) as follows:
   - Level II 12 units of Levels II and/or III Cultural Studies and Critical Theory
   - Level III 12 units of Levels II and/or III Cultural Studies and Critical Theory

B.A. in English

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 3.5 including an average of at least 4.0 in six units of Level I English.

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 12 units of Levels II and/or III English

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

30 units from the Level I program completed prior to admission into the program

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

36 units Electives

Minor in English

Six units of Level I English and 18 units of Levels II and III English

DEPARTMENT OF FRENCH

Web Address: http://www.humanities.mcmaster.ca/~french

Honours Arts & Science and French

(B.Arts.Sc.; See Arts & Science Program)

The Department of French has an overall theme of Francophonie (the French-speaking world) and Diversité. This theme is reflected in the four areas of study in the following table which serves to give an overview of courses available in each area of concentration. Students are not expected to specialize officially in any one area.
**FACULTY OF HUMANITIES**

### AREA

<table>
<thead>
<tr>
<th>FRENCH COURSES</th>
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<tbody>
<tr>
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</table>

### NOTE

Students planning to do graduate work in French literature are advised to take as many courses as possible from the Franco-European Literatures and Cultures Area.

### Honours French

**2233**

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

**ADMISSION**

Completion of any Level I program and a Cumulative Average of at least 6.0 including a grade of at least B- in FRENCH 1A06 or 2M06.

### NOTES

1. Students who complete FRENCH 1K06 and wish to enter a program in French will be eligible to take FRENCH 2M06 (equivalent to FRENCH 1A06) in the Spring/Summer session. Completion of FRENCH 2M06, with the appropriate grade and Cumulative Average, will enable students to enter Level II of a program in French in the Fall/Winter session immediately following.

2. 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 Office of the Dean of the Faculty of Humanities, Level III of Honours French may be replaced by courses of study at a French-language university.

### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission into the program

12 units FRENCH 2B03, 2BB3, 3C03, 4A03

9 units FRENCH 2E03, 2F03, 2H03

3 units from FRENCH 3Z03, 4L3

12 units from FRENCH 2J03 or 2JJ3; 3K03 or 3KK3; 3Q03 or 3QQ3; 3W03 or 3WW3; 3Y03, 4D03, 4F03, 4I03, 4J03, 4MM3, 4N03, 4S03, 4V03, 4Y03

6 units Levels II, III or IV French

36 units Electives

### Combined Honours in French and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

**ADMISSION**

Completion of any Level I program and a Cumulative Average of at least 6.0 including a grade of at least B- in FRENCH 1A06 or 2M06.

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### B.A. in French

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

**ADMISSION**

Completion of any Level I program and a Cumulative Average of at least 3.5 including a grade of at least C- in FRENCH 1A06 or 2M06.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I

30 units from the Level I program completed prior to admission into the program

9 units FRENCH 2B03, 2BB3, 3C03

12 units from FRENCH 2E03, 2F03, 2H03, 3Z03

12 units from FRENCH 2J03 or 2JJ3; 3K03 or 3KK3; 3Q03 or 3QQ3; 3W03 or 3WW3; 3Y03, 4D03, 4S03

3 units Levels II or III French

24 units Electives

### Minor in French

**REQUIREMENTS**

24 units total

6 units from FRENCH 1A06, 1N06, 2M06

9 units FRENCH 2B03, 2BB3, 3C03

3 units from FRENCH 2E03, 2F03, 2H03, 2NJ3, 2W03, 2WW3, 2AA3, 3K03, 3KK3, 3Q03, 3QQ3, 3W03, 3WW3, 3Y03, 3Z03

6 units Levels II or III French, excluding FRENCH 2M06 and 2Z06

### PROGRAMS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2006

Students who entered a program in French prior to September 2006 should refer to their degree audits or contact the Departmental Counsellor in the Department of French to discuss their program requirements.

### DEPARTMENT OF HISTORY

**WEB ADDRESS:** http://www.humanities.mcmaster.ca/history/

**Honours Arts & Science and History**

(B.Arts.Sc.: See Arts & Science Program)

**SUBFIELDS**

The Department has defined three fields of study. Students should consult the Program Notes for their specific program to determine the requirements regarding these fields. Level II and III courses are allocated to the fields as follows:

- **Europe**
  - HISTORY 2CC3, 2DD3, 2EE3, 2FF3, 2HH3, 2II3, 2MM3, 2QQ3, 2S03, 2U03, 2U13, 2X03, 3D03, 3F03, 3FF3, 3H03, 3I13, 3L03, 3PP3, 3QQ3, 3RR3, 3SS3, 3T03, 3UU3, 3V03, 3VV3, 3Y03, 3Y13, 3Z03, 3Z23
Ancient and Non-Western World

HISTORY 2EE3, 2HH3, 2J03, 2JJ3, 2K03, 2L03, 2LA3, 2LB3, 2LC3, 2LD3, 2LL3, 2U03, 2UU3, 3AA3, 3BB3, 3CC3, 3D03, 3EE3, 3G03, 3H03, 3LL3, 3M03, 3MM3, 3TT3, 3XX3

The Americas

HISTORY 2AA3, 2DD3, 2EE3, 2G03, 2R03, 2RR3, 2TT3, 3G03, 3II3, 3J03, 3K03, 3KK3, 3L03, 3N03, 3NN3, 3P03, 3P03, 3U03, 3UU3, 3V03, 3W03, 3WW3, 3Y03

Honours History

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I History.

NOTES

1. In selecting courses, students must ensure that they take a minimum of six units in each of three fields of History. 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.

2. All students registered in an Honours History program must take HISTORY 2P03 in Level II as part of their degree requirements. Those students who entered the program prior to September 2007 should follow the requirements as specified on their degree audit and are not required to take HISTORY 2P03.

3. The department recommends that students take one Level IV seminar in Level III and one Level IV seminar in Level IV. Students must complete HISTORY 2P03 before enrolling in a Level IV History seminar.

4. KINESIOL 3A03 (History of Physical Culture and Sports Medicine) and KINESIOL 4113 (Canadian Sport and Physical Activity History) may be taken as substitutes for three units of Level III History in Level II or III of any honours program in History.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission into the program

15 units Level II History

3 units HISTORY 2P03 (See Note 2 above.)

15 units Level III History

12 units Level IV History

45 units Electives

Combined Honours in History and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I History.

NOTES

1. In selecting courses, students must ensure that they take a minimum of three units in each of three fields of History. 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.

2. All students registered in an Honours History program must take HISTORY 2P03 in Level II as part of their degree requirements. Those students who entered the program prior to September 2007 should follow the requirements as specified on their degree audit and are not required to take HISTORY 2P03.

3. No Level IV seminar may be taken before completion of 12 units of History above Level I. Students must complete HISTORY 2P03 before enrolling in a Level IV History seminar.

4. The department recommends that students take one Level IV seminar in Level III and one Level IV seminar in Level IV.

5. KINESIOL 3A03 (History of Physical Culture and Sports Medicine) and KINESIOL 4113 (Canadian Sport and Physical Activity History) may be taken as substitutes for three units of Level III History in Level II or III of any honours program in History.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission into the program

9 units Level II History

3 units HISTORY 2P03 (See Note 2 above.)

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 Elective to total 120 units

B.A. in History

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I History.

NOTES

1. In selecting courses, students must ensure that they take a minimum of three units in each of three fields of History. All Level II and III History courses from the above list may be used towards this requirement.

2. KINESIOL 3A03 (History of Physical Culture and Sports Medicine) may be taken as a substitute for three units of Level III History.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

30 units from the Level I program completed prior to admission into the program

12 units Level II History

12 units Level III History

36 units Electives

Minor in History

24 units of History of which no more than six units may be from Level I. Consult the Course Listings section for course prerequisites and limited enrolment courses.

COMBINED B.A. IN INDIGENOUS STUDIES AND ANOTHER SUBJECT

For details see Combined B.A. in Indigenous Studies and Another Subject section of this Calendar.

JAPANESE STUDIES

Minor in Japanese Studies

24 units from JAPANESE 1Z06 and JAPAN ST 2P06 and 12 additional units of Japanese or Japanese Studies courses

DEPARTMENT OF LINGUISTICS AND LANGUAGES

WEB ADDRESS: http://www.humanities.mcmaster.ca/~linguistics

Honours Arts & Science and Linguistics

(B.Arts.Sc.; See Arts & Science Program)

The Department of Linguistics and Languages offers B.A. Honours programs in:

- Linguistic Cognitive Science
- Linguistics
Honours Linguistics {2312}

This program is designed for students who are concentrating on the scientific study of language (phonology, morphology, syntax, semantics, etc.).

Students wishing to enter this program must complete an application for admission to Level II on MUGSL in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in LINGUIST 1A03 and 1AA3. Please see Note 4 below.

NOTES

1. Students are required to complete 18 units of a language other than English for this program with six units at Level I and 12 units above Level I. Please note however, that some languages begin at Level II. Students are also advised that some languages may not offer sufficient units to meet this 18 unit requirement. Students should consult the Academic Counsellor in Linguistics in selecting their language of concentration.

2. Students whose other subject involves the study of a language may substitute the 12 units of language other than English with 12 units from Course List 1.

3. Upon completion of 60 units of work and with the approval of the Department of Linguistics and Languages, and the Office of the Dean of the Faculty of Humanities, one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Program.

4. Students who are interested in taking Psychology courses which appear in Course List 1 should note that some of these courses require a prerequisite of either a credit in Grade 12 Biology U or BIOLOGY 1P03 in addition to PSYCH 1A03, 1AA3 (or 1X03, 1X33).

COURSE LIST 1 - THEORETICAL LINGUISTICS

All Linguistics courses above Level I; and all courses taught in a language other than English: CMST 3E03; MMEDIA 2D03, 2I03, 4C03; PHILOS 2B03, 3E03, 3F03, 4D03; PSYCH 2E03, 2H03, 3A03, 3U03, 3UU3.

COURSE LIST 2 - APPLIED LINGUISTICS

All Linguistics courses above Level I (See Note 4 above); and all courses taught in a language other than English; MMEDIA 4C03; PSYCH 2C03, 2H03, 3A03, 3U03, 3UU3.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

Combined Honours in Linguistics and Another Subject

This program is designed for students who want to combine the scientific study of language with another subject of their choice.

Students wishing to enter this program must complete an application for admission to Level II on MUGSL in mid-March to be considered for admission.

ADMISSION

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in LINGUIST 1A03 and 1AA3. Please see Note 4 below.

NOTES

1. Students should be aware that, effective 2008-2009, the Department of Psychology, Neuroscience and Behaviour has reorganized its Level I Psychology course offerings. PSYCH 1X03 will require completion of PSYCH 1X03 and either Grade 12 Biology U or BIOLOGY 1P03 as a prerequisite.

2. When selecting electives, students may choose to focus on one of the following subfields though it is not necessary to do so. Students should speak with the Undergraduate Counselor for Linguistics to determine which electives are most appropriate for their academic and professional objectives.
SPEECH AND LANGUAGE PATHOLOGY PREPARATION
GERONTOL 2E03; MATH 1M03; KINESIOI 1Y03, 1Y13; LINGUIST 3B03, 3C03, 3X03, 4S13; PSYCH 2A03, 2E03, 2H03, 2RA3, 2RB3, 3A03

Students wishing to enter a graduate program in Speech and Language Pathology should take a total of six units of statistics courses.

LANGUAGE AND SOCIAL LIFE
CMST 3C03, 3D03; FRENCH 3CC3, 4BB3, 4H03, 4X03; LINGUIST 2E03, 3P03, 3X03, 4I03, 4M03, 4N03, 4R03, 4S03 4T03, 4Z23; MMEDIA 2D03, 2I03, 3B03, 3D03; PSYCH 2C03

COGNITIVE SCIENCE
FRENCH 3CC3, 4BB3, 4H03, 4X03; LINGUIST 2AA3, 2LL3, 4D03, 4L3B, 4L3C, 4XX3, 4Z23; MMEDIA 2D03, 3B03, 3D03, 3F03, 3J03; PHILOS 2F03, 3F03, 3M03; PSYCH 2C03, 2D03, 2H03, 3A03, 3B03, 3H13, 3J13, 3Q03, 3V03, 4B13, 4Z23

At some time during the program, students must meet a laboratory requirement by completing one course from Course List 1 below. Enrolment in Psychology Laboratory courses is limited.

4. In this program students are required to complete 12 units of language courses other than English. Students may choose to complete 12 units of one language or six units of two different languages in order to fulfill this requirement.

5. Students taking French courses as a part of this program must be proficient enough to participate in a classroom environment conducted entirely in French, but will have the option of writing assignments and answering exam questions in English.

COURSE LIST 1
LINGUIST 4D03, 4L13; PSYCH 3E03, 3L03, 3QQ3, 3V03

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
15 units LINGUIST 2L03, 3A03, 3I03, 4I03, 4M03
3 units from LINGUIST 3C03, PSYCH 3I13
3 units from LINGUIST 4B03, 4L3B, 4L3C, 4M03, 4X03, 4Z23
6 units from LINGUIST 3P03, PHILOS 2B03, 3E03, 3F03
6 units from PSYCH 1AA3 (or 1X03), 1X03, 2H03
6 units from LINGUIST 3B03, PSYCH 3U03, 3UU3
3 units from PSYCH 2D03, 2E03, 2F03
3 units from PSYCH 2RA3, 2RR3, SOC SCI 2J03
12 units from a language other than English (See Note 4 above.)
3 units from Course List 1
30 units Electives

Combined Honours in Linguistic Science and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGS in mid-March to be considered for admission.

ADMISSION
Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in LINGUIST 1A03, 1A13 and PSYCH 1A03 (or 1X03).

NOTES
1. Students should be aware that, effective 2008-2009, the Department of Psychology, Neuroscience and Behaviour has reorganized its Level I Psychology course offerings. PSYCH 1XX3 will require completion of PSYCH 1X03 and either Grade 12 Biology U or BIOLOGY 1P03 as a prerequisite.
2. At some time during the program, students must meet a laboratory requirement by completing one course from Course List 1 below. Enrollment in Psychology Laboratory courses is limited.
3. Students are not permitted to combine this program with the Combined Honours in Linguistics or Combined Honours in Psychology programs.

COURSE LIST 1
LINGUIST 4D03, 4L13; PSYCH 3E03, 3L03, 3QQ3, 3V03

Requirements
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
12 units from LINGUIST 2L03, 3A03, 3I03, 4I03, 4M03
3 units from LINGUIST 3C03, PSYCH 3I13
3 units from LINGUIST 4B03, 4L3B, 4L3C, 4M03, 4X03, 4Z23
3 units from LINGUIST 3P03, PHILOS 2B03, 3E03
6 units from PSYCH 1AA3 (or 1X03), 1X03, 2H03
6 units from LINGUIST 3B03, PSYCH 3U03, 3UU3
3 units from PSYCH 2RA3, 2RR3, SOC SCI 2J03
3 units from Course List 1
36 units Courses specified for the other subject. (See Note 3 above.)
15 units Electives

Minors

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 Japanese Language
24 units of Japanese, 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

Peace Studies

WEB ADDRESS: http://www.humanities.mcmaster.ca/~peace

Honours Arts & Science and Peace Studies
(B.Arts.Sc.; See Arts & Science Program)

Combined Honours in Peace Studies and Another Subject

Students wishing to enter this program must complete an application for admission to Level II on MUGS in mid-March to be considered for admission.

ADMISSION
Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in PEACE ST 1A03 and 1B03.

NOTES
1. Students should note that certain courses in Course Lists 1 and 2 have their own disciplinary prerequisites.
2. Upon completion of 60 units of work and with the approval of both the Director of Peace Studies and the Office of the Dean of the Faculty of Humanities, one or both terms of Level III of this program may be replaced by courses of study at a university or universities under the Humanities Studies Elsewhere program.

COURSE LIST 1
HISTORY 2G03, 3I13, 3KK3; PEACE ST 2AA3, 2B03, 2I03, 2I13, 2S03, 3A03, 3B03, 3E06, 3F03, 3I03, 3L03, 3M03, 3MM3, 3N03, 3O03, 3V03, 3X03, 3XX3, 3Y03, 3Y13, 3Z03, 4C03

COURSE LIST 2
ANTHROP 2X03, 3T03; BIOLOGY 4EE3; ECON 2F03; LABR ST 2A03, 2C03, 3G03; POL SCI 3AA3, 3KK3, 3Q03, POL SCI 3Y03; RELIG ST 2H03, 2L03, 2M03; SOCSCI 3KK3
REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission to the program
3 units PEACE ST 2A03
3 units from ANTHROP 3T03, PEACE ST 3M03, RELIG ST 2H03, SOCIOL 3KK3
3 units from PEACE ST 4A03, 4B03, 4D03
9 units from Course List 1
9 units from Course List 2
9 units from Course Lists 1 and 2
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

NOTE
- With the permission of the Director of Peace Studies, some courses not listed may be substituted, at the appropriate Level,
- Students are advised to take note which courses are offered in alternate years.
- Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their program.
- Students are also advised to note which courses are offered in alternate years.
- Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Office of the Dean of theFaculty of Humanities, 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 to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
12 units PHILOS 2A06, 2C06
3 units from HUMAN 2C03, PHILOS 2B03
15 units Levels III or IV Philosophy
6 units Level IV Philosophy
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 Philosophy and Biology (B.A.)

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.

ADMISSION
Completion of any Level I program and a Cumulative Average of at least 6.0 and an average of at least 7.0 in six units of Level I Philosophy 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 program.
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 Office of the Dean of the Faculty of Humanities, 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 to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission into the program
12 units PHILOS 2A06, 2C06, 2B03, 2D03, 2E03, 2F03, CHEM 2E03
24 units from BIOLOGY 2G03, Levels III or IV Biology (See Note 3 above.)
18 units PHILOS 2A06, 2C06, 3O03, 4H03
3 units from PHILOS 2D03, 2F03, 2G03
3 units from PHILOS 3G03, 3N03
6 units Levels III or IV Philosophy
3 units Level IV Philosophy
18 units Electives

Honours Philosophy and Mathematics (B.A.)

Students wishing to enter this program must complete an application for admission to Level II on MUGSI in mid-March to be considered for admission.
**ADMISSION**

Completion of any Level I program and a Cumulative Average of at least 6.0; and successful completion of MATH 1A03 or 1X03; and a grade of at least B- in MATH 1B03 and either MATH 1AA3 or 1XX3; and an average of at least 7.0 in six units of Level I Philosophy or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

**NOTES**

1. 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. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Office of the Dean of the Faculty of Humanities, 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 to IV), of which 48 units may be Level I.

- 30 units from the Level I program completed prior to admission into the program
- 9 units MATH 2R03, 2X03, 2XX3
- 3 units from MATH 2C03, STATS 2D03
- 12 units Levels II, III or IV Mathematics or Statistics which must include MATH 3A03, 3X03
- 12 units Levels III or IV Mathematics or Statistics which must include at least one course at Level IV
- 12 units PHILOS 2A06, 2C06
- 3 units PHILOS 2B03
- 21 units Levels III or IV Philosophy
- 3 units Level IV Philosophy
- 15 units Electives

**B.A. in Philosophy**

Students wishing to enter this program must complete an application for admission to Level II on MUGS1 in mid-March to be considered for admission.

**ADMISSION**

Completion of any Level I program and a Cumulative Average of at least 3.5 and an average of at least 4.0 in six units of Level I Philosophy.

**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 to III), of which 42 units may be Level I.

- 30 units from the Level I program completed prior to admission into the program
- 12 units PHILOS 2A06, 2C06
- 3 units from HUMAN 2003, PHILOS 2B03
- 3 units Levels II, III or IV Philosophy
- 6 units Levels III or IV Philosophy
- 36 units Electives

**Minor in Philosophy**

24 units from PHILOS 2A06 and 2C06; and 12 additional units of Philosophy, of which no more than six units may be from Level I.

**WOMEN’S STUDIES**

WEB ADDRESS: http://www.humanities.mcmaster.ca/~womensst/

Honours Arts & Science and Women’s Studies

(B.Arts.Sc.; See Arts & Science Program)

Combined Honours in

Women’s Studies and Another Subject

Women’s Studies may be taken as a Combined Honours degree or as a Minor. All Women’s Studies courses are interdisciplinary, allowing students to explore the relationship between different branches of knowledge and to examine critically different approaches to knowledge construction and theoretical positions in understanding the contributions and social locations of women. Graduates of the Program will be able to choose from a wide career list which includes industrial and government consulting, personnel management, labour relations, education and health care professions. The Program’s focus on research prepares students for graduate school.

Students wishing to enter this program must complete an application for admission to Level II on MUGS1 in mid-March to be considered for admission.

**ADMISSION**

Completion of any Level I program and a Cumulative Average of at least 6.0 including an average of at least 7.0 in WOMEN ST 1A03 and 1AA3 or a grade of at least B- in WOMEN ST 1A06.

**NOTES**

1. Students who have not taken WOMEN ST 1A03 and 1AA3 (or 1A06) because they have transferred from another university may be considered for admission to the program if they are deemed by the Admissions Committee to have fulfilled requirements equivalent to those courses.

2. In Levels II, III and IV, students must take six units of Women’s Studies courses appropriate to their level and six additional units of approved discipline-related courses at each level.

3. The courses required for the Women’s Studies portion of the Combined Honours program may not include courses offered in the student’s other subject area.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I.

- 30 units from the Level I program completed prior to admission to the program
- 6 units WOMEN ST 2A03, 2AA3
- 6 units from RELIG ST 2SS3, SOCIOl 2Q06, WOMEN ST 2F03, 2FF3, 2H03, 2HH3, 2J03, 2K06, 2L03
- 6 units WOMEN ST 3A03, 3AA3
- 6 units from LABR ST 3E03, WOMEN ST 3B03, 3BB3, 3DD3, 3E03, 3G03, 3GG3, 3H03, 3HH3, 3I03, 3NN3, 3WW3, 3Z03
- 6 units WOMEN ST 4A06
- 6 units from HISTORY 4R06, KINESIOl 4T03, SOC WORK 4R03, WOMEN ST 4B03, 4C03, 4J03
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Elective course work above Level I to total 120 units

With the permission of the Director of Women’s Studies, some courses not listed above may be substituted, at the appropriate level, from: Anthropology, Classics, Comparative Literature, English and Cultural Studies, French, Geography and Earth Sciences, History, Kinesiology, Labour Studies, Philosophy, Religious Studies and Sociology.

**Minor in Women’s Studies**

NOTE

The courses required for the Minor may not include courses offered in the student’s other subject area.

**REQUIREMENTS**

24 units total

- 6 units WOMEN ST 1A03, 1AA3 (or 1A06)
- 18 units Levels II or III Women’s Studies courses as listed under Women’s Studies in the Course Listings section of this Calendar.
LEVEL I PROGRAMS IN THE FACULTY OF SCIENCE
HONOURS BACHELOR OF SCIENCE AND BACHELOR OF SCIENCE PROGRAMS:

ENVIRONMENTAL AND EARTH SCIENCES

Prior to registration, Level I students must review the admission requirements of the Level II programs they are considering. Courses must be selected carefully to meet the admission requirements for entry to Level II of a specific program. (See Faculty of Science program descriptions in this section of the Calendar for Level II program admission requirements.) The Office of the Associate Dean of Science (Studies) organizes Level I Counselling Sessions in late June and early July to provide Level I students with academic advice and registration assistance. Attendance at a Counselling Session is strongly advised. Students who are unable to attend are asked to contact the Office of the Associate Dean of Science (Studies) for pre-registration advice and further information.

PROGRAM NOTES

1. Students without Grade 12 Calculus and Vectors U must complete MATH 1F03.
2. BIOLOGY 1P03, which may be completed as an elective, serves as the prerequisite for BIOLOGY 1A03 and 1M03 for those students who did not complete Grade 12 Biology U.
3. CHEM 1R03, which may be completed as an elective, serves as the prerequisite for CHEM 1A03 for those students who did not complete Grade 12 Chemistry U.
4. PHYSICS 1L03, which may be completed as an elective, serves as the prerequisite for PHYSICS 1B03 for those students who did not complete Grade 12 Physics U.
5. SCI 1A03, 1B03, 1L03; PHYSICS 1L03, 1B03, 1F03, 1L03; PSYCH 1X03, 1XX3

REQUIREMENTS: 30 UNITS

3 units from ENVIR SC 1A03, 1B03
3 units from MATH 1A03, 1LS3
3 units from BIOLOGY 1M03, PHYSICS 1B03, 1L03 (See Program Notes 2 and 4 above.)
3 units from CHEM 1A03, 1R03 (See Program Note 3 above.)
9 units from Environmental and Earth Sciences I Course List
6 units Electives (See Program Note 1 above.)

LIFE SCIENCES

Prior to registration, Level I students must review the admission requirements of the Level II programs they are considering. Courses must be selected carefully to meet the admission requirements for entry to Level II of a specific program. (See Faculty of Science program descriptions in this section of the Calendar for Level II program admission requirements.) The Office of the Associate Dean of Science (Studies) organizes Level I Counselling Sessions in late June and early July to provide Level I students with academic advice and registration assistance. Attendance at a Counselling Session is strongly advised. Students who are unable to attend are asked to contact the Office of the Associate Dean of Science (Studies) for pre-registration advice and further information.

PROGRAM NOTES

1. Students without Grade 12 Calculus and Vectors U must complete MATH 1F03.
2. Completion of both PSYCH 1X03 and 1XX3 is required for admission to all Honours B.Sc. Psychology, Neuroscience and Behaviour programs and most Level II Psychology courses.
3. CHEM 1R03, which may be completed as an elective, serves as the prerequisite for CHEM 1A03 for those students who did not complete Grade 12 Chemistry U.
4. Completion of both BIOLOGY 1A03 and 1M03 is required for admission to all Biology programs and some Level II Biology courses.
5. PHYSICS 1L03, which may be completed as an elective, serves as the prerequisite for PHYSICS 1B03 for those students who did not complete Grade 12 Physics U.
6. SCIENCE 1A00, a one-hour mandatory Health and Safety course, is a co-requisite to BIOLOGY 1A03, CHEM 1A03, ENVIR SC 1B03, ISCI 1A24, KINESIOLOGY 1A03, 1Y03, PHYSICS 1B03.
7. INQUIRY 1SC3 may be taken as an elective.

**LIFE SCIENCES I COURSE LIST**

- ASTRON 1F03: BIOLOGY 1A03, 1M03; CHEM 1A03, 1AA3; COMP SCI 1FC3, 1MA3, 1MD3; ENVIR SC 1A03, 1B03, 1G03; KINESIOLOGY 1Y03, 1Y03; MATH 1A03, 1AA3, 1B03, 1L03; PHYSICS 1B03, 1BA3, 1BB3, 1L03; PSYCH 1X03, 1XX3

**REQUIREMENTS: 30 UNITS**

- 9 units from BIOLOGY 1A03, 1M03, PSYCH 1X03, 1XX3
- 3 units from MATH 1A03, 1L03
- 3 units from PHYSICS 1B03, 1L03
- 9 units from Life Sciences I Course List (See Program Notes 2, 3, 4 and 5 above.)
- 6 units Electives (See Program Note 1 above.)

**MATHEMATICS AND STATISTICS I** (0320)

Prior to registration, Level I students must review the admission requirements for the Level II programs they are considering. Courses must be selected carefully to meet the admission requirements for entry to Level II of a specific program. (See Faculty of Science program descriptions in this section of the Calendar for Level II program admission requirements.) The Office of the Associate Dean of Science (Studies) organizes Level I Counselling Sessions in late June and early July to provide Level I students with academic advice and registration assistance. Attendance at a Counselling Session is strongly advised. Students who are unable to attend are asked to contact the Office of the Associate Dean of Science (Studies) for pre-registration advice and further information.

**PROGRAM NOTE**

Completion of COMP SCI 1MD3 is required for admission to the Honours Mathematics and Computer Science program.

**REQUIREMENTS: 30 UNITS**

- 12 units MATH 1B03, 1C03, 1X03, 1XX3
- 3 units from courses in the Faculty of Science or COMP SCI 1FC3, 1MA3, 1MD3
- 15 units Electives

**PHYSICAL SCIENCES I** (0435)

Prior to registration, Level I students must review the admission requirements for the Level II programs they are considering. Courses must be selected carefully to meet the admission requirements for entry to Level II of a specific program. (See Faculty of Science program descriptions in this section of the Calendar for Level II program admission requirements.) The Office of the Associate Dean of Science (Studies) organizes Level I Counselling Sessions in late June and early July to provide Level I students with academic advice and registration assistance. Attendance at a Counselling Session is strongly advised. Students who are unable to attend are asked to contact the Office of the Associate Dean of Science (Studies) for pre-registration advice and further information.

**PROGRAM NOTES**

1. BIOLOGY 1P03, which may be completed as an elective, serves as the prerequisite for BIOLOGY 1A03 and 1M03 for those students who did not complete Grade 12 Biology U.
2. SCIENCE 1A00, a one-hour mandatory Health and Safety course, is a co-requisite to BIOLOGY 1A03, CHEM 1A03, ENVIR SC 1B03, ISCI 1A24, KINESIOLOGY 1A03, 1Y03, PHYSICS 1B03.
3. INQUIRY 1SC3 may be taken as an elective.

**PHYSICAL SCIENCES I COURSE LIST**

- ASTRON 1F03: BIOLOGY 1A03, 1M03; COMP SCI 1FC3, 1MA3, 1MD3; ENVIR SC 1A03, 1B03, 1G03; KINESIOLOGY 1Y03, 1Y03; MATH 1B03; PHYSICS 1L03; PSYCH 1X03, 1XX3

**REQUIREMENTS: 30 UNITS**

- 6 units CHEM 1A03, 1AA3
- 6 units MATH 1A03, 1AA3
- 3 units PHYSICS 1BA3, 1BB3
- 3 units from PHYSICS 1BA3, 1BB3
- 6 units from Physical Sciences I Course List (See Program Note 1 above.)
- 6 units Electives (See Program Note 1 above.)

**HONOURS INTEGRATED SCIENCES I** (EFFECTIVE 2009-2010)

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2009-2010 academic year an Honours Bachelor of Science in Integrated Sciences will be offered.

**ENROLMENT IN THIS PROGRAM IS LIMITED.**

**PROGRAM NOTES**

1. As places in the Honours Integrated Science program are limited to approximately 60 students, admission is by selection, and possession of published minimum requirements does not guarantee admission.
2. The University reserves the right to grant admission to a limited number of students and to refuse readmission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the program for a period in excess of one academic year.
3. All Level I Integrated Science students will be asked to complete an orientation course prior to the start of classes in September. The course will serve to review and consolidate material covered by the secondary school math and science curriculum and will be especially valuable to those who have not completed Grade 12 Calculus and Vectors U or Grade 12 Advanced Functions and Introduction to Calculus U, must complete MATH 1F03.
4. SCIENCE 1A00, a one-hour mandatory Health and Safety course, is a co-requisite to BIOLOGY 1A03, CHEM 1A03, ENVIR SC 1B03, ISCI 1A24, KINESIOLOGY 1A03, 1Y03, PHYSICS 1B03.

**REQUIREMENTS: 30 UNITS**

- 24 units ISCI 1A24
- 6 units Electives

**HONOURS BACHELOR OF SCIENCE**

**KINESIOLOGY PROGRAM:**

**HONOURS KINESIOLOGY I** (0309)

ENROLMENT IN THIS PROGRAM IS LIMITED.

**PROGRAM NOTES**

1. Application is made to the Honours Kinesiology I program.
2. In addition to the Honours Bachelor of Science Kinesiology (Hons.B.Sc.Kin.), the Department of Kinesiology offers an Honours Bachelor of Kinesiology (Hons.B.Kin.) as a program option beyond Level I for Kinesiology students. For further information and program requirements for the Hons.B.Kin. program, see Department of Kinesiology listing in the Faculty of Social Sciences section of this Calendar.
3. Kinesiology students intending to complete the Hons.B.Sc.Kin., who do not have credit in Grade 12 Calculus and Vectors U or Grade 12 Advanced Functions and Introduction to Calculus U, must complete MATH 1F03.
4. Completion of MATH 1A03 or 1L03 is required for the Hons.B.Sc.Kin. program. Students are encouraged to fulfill this requirement by the end of Level I.
5. Upon completion of Honours Kinesiology I, students who have achieved an average of at least 6.0 in KINESIOLOGY 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03, and whose C.A. is between 5.5 and 5.9 may register in either Level II Honours Kinesiology program but will be placed on program probation for one reviewing period. A student may be on program probation only once, and, therefore, must raise their C.A. to at least 6.0 to continue in an Honours Kinesiology program.

Upon completion of Honours Kinesiology I, students who have achieved an average of at least 6.0 in KINESIOLOGY 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03, and whose C.A. is between 5.5 and 5.9 may register in Level II B.Sc. Kinesiology General and, with permission, take Level II Kinesiology required courses. At their next review, such students must achieve a C.A. of at least 6.0 to transfer to an Honours Kinesiology program.

Upon completion of Honours Kinesiology I, students who have not achieved an average of at least 6.0 in KINESIOLOGY 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03, and whose C.A. is between 3.5 and 5.9 may register in Level II B.Sc. Kinesiology General for one reviewing period. During that period a student may not take Level II Kinesiology courses but may upgrade or repeat Level I Kinesiology courses. At the end of that period, students who have achieved an average of at least 6.0 in KINESIOLOGY 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03, and have a C.A. of at least 6.0 may transfer to an Honours Kinesiology program. Students who fail to meet the minimum requirements for transfer to an Honours Kinesiology program must transfer to a non-Kinesiology program for which they qualify.
6. SCIENCE 1A00, a one-hour mandatory Health and Safety course, is a co-prerequisite to BIOLOGY 1A03, CHEM 1A03, ENVIR SC 1B03, ISCI 1A24, KINESIOL 1A03, 1Y03, PHYSICS 1B03.

REQUIREMENTS: 30 UNITS
18 units, KINESIOL 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03
12 units Electives (See Program Notes 3 and 4 above.)

BACHELOR OF MEDICAL RADIATION

SCIENCES PROGRAM:
Effective September 2007, this program will lead to the Bachelor of Medical Radiation Sciences (B.M.R.Sc.) degree. Students who entered Medical Radiation Sciences I prior to September 2007, will be given the option of graduating with either the McMaster Bachelor of Science (B.Sc.) degree or the McMaster Bachelor of Medical Radiation Science (B.M.R.Sc.) degree.

MEDICAL RADIATION SCIENCES I

ENROLMENT IN THIS PROGRAM IS LIMITED.

PROGRAM NOTES
1. Students without Grade 12 Calculus and Vectors U must complete MATH 1F03.
2. Students without Grade 12 Physics U must complete PHYSICS 1F03.
3. As places in the Medical Radiation Sciences program are limited, admission is by selection, and possession of published minimum requirements does not guarantee admission.
4. The University reserves the right to grant admission to a limited number of students and to refuse readmission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the program for a period in excess of one academic year.
5. SCIENCE 1A00, a one-hour mandatory Health and Safety course, is a co-requisite to BIOLOGY 1A03, CHEM 1A03, ENVIR SC 1B03, ISCI 1A24, KINESIOL 1A03, 1Y03, PHYSICS 1B03.

REQUIREMENTS: 30 UNITS
3 units BIOLOGY 1A03
6 units KINESIOL 1Y03, 1Y03
3 units from MATH 1A03, 1L03
12 units MEDRADSC 1A03, 1B03, 1C03, 1D03
6 units Electives (See Program Notes 1 and 2 above.)

B. Degree Programs

Honours Bachelor of Science Programs
An Honours B.Sc. requires the completion of a set of courses in a specific discipline and allows for interdisciplinary, and/or liberal arts studies through electives from other departments and faculties. An Honours B.Sc. with Specialization requires the completion of the same courses required for the Honours program as well as designated upper level courses in the specialization. Please refer to departmental program descriptions for details.

Also available as an Honours Bachelor of Science degree, the Specialization in Origins Research is designed to re-introduce Natural Science to students through various themes. This specialization may be combined with most B.Sc. Honours programs. See Origins Research Specialization in Interdisciplinary Programs in this section of the Calendar for further information.

Beginning in 2009-2010, the Faculty intends to offer the Honours Integrated Science program. This limited enrolment, interdisciplinary research-based science program is designed to develop students as broadly educated research scientists capable of contributing to all modern fields of science. Program courses will develop scientific understanding through integration of multiple disciplines in the study of a series of relevant themes or problems. Each discipline of science will contribute toward courses offered in the Integrated Science program. Students will be involved in individual and team research projects throughout the program.

Students who successfully complete the first three levels of any Honours B.Sc. program may request permission from the Office of the Associate Dean of Science (Studies) to transfer to graduate with a three-level B.Sc. degree.

CO-OP PROGRAMS
The Faculty of Science has Cooperative Education programs, beginning in Level III, in Honours Biochemistry, Honours Biology (Genetics Specialization), Honours Biology and Pharmacology, Honours Chemistry, Honours Mathematics and Statistics, Honours Medical and Health Physics, and Honours Physics.

Co-ops programs have limited enrolment and admission is by selection. Please see the admission statement for each program in this section of the Calendar. Employment must be full-time during the work term. Students enrolled in the Co-op programs must be registered in full-time study, including all prescribed courses, during the academic terms of their program (a minimum of 24 units in a full-term; and at least 12 units in a half-term) and will be charged per unit registered. An additional Science Co-op fee will be charged for each academic term of a Co-op program. With written permission from the work term supervisor, academic work may be taken during each four-month period of a work term and the student will be responsible for the additional tuition.

For further information, please consult Science Career and Cooperative Education in the Faculty of Science.

INDUSTRIAL INTERNSHIPS
The Faculty of Science offers students the opportunity to participate in 12-16 month full-time paid work placements in industry that provide students with technical work experience related to their academic curriculum. Internship placements are available to students registered as full-time students in good standing in Level II or III of Honours B.Sc. program and who have at least 24 units left to complete upon their return. Students must complete SCIENCE 2C00 prior to internship employment. Students compete for placements with participating companies through an application and interview process. A fee is assessed following the start of the placement.

For further information, please consult Science Career and Cooperative Education in the Faculty of Science. For Computer Science Internships, please consult Engineering Co-op and Career Services in the Faculty of Engineering.

MINORS
Within the Faculty of Science, Minors are available to students registered in an Honours program only. 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 to complete a Minor in a Science subject.

Minors offered by the Faculty of Science include:
- Astronomy
- Biochemistry
- Biology
- Chemistry
- Earth Sciences
- Environmental Sciences
- Geographical Information Systems (GIS)
- Mathematics and Statistics
- Physics
- Psychology

Bachelor of Science Programs
Three-level B.Sc. programs offered by the Faculty of Science include: Environmental and Earth Sciences (formerly Geoscience), Life Sciences, Mathematical Science and Physical Sciences. Students interested in the Environmental and Earth Sciences program are encouraged to see School of Geography and Earth Sciences in this section of the Calendar. Students interested in the Life Sciences program are encouraged to see Department of Mathematics and Statistics in this section of the Calendar. Students interested in the Physical Sciences are encouraged to see B.Sc. in Physical Sciences in Interdisciplinary Programs in this section of the Calendar.

Students who successfully complete the first three levels of any Honours B.Sc. program may request permission from the Office of the Associate Dean of Science (Studies) to transfer to graduate with a B.Sc. degree.
ACADEMIC REGULATIONS

STUDENT ACADEMIC RESPONSIBILITY
You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES
All undergraduate courses at McMaster University have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that they are able to complete program admission requirements, course requisites, and courses required for their program of studies in a timely manner. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students in particular programs or Faculties. When students are selecting from a list of required courses, access to a specific course is not guaranteed when there is another course available to meet a specific program requirement. All students are strongly encouraged to register as soon as MUGS11 is available to them. In addition, in the Faculty of Science, there are two types of courses for which permission must be obtained prior to registration.

LIMITED ENROLMENT PROGRAMS
Admission at Level I (and above) is limited for the following programs:
- All Psychology, Neuroscience and Behaviour programs
- All Honours Biology programs
- All Honours Biochemistry programs

LIMITED ENROLMENT PROGRAMS
Admission at Level II (and above) is limited for the following programs:
- Honours Molecular Biology
- Honours Kinesiology
- Honours Biology and Environmental Sciences
- Honours Chemistry

LIMITED ENROLMENT PROGRAMS
Admission at Level II (and above) is limited for the following programs:
- Integrated Science (Effective 2009-2010)
- Honours Kinesiology
- All Medical Radiation Sciences programs

LIMITED ENROLMENT PROGRAMS
Admission to a second degree or continuing studies, registration, deleting, cancelling, or adding 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.

LIMITED ENROLMENT COURSES REQUIRING PRE-REGISTRATION BALLOTING
- The Psychology, Neuroscience and Behaviour Department pre-registration ballot will be done in two phases. The first phase will include all courses (PSYCH 1Q03, 1QQ3, 2Q03, 2QQ3, 3Q03, 4Q03) and individual Study courses (PSYCH 2QQ3, 3Q03, 3QQ3, 4QQ3), Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3BL3, 3EE3, 3L33, 3LL3, 3S03, 3V03) and limited enrolment courses (PSYCH 3BN3, 4F03, 4J03, 4R03, 4Y03). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the Fall term. Ballots can be obtained from the Department of Psychology, Neuroscience and Behaviour’s web site at http://www.mcmaster.ca/psychology. Priority will be given to students registered in Honours Psychology, Neuroscience and Behaviour and the Combined Honours Psychology, Neuroscience and Behaviour programs.

WORKLOAD
All programs in the Faculty of Science may be taken by full-time and part-time students, with the exception of the Honours Co-op programs. Students enrolled in Co-op programs must maintain a full academic load during the study terms of their program. Students must maintain a full academic load during the Fall/Winter session to be eligible for scholarships available to full-time students. 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 program 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 program are permitted to overload by up to six additional units in order to become eligible to graduate.

COURSES REQUIRING AN ADDITIONAL FEE
The Faculty offers courses that may require a payment of a fee, above the regular associated tuition. Examples include: field courses, offered through the Departments of Biology, Medical Physics, Medical Imaging Science, the School of Geography, and Earth Sciences. 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 departmental offices.
LETTER OF PERMISSION
All students in good academic standing with the exception of students registered in second degree programs, may apply to the Office of the Associate Dean of Science (Studies) to take courses at another university on Letter of Permission. Students must achieve a grade of at least C- for transfer of 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 program may not be taken elsewhere unless departmental approval is given. Effective 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.

STUDENT EXCHANGES
McMaster University has agreements with institutions in Canada and abroad including Australia, France, and the United Kingdom to provide students with the opportunity to participate in an exchange program for one year or term. Exchanges allow students to gain a varied perspective on their course of study and enhance their professional and personal goals. In addition, exchange programs offer students the most inexpensive means of studying abroad as students participating in these exchanges avoid the foreign fees by paying fees to McMaster.

All students must be in good standing and 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 programs go abroad for the third level of an Honours program.

Students interested in these opportunities should begin discussions with the Office of the Associate Dean of Science (Studies) about one year before they plan to enroll elsewhere. Students must propose and submit an academic program to their Department for approval. Academic approval must be completed by the end of February for registration in the following Fall/Winter session. In certain cases, students may be recommended for the Deans' Honour List on the basis of work undertaken while on exchange.

For further information please see International Study in the General Academic Regulations section in this Calendar. Information concerning exchanges can also be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Centre for Student Development, International Student Services.

Acceptance to the Ontario and University-wide Exchange Programs is by recommendation. Application forms can be obtained from:

Centre for Student Development
Student Exchanges
Gilmour Hall, Room 104
Telephone: (905) 525-9140, extension 24748

TRANSFERS
Science students may be permitted to transfer between programs or students in other Faculties may apply to transfer to a program in the Faculty of Science provided they have obtained a Cumulative Average of at least 3.5 and have completed the necessary admission requirements. Students who do not meet these requirements must consult with the Office of the Associate Dean of Science (Studies).

Students in Levels I or II who wish to transfer to another program in the Faculty of Science must speak with an Academic Advisor in the Office of the Associate Dean of Science (Studies).

TRANSFER/APPLICATION TO KINESIOLOGY I
Any student seeking transfer/admission to Kinesiology I for the following Fall/Winter session must submit an Application for Admission through MUGS1 by April 1. The application allows students to rank four program choices. Students will be notified of their eligibility for transfer to Kinesiology I on their grade reports in June. A limited number of exceptionally qualified students are admitted each year. To be considered, applicants must have an average of at least 6.0 in either BIOLOGY 1A03 and 1AA3 (or 1M03) or KINESIOLOGY 1Y03 and 1YY3. Given the number of required units and prerequisites of Kinesiology courses, transfer students may not be able to complete the requirements in three additional years of study.

GRADUATION
From Honours B.Sc. and B.Sc. Programs
To graduate from a program, students must meet all course requirements for their declared program.

The requirements for graduation from these programs 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. Program
Students who successfully complete at least 90 units including all requirements up to the end of Level III of any Honours B.Sc. degree, with a minimum Cumulative Average of 3.5 may request permission from the Office of the Associate Dean of Science (Studies) for transfer to graduate with a corresponding three-level B.Sc. degree as follows:

- All Honours Biochemistry, Biology, Chemical Biology, Computational Biology, Life Sciences, Molecular Biology and Psychology, Neuroscience and Behaviour programs qualify for the B.Sc. Life Sciences degree.
- All Environmental & Earth Sciences programs qualify for the B.Sc. Environmental & Earth Sciences degree.
- All Mathematics and Statistics programs qualify for the B.Sc. Mathematical Science degree.
- All Chemistry, Medical and Health Physics, and Physics programs qualify for the B.Sc. Physical Sciences degree.

Students enrolled in Honours Biology and Environmental Sciences will be given the option of either the B.Sc. Environmental and Earth Sciences or Life Sciences degree. Students enrolled in any Integrated Science program would qualify for the B.Sc. Science degree. Honours B.Sc. Kinesiology students would qualify for the B.Sc. Kin. degree.

DEPARTMENT OF BIOCHEMISTRY
AND BIOMEDICAL SCIENCES

WEB ADDRESS: http://www.fhs.mcmaster.ca/biochem/

Honours Arts & Science and Biochemistry (B.Arts.Sc; See Arts & Science Program)

Honours Life Sciences
(See Interdisciplinary Programs)

NOTES APPLICABLE TO ALL HONOURS BIOCHEMISTRY PROGRAMS

1. Students who have not completed PHYSICS 1B3 will be considered for admission, however, completion of the course is required by the end of Level II. Completion of MATH 1B03 and PHYSICS 1B03 is strongly recommended.

2. While STATS 1CC3 is strongly recommended, students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3.
**LEVEL III: 30 UNITS**

3 units BIOCHEM 3D03
3 units BIOLOGY 2C03
3 units from CHEM 2N03, CHEM BIO 2A03
3 units STATS 2B03 (See Program Note 4 above.)
18 units Electives

**LEVEL IV: 30 UNITS**

6 units BIOCHEM 4E03, 4N03
3 units from BIOCHEM 3A03, 4C03
3 units from BIOCHEM 3A03, 3H03, 3N03, 4H03, 4Q03
6 units Levels III, IV Biochemistry, BIOLOGY 3003, 4V03, HTH SCI 3I03, 3K03, 4I13, 4Q03, MOL BIOL 4H03
12 units Electives

**Honours Biochemistry (Biotechnology and Genetic Engineering Specialization)**

**ADMISSION NOTES (2008-2009 ONLY)**

1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of PHYSICS 1B03 is required by the end of Level II. PHYSICS 1L03 serves as the prerequisite for PHYSICS 1B03 for students who have not completed Grade 12 Physics U. Completion of PHYSICS 1BB3 is strongly recommended.

2. Completion of MATH 1B03 is strongly recommended.

**ADMISSION EFFECTIVE 2009-2010:** Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

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<tr>
<th>Units</th>
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<tr>
<td>6</td>
<td>BIOLOGY 1A03, 1AA3</td>
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<td>3</td>
<td>PHYSICS 1B03 (See Admission Note 1 above.)</td>
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<td>3</td>
<td>STATS 1CC3 (See Admission Note 2 above.)</td>
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<td>3</td>
<td>from Science I Course List</td>
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A grade of at least C+ in four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3 and either MATH 1A03 or 1LS3 is required.

**PROGRAM NOTES**

1. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.

2. BIOLOGY 2B03 may be deferred until Level III, however, students planning to apply for admission to a Biochemistry Co-op program must complete it in Level II.

3. Students who entered the program prior to September 2008, may use CHEM 2B03 and 2B04 as substitutes for CHEM 2A03 and 2B03.

4. Students who have completed STATS 1CC3 are not required to complete STATS 2B03, however, they will be required to complete three additional units of electives.

**REQUIREMENTS**

120 units total (Levels I to IV), of which no more than 48 units may be Level I.

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS (2008-2009 ONLY)**

12 units BIOCHEM 2B03, 2B03, 2L06
3 units BIOLOGY 2B03 (See Program Note 2 above.)
3 units from CHEM 2R03, CHEM BIO 2P03
6 units CHEM 2OA3, 2OB3 (See Program Note 3 above.)
0-3 units PHYSICS 1503 if not completed in Level I (See Admission Note 1 above.)
3-6 units Electives (See Admission Note 1 above.)

**LEVEL II: 30 UNITS (EFFECTIVE 2009-2010)**

12 units BIOCHEM 2B03, 2B03, 2L06
3 units BIOLOGY 2B03 (See Program Note 2 above.)
3 units from CHEM 2R03, CHEM BIO 2P03
6 units CHEM 2OA3, 2OB3 (See Program Note 3 above.)
0-6 units PHYSICS 1503, 1L03 if not completed in Level I (See Admission Note 1 above.)
0-6 units Electives (See Admission Notes 1 and 2 above.)
3. Students who entered the program prior to September 2008, may use CHEM 2B03 and 2BB3 as substitutions for CHEM 2OA3 and 2OB3.

4. Students who have completed STATS 1CC3 are not required to complete STATS 2B03, however they will be required to complete three additional units of electives.

REQUIREMENTS

120-121 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS (2008-2009 ONLY)

12 units BIOCHEM 2B03, 2BB3, 2L06
3 units BIOLOGY 2B03
3 units from CHEM 2R03, CHEM BIO 2P03
3 units CHEM ENG 2B03
6 units CHEM 2OA3, 2OB3 (See Program Note 3 above.)
0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note 1 above.)
0-3 units Electives (See Admission Note 1 above.)

LEVEL II: 30 UNITS (2008-2009 EFFECTIVE 2009-2010)

12 units BIOCHEM 2B03, 2BB3, 2L06
3 units BIOLOGY 2B03
3 units from CHEM 2R03, CHEM BIO 2P03
6 units CHEM 2OA3, 2OB3 (See Program Note 3 above.)
0-6 units PHYSICS 1B03, 1L03 if not completed in Level I (See Admission Note 1 above.)
0-6 units Electives (See Admission Notes 1 and 2 above.)

LEVEL III: 30 UNITS (2008-2009 ONLY)

9 units BIOCHEM 3D03, 3P03, 4LL3 (See Program Note 2 above.)
6 units BIOLOGY 2C03, 2EE3
3 units from CHEM 2N03, CHEM BIO 2A03
3 units CHEM 3FF3
3-4 units Levels III, IV Biochemistry, Biology, Chemistry, CHEM ENG 3K04, 3B03, MOL BIOL 4H03
6 units Electives

LEVEL III: 30 UNITS (EFFECTIVE 2009-2010)

9 units BIOCHEM 3D03, 3P03, 4LL3 (See Program Note 2 above.)
6 units BIOLOGY 2C03, 2EE3
3 units from CHEM 2N03, CHEM BIO 2A03
3 units CHEM 3FF3
3 units from CHEM 3FF3, CHEM BIO 30A3
3 units STATS 2B03 (See Program Note 4 above.)
6 units Electives

LEVEL IV: 30-31 UNITS

9 units BIOCHEM 4E03, 4H03, 4N03
3 units BIOLOGY 3003
12-13 units Levels III, IV Biochemistry, Biology, Chemical Engineering, Chemistry, CHEM ENG 3K04, HTH SCI 3I03, 3K03, 4I03, 4O03, MOL BIOL 4H03, which must include one of BIOCHEM 4B06, 4F09, 4P03 (See Program Note 1 above.)
6 units Electives

Honours Biochemistry

(Molecular Biology Specialization) [2040804]

ADMISSION NOTES (2008-2009 ONLY)

1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II. Completion of MATH 1B03 and PHYSICS 1B03 is strongly recommended.

2. While STATS 1CC3 is strongly recommended, students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units MATH 1A03
3 units PHYSICS 1B03 (See Admission Note 1 above.)
3 units STATS 1CC3 (See Admission Note 2 above.)
3 units from Science I Course List
A grade of at least C+ in four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3 and MATH 1A03 is required.

ADMISSION NOTES (EFFECTIVE 2009-2010)

1. Students who have not completed PHYSICS 1B03 or 1L03 will be considered for admission, however, completion of PHYSICS 1B03 is required by the end of Level II. PHYSICS 1L03 serves as the prerequisite for PHYSICS 1B03 for students who have not completed Grade 12 Physics U. Completion of PHYSICS 1BB3 is strongly recommended.

2. Completion of MATH 1B03 is strongly recommended.

ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3
6 units CHEM 1A03, 1AA3
3 units from MATH 1A03, 1LS3
3 units from PHYSICS 1B03, 1L03 (See Admission Note 1 above.)
6 units from Life Sciences I Course List (See Admission Notes 1 and 2 above.)
A grade of at least C+ in four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3 and either MATH 1A03 or 1LS3 is required.

PROGRAM NOTES

1. Completion of one of BIOCHEM 4B06, 4F09, 4P03 is required in Level IV. Students who do not obtain the minimum Cumulative Average as stated in the prerequisites, may request a requisitewaver from the Undergraduate Associate Chair. Students denied permission may not continue in the program and may apply to transfer to the Honours Biochemistry program.

2. Students who have obtained appropriate research experience may request permission from the Department to take three units of Levels III, IV Biochemistry instead of BIOCHEM 3P03.

3. Students who entered the program prior to September 2008, may use CHEM 2B03 and 2BB3 as substitutions for CHEM 2OA3 and 2OB3.

4. Students who have completed STATS 1CC3 are not required to complete STATS 2B03, however they will be required to complete three additional units of electives.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS (2008-2009 ONLY)

12 units BIOCHEM 2B03, 2BB3, 2L06
3 units BIOLOGY 2B03
3 units from CHEM 2R03, CHEM BIO 2P03
6 units CHEM 2OA3, 2OB3 (See Program Note 3 above.)
0-6 units PHYSICS 1B03, 1L03 if not completed in Level I (See Admission Note 1 above.)
0-6 units Electives (See Admission Notes 1 and 2 above.)
LEVEL III: 30 UNITS (EFFECTIVE 2009-2010)

9 units BIOCHEM 3C03, 3D03, 3P03 (See Program Note 2 above.)
6 units BIOLOGY 2C03, 2E03
3 units from CHEM 2N03, CHEM BIO 2A03
3 units from CHEM 3FF3, CHEM BIO 3O03
3 units STATS 2B03 (See Program Note 4 above.)
6 units Electives

LEVEL IV: 30 UNITS

12 units BIOCHEM 4E03, 4E03, 4N03, 4O03, BIOLOGY 3O03
12 units Levels III, IV Biochemistry, Biology, Chemistry, HTH SCI 3I03, 3K03, 4I03, 4O03, MOL BIOL 4H03, which must include one of BIOCHEM 4B06, 4P09, 4P03 (BIOCHEM 4S03, 4Y03 are recommended.) (See Program Note 1 above.)
6 units Electives

Honours Biochemistry

(Origins Research Specialization) {2040412}

ADMISSION NOTES (2008-2009 ONLY)

1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level III.
2. One of ASTRON 1F03, PHYSICS 1BA3, 1BB3 must be completed by the end of Level III.

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1A03
- 3 units MATH 1A03
- 3 units PHYSICS 1B03 (See Admission Note 1 above.)

A grade of at least C+ in four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1A03 and MATH 1A03 is required.

ADMISSION NOTES (EFFECTIVE 2009-2010)

1. Students who have not completed PHYSICS 1B03 or 1L03 will be considered for admission, however, completion of PHYSICS 1B03 is required by the end of Level III. PHYSICS 1L03 serves as the prerequisite for PHYSICS 1B03 for students who have not completed Grade 12 Physics U.
2. One of ASTRON 1F03, PHYSICS 1BA3, 1BB3, 1F03 must be completed by the end of Level III.

ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Admission is by selection but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

- 6 units BIOLOGY 1A03, 1M03 (or 1AA3)
- 6 units CHEM 1A03, 1A03
- 3 units from MATH 1A03, 1LS3
- 3 units from PHYSICS 1B03, 1L03 (See Admission Note 1 above.)

6 units from Life Sciences I Course List (See Admission Notes 1 and 2 above.)

A grade of at least C+ in four of BIOLOGY 1A03, 1M03 (or 1AA3), CHEM 1A03, 1A03 and either MATH 1A03 or 1LS3 is required.

PROGRAM NOTES

1. Students who entered the program prior to September 2008, may use CHEM 2B03 and 2B03 as substitutions for CHEM 2O03 and 2O03.
2. Completion of ORIGINS 2B03 and 2F03 is required by the end of Level III.
3. Students who have completed STATS 1C03 are not required to complete STATS 2B03, however they will be required to complete three additional units of electives.

ORIGINS COURSE LIST

ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

12 units BIOCHEM 2B03, 2B03, 2L06
3 units BIOLOGY 2B03
3 units from CHEM 2N03, CHEM BIO 2A03
6 units CHEM 2O03, 2B03 (See Program Note 1 above.)
3 units from ORIGINS 2B03, 2F03 (See Program Note 2 above.)
3 units ORIGINS 2S03

LEVEL III: 30 UNITS (2008-2009 ONLY)

3 units BIOCHEM 3D03
3 units BIOLOGY 2C03
3 units from CHEM 2N03, CHEM BIO 2A03
3 units from ORIGINS 2B03, 2F03 (See Program Note 2 above.)
6 units from the Origins Course List
3 units ORIGINS 3S03
0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note 1 above.)
0-3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3, 1F03 if not completed in Level I (See Admission Note 2 above.)
3-9 units Electives

LEVEL IV: 30 UNITS

6 units BIOCHEM 4E03, 4N03
6 units from BIOCHEM 3A03, 4C03
3 units from BIOCHEM 3H03, 3N03, 4H03, 4Q03
6 units Levels III, IV Biochemistry, BIOLOGY 3O03, HTH SCI 3O03, 3K03, 4I03, 4O03, MOL BIOL 4H03
9 units ORIGINS 4A09
3 units Electives

Honours Biochemistry Co-op Programs

Students who are entering Level III Honours Biochemistry Co-op have a choice between two specializations:

- Molecular Biology Specialization
- Biotechnology and Genetic Engineering Specialization

Information about the program and the selection procedure may be obtained from Science Career and Cooperative Education.

Honours Biochemistry

(Biotechnology and Genetic Engineering Specialization Co-op)

ADMISSION

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement and an interview but requires, as a minimum, a Cumulative Average of at least 6.0 and completion of either Level II Honours Biochemistry or Honours Molecular Biology.

PROGRAM NOTES

1. This is a five-level (year) co-op program 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, as prescribed by Level and Term.
3. Students are required to complete SCIENCE 2000 before the first work placement and are recommended to complete this course in Level II.
There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.

6. Students who have obtained appropriate research experience may request permission from the Department to take three units of Levels III, IV Biochemistry instead of BIOCHEM 4P03.

7. Students who have completed STATS 1CC3 are not required to complete STATS 2B03, however they will be required to complete three additional units of electives.

**REQUIREMENTS**

- **LEVEL I:**
  - **TERM I (FALL 2008):** 15 UNITS
    - 9 units BIOCHEM 3D03, BIOLOGY 2C03, 2EE3
    - 3 units Electives
  - **TERM I (EFFECTIVE FALL 2009):** 15 UNITS
    - 3 units BIOCHEM 3D03
    - 6 units BIOLOGY 2C03, 2EE3
    - 3 units STATS 2B03 (See Program Note 7 above.)
    - 3 units Electives

**LEVEL II:**

- **TERM 2 (WINTER) AND SUMMER**
  - Work Term (eight-month)

**LEVEL III**

- Consists of Academic Term 1 (Fall) and the completion of the first eight-month work term, Term 2 (Winter) and Summer Term

**LEVEL IV**

- Consists of Academic Term 1 (Fall) and Term 2 (Winter), and the first half of the second eight-month work term, Summer Term

**LEVEL V**

- Consists of completion of the second half of the second eight-month work term, Term 1 (Fall) and 15 units Academic, Term 2 (Winter)

**TERM 1 (FALL)**

- Work Term

**TERM 2 (WINTER):** 15 UNITS

- 6 units BIOCHEM 4L33, 4N03
- 3 units Levels III, IV Biochemistry, Biology, Chemistry (See Program Note 6 above.)

Honours Biochemistry (2045) (Molecular Biology Specialization Co-op)

**ADMISSION**

Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement and an interview but requires, as a minimum, a Cumulative Average of at least 6.0 and completion of either Level II Honours Biochemistry or Honours Molecular Biology.

**PROGRAM NOTES**

1. This is a five-level (year) co-op program 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, as prescribed by Level and Term.

3. Students are required to complete SCIENCE 2C00 before the first work placement and are recommended to complete this course in Level II.

4. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.

5. Students who have obtained appropriate research experience may request permission from the Department to take three units of Levels III, IV Biochemistry instead of BIOCHEM 4P03.

6. Students have the option of registering in BIOCHEM 4B06 or 4F09 in Level IV instead of registering in BIOCHEM 4P03 in Term 2 of Level V.

7. Students who have completed STATS 1CC3 are not required to complete STATS 2B03, however they will be required to complete three additional units of electives.

**REQUIREMENTS**

- **LEVEL I:**
  - **TERM I (FALL 2008):** 15 UNITS
    - 9 units BIOCHEM 3D03, BIOLOGY 2C03, 2EE3
    - 3 units Electives
  - **TERM I (EFFECTIVE FALL 2009):** 15 UNITS
    - 3 units BIOCHEM 3D03
    - 6 units BIOLOGY 2C03, 2EE3
    - 3 units STATS 2B03 (See Program Note 7 above.)
    - 3 units Electives

**LEVEL II:**

- **TERM 2 (WINTER) AND SUMMER**
  - Work Term (eight-month)

**LEVEL III**

- Consists of Academic Term 1 (Fall) and the completion of the first eight-month work term, Term 2 (Winter) and Summer Term

**TERM 1 (FALL 2008):** 15 UNITS

- 3 units BIOCHEM 3D03, 3P03, 4E03, 4H03 (See Program Note 5 above.)
- 3 units BIOLOGY 3003
- 3 units from CHEM 2N03, CHEM BIO 2A03
- 3 units from CHEM 3FF3, CHEM BIO 3OA3
- 3-9 units Levels III, IV Biochemistry (which may include BIOCHEM 4F06, 4F09), Biology, Chemistry, CHEM ENG 3B03, 3K04, CHEM SCI 3103, 3K03, 4L03, 4O03, MOL BIOL 4H03 (See Program Note 6 above.)
- 3 units Electives
Minor in Biochemistry

NOTES
1. Students who have already completed CHEM 2BA3 and 2BB3 may substitute these courses for CHEM 2A03 and 2B03.
2. Students with credit in ISCI 1A24 do not need to complete CHEM 1A03 and 1AA3.

REQUIREMENTS
24 units total
6 units from CHEM 1A03, 1AA3 (See Note 2 above.)
6 units from CHEM 2A03, 2BB3 (See Note 1 above.)
6 units from BIOCHEM 2B03, 2B03, 2EE3, 3D03, 3G03, HTH SCI 2E03
6 units Levels III, IV Biochemistry

DEPARTMENT OF BIOLOGY

WEB ADDRESS: http://www.science.mcmaster.ca/biology/

Honours Arts & Science and Biology
(B.Arts Sc.; See Arts & Science Program)

Honours Arts & Science and Biology
(Biodiversity Specialization)
(B.Arts Sc.; See Arts & Science Program)

Honours Arts & Science and Biology
(Microbiology and Biotechnology Specialization)
(B.Arts Sc.; See Arts & Science Program)

Honours Biology and Environmental Science
(See Interdisciplinary Programs)

Honours Chemical Biology
(See Honours Chemical Biology program, Department of Chemistry)

Honours Computational Biology
(See Interdisciplinary Programs)

Honours Life Sciences
(See Interdisciplinary Programs)

Honours Molecular Biology
(See Interdisciplinary Programs)

Honours Philosophy and Biology
(B.A.; See Faculty of Humanities, Department of Philosophy)

Honours Biology Programs

NOTES APPLICABLE TO ALL HONOURS BIOLOGY PROGRAMS
1. In addition to the Honours Biology program, the Department offers four specializations. All options are suitable for students wishing to pursue graduate studies in Biology. While the Honours program has a specified set of basic requirements and a wide choice of electives (including those from outside the Faculty of Science), allowing for interdisciplinary studies or the opportunity to complete a Minor in another subject, the specializations reflect the Department's research strengths. The specializations currently available are:
   • Biodiversity Specialization
   • Genetics Specialization
   • Microbiology and Biotechnology Specialization
   • Physiology Specialization

   Honours Biology may also be combined with the Origins Research Specialization.

2. Transfer between programs is possible at any time, subject to satisfying the admission requirements and availability of space.
3. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing Level II and III courses.
4. Students wishing to include more mathematical statistics may replace STATS 2B03 with STATS 2D03, 2MB3. In this case, students are advised to register in MATH 1B03 in Level I.
5. Admission to Honours Biology and Pharmacology (Co-op) requires completion of CHEM 2A03 and 2B03. Students are strongly recommended to register in BIOLOGY 2A03 while registered in Level II.
6. Students with credit in BIOLOGY 1AA3 may substitute it for BIOLOGY 1M03.
7. Students considering graduate studies in Biology are recommended to complete BIOLOGY 4C09 or 4F06.

Honours Biology

ADMISSION NOTE
Students who have not completed one of PHYSICS 1B03 or 1L03 (first offered 2008-2009) will be considered for admission, however, completion of one of these courses is required by the end of Level II.

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
3 units MATH 1A03
6 units CHEM 1A03, 1AA3
3 units PHYSICS 1B03 (See Admission Note above.)
3 units from MATH 1AA3, 1B03, 1D03, STATS 1CC3
3 units from Science I Course List

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0
6 units CHEM 1A03, 1AA3
3 units from MATH 1AA3, 1LS3
3 units from PHYSICS 1B03, 1L03 (See Admission Note above.)
6 units from Life Sciences I Course List

PROGRAM NOTES
1. The Honours Biology program allows students to choose Biology courses which reflect their own interests. Students are encouraged to discuss their course selections with a Biology undergraduate counsellor.
2. Students who wish to take the following courses should take both CHEM 2A03 and 2B03: BIOCHEM 3G03, BIOLOGY 3CC3, 3P03, 4B03, 4T03, more advanced Biochemistry and Chemistry courses. Students are advised to check prerequisites carefully.
3. Students must complete nine units from BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03. Additional units from this list may be used towards the Biology course list requirement.
4. Completion of STATS 2B03 by the end of Level III is recommended. If STATS 1CC3 has been completed these units will be taken as electives.
5. Students considering graduate studies in Biology are recommended to complete BIOLOGY 4C09 or 4F06.
BIOLOGY COURSE LIST

BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03, 2G03, 2I03, all Biology Level I and IV courses (except BIOLOGY 3Q03, 3Q03); BIOCHEM 2B03, 2B3, 3G03, 3I03, 3N03, 3L03, 3E03, 4A03, 4E03, 4Q03; CHEM ENG 2B03; EARTH SC 2B03, 2C03, 2E03, 2E13, 2G13, 2Q03, 2W03, 3G13, 3J03, 4B03, 4C03, 4E03, 4FF3, 4I03, ENVIR SC 2MB3, 3EP3, 3SA3; GEO 2A03, 2B03, 2C03, 2E03, 2I03, 2Q03, 2W03, 3A03, 3I03, 3J03, 3L03, 3N03, 4A03, 4B03, 4C03, 4D03, 4E03, 4G03, 4I03, 4J03; PSYCH 2F03, 2HT03, 2R03, 3A03, 3F03, 3A03, 3T03, 3Y03, 4R03, 4Y03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I: 30 UNITS

30 units (See Admission above.)

LEVELS II-IV: 90 UNITS

3 units BIOCHEM 2EE3
3 units BIOLOGY 2C03
3 units from STAT 1CC3, 2B03 (See Program Note 4 above.)
9 units from BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03 (See Program Note 3 above.)
3 units from CHEM 2E03, 2O3, 2OCC3
15 units from Biology Course List (See Program Note 3 above.)
15 units Levels III, IV Biology which may include BIOLOGY 4C09 or 4F06
0-3 units PHYSICS 1B03, 1L03 if not completed in Level I (See Admission Note above.)
36-39 units Electives (See Program Note 2 above.)

Honours Biology {2050812}

(Biodiversity Specialization)

ADMISSION NOTE

Students who have not completed one of PHYSICS 1B03 or 1L03 (first offered 2008-2009) will be considered for admission, however, completion of one of these courses is required by the end of Level II.

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
6 units CHEM 1A03, 1AA3
3 units from PHYSICS 1B03 (See Admission Note above.)
3 units from MATH 1AA3, 1B03, 1D03, STAT 1CC3
3 units from Science I Course List

ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
6 units CHEM 1A03, 1AA3
3 units from MATH 1A03, 1LS3
3 units from PHYSICS 1B03, 1L03 (See Admission Note above.)
6 units from Life Sciences I Course List

PROGRAM NOTES

1. Students interested in the Biodiversity Specialization are recommended to register in at least one of ENVIR SC 1A03, 1B03 or 1G03 in Level I or II.
2. Students who wish to take the following courses should take both CHEM 2O3 and 2B3: BIOCHEM 3G03, BIOLOGY 3CC3, 3P03, 4B03, 4T03, more advanced Biochemistry and Chemistry courses. Students are advised to check prerequisites carefully.
3. All students are recommended to take EARTH SC 2G13 (formerly GEO 2103) and PSYCH 2R03 or STATS 2B03 in Level II. If STATS 1CC3 has been completed these units will be taken as electives.

4. Completion of one of BIOLOGY 4C09, 4F06 is required in Level IV. Students who do not obtain the minimum Cumulative Average as stated in the prerequisite, may request a requisite waiver from the Undergraduate Associate Chair. Students denied permission may not continue in the program and may apply to transfer to the Honours Biology program.

BIOGRAPHY COURSE LIST

BIOLOGY 2A03, 2B03, 2EE3, 3B03, 3E03, 3NN3; BIOCHEM 2B03, 3G03, 3I03, 3L03, 4A03, 4D03, 4E03, 4G03, 4I03, 4J03, 4PP3, 4X03, 4Y03; CHEM ENG 2B03; EARTH SC 2B03, 2C03, 2E03, 2E13, 2G13, 2Q03, 2W03, 3G13, 3J03, 3L03, 3T03, 3Y03, 4R03, 4Y03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I: 30 UNITS

30 units (See Admission above.)

LEVELS II-IV: 90 UNITS

3 units BIOCHEM 2EE3
3 units BIOLOGY 2C03
3 units from STAT 1CC3, 2B03 (See Program Note 4 above.)
9 units from BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03 (See Program Note 3 above.)
3 units from CHEM 2E03, 2O3, 2OCC3
15 units from Biology Course List (See Program Note 3 above.)
15 units Levels III, IV Biology which may include BIOLOGY 4C09 or 4F06
0-3 units PHYSICS 1B03, 1L03 if not completed in Level I (See Admission Note above.)
36-39 units Electives (See Program Note 2 above.)

Honours Biology {2050814}

(Genetics Specialization)

ADMISSION NOTE (2008-2009 ONLY)

Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II. Completion of PHYSICS 1B03 is also recommended.

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
6 units CHEM 1A03, 1AA3
3 units from MATH 1AA3, 1B03, 1D03, STAT 1CC3
3 units from Science I Course List

PROGRAM NOTES

1. Students interested in the Genetics Specialization are recommended to register in at least one of ENVIR SC 1A03, 1B03 or 1G03 in Level I or II.
2. Students who wish to take the following courses should take both CHEM 2O3 and 2B3: BIOCHEM 3G03, BIOLOGY 3CC3, 3P03, 4B03, 4T03, more advanced Biochemistry and Chemistry courses. Students are advised to check prerequisites carefully.
3. All students are recommended to take EARTH SC 2G13 (formerly GEO 2103) and PSYCH 2R03 or STATS 2B03 in Level II. If STATS 1CC3 has been completed these units will be taken as electives.

4. Completion of one of BIOLOGY 4C09, 4F06 is required in Level IV. Students who do not obtain the minimum Cumulative Average as stated in the prerequisite, may request a requisite waiver from the Undergraduate Associate Chair. Students denied permission may not continue in the program and may apply to transfer to the Honours Biology program.

FACULTY OF SCIENCE 111
ADMISSION NOTE (EFFECTIVE 2009-2010)

PHYSICS 1B03 must be completed by the end of Level II. Completion of PHYSICS 1B3 is also recommended.

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units PHYSICS 1A03, 1A3 with an average of at least 6.0
6 units CHEM 1A03, 1A3
6 units from MATH 1A03, 1B03, 1D03
3 units from PHYSICS 1B03, 1L03 (See Admission Note above.)
6 units from Life Sciences I Course List

ADMISSION NOTES (EFFECTIVE 2008-2009)

1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II. PHYSICS 1B3 is also recommended.

ADMISSION 2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1A3 with an average of at least 6.0
6 units MATH 1A03
6 units CHEM 1A03, 1A3
3 units PHYSICS 1B03 (See Admission Note above.)
3 units from MATH 1A03, 1B03, 1D03, STATS 1C3
3 units from Science I Course List

ADMISSION NOTE (EFFECTIVE 2009-2010)

PHYSICS 1B03 must be completed by the end of Level II. Completion of PHYSICS 1B3 is also recommended.

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1A3 with an average of at least 6.0
6 units CHEM 1A03, 1A3
6 units from MATH 1A03, 1B03, 1D03
3 units from PHYSICS 1B03, 1L03 (See Admission Note above.)
6 units from Life Sciences I Course List

ADMISSION NOTES (EFFECTIVE 2008-2009)

1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II.

2. Students who have not completed one of ASTRON 1F03, PHYSICS 1B03, 1B3 will be considered for admission, however, completion is required by the end of Level II.
ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

- 6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0
- 6 units CHEM 1A03, 1AA3
- 3 units from MATH 1A03, 1L3
- 3 units from PHYSICS 1B03, 1L3 (See Admission Note 1 above)
- 6 units from Life Sciences I Course List (See Admission Note 2 above)

PROGRAM NOTES

1. Completion of ORIGINS 2B03, 2FF3 and 2S03 is required by the end of Level III.
2. Students who wish to take BIOCHEM 3G03, BIOLOGY 3C3, 3P03, 4B03, 4T03 must complete both CHEM 2B03 and 2B3. Students are advised to check prerequisites carefully.
3. Students must complete nine units from BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03. Additional units from this list may be used towards the Biology Course List requirement.
4. Completion of STATS 2B03 by the end of Level III is recommended. If STATS 1CC3 has been completed these units will be taken as electives.

BIOLOGY COURSE LIST

BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03, 2G03, all Biology Level III and IV courses (except BIOLOGY 3C03, 3Q03); BIOCHEM 2B03, 2B3, 3G03, 3H03, 3M03, 4E03, 4E3, 4J03, 4Q03; CHEM ENG 2B03; EARTH SC 2B03, 2C03, 2E03, 2E13, 2G13, 2Q03, 2W03, 3G13, 3J03, 3Q03, 4B03, 4C03, 4E3A, 4FF3, 4GI3; ENVIR SC 2MB3, 3EP3, 3SA3; GEO 2A03, 2B03, 2C03, 2E03, 2I03, 2Q03, 2W03, 3A03, 3I03, 3J03, 3Q03, 3R03, 4A03, 4B03, 4C03, 4FF3, 4GI3, 4Q03, 4R03, 4V03; HTH SCI 3I03, 3K03, 4I3; MED PHYS 3T03, 4B03; MOL BIOL 4H03, 4J03; PSYCH 2F03, 2FF3, 2S03, 3S03, 3T03, 3V03, 4R03, 4V03

ORIGINS COURSE LIST

ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVELS II-IV: 90 UNITS

3 units from CHEM 2E03, 2A03
3 units BIOCHEM 2E3
3 units BIOLOGY 2C03
9 units BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03 (See Program Note 3 above)
21 units ORIGINS 2B03, 2FF3, 2S03, 3S03, 4A09 (See Program Note 1 above)
3 units from STAT 1CC3, 2B03 (See Program Note 4 above)
12 units Levels III, IV Biology
12 units from Biology Course List which may include BIOLOGY 4C09 or 4F06 (See Program Note 3 above)
6 units from Origins Course List

- 0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note above)

15-18 units Electives

Honours Biology (Physiology Specialization) [2050444]

ADMISSION NOTE (2008-2009 ONLY)

Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II. Completion of PHYSICS 1BB3 is also recommended.

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

- 6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
- 3 units MATH 1A03
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03 (See Admission Note above)
- 3 units from MATH 1AA3, 1B03, 1D03, STAT 1CC3
- 3 units from Science I Course List

ADMISSION NOTE (EFFECTIVE 2009-2010)

PHYSICS 1B03 must be completed by the end of Level II. Completion of PHYSICS 1BB3 is also recommended.

ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

- 6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03 (See Admission Note above)
- 3 units from MATH 1AA3, 1B03, 1D03, STAT 1CC3
- 3 units from Science I Course List

PROGRAM NOTES

1. It is recommended that students take both PSYCH 1X03 and 1XX3 if they are interested in upper level Psychology courses.
2. All students must take BIOLOGY 2A03 in Level II.
3. Completion of BIOLOGY 4C09 is required in Level IV. Students who do not obtain the minimum Cumulative Average as stated in the prerequisite, may request a requisite waiver from the Undergraduate Associate Chair. Students denied permission may not continue in the program and may apply to transfer to the Honours Biology program.
4. Completion of STATS 2B03 by the end of Level III is recommended. If STATS 1CC3 has been completed these units will be taken as electives.

PHYSIOLOGY COURSE LIST

BIOLOGY 3A03, 3F03, 3FF3, 3G03, 3H03, 3M03, 3MM3, 3R03, 3S03, 3SSS, 3TT3; KINESIOL 2C03, 2CC3, 3Y03, 4C03, 4CC3; MED PHYS 4B03; PSYCH 2D03, 2E03, 2F03, 2TT3, 3A03, 3F03, 3FA3, 3J03, 3S03, 3T03, 4Y03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVELS II-IV: 90 UNITS

12 units BIOLOGY 2A03, 2B03, 2C03, 2E03, 2F03 (See Program Note 2 above)
6 units CHEM 2A03, 2B3
3 units from STATS 1CC3, 2B03 (See Program Note 4 above)
3 units BIOCHEM 3G03
21 units BIOLOGY 3P03, 3U03, 3UU3, 3X03, 3Y03, 4C09 (See Program Note 3 above)
3 units from BIOLOGY 4T03, 4X03
18 units from Physiology Course List
0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note above)

21-24 units Electives

Honours Biology and Mathematics [2050320]

ADMISSION NOTE

Students who have not completed Grade 12 Discrete Mathematics or Grade 12 Calculus and Vectors U must take MATH 1F03 as a prerequisite for MATH 1B03.

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

- 6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
- 3 units MATH 1A03
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03 (See Admission Note above)
- 3 units from MATH 1AA3, 1B03, 1D03, STAT 1CC3
- 3 units from Science I Course List
ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0
9 units MATH 1A03, 1AA3, 1B03 with an average of at least 6.0
6 units CHEM 1A03, 1AA3
3 units from Life Sciences I Course List

PROGRAM NOTES

1. Students may seek counselling for this program in either the Department of Mathematics and Statistics or the Department of Biology.
2. Students are advised to carefully note graduate program requirements.
3. Students considering graduate studies in Biology are recommended to complete BIOLOGY 4C09 or 4F06.
4. Students considering graduate studies in Mathematics, are recommended to complete MATH 2S03 or 2T03 in Level II, MATH 3A03 and 3X03 in Level III, and MATH 4A03 and 4X03 in Level IV. MATH 3E03 is recommended.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL III

6 units (See Admission above.)

LEVELS II-IV: 90 UNITS

6 units BIOLOGY 2C03, 2F03
6 units from BIOCHEM 2EE3, BIOLOGY 2A03, 2B03, 2D03, 2E03
18 units MATH 2C03, 2R03, 2X03, 3X03, 3A03, 3A03, 3X03
21 units Levels III, IV Biology which must include at least nine units of Level IV
6 units from Levels II, III, IV Mathematics or Statistics
12 units Levels III, IV Mathematics or Statistics which must include at least three units of Level IV
21 units Electives

Honours Biology and Psychology [2050460]

ADMISSION NOTES (2008-2009 ONLY)

1. MATH 1B03 and PHYSICS 1BB3 are strongly recommended for students intending to pursue graduate work in Experimental Psychology or Neuroscience.
2. Students wishing to take more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1A03 in Level I and consult with a departmental advisor.

ADMISSION

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1AA3 with an average of at least 7.0
6 units a grade of at least B- in both PSYCH 1A03 and 1AA3
6 units CHEM 1A03, 1AA3 with an average of at least 7.0
3 units MATH 1A03
3 units PHYSICS 1B03
3 units from MATH 1AA3, 1B03, 1D03, STATS 1CC3 (See Admission Notes 1 and 2 above.)

ADMISSION NOTES (EFFECTIVE 2009-2010)

1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II.
2. MATH 1B03 and PHYSICS 1BB3 are strongly recommended for students intending to pursue graduate work in Experimental Psychology or Neuroscience.
3. Students wishing to take more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.

ADMISSION

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 7.0
6 units a grade of at least B- in both PSYCH 1X03 (or 1AA3) and 1XX3 (or 1AA3)
6 units CHEM 1A03, 1AA3 with an average of at least 7.0
3 units from MATH 1A03, 1LS3
3 units from PHYSICS 1B03, 1L03 (See Admission Note 1 above.)
3 units from Life Sciences I Course List (See Admission Notes 2 and 3 above.)

PROGRAM NOTES

1. Counselling for this program is shared by the Departments of Biology and Psychology, Neuroscience and Behaviour.
2. Students who are registered in this program prior to September 2006 and who completed PSYCH 2R3 and STATS 1CC3 do not need to complete PSYCH 2RA3 and 2RB3. Beginning September 2006, students with credit in STATS 1CC3 but not PSYCH 2R3 must complete both PSYCH 2RA3 and 2RB3.
3. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.
4. Students who completed PSYCH 3Q03 or 4Q03 prior to September 2007 may use this credit towards fulfilling the Level III lab requirement. Effective September 2007, PSYCH 3Q03 or 4Q03 will only fulfill this requirement if taken under the supervision or co-supervision of a faculty member in the Department of Psychology and Neuroscience.
5. Students intending to do a Psychology thesis (PSYCH 4DD6, 4DO9) must complete a Psychology lab course prior to doing a thesis.
6. Students who registered in the program prior to September 2007 may use PSYCH 2D03 or 2F03 as a substitute for three units of Psychology Course List.

For Psychology Courses with limited enrolment which require permission by pre-registration ballot, the Psychology, Neuroscience and Behaviour Department pre-registration ballot is to be done in two phases. The first phase will include the thesis courses (PSYCH 4D09, 4D6), and the Individual Study course (PSYCH 3QQ3, 3Q03, 3QQ3, 4Q03, 4QQ3). Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the Fall term. Ballots can be obtained from the Department of Psychology, Neuroscience and Behaviour web site at http://www.mcmaster.ca/psychology. Priority will be given to students registered in Honours Psychology, Neuroscience and Behaviour, Honours Psychology and Combined Honours Psychology programs.

8. Students who entered the program prior to September 2007 may complete PSYCH 4D06 to satisfy the thesis requirement. For students entering the program effective September 2007, students who do not obtain the minimum Cumulative Average as stated in the prerequisite of one of BIOLOGY 4C09, 4F06 or PSYCH 4D09, 4D6 may request a requisite waiver from the Undergraduate Associate Chair of the Department. Students denied permission may not continue in the program and may apply to transfer to Honours Biology or Honours Psychology, Neuroscience and Behaviour and apply to graduate with a Minor in the alternate subject area.

9. Students who entered the program prior to September 2007 should refer to the 2006-2007 Undergraduate Calendar or their personal degree audit for program requirements.

BIOLOGY COURSE LIST

BIOCHEM 2EE3, 3Q03, 3V03, 4E03, 4EE3, 4K03, 4Q03; BIOLOGY 2A03, 2D03, 2E03, 2F03, 2G03, 2I03, 2L03, 2M03, 2N03, 2P03, all Level III and IV Biology courses (except BIOLOGY 3Q03, 3Q03); HTH SCI 2J03, 3I03, 4BB3, 4I13; MED PHYS 3T03, 4B03; MOL BIOL 4H03

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PSYCHOLOGY COURSE LIST
KINESIO3 3E03, 4P03; MUSICCOG 2A03, 3A03, 3B03; PSYCH 2E03, 2H03, 2TT3, all Level III and IV Psychology courses (PSYCH 2AA3, 2BB3, 2C03, 2H03, 2S03, 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may only be used as elective credit.)

PSYCHOLOGY LAB COURSE LIST
PSYCH 3BL3, 3EE3, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3, 4V03 (All Psychology lab courses have limited enrolment. See Program Notes 4, 5 and 7 above.)

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVELS II-IV: 90 UNITS
(See Program Note 9 above.)
18 units BIOCHEM 2EE3, 3G03, BIOLOGY 2B03, 2C03, CHEM 20A3, 20B3
9 units PSYCH 2F03, 2RA3, 2RB3 (See Program Notes 2 and 3 above.)
3 units from PSYCH 2E03, 2TT3
9 units from Biology Course List which must include at least three units of Level III
6 units from Psychology Course List which must include at least three units of Level III or IV (See Program Note 6 above.)
3 units Level III or IV courses from Biology Course List or Psychology Course List
24 units Level III or IV courses from Biology Course List or Psychology Course List, including at least nine units from Biology Course List and nine units from Psychology Course List. One of BIOLOGY 4CO9, 4FO6, PSYCH 4DD9 or 4DD6 must be included. (See Program Notes 7 and 8 above.)
3 units from Psychology Lab Course List (See Program Notes 4, 5 and 7 above.)
0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note 1 above.)

12-15 units Electives

Honours Biology

(Genetics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II of the Honours Biology Genetics Specialization program with a Cumulative Average of at least 6.0. Admission is by selection, and possession of published minimum requirements does not guarantee admission.

Information about this program and the selection procedure can be obtained from Science Career and Cooperative Education.

PROGRAM NOTES
1. This is a five-level (year) co-op program, which includes eight months of off-campus work and a four-month academic work term. All work terms must be spent in Genetics related placements.
2. Students must be registered full-time and take a full academic workload as prescribed by Level and Term.
3. Students are required to complete SCIENCE 2C00 before the first work placement.
4. Students should seek academic counselling for this program in the Department of Biology.
5. Students in the Genetics Specialization are encouraged to take PHILOS 2D03 or 2G03 as an elective.
6. Students in the Genetics Specialization must take BIOLOGY 2B03, 2C03 and BIOCHEM 2EE3 in Level II.
7. Students are strongly recommended to take BIOLOGY 2A03, 2B03.
8. Alternate arrangements for the BIOLOGY 4GG9 thesis will be considered by the Program Coordinator.
9. Students may complete the program in December of the year prior to Spring convocation.

GENETICS COURSE LIST
BIOCHEM 3G03, 4E03; BIOLOGY 3CC3, 3HH3, 3J03, 3M03, 3S03, 3Y03, 3B03, 4DD3, 4E03, 4EE3, 4K03, 4P03, 4PP3, 4V03; MOL BIOL 4H03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I: 30 UNITS
30 units Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Biology (Genetics Specialization)

LEVEL III
Consists of Academic Terms 1 and 2 (Fall/Winter) and completion of BIOLOGY 4XX3 and the first half of the first eight-month work term, Summer Term

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS
3 units from BIOLOGY 2EE3, 3E03
15 units BIOLOGY 3FF3, 3H03, 3J03, 3O03, 3V03
3 units from Genetics Course List
9 units Electives
1 course SCIENCE 2C00

SUMMER: 3 UNITS
3 units BIOLOGY 4XX3 (first two weeks of May)
Work Term

LEVEL IV
Consists of completion of the second half of the first eight-month work term, Term 1 (Fall), Academic Term 2 (Winter) and Academic work term, Summer Term

TERM 1 (FALL):
Work Term

TERM 2 (WINTER): 15 UNITS
3 units BIOLOGY 4R03
6 units from Genetics Course List
6 units Electives

SUMMER
Work Term (in an Academic Lab) and preparation for BIOLOGY 4GG9

LEVEL V
Consists of Academic Term 1 (Fall)

TERM 1 (FALL): 12 UNITS
9 units Completion of BIOLOGY 4GG9
3 units from Genetics Course List

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<td>Work Term</td>
<td>15 units from Academic Level IV + Work Term (in a lab) + prep for BIOLOGY 4GG9</td>
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<td>15 units from Academic Level III + Work Term</td>
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Honours Biology and Pharmacology (Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic and other achievement and an interview but requires, as a minimum, completion of any Level II program with a Cumulative Average of at least 6.0 and completion of the following courses:
6 units BIOLOGY 2A03, 2B03
6 units CHEM 20A3, 20B3
3-6 units BIOCHEM 2EE3 or both BIOCHEM 2B03 and 2BB3 (See Program Note 7 below.)
6 units from BIOLOGY 2B03, 2D03, 2E03, 2F03, CHEM 2N03, 2R03

Information about this program and the selection procedure can be obtained from Science Career and Cooperative Education and the Program Director.
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PROGRAM NOTES
1. This is a five-level (year) co-op program, three terms of which must be spent in work related to biology or pharmacology placements.
2. A senior thesis, PHARMAC 4F09, will be completed in Level IV, Summer Term. Work terms must be completed in Level IV, Term 1 and Level V, Term 1.
3. PHARMAC 3A06, 3B06, 4A03, 4A43, 4C03, 4D03, 4E03 will use a self-directed-problem-based learning approach.
4. Students must be registered full-time and take a full academic workload as prescribed by Level and Term.
5. Students are required to complete SCIENCE 2C00 before the first work placement.
6. Students should seek academic counselling for this program in the Department of Biology.
7. This program requires that students complete the specific Biochemistry courses. If students have completed BIOCHEM 2EE3 prior to admission, BIOCHEM 3G03 must be completed in Level III. Students with credit in BIOCHEM 2B03 and 2BB3 are not required to complete further Biochemistry courses.

COURSE LIST
BIOCHEM 3D03, 3H03, 3N03; all Level III and IV Biology and Pharmacology courses except BIOLOGY 3Q03, 3Q03; CHEM 3F03, 3FF3, 4DD3; EARTH SCI 3J03, 4B03, 4EA3; GEO 3J03, 4A03, 4B03; HTH SCI 3I03, 3K03, 4I03; MOL BIOL 4H03, 4J03; PSYCH 2RB3

REQUIREMENTS
129 units total (Levels I to IV), of which no more than 48 units may be Level I
LEVEL I: 30 UNITS
30 units Completed prior to admission to the program.
LEVEL II: 30 UNITS
30 units Completion of any Level II program including courses as outlined in Admission statement. (See Admission above.)

LEVEL III
Consists of Academic Terms 1 and 2 (Fall/Winter) and completion of the first four-month work term, Summer Term

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS
6 units BIOCHEM 3G03, 3 courses from Course List (See Program Note 7 above.)
9 units BIOLOGY 3P03, 3U03, 3U03
12 units PHARMAC 3A06, 3B06
3 units Electives (See Program Note 7 above.)
1 course SCIENCE 2C00

SUMMER
Work Term

LEVEL IV
Consists of Academic Term 1 (Fall), completion of the second four-month work term, Term 2 (Winter) and completion of senior thesis, Summer Term

TERM 1 (FALL): 15 UNITS
6 units PHARMAC 4A03, 4C03
3 units PSYCH 2RA3
6 units from Course List

TERM 2 (WINTER):
Work Term

SUMMER: 9 UNITS
9 units PHARMAC 4F09 (See Program Note 2 above.)

LEVEL V
Consists of completion of third four-month work term, Term 1 (Fall) and Academic Term 2 (Winter)

TERM 1 (FALL):
Work Term

TERM 2 (WINTER): 15 UNITS
6 units from PHARMAC 4A03, 4D03, 4E03
3 units from Course List
6 units Electives

B.Sc. Three-Level Degree
A three-level program with a general Life Sciences orientation is available through the B.Sc. in Life Sciences. See Interdisciplinary Programs in this section of the calendar.

Minor in Biology
NOTE
Students with credit in ISCI 1A24 do not need to complete BIOLOGY 1A03 and 1AA3 (or 1M03).

REQUIREMENTS
24 units total
6 units BIOLOGY 1A03, 1AA3 (or 1M03)
18 units Levels II, III, IV Biology, including at least six units from Levels III, IV Biology

DEPARTMENT OF CHEMISTRY
WEB ADDRESS: http://www.chemistry.mcmaster.ca

Honours Arts & Science and Chemistry (B.Arts.Sc.; See Arts & Science Program)

Honours Physical Sciences
(See Interdisciplinary Programs)

NOTES APPLICABLE TO ALL HONOURS CHEMISTRY PROGRAMS
1. In addition to the Honours Chemistry program, the Department will offer two specializations. The Honours program consists of a specified set of basic requirements and a wide choice of electives, allowing for interdisciplinary studies or the opportunity to complete a Minor. Alternatively, upon completion of Level II Honours Chemistry, students may wish to complete one of the following specializations which are more appropriate for graduate studies in Chemistry:
   • Advanced Materials
   • Molecular Science
   Honours Chemistry may also be combined with the Origins Research Specialization.
2. Students are encouraged to seek academic counselling from the Undergraduate Advisor for Chemistry programs (email: advisor@chemistry.mcmaster.ca).
3. All options in Honours Chemistry fulfill the academic requirements of the Canadian Society for Chemistry.
4. For those considering postgraduate studies in Chemistry, it should be noted that 18 units of Level IV Chemistry or related subjects are required for consideration for admission at McMaster and most graduate schools in Canada. CHEM 4G09 is strongly recommended.
5. 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 courses.
6. BIOCHEM 2EE3 is an acceptable alternative to BIOCHEM 3G03 (BIOCHEM 3G03 is preferred). Other Biochemistry courses that have Biology prerequisites are also permitted.
7. CHEM 2PC3 is recommended for all Chemistry students, but not required for students who have credit in MATH 1B03.
6. CHEM 3QA3 provides the opportunities for students to integrate a summer work/research experience into an academic course. Registration in the course will take place in Term 1 of the Fall/Winter session immediately following the work-place experience. Further details may be obtained from the Undergraduate Advisor, in the Department of Chemistry.

**Honours Chemistry**

**ADMISSION NOTE (2008-2009 ONLY)**

PHYSICS 1B03 or 1BB3 must be completed by the end of Level II and is strongly recommended in Level I.

**ADMISSION (2008-2009 ONLY):** Completion of any Level I program with a Cumulative Average of at least 6.0 including:
- 6 units CHEM 1A03, 1AA3 with an average of at least 6.0
- 3 units MATH 1A03
- 3 units PHYSICS 1B03

**ADMISSION NOTE (EFFECTIVE 2009-2010)**

MATh 1LS3, with a grade of at least 10, may be substituted for MATH 1A03.

**ADMISSION EFFECTIVE 2009-2010:** Completion of any Level I program with a Cumulative Average of at least 6.0 including:
- 6 units CHEM 1A03, 1AA3 with an average of at least 6.0
- 3 units MATH 1A03 (See Admission Note above.)
- 3 units CHEM 2LA3, 2LB3
- 9 units from Science I Course List (See Admission Note above.)

**PROGRAM NOTES**

1. 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 courses.

2. BIOCHEM 2EE3 is an acceptable alternative to BIOCHEM 3G03; other Biochemistry courses that have Biology prerequisites are also permitted.

3. CHEM 3L13 and 4G09 are considered inquiry courses. If both courses are taken, it is recommended that CHEM 3L13 be taken prior to CHEM 4G09. CHEM 3L13 will not be offered beyond 2008-2009.

4. CHEM 2PC3 is recommended for all Chemistry students, however, it is not required for students who have credit in MATH 1B03.

5. CHEM 2Q03 is a recommended elective in Level II.

**REQUIREMENTS**

120 units total (Levels I to IV), of which no more than 48 units may be Level I

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS (2008-2009 ONLY)**

15 units CHEM 2AA3, 2BB3, 2CC3, 2DD3, 2PD3
- 6 units CHEM 2LA3, 2LB3
- 0-3 units from CHEM 2PC3, MATH 1B03 (See Program Note 4 above.)

**LEVEL II: 30 UNITS (EFFECTIVE 2009-2010)**

15 units CHEM 2AA3, 2BB3, 2CC3, 2DD3, 2PD3
- 6 units CHEM 2LA3, 2LB3
- 0-3 units from CHEM 2PC3, MATH 1B03 (See Program Note 4 above.)

**LEVEL III: 30 UNITS (2008-2009 ONLY)**

18 units CHEM 3A03, 3B03, 3D03, 3L13, 3P03, 3Q03
- 3 units from BIOCHEM 2EE3, 3G03 (See Program Note 2 above.)

**LEVEL III: 30 UNITS (EFFECTIVE 2009-2010)**

9 units CHEM 3AA3, 3BB3, 3PA3
- 6 units CHEM 3LA3, 3LB3
- 3 units Level II, IV Chemical Biology or Chemistry
- 3 units BIOCHEM 3G03
- 9 units Electives


9 units Level IV Chemistry
- 9 units Levels III, IV courses from the Faculty of Science
- 12 units Electives

**LEVEL IV: 30 UNITS (EFFECTIVE 2010-2011)**

9 units Level IV Chemistry
- 6 units Levels III, IV Chemical Biology or Chemistry
- 15 units Electives

**Honours Chemistry (Advanced Materials Specialization)**

**ADMISSION NOTE**

Level II Honours Chemistry students interested in applying to this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), (BSB, Room 129), email: science@mcmaster.ca by April 30.

**ADMISSION (EFFECTIVE 2009-2010)**

Completion of Level II Honours Chemistry.

**REQUIREMENTS**

120 units total (Levels I to IV), of which no more than 48 units may be Level I

**LEVEL I:**

30 units

**LEVEL II:**

30 units Completed prior to admission to the program

**LEVEL III:**

30 units Completed prior to admission to the specialization

**LEVEL IV:**

30 units

**Honours Chemistry (Molecular Science Specialization)**

**ADMISSION NOTE**

Level II Honours Chemistry students interested in applying to this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), (BSB, Room 129), email: science@mcmaster.ca by April 30.

**ADMISSION (EFFECTIVE 2009-2010)**

Completion of Level II Honours Chemistry.

**REQUIREMENTS**

120 units total (Levels I to IV), of which no more than 48 units may be Level I

**LEVEL I:**

30 units

**LEVEL II:**

30 units

**LEVEL III:**

30 units

**LEVEL IV:**

30 units
Honours Chemistry {2070818} (Biological Specialization)

The Honours Chemistry (Biological Specialization) program is being phased out. Students who had intended to register in this program should refer to the Honours Chemistry program or Honours Chemical Biology program in this section of the Calendar. Entry to Level III Honours Chemistry (Biological Specialization) will be last available in 2008-2009.

PROGRAM NOTES
1. A Minor in Biochemistry is not permitted in the Biological Chemistry Specialization.
2. Recommended electives for Levels III and IV include BIOCHEM 2B03 and CHEM 3FF3.
3. Students with credit in BIOCHEM 4K03 may substitute it for BIOCHEM 4N03.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I and at least 36 units must be Level III, IV courses

LEVEL III: 30 UNITS
15 units CHEM 3A03, 3BA3, 3D03, 3L13, 3P03, 3Q03
3 units from BIOCHEM 2B03, 3G03
3 units from BIOCHEM 2EE3, 3D03
3 units BIOLOGY 2C03
3 units Electives

LEVEL IV: 30 UNITS (2008-2009 ONLY)
15 units CHEM 4D03, 4DD3, 4G09
3 units BIOCHEM 4N03 (See Program Note 3 above.)
6 units Levels III, IV Biochemistry or Biology
6 units Electives

LEVEL IV: 30 UNITS (EFFECTIVE 2009-2010)
12 units CHEM 4OA3, 4O99
3 units Levels III, IV Chemical Biology
3 units BIOCHEM 4N03 (See Program Note 3 above.)
6 units Levels III, IV Biochemistry, Biology or Chemical Biology
6 units Electives

Honours Chemistry {2070822} (Physical and Analytical Specialization)

The Honours Chemistry (Physical and Analytical Specialization) program is being phased out. Students who had intended to register in this program should refer to the Honours Chemistry program in this section of the Calendar. Entry to Level III Honours Chemistry (Physical and Analytical Specialization) will be last available in 2008-2009.

PROGRAM NOTE
Recommended electives include MATH 2C03, STATS 2D03, 2MB3.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I and at least 36 units must be Level III, IV courses

LEVEL III: 30 UNITS
24 units CHEM 3A03, 3BA3, 3BB3, 3D03, 3L13, 3P03, 3Q03, 3ZZ3
3 units from BIOCHEM 2EE3, 3D03
3 units Electives

LEVEL IV: 30 UNITS (2008-2009 ONLY)
9 units CHEM 4G09
6 units Levels III, IV Chemistry
15 units Electives

LEVEL IV: 30 UNITS (EFFECTIVE 2009-2010)
9 units CHEM 4G09
6 units Levels III, IV Chemical Biology or Chemistry
15 units Electives

Honours Chemistry {2070824} (Synthesis and Structure Specialization)

The Honours Chemistry (Synthesis and Structure Specialization) program is being phased out. Students who had intended to register in this program should refer to the Honours Chemistry program in this section of the Calendar. Entry to Level III Honours Chemistry (Synthesis and Structure Specialization) will be last available in 2008-2009.

PROGRAM NOTE
Additional Biochemistry is recommended from either BIOCHEM 2EE3, 3G03 or from BIOCHEM 2B03, 2BB3 and 3D03. Note that the latter three courses have Biology prerequisites.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I and at least 36 units must be Level III, IV courses

LEVEL III: 30 UNITS
18 units CHEM 3A03, 3BA3, 3D03, 3L13, 3P03, 3Q03
6 units from CHEM 3I03, 4A03, 4C03, 4D03, 4DD3, 4PP3, 4R03, 4S03
3 units from BIOCHEM 2EE3, 3G03
3 units Electives

LEVEL IV: 30 UNITS (2008-2009 ONLY)
9 units CHEM 4G09
6 units Levels III, IV Chemistry
15 units Electives

LEVEL IV: 30 UNITS (EFFECTIVE 2009-2010)
9 units CHEM 4G09
6 units Levels III, IV Chemical Biology or Chemistry
15 units Electives

Hons Chemistry {2070412} (Origins Research Specialization)

ADMISSION NOTES (2008-2009 ONLY)
1. PHYSICS 1A03 or 1B03 must be completed by the end of Level II and is strongly recommended in Level I. Students who do not complete this requirement in Level I may have to complete more than 120 units to meet the requirements of this program.
2. BIOLOGY 1A03 and 1A3 must be completed by the end of Level II, however completion is strongly recommended in Level I. Students who do not complete these courses in Level I may have to complete more than 120 units to meet the requirements of this program.

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units CHEM 1A03, 1A3 with an average of at least 6.0
3 units MATH 1A03
3 units PHYSICS 1B03
3 units from PHYSICS 1B03, 1BB3 (See Admission Note 1 above.)
9 units from Science I Course List (See Admission Note 2 above.)

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. MATH 1LS3, with a grade of at least 10, may be substituted for MATH 1A03.
2. BIOLOGY 1A03 and 1M03 (or 1A33) must be completed by the end of Level II, however completion is strongly recommended in Level I. Students who do not complete these courses in Level I may have to complete more than 120 units to meet the requirements of this program.
3. One of PHYSICS 1B03 or 1BB3 must be completed by the end of Level II and is strongly recommended in Level I.

ADMISSION
EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units CHEM 1A03, 1A3 with an average of at least 6.0
3 units MATH 1A03 (See Admission Note 1 above.)
3 units PHYSICS 1B03
3 units from PHYSICS 1B03, 1BB3 (See Admission Note 3 above.)
9 units from Life Sciences I Course List or Physical Sciences I Course List (See Admission Note 2 above.)

PROGRAM NOTES
1. Completion of ORIGINS 2B03, 2FF3 and 2S03 is required by the end of Level III.
2. In some cases there are Level I and III prerequisites for Level III and IV courses. The prerequisites should be considered when choosing your Level II and III courses.
3. BIOCHEM 2EE3 is an acceptable (though not recommended) alternative to BIOCHEM 3G03; other Biochemistry courses that have Biology prerequisites are also permitted.
4. CHEM 3L13 and 4G09 are considered inquiry courses. If both courses are taken, it is recommended that CHEM 3L13 be taken prior to CHEM 4G09. CHEM 3L13 will not be offered beyond 2008-2009.

5. CHEM 2PC3 is recommended for all Chemistry students, however, it is not required for students who have credit in MATH 1B03.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

ORIGINS COURSE LIST
ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03

LEVEL I
30 units (See Admission Note above.)

LEVEL II: 30-39 UNITS (2008-2009 ONLY)
15 units CHEM 2A03, 2B03, 2C03, 2D03, 2PD3
6 units CHEM 2L13, 2L33
3 units from CHEM 2PC3, MATH 1B03 (See Program Note 5 above.)
3 units from ORIGINS 2B03, 2FF3 (See Program Note 1 above.)
3 units ORIGINS 2S03
0-3 units from PHYSICS 1AO3 or 1BB3, if not completed in Level I (See Admission Note 1 above.)
0-6 units from BIOLOGY 1A03 and 1AA3 (or 1M03), if not completed in Level I (See Admission Note 2 above.)
0-3 units Electives

LEVEL III: 30 UNITS (2008-2009 ONLY)
18 units CHEM 3A03, 3B03, 3FF3, 3L13, 3P03, 3Q03
3 units from BIOCHEM 2EE3, 2G03 (See Program Note 3 above.)
3 units from ORIGINS 2B03, 2FF3 (See Program Note 1 above.)
3 units from Origins Course List
3 units ORIGINS 3S03

LEVEL IV: 30 UNITS (2008-2009 AND 2009-2010 ONLY)
9 units Level IV Chemistry
9 units Levels III, IV courses from the Faculty of Science
3 units from Origins Course List
9 units ORIGINS 4A09

LEVEL IV: 30 UNITS (EFFECTIVE 2010-2011)
9 units Level IV Chemistry
6 units Levels III, IV Chemical Biology or Chemistry
3 units from Origins Course List
9 units ORIGINS 4A09
3 units ORIGINS 3S03

Honours Chemical Biology {2071}

ADMISSION NOTES
1. Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II.

2. Completion of MATH 1B03 and PHYSICS 1BB3 is strongly recommended.

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units from MATH 1AO3, 1AAX, STATS 1C03
6 units BIOLOGY 1A03, 1AA3 with a grade of at least C+ in each
6 units CHEM 1AO3, 1AA3 with an average of at least 6.0
3 units PHYSICS 1B03 (See Admission Note 1 above.)
3 units from Science I Course List (See Admission Note 2 above.)

EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

3 units from MATH 1AO3, 1LS3
6 units BIOLOGY 1A03, 1M03 (or 1AAX) with a grade of at least C+ in each
6 units. CHEM 1A03, 1AA3 with an average of at least 6.0
3 units PHYSICS 1B03, 1L03 (See Admission Note 1 above.)
6 units from either Life Sciences I Course List or Physical Sciences I Course List (See Admission Note 2 above.)

PROGRAM NOTES
1. Students are encouraged to seek academic counselling from the Undergraduate Advisor for the Chemical Biology program (email advisor@chembio.mcmaster.ca).

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 courses.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I and at least 36 units must be Levels III, IV

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units CHEM BIO 2A03, 2L03, 2P03, 2Q03
6 units CHEM 2AO3, 2B03
6 units BIOCHEM 2B03, 2BB3
3 units BIOLOGY 2B03
0-3 units from PHYSICS 1B03, if not completed in Level I (See Admission Note 1 above.)
0-3 units Electives (See Admission Note 2 above.)

LEVEL III: 30 UNITS
6 units CHEM BIO 3A03, 3B03, 3C03, 3F03
6 units CHEM 3A03, 3BB3, 3FF3, 3L13
3 units BIOCHEM 3D03, 3G03; other Biochemistry courses that have biology prerequisite
3 units from ORIGINS 3S03
3 units BIOCHEM 3G03
3 units from ORIGINS 2B03, 2FF3
3 units from Origins Course List
3 units ORIGINS 3S03

LEVEL IV: 30 UNITS
6 units CHEM BIO 4A03, 4AA3, 4OB3
3-9 units from CHEM BIO 4G03, 4GG9
15-21 units Electives, of which at least 12 units must be Level III or IV

Honours Chemistry Co-op {2073}

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level IIHonours Chemistry with a Cumulative Average of at least 6.0.

Information about the program and the selection procedure may be obtained from Science Career and Cooperative Education.

PROGRAM NOTES
1. This is a five-level (year) co-op program which includes two eight-month work terms that must be spent in Chemistry-related placements.

2. Students must be registered full-time and take a full academic workload as prescribed by Level and Term.

3. Students are required to complete SCIENCE 2C00 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. Students should, in particular, note the Mathematics and Physics prerequisites for CHEM 3BB3 and 3Z3.

5. Students considering postgraduate studies in Chemistry should note that 18 units of Level IV Chemistry or related subjects are required for consideration for admission at McMaster and most graduate schools in Canada.

6. BIOCHEM 2EE3 is an acceptable alternative to BIOCHEM 3G03; other Biochemistry courses that have Biology prerequisites are also permitted.
7. Students in a Chemistry co-op program may not complete CHEM 3QA3.
8. CHEM 3BB3 and 3ZZ3 will not be offered beyond 2008-2009.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I and at least 36 units must be Level III, IV courses

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
Completion of any Level II Honours Chemistry program

LEVEL III
Consists of Academic Term 1 (Fall) and completion of the first eight-month work term, Term 2 (Winter) and Summer Term

TERM 1 (FALL): 15 UNITS (2008 ONLY)
6 units CHEM 3BA3, 3G03
9 units Electives
1 course SCIENCE 2C00

TERM 1 (FALL): 15 UNITS (EFFECTIVE 2009)
6 units CHEM 3I13, 3PA3
9 units Electives
1 course SCIENCE 2C00

TERM 2 (WINTER) AND SUMMER
Work Term

LEVEL IV
Consists of Academic Term 1 (Fall), and Term 2 (Winter), and the first half of the second eight-month work term, Summer Term

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS (2008-2009 ONLY)
12 units CHEM 3A03, 3D03, 3I03, 3P03
6-9 units from CHEM 3BB3, 3LI3, 3ZZ3, 4C03, 4D03, 4DD3, 4G09, 4PP3, 4RO3, 4PS3 (See Program Note 8 above.)
9-12 units Electives

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS (EFFECTIVE 2009-2010)
9 units CHEM 3LA3, 3LB3
6-9 units Levels III, IV Chemistry
3 units Levels III, IV Chemical Biology or Chemistry
9-12 units Electives

SUMMER
Work Term

LEVEL V
Consists of completion of the second half of the second eight-month work term, Term 1 (Fall) plus Academic Term 2 (Winter)

TERM 1 (FALL)
Work Term

TERM 2 (WINTER): 15 UNITS (2009 ONLY)
3 units Levels III, IV Chemistry
3 units Level IV Chemistry
3 units from BIOCHEM 2EE3, 3G03 (See Program Note 6 above.)
6 units Electives

TERM 2 (WINTER): 15 UNITS (2010 ONLY)
3 units Levels III, IV Chemistry
3 units Level IV Chemical Biology or Chemistry
3 units BIOCHEM 3G03 (See Program Note 6 above.)
6 units Electives

B.Sc. Three-Level Degree
A three-level program with a Chemistry orientation is available through the B.Sc. in Physical Sciences. See Interdisciplinary Programs in this section of the Calendar.

Minor in Chemistry

NOTES
1. Students who wish to pursue a Minor in Chemistry are encouraged to select courses in consultation with the Undergraduate Advisor in the Department of Chemistry.
2. Students with credit in ISCI 1A24 do not need to complete CHEM 1A03 and 1AA3.

DEPARTMENT OF COMPUTING AND SOFTWARE
WEB ADDRESS: http://www.ca.s.mcmaster.ca

Honours Arts & Science and Computer Science
(B.A.Sc.; See Arts & Science Program)

Honours Computer Science (B.A.Sc.)
(B.A.Sc.; See Faculty of Engineering, Honours Computer Science (B.A.Sc.)

Honours Economics and Computer Science
(B.A.; See Faculty of Social Sciences, Department of Economics)

Honours Mathematics and Computer Science
(See Department of Mathematics and Statistics)

Honours Mathematical Science
(See Interdisciplinary Programs)

Honours Computer Science (B.Sc.) {2153)

The Honours Computer Science Program has been cancelled, effective September 2008. (Those students wishing to pursue the Honours Computer Science (B.A.Sc.) program should see Honours Computer Science (B.A.Sc.) in the Faculty of Engineering section of this calendar.) Students who registered in a Computer Science program prior to September 2007 may see an Academic Advisor in the Office of the Associate Dean of Science (Studies) for program requirements.

Honours Computer Science {2145320

and Mathematics

Students interested in pursuing a program in Computer Science and Mathematics should see Honours Mathematics and Computer Science in the Department of Mathematics and Statistics section of this Calendar.

SCHOOL OF GEOGRAPHY AND EARTH SCIENCES
WEB ADDRESS: http://www.science.mcmaster.ca/geo/

Honours Arts & Science and Geography and Environmental Sciences
(B.A.; See Arts & Science Program)

Honours Geography (B.A.), B.A. in Geography and Honours Geography and Environmental Studies (B.A.)
(See B.A. programs, Faculty of Social Sciences, School of Geography and Earth Sciences)
NOTES APPLICABLE TO ALL HONOURS
EARTH AND ENVIRONMENTAL SCIENCES PROGRAMS

1. All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Sciences or Geography courses, see Geography and Earth Sciences in the Course Listings section of this Calendar.

2. Upon completion of Level II Honours Earth and Environmental Science Specializations, students may choose to register in one of three specializations:
   - Aqueous Environmental Geochemistry Specialization
   - Earth Sciences Specialization
   - Environmental Hydrology and Climate Specialization

   These specializations aim to fulfill the academic requirements for professional registration of Geoscientists in Ontario. Additional information on these requirements can be found on the website: http://www.science.mcmaster.ca/geo/undergraduate/programs/science.html. Students are encouraged to consult with the academic advisor in the School of Geography and Earth Sciences to ensure proper selection of courses for professional registration. The Honours Earth and Environmental Sciences program does not aim to fulfill professional registration requirements.

Honours Earth and Environmental Sciences (B.Sc.)

All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Science or Geography courses, please see Geography and Earth Sciences in the Course Listings section of this Calendar.

ADMISSION NOTE (2008-2009 ONLY)
Both ENVIR SC 1A03 and 1G03 must be completed by the end of Level II and are recommended in Level I.

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units a grade of at least C+ in two of ENVIR SC 1A03, 1B03, 1G03 (See Admission Note above.)
3 units CHEM 1A03
3 units MATH 1A03
3 units from MATH 1AA3, 1B03, 1D03, STATS 1CC3
9 units from BIOLOGY 1A03, 1AA3, CHEM 1AA3, PHYSICS 1B03, 1BA3

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. Both ENVIR SC 1A03 and 1G03 must be completed by the end of Level II and are recommended in Level I.
2. CHEM 1A03 must be completed by the end of Level II.
3. One of MATH 1A03, 1AA3, 1B03, STATS 2B03 must be completed by the end of Level II.

ADMISSION EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units a grade of at least C+ in two of ENVIR SC 1A03, 1B03, 1G03 (See Admission Note 1 above.)
3 units CHEM 1A03, 1R03 (See Admission Note 2 above.)
3 units MATH 1A03, 1LS3
12 units from BIOLOGY 1A03, 1M03 (or 1AA3), CHEM 1AA3, MATH 1A03, 1AA3, 1B03, PHYSICS 1B03, 1BA3, 1LS3

PROGRAM NOTES
1. Students may select one of the three specializations at the completion of Level II. Students who choose not to specialize will follow the requirements for Honours Earth and Environmental Sciences. If students choose to specialize, they follow the Level III and IV requirements listed under their appropriate specialization listing (see below). Students who choose not to specialize might not fulfill the academic requirements required for professional registration.
2. All students are strongly encouraged to meet with the academic advisor in the School of Geography and Earth Sciences to discuss program requirements and course selections.
3. There are Level III prerequisites for many Level IV courses. The prerequisites should be considered when selecting your courses.
4. The field components of EARTH SC 3FE3 and 4FE3 are normally taken outside of the normal term. Details are announced in March.

FACULTY OF SCIENCE 121

REQUIREMENTS FOR STUDENTS WHO ENTER IN 2008-2009

COURSE LIST I
BIOLOGY 2D03 or 2F03; CHEM 2A03, 2E03; ENVIR SC 1B03 or EARTH SC 2E13; EARTH SC 2C03, 2G13, 2K03; STATS 2B03

COURSE LIST 2
BIOLOGY 2F03, 3SS3, 3TT3; CHEM 2A03, 2E03; EARTH SC 2C03, 2G13, 2K03, 3CC3, 3G13, 3J03, 3K03, 3L03, 3O03, 3P03, 3Q03, 3R03, 3U03, 3V03, 3W03, 3Z03, 4B03, 4C03, 4E03, 4EA3, 4FE3, 4FF3, 4G03, 4J03, 4L03, 4MR3, 4MT6, 4Q03, 4Q03, 4T03, 4W03, 4Z03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS (2008-2009 ONLY)
15 units EARTH SC 2B03, 2G03, 2Q03, 2W03
6 units from Course List 1
0-3 units from ENVIR SC 1A03, 1G03, if not completed in Level I (See Admission Note above.)
6-9 units Electives

LEVEL II: 30 UNITS (EFFECTIVE 2009-2010)
15 units EARTH SC 2B03, 2E03, 2G03, 2Q03, 2W03
6 units from Course List 1
0-3 units from ENVIR SC 1A03, 1G03, if not completed in Level I (See Admission Note 1 above.)
0-3 units CHEM 1A03, if not completed in Level I (See Admission Note 2 above.)
0-3 units MATH 1A03, 1AA3, 1B03 (if not completed in Level I) or STATS 2B03 (See Admission Note 3 above.)
0-9 units Electives

LEVEL III: 30 UNITS
(See below for the Level III requirements for Specializations)
6 units EARTH SC 3FE3, 3RD3
9 units from Course List 2
15 units Electives

LEVEL IV: 30 UNITS
(See below for the Level IV requirements for Specializations)
18 units from Course List 2, which must include one of EARTH SC 4MR3, 4MT6
12 units Electives

REQUIREMENTS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2008

COURSE LIST I
BIOLOGY 2D03, 2F03; CHEM 2A03, 2E03; EARTH SC 2B03, 2C03, 2G03, 2K03; GEO 2C03, 2G03, 2K03; one of EARTH SC 2E13, ENVIR SC 1B03, GEO 2A03

COURSE LIST 2
ASTRON 2E03; BIOLOGY 2F03, 3SS3, 3TT3; CHEM 2A03, 2E03; EARTH SC 2C03, 2G13, 2K03, 3CC3, 3G13, 3J03, 3K03, 3L03, 3O03, 3P03, 3Q03, 3U03, 3V03, 3W03, 3Z03, 4B03, 4C03, 4E03, 4FE3, 4FF3, 4G03, 4J03, 4L03, 4MR3, 4MT6, 4Q03, 4Q03, 4T03, 4W03, 4WW3, 4Z03; GEO 2B03, 2C03, 2K03, 2KK3, 3B03, 3C03, 3E03, 3I03, 3J03, 3K03, 3L03, 3O03, 3P03, 3U03, 3V03, 3W03, 3Z03, 4B03, 4C03, 4CC3, 4E03, 4FF3, 4G03, 4HH3, 4J03, 4K03, 4Q03, 4QR3, 4RO6, 4T03, 4W03, 4WW3, 4Z03, 4Z23

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS (2008-2009 ONLY)
3 units from CHEM 2R03, EARTH SC 2Q03, GEO 2Q03
12 units from EARTH SC 2E03, 2G03, 2G13, 2W03, GEO 2E03, 2G03, 2I03, 2W03
6 units from Course List 1
0-3 units from ENVIR SC 1A03, 1G03, if not completed in Level I (See Admission Note above.)
6-9 units Electives
LEVEL III: 30 UNITS
(See below for the Level III requirements for Specializations)
3 units from EARTH SC 3FE3, GEO 3FE3
6 units from EARTH SC 3RD3, 3SR3, GEO 3R03, 3Y03
6 units from Course List 2
15 units Electives

LEVEL IV: 30 UNITS
(See below for the Level IV requirements for Specializations)
3 units EARTH SC 4EA3, GEO 4A03
15 units from Course List 2, which must include one of EARTH SC 4MR3, 4MT6, GEO 4CC3, 4R06
12 units Electives

Honours Earth and Environmental Sciences (Aqueous Environmental Geochemistry Specialization)
FORMERLY GEOCHEMISTRY SPECIALIZATION

ADMISSION
Completion of Level II Honours Earth and Environmental Sciences.

REQUIREMENTS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2008
Aqueous Environmental Geochemistry Course List: BIOLOGY 2F03; CHEM 2A03 or 2E03; EARTH SC 2G13, 2K03, 3E03, 3G13, 3J03, 3SR3, 3U03, 3V03, 3Z03, 4EA3, 4FE3, 4FF3, 4GO3, 4GI3, 4L03, 4MR3, 4MT6, 4Q03, 4W03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL III: 30 UNITS
6 units EARTH SC 3FE3, 3RD3
9 units EARTH SC 3L03, 3O03, 3Q03
9 units from Aqueous Environmental Geochemistry Course List
6 units Electives

LEVEL IV: 30 UNITS
15 units from Aqueous Environmental Geochemistry Course List, which must include one of EARTH SC 4MR3, 4MT6
9 units from EARTH SC 2C03, 3W03, 4O03, 4WW3
6 units Electives

REQUIREMENTS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2008
Aqueous Environmental Geochemistry Course List 1: BIOLOGY 2F03; EARTH SC 2B03, 2C03, 3J03, 3L03, 3O03, 3Q03; GEO 2B03, 2C03, 3J03, 3L03, 3O03, 3Q03
Aqueous Environmental Geochemistry Course List 2: ASTRON 2E03; BIOLOGY 2F03, 3SS3, 3TT3; CHEM 2A03 or 2E03; one Level III Chemistry course; EARTH SC 2B03, 2C03, 2K03, 3J03, 3L03, 3O03, 3Q03, 3U03, 3V03, 3Z03, 4E03, 4EA3, 4FE3, 4FF3, 4FF5, 4Q03, 4V03, 4WW3; GEO 2B03, 2C03, 2K03, 3J03, 3L03, 3O03, 3Q03, 3U03, 4B03, 4CC3, 4FE3, 4FF3, 4Q03, 4HH3, 4J03, 4Q03, 4R06

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL III: 30 UNITS
3 units from EARTH SC 3FE3, GEO 3FE3
6 units from EARTH SC 3RD3, 3SR3, GEO 3R03, 3Y03
6 units from Aqueous Environmental Geochemistry Course List 1
9 units from Aqueous Environmental Geochemistry Course List 2
6 units Electives

LEVEL IV: 30 UNITS
3 units from EARTH SC 4EA3, GEO 4A03
9 units from Aqueous Environmental Geochemistry Course List 1
12 units from Aqueous Environmental Geochemistry Course List 2, which must include one of EARTH SC 4MR3, 4MT6, GEO 4CC3, 4R06
6 units Electives
Requirements
120 units total (Levels I to IV), of which no more than 48 units may be Level I

Level III: 30 Units
6 units: Earth SC 3FE3, 3RD3
6 units: From Environmental Hydrology and Climate Course List 1
12 units: From Environmental Hydrology and Climate Course List 2
6 units: Electives

Level IV: 30 Units
9 units: From Environmental Hydrology and Climate Course List 1
15 units: From Environmental Hydrology and Climate Course List 2, which must include one of Earth SC 4MR3, 4MT6
6 units: Electives

Requirements for Students Who Entered Prior to September 2008

Environmental Hydrology and Climate Course List 1: Biology 2F03; Earth SC 2C03, 2G13, 3J03, 3W03; Geo 2B03, 2C03, 3C03, 3J03, 3W03, 3Z03

Environmental Hydrology and Climate Course List 2: Earth SC 3CC3, 3G13, 3L03, 3Q03, 3R03, 3W03, 4B03, 4C03, 4FE3, 4FF3, 4G13, 4L03, 4MR3, 4MT6, 4W03, 4W3; Geo 2B03, 2C03, 2K03, 3B03, 3C03, 3I03, 3J03, 3Q03, 3U03, 3W03, 3Z03, 4B03, 4C03, 4EC3, 4FE3, 4FF3, 4G03, 4Q03, 4R06, 4W03, 4W3

Level IV: 30 Units
3 units: From Earth SC 4EA3, GEO 4A03
9 units: From Environmental Hydrology and Climate Course List 1
12 units: From Environmental Hydrology and Climate Course List 2, which must include one of Earth SC 4MR3, 4MT6, Geo 4C03, 4R06
6 units: Electives

Honours Environmental Sciences (B.Sc.) [2210]

Admission Note
Envir SC 1A03, 1B03, 1G03 must be completed by the end of Level I.

Admission
2008-2009 Only: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units: From Envir SC 1A03, 1B03, 1G03 with an average of at least 6.0 (See Admission Note above.)
3 units: Math 1A03
3 units: Math 1AA3, 1B03, 1D03, Stats 1CC3
12 units: From Science I Course List (See Admission Note above.)

Admission Effective 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units: From Math 1A03, 1LS3
3 units: From Biology 1M03 (or 1A3)
6 units: From Envir SC 1A03, 1B03, 1G03 with an average of at least 6.0 (See Admission Note above.)
12 units: From AStron 1F03, Biology 1A03, Chem 1A03, 1AA3, Comp Sci 1FC3, 1MA3, 1MD3, Envir SC 1A03, 1B03, 1G03, Math 1A03, 1AA3, 1B03, 1LS3, Physics 1B03, 1B13, 1B33, 1F03, 1L03, Psych 1X03, 1X3

Requirements for Students Who Enter in 2008-2009

Environmental Sciences Course List: Biology 2G03, 3R03, 3SS3, 3TT3, 4A03, 4J03, 4Y03; Envir SC 2B03, 2C03, 2E03, 2G03, 2G13, 2MB3, 2W03, 3C03, 3E03, 3EP3, 3G13, 3J03, 3L03, 3Q03, 3R03, 3S03, 3SAA3, 3SR03, 3U03, 3W03, 4B03, 4C03, 4G03, 4G13, 4H13, 4L03, 4Q03, 4W03, 4W3; Stats 2B03

Requirements
120 units total (Levels I to IV), of which no more than 48 units may be Level I

Level I
30 units (See Admission above.)

Level II: 30 Units
12 units: From Envir SC 2B03, 2C03, 2E03, 2Q03, 2W03
6 units: Biology 2D03, 2F03
0-3 units: From Envir SC 1A03, 1B03, 1G03 (See Admission Note above.)
9-12 units: Electives

Level III: 30 Units
12 units: From Envir SC 3CC3, 3EP3, 3J03, 3L03, 3Q03, 3U03, 3W03
9 units: From Environmental Sciences Course List
9 units: Electives

Level IV: 30 Units
3 units: Envir SC 4EA3
18 units: Levels Ill, IV courses from Environmental Sciences Course List
9 units: Electives

Requirements for Students Who Entered Prior to September 2008

Environmental Sciences Course List: Biology 3R03, 3SS3, 3TT3, 4A03, 4J03, 4Y03; Envir SC 2B03, 2C03, 2E03, 2G03, 2G13, 2MB3, 2W03, 3C03, 3E03, 3EP3, 3G13, 3J03, 3L03, 3Q03, 3R03, 3S03, 3SAA3, 3SR03, 3U03, 3W03, 4B03, 4C03, 4G03, 4G13, 4H13, 4L03, 4Q03, 4W03, 4W3; Stats 2B03; All Level II, III and IV Geo Courses Except Geo 2G13, 2MM3, 2W03, 3A03, 3CC3, 3DD3, 3NN3, 3RR3 and any course that is exclusively Geography

Requirements
120 units total (Levels I to IV), of which no more than 48 units may be Level I

Level I
30 units (See Admission above.)

Level II: 30 Units
12 units: Level II courses from Environmental Sciences Course List
6 units: From Faculty of Science courses excluding Environmental Sciences Course List
0-3 units: From Envir SC 1A03, 1B03, 1G03 (See Admission Note above.)
9-12 units: Electives

Level III: 30 Units
12 units: Levels III, IV courses from Environmental Sciences Course List
3 units: From Faculty of Science courses excluding Environmental Sciences Course List
15 units: Electives

Level IV: 30 Units
18 units: Levels II, III, IV courses from Environmental Sciences Course List of which at least 12 units must be Levels III, IV
6 units: From Faculty of Science courses excluding Environmental Sciences Course List
6 units: Electives

Honours Geoscience [2513]

The Honours Geoscience program has been cancelled and replaced by Honours Environmental Sciences. (See requirements above.) Entry to Level III Honours Geoscience will be last available in 2008-2009. Those students currently registered in Honours Geoscience who wish to transfer to the new program must contact the Office of the Associate Dean of Science (Studies). Those students currently registered in Honours Geoscience who wish to remain in the program should refer to their degree audit for requirements.
I in the Honours Earth and Environmental Sciences program.

24 units - from ENVIR SC 1A03, 1B03, 1G03
30 units from ENVIR SC 1G03
6 units from MATH 1A03, 1LS3
15 units from ASTRON 1F03, BIOLOGY IA03, IM03, CHEM IA03, 1AA3, COMP SCI 1FC3, 1MA3, 1MD3, ENVIR SC 1A03, 1B03, 1G03, MATH 1A03, 1AA3, 1B03, PHYSICS 1B03, 1AA3, 1B03, 1G03, 1L03, PSYCH 1X03, 1X3X

PROGRAM NOTES

1. There are Level II prerequisites for many Level III courses; these should be considered when choosing Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the required specialist option courses in the Honours Earth and Environmental Sciences program.

2. Students should seek academic counselling from the School of Geography and Earth Sciences to ensure that their choices are appropriate.

Course List (For Students Who Enter In 2008-2009):

90 units from Levels I to III, of which no more than 42 units may be Level I.

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units Level II courses from Course List
6 units from Faculty of Science courses
12 units Electives

LEVEL III: 30 UNITS
12 units Levels III, IV courses from Course List
3 units from Faculty of Science courses
15 units Electives

Minor in Geography

Please see Minor in Geography in the School of Geography and Earth Sciences in the Faculty of Social Sciences section of this Calendar.

Minor in Earth Sciences

NOTE
Students with credit in ISCI 1A24 do not need to complete ENVIR SC 1G03.

REQUIREMENTS

24 units total
3 units from ENVIR SC 1G03
3 units from ENVIR SC 1A03, 1B03
18 units from MATH 1A03, 1LS3

Minor in Environmental Sciences

NOTE
Students with credit in ISCI 1A24 do not need to complete ENVIR SC 1G03.

REQUIREMENTS

24 units total
6 units from ENVIR SC 1A03, 1B03, 1G03
18 units from BIOLOGY 2F03, 3R03, 3S53, 3T73, 4J03, 4Y03, CHEM 2A03, 2E03, 2H03, EARTH SC 2E13, ENVIR SC 2B03, 2C03, 2E03, 2G03, 2I3, 2M3, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3G13, 3J03, 3L03, 3Q03, 3SA3, 3W03, 4B03, 4C03, 4G03, 4I3, 4H3, 4L03, 4O03, 4W03, 4WW3

Certificate in G.I.S.

(For Geographic Information Systems)

For further information see the Certificate and Diploma Programs section of this Calendar.

INTEGRATED SCIENCE

(See Interdisciplinary Programs)

DEPARTMENT OF KINESIOLOGY

WEB ADDRESS:  www.mcmaster.ca/kinesiology

Honours Bachelor of Kinesiology (B.Kin.)

(See Faculty of Social Sciences, Department of Kinesiology)

Honours Kinesiology (B.Sc.)

2671

This program is being phased out and admission to Level III will be last available in 2008. The program has been replaced by the Honours Kinesiology (B.Sc.Kin.) degree program.

PROGRAM NOTES

1. B.Sc. Kinesiology students must complete at least 12 units of electives selected from the Subject of Science. These units may be completed in any Level but may not include any course that is exclusively GEOG or PSYCH 2A3, 2B03, 2C03, 2D03, 2E03, 2F03, 2G03, 2H03, 2I3, 2J3, 3A3, 3B3, 3C3, 3D3, 3E3, 3F3.

2. KINESIOL 3C03 or STATS 2B03 may substitute for STATS 1C03.

Kinesiology courses may not be used toward the elective component of the degree.

COU RSE LIST

KINESIOL 3A03, 3B03, 3C03, 3D03, 3E03, 3J03, 3K03, 3N03, 3Q03, 4A06, 4B03, 4B3, 4C03, 4CC3, 4E03, 4F03, 4FF3, 4GG3, 4J03, 4J03, 4K03, 4K03, 4M03, 4M3, 4P03, 4Q03, 4R03, 4RR6, 4RR9, 4S03, 4SS3, 4V03, 4X06

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I.

LEVELS III AND IV: 60 UNITS

30 units Levels III, IV Kinesiology, including at least 18 units from Course List (See Program Note 2 above.)
30 units Electives (See Program Notes 1 and 3 above.)
Honours Kinesiology (B.Sc.Kinesiology) {2672}

ADMISSION
Completion of Kinesiology I with a Cumulative Average of at least 6.0 including an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1EO3, 1F03, 1G03

PROGRAM NOTES
1. Completion of one of MATH 1A03, 1B03, 1D03 (last offered 2007-2008), 1LS3 (first offered 2008-2009) is a requirement for this program.
2. Completion of a statistics course is a requirement for this program. Students who have not completed STATS 1C03, must complete either KINESIOL 3C03 or STATS 2B03.
3. Honours B.Sc. Kinesiology students must complete at least six units of electives chosen from the Faculty of Science. These units may be completed in any level of studies but may not include any course that is exclusively GEOG or PSYCH 2AA3, 2B03, 2C03, 2I03, 2S03, 3AB3, 3AC3, 3BA3, 3CB3, 3CD3.
4. Kinesiology courses may not be used toward the elective component of the degree.
5. Honours Kinesiology students who have a minimum Cumulative Average of 3.5 and successfully completed at least 90 units including all requirements up to the end of Level III of the Honours B.Sc.Kin. program may request permission from the Office of the Associate Dean of Science (Studies) to transfer to graduate with the Bachelor of Science Kinesiology (B.Sc.Kin.) degree.

COURSE LIST
KINESIOL 3AA3, 3B03, 3C03, 3D03, 3E03, 3J03, 3K03, 3N03, 3Y03, 4A06, 4B03, 4BB3, 4C03, 4CC3, 4E03, 4F03, 4FF3, 4GG3, 4I03, 4J03, 4K03, 4KK3, 4M03, 4MM3, 4P03, 4Q03, 4R03, 4RR6, 4RR9, 4S03, 4SS3, 4V03, 4X06

REQUIREMENTS FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2008
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVELS II - IV: 90 UNITS
18 units KINESIOL 2A03, 2C03, 2CC3, 2E03, 2F03, 2G03 0-3 units from MATH 1A03, 1B03, 1D03, 1LS3, if not completed in Level I
0-3 units from STATS 1CC3 (See Program Note 2 above.)
36 units Levels III, IV Kinesiology, including at least nine units of Level IV and at least 27 units from Course List
30-36 units Electives (See Program Notes 3 and 4 above.)

REQUIREMENTS FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2009
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVELS II - IV: 90 UNITS
18 units KINESIOL 2A03, 2C03, 2CC3, 2E03, 2F03, 2G03 0-3 units from MATH 1A03, 1B03, 1D03, 1LS3, if not completed in Level I
3 units from KINESIOL 3C03, STATS 2B03
36 units Levels III, IV Kinesiology, including at least nine units of Level IV and at least 27 units from Course List
30-33 units Electives (See Program Notes 3 and 4 above.)

MATERIALS SCIENCE AND ENGINEERING

WEB ADDRESS: http://mse.eng.mcmaster.ca

Honours Materials Science (Computational Materials Science Specialization) {2518}

The Honours Materials Science (Computational Materials Science Specialization) has been cancelled. Students who had intended to register in this program should contact the Office of the Associate Dean of Science (Studies) to discuss an alternate choice.

Honours Materials Science
(Materials Properties and Processing Specialization) (Nanomaterials Specialization) {2517, 2523}

The Honours Materials Science programs (Materials Properties and Processing Specialization and Nanomaterials Specialization) have been cancelled. Students who had intended to register in either of these specializations should contact the Office of the Associate Dean of Science (Studies) to discuss an alternate choice.

DEPARTMENT OF MATHEMATICS AND STATISTICS

WEB ADDRESS: http://www.math.mcmaster.ca

Honours Arts & Science and Mathematics (B.Arts.Sc.; See Arts & Science Program)

Honours Biology and Mathematics
(See Department of Biology)

Honours Computational Biology
(See Interdisciplinary Programs)

Honours Economics and Mathematics
(See Faculty of Social Sciences, Department of Economics)

Honours Philosophy and Mathematics
(See Faculty of Humanities, Department of Philosophy)

NOTES APPLICABLE TO ALL HONOURS MATHEMATICS AND STATISTICS PROGRAMS

1. In addition to the Honours Mathematics and Statistics programs, the Department offers three specializations. The Honours program consists of a specified set of basic requirements and allows a wide choice of electives (including those from outside the Faculty of Science) allowing for interdisciplinary studies or the opportunity to complete a Minor in another subject. Alternatively, students may choose one of the following specializations which are more appropriate for graduate studies in Mathematics or Statistics:
   • Applied Mathematics Specialization
   • Mathematics Specialization
   • Statistics Specialization

2. Honours Mathematics and Statistics may also be combined with the Origins Research Specialization.

3. Students who successfully complete the first three levels of any Honours B.Sc. degree may request permission from the Office of the Associate Dean of Science (Studies) for transfer to graduate with a three-level B.Sc. Mathematical Science degree.

4. A Cooperative Education program is available; see the requirements for Honours Mathematics and Statistics Co-op programs in this section of the Calendar. Admission to the co-op program is in Level III.

5. Joint Honours programs are available with Arts & Science, Biology, Computer Science, Economics, Philosophy and Physics.

Honours Mathematics and Statistics {2320832}

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3 with a grade of at least C+
3 units MATH 1B03

PROGRAM NOTE
MATH 1C03, although not required, is strongly recommended, if not completed in Level I.
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COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units MATH 2C03, 2R03, 2X03, 2XX3
3 units STATS 2D03
15 units Electives (See Program Note above.)

LEVEL III: 30 UNITS
6 units MATH 3A03, 3X03
3 units Levels III, IV Mathematics or Statistics
6 units from Course List
15 units Electives

LEVEL IV: 30 UNITS
15 units Levels III, IV Mathematics or Statistics
15 units Electives

Honours Mathematics and Statistics (2320838)
(Origins Research Specialization)

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3 with a grade of at least C+
3 units MATH 1B03

PROGRAM NOTES
1. Students registered in the Applied Mathematics Specialization may substitute certain courses offered by the Faculty of Engineering and the Department of Physics and Astronomy for up to 12 units of the Level III and IV Mathematics and Statistics course requirements, subject to approval by the Department of Mathematics and Statistics. Please consult with an advisor in the Department of Mathematics and Statistics for further information.

2. MATH 1C03, although not required, is strongly recommended, if not completed in Level I.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units MATH 2C03, 2R03, 2X03, 2XX3
3 units STATS 2D03
3 units from MATH 2S03, 2T03
12 units Electives (MATH 2E03 is recommended.) (See Program Note 2 above.)

LEVEL III: 30 UNITS
6 units MATH 3A03, 3X03
6 units from MATH 3F03, 3FF3, 3Q03
9 units Levels II, III, IV Mathematics or Statistics, of which at least three units must be Level III or IV
9 units Electives

LEVEL IV: 30 UNITS
3 units MATH 4A03
3 units from MATH 4B03, 4E03, 4G03, 4X03
15 units Levels III, IV Mathematics or Statistics
9 units Electives

Honours Mathematics and Statistics (2320834)
(Mathematics Specialization)

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3 with a grade of at least C+
3 units MATH 1B03

PROGRAM NOTE
MATH 1C03, although not required, is strongly recommended, if not completed in Level I.
Honours Mathematics and Statistics {2320836} (Statistics Specialization)

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3 with a grade of at least C+
3 units MATH 1B03

PROGRAM NOTES
1. MATH 1C03, although not required, is strongly recommended, if not completed in Level I.
2. Students who have already completed STATS 3D03, may substitute it for one of STATS 3C13, 3S03, 3U03.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
6 units STATS 2D03, 2MB3
12 units MATH 2C03, 2R03, 2X03, 2XX3
12 units Electives (See Program Note 1 above.)

LEVEL III: 30 UNITS
6 units MATH 3A03, 3X03
6 units MATH 3A03, 3D03
3 units from STATS 3C13, 3S03, 3U03 (See Program Note 2 above.)
6 units Levels II, III, IV Mathematics or Statistics, of which at least three units must be Level III or IV
9 units Electives

LEVEL IV: 30 UNITS
6 units Level IV Statistics
15 units Levels III, IV Mathematics or Statistics
9 units Electives

Honours Mathematics and Computer Science {2320145}

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3 with a grade of at least C+
3 units MATH 1B03 with a grade of at least C+
3 units COMP SCI 1MD3 with a grade of at least C+

PROGRAM NOTE
MATH 1C03, although not required, is strongly recommended, if not completed in Level I.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
9 units MATH 2R03, 2X03, 2XX3
3 units from MATH 2C03, STAT 2D03
6 units COMP SCI 2M13, 2SC3
6 units COMP SCI 2CA3 and 2MF3; or COMP SCI 2ME3 and 2Q03
6 units Electives (See Program Note above.)

LEVEL III: 30 UNITS
6 units MATH 3A03, 3X03
6 units Levels II, III, IV Mathematics or Statistics
6 units COMP SCI 3DA3, 3M13; or COMP SCI 3DB3, 3MH3; or COMP SCI 3EA3, 3SR3
6 units Levels II, III Computer Science
6 units Electives

LEVEL IV: 30 UNITS
12 units Levels III, IV Mathematics or Statistics, of which at least three units must be Level IV
3 units from COMP SCI 4AR3, 4CD3, 4TB3
9 units Levels III, IV Computer Science
6 units Electives

Honours Mathematics and Physics {2320440}

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3 with a grade of at least C+
3 units MATH 1B03 with a grade of at least C+
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1BA3, 1BB3 with a grade of at least C+
3 units from Science I Course List

PROGRAM NOTES
1. PHYSICS 3A03 and 3C03 are listed in Level III but are offered in alternate years and may be taken in Level IV.
2. A Minor in Astronomy or Statistics is not permitted in the Honours Mathematics and Physics program.
3. MATH 1C03, although not required, is strongly recommended, if not completed in Level I.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units MATH 2C03, 2R03, 2X03, 2XX3
12 units PHYSICS 2D06, 2C03, 2E03
6 units Electives (See Program Note 3 above.)

LEVEL III: 30 UNITS
6 units MATH 3A03, 3X03
6 units Levels II, III, IV Mathematics or Statistics
3 units from PHYSICS 3A03, 3C03
6 units PHYSICS 3K03, 3MM3
3 units Levels III, IV Physics or Astronomy
6 units Electives

LEVEL IV: 30 UNITS
12 units Levels III, IV Mathematics or Statistics, with at least three units from Level IV
3 units PHYSICS 4A03
9 units Levels III, IV Physics or Astronomy, including PHYSICS 4L03 or 4P06
6 units Electives

Honours Mathematical Science {2515}

FORMERLY HONOURS SCIENCE (MATHEMATICAL SCIENCE)
(Includes Mathematics and Statistics and Computer Science)

The Honours Mathematical Science program has been phased out. Registration in Level III of this program will be last available in September 2008. Students who intended to register in Level II of this program should consult the Office of the Associate Dean of Science (Studies) regarding an alternative program of study.

MATHEMATICAL SCIENCE COURSE LIST
All Levels II, III, IV Computer Science, Mathematics or Statistics courses

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL II: 30 UNITS
12 units Levels III, IV courses from Mathematical Science Course List
3 units from Faculty of Science courses excluding the Mathematical Science Course List
15 units Electives

LEVEL IV: 30 UNITS
18 units Levels II, III, IV courses from Mathematical Science Course List of which at least 12 units must be Levels III, IV
6 units from Faculty of Science courses excluding the Mathematical Science Course List
6 units Electives
Honours Mathematics and Statistics {2325842} (Mathematics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Mathematics and Statistics (Mathematics Specialization) with a Cumulative Average of at least 6.0.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Mathematics and Statistics (Mathematics Specialization)

LEVEL III
Consists of Academic Term 1 (Fall) and completion of the first eight-month work term; Term 2 (Winter) and Summer Term

TERM 1 (FALL): 15 UNITS
6 units MATH 3A03, 3E03
3 units from Course List
3 units Levels III, IV Mathematics or Statistics
3 units Electives
1 course SCIENCE 2C00

TERM 2 (WINTER) AND SUMMER
Work Term

LEVEL IV
Consists of Academic Term 1 (Fall) and Academic Term 2 (Winter), and the first half of the second eight-month work term, Summer Term

TERM 1 AND 2 (FALL AND WINTER): 30 UNITS
9 units MATH 3EE3, 3X03, 4A03
3 units from Course List
9 units Levels III, IV Mathematics or Statistics
9 units Electives

SUMMER
Work Term

LEVEL V
Consists of completion of the second half of the second eight-month work term, Term 1 (Fall) and Academic Term 2 (Winter)

TERM 1 (FALL)
Work Term

TERM 2 (WINTER): 15 UNITS
6 units Levels III, IV Mathematics or Statistics
3 units from MATH 4B03, 4E03, 4G03, 4X03
6 units Electives

Honours Mathematics and Statistics {2325844} (Statistics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Mathematics and Statistics (Statistics Specialization) with a Cumulative Average of at least 6.0.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Mathematics and Statistics (Statistics Specialization)

LEVEL III
Consists of Academic Term 1 (Fall) and completion of the first eight-month work term, Term 2 (Winter) and Summer Term

TERM 1 (FALL): 15 UNITS
6 units STATS 3A03, 3D03
3 units MATH 3A03
6 units Electives

Honours Mathematics and Statistics {2325846} (Applied Mathematics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Mathematics and Statistics (Applied Mathematics Specialization) with a Cumulative Average of at least 6.0.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Mathematics and Statistics (Applied Mathematics Specialization)

LEVEL III
Consists of Academic Term 1 (Fall) and Academic Term 2 (Winter) and the first half of the second eight-month work term, Summer Term

TERM 1 AND 2 (FALL AND WINTER): 30 UNITS
9 units MATH 3EE3, 3X03, 4A03
3 units from Course List
9 units Levels III, IV Mathematics or Statistics
9 units Electives

SUMMER
Work Term

LEVEL V
Consists of completion of the second half of the second eight-month work term, Term 1 (Fall) and Academic Term 2 (Winter)

TERM 1 (FALL)
Work Term

TERM 2 (WINTER): 15 UNITS
6 units Levels III, IV Mathematics or Statistics
3 units from MATH 4B03, 4E03, 4G03, 4X03
6 units Electives

Honours Mathematics and Statistics {2325848} (Applied Mathematics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Mathematics and Statistics (Applied Mathematics Specialization) with a Cumulative Average of at least 6.0.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Mathematics and Statistics (Applied Mathematics Specialization)

LEVEL III
Consists of Academic Term 1 (Fall) and Academic Term 2 (Winter) and the first half of the second eight-month work term, Summer Term

TERM 1 AND 2 (FALL AND WINTER): 30 UNITS
9 units MATH 3EE3, 3X03, 4A03
3 units from Course List
9 units Levels III, IV Mathematics or Statistics
9 units Electives

SUMMER
Work Term

LEVEL V
Consists of completion of the second half of the second eight-month work term, Term 1 (Fall) and Academic Term 2 (Winter)

TERM 1 (FALL)
Work Term

TERM 2 (WINTER): 15 UNITS
6 units Levels III, IV Mathematics or Statistics
3 units from MATH 4B03, 4E03, 4G03, 4X03
6 units Electives

Honours Mathematics and Statistics {2325850} (Statistics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Mathematics and Statistics (Statistics Specialization) with a Cumulative Average of at least 6.0.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Mathematics and Statistics (Statistics Specialization)

LEVEL III
Consists of Academic Term 1 (Fall) and completion of the first eight-month work term, Term 2 (Winter) and Summer Term

TERM 1 (FALL): 15 UNITS
6 units STATS 3A03, 3D03
3 units MATH 3A03
6 units Electives

Honours Mathematics and Statistics {2325852} (Statistics Specialization Co-op)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Mathematics and Statistics (Statistics Specialization) with a Cumulative Average of at least 6.0.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3D03, 3DD3, 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II: 30 UNITS
30 units Completion of Level II Honours Mathematics and Statistics (Statistics Specialization)

LEVEL III
Consists of Academic Term 1 (Fall) and completion of the first eight-month work term, Term 2 (Winter) and Summer Term

TERM 1 (FALL): 15 UNITS
6 units STATS 3A03, 3D03
3 units MATH 3A03
6 units Electives
TERM 2 (WINTER) AND SUMMER

Work Term

LEVEL IV
Consists of Academic Term 1 (Fall) and Academic Term 2 (Winter) and the second half of the second eight-month work term, Summer Term

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS
3 units MATH 3X03
3 units from STATS 3C13, 3S03, 3U03 if not completed in Level III (See Program Note above.)
9 units from Course List
9 units Levels III, IV Mathematics or Statistics
9 units Electives

SUMMER
Work Term

LEVEL V
Consists of completion of the second half of the second eight-month work term, Term 1 and Academic Term 2 (Winter)

TERM 2 (WINTER): 15 UNITS REQUIREMENTS
TERM 1 (FALL)
9 units Electives
6 units Levels III, IV Mathematics or Statistics
3 units from MATH 1A03, 1X03
3 units Level IV Statistics
6 units from Course List

B.Sc. in Mathematical Science \{1325\} (Includes Computer Science and Mathematics and Statistics)

ADMISSION NOTE
Students should be aware that MATH 1B03 may be a prerequisite for upper level Computer Science and Mathematics courses.

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 3.5 including:
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3
3 units from COMP SCI 1FC3, 1MD3, MATH 1B03, 1D03
6 units from Science I Course List (See Admission Note above.)
An average of at least 4.0 in six units from MATH 1A03, 1AA3, 1B03, 1X03, 1XX3 is required.

EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 3.5 including:
6 units from MATH 1A03, MATH 1AA3, 1X03, 1XX3 with an average of at least 4.0
3 units from COMP SCI 1FC3, 1MD3, MATH 1B03
6 units from the Faculty of Science (See Admission Note above.)

PROGRAM NOTE
Students are responsible for ensuring that prerequisites for anticipated courses for Level III are completed in Level II.

MATHEMATICAL SCIENCE COURSE LIST
All Level II, III, IV Computer Science courses; MATH 2A03, 2C03, 2E03, 2K03, 2P03, 2S03, 2T03, 2X03, 2XX3; STATS 2D03, 2MB3, all Level III and IV Mathematics or Statistics courses

REQUIREMENTS
90 units total (Levels I to III), of which no more than 42 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
12 units from Level II courses from Mathematical Science Course List
6 units from Faculty of Science courses
6 units Electives (See Admission Note above.)

LEVEL III: 30 UNITS
12 units from Level III courses from Mathematical Science Course List
3 units from Faculty of Science courses

Minor in Mathematics and Statistics

NOTES
1. Students with credit in ISCI 1A24 do not need to complete MATH 1A03 (or 1X03) and 1AA3 (or 1XX3).
2. MATH 2L03 cannot be used for credit towards this Minor.

REQUIREMENTS
27 units total
3 units from MATH 1A03, 1X03
3 units from MATH 1AA3, 1XX3
3 units MATH 1B03
18 units Levels II, III, IV Mathematics or Statistics, including at least six units from Levels III, IV Mathematics or Statistics (See Note 2 above.)

MEDICAL PHYSICS AND APPLIED RADIATION SCIENCES

WEB ADDRESS: http://www.science.mcmaster.ca/medphys/

NOTE
Students in Medical and Health Physics programs are expected to have basic skills in the use of personal computers, word processing and spreadsheet software and some familiarity with a programming language.

Honours Medical and Health Physics \{2443\}

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
9 units MATH 1A03, 1AA3, 1B03 (or 1D03)
3 units BIOLOGY 1A03
6 units CHEM 1A03, 1AA3, 1BB3
3 units PHYSICS 1B03
3 units from BIOLOGY 1AA3, PHYSICS 1BA3 (or 1BB3) (See Program Note 1 below.)
6 units Level I electives
An average of at least 7.0 in MATH 1A03, 1AA3, 1B03 (or 1D03), PHYSICS 1B03 is required.

EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
9 units MATH 1A03, 1AA3, 1B03
3 units BIOLOGY 1A03
6 units CHEM 1A03, 1AA3, 1BB3
3 units PHYSICS 1B03
3 units from BIOLOGY 1MA3 (or 1AA3), PHYSICS 1BA3 (or 1BB3) (See Program Note 1 below.)
An average of at least 7.0 in MATH 1A03, 1AA3, 1B03, PHYSICS 1B03 is required.

PROGRAM NOTES
1. BIOLOGY 1AA3 (or 1M03) and PHYSICS 1BA3 (or 1BB3) must be completed by the end of Level II. PHYSICS 1BA3 or 1BB3 is strongly recommended in Level I.

2. Psychology courses may require permission of the Psychology, Neuroscience and Behaviour Departmental Academic Advisor or instructor.

3. MED PHYS 4I03 will become a Level IV requirement for students who entered in 2007 or later. It is strongly recommended for students who entered prior to 2007.
FACULTY OF SCIENCE

REQUIREMENTS
121 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I: 30 UNITS
30 units (See Admission above.)

LEVEL II: 31 UNITS
3 units MATH 2A03
9 units MED PHYS 2A03, 2C03, 2E03
12 units CHEM 2E03, or both CHEM 20A3 and 20B3
9 units MATH 2A03, 2C03, 2E03
13 units PHYSICS 2B06, 2E03, 2H04
0-3 units Electives

LEVEL III: 30 UNITS
9 units BIOLOGY 2B03, MATH 3C03, 3D03
6 units MED PHYS 3R03, 4B03
12 units PHYSICS 3A03, 3M03, 3N03
3 units from BIOCHEM 3G03, BIOLOGY 2C03, MEDRADSC
3Y03, PSYCH 3A03, 3A3, 3FA3, 3J03, 3N03 (See Program Note 2 above.)

LEVEL IV: 30 UNITS (2008-2009 ONLY)
3 units BIOLOGY 4U03
15 units MED PHYS 4A03, 4R06, 4T03, 4XX3
9 units PHYSICS 4D06, 4E03
3 units Electives (See Program Note 3 above.)

LEVEL IV: 30 UNITS (EFFECTIVE 2009-2010)
3 units BIOLOGY 4U03
15 units MED PHYS 4A03, 4R06, 4T03, 4XX3
9 units PHYSICS 4D06, 4E03
3 units MED PHYS 4I03

Honours Medical and Health Physics Co-op

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement and an interview 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 program and the selection procedure may be obtained from the Science Career and Cooperative Education Office.

PROGRAM NOTES
1. This is a five-level (year) co-op program 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 load as prescribed by Level and Term.
3. Students are required to complete SCIENCE 2C00 before the first work placement and are recommended to complete this course in Level II.
4. MED PHYS 4I03 will become a Level V requirement for students who entered in 2007 or later. It is strongly recommended for students who entered prior to 2007.
5. Psychology courses may require permission of the Psychology, Neuroscience and Behaviour Departmental Advisor or instructor.

REQUIREMENTS
121 units total (Levels I to IV) of which no more than 48 units may be Level I

LEVEL I: 30 UNITS
30 units Completed prior to admission to the program

LEVEL II: 31 UNITS
31 units Completion of Level II Honours Medical and Health Physics
1 course SCIENCE 2C00

LEVEL III
Consists of Academic Term 1 (Fall) and completion of the first eight-month work term, Term 2 (Winter) and Summer Term

TERM 1 (FALL): 16 UNITS
3 units MATH 3C03
3 units MED PHYS 4B03
7 units PHYSICS 2C03, 3HC1, 3N03
3 units from BIOCHEM 3G03, BIOLOGY 2C03, MEDRADSC
3Y03, PSYCH 3A03, 3AA3, 3FA3, 3J03, 3N03 (See Program Note 4 above.)

TERM 2 (WINTER) AND SUMMER
Work Term

LEVEL IV
Consists of Academic Term 1 (Fall) and Academic Term 2 (Winter), and the first half of the second eight-month work term, Summer Term

TERM 1 AND 2 (FALL AND WINTER): 31 UNITS
6 units BIOLOGY 2B03, 4U03
3 units MATH 3D03
13 units MED PHYS 4AA1, 4R06, 4T03, 4XX3
9 units PHYSICS 3M03, 4D06

SUMMER
Work Term

LEVEL V
Consists of completion of the second half of the second eight-month work term, Term 1 (Fall), plus Academic Term 2 (Winter)

TERM 1
Work Term

TERM 2 (WINTER): 13 UNITS
5 units MED PHYS 3R03, 4AB2
5 units PHYSICS 3HD2, 4E03
3 units Electives. (See Program Note 4 above.)

TERM 2 (WINTER) (EFFECTIVE 2010-2011)
5 units MED PHYS 3R03, 4AB2
5 units PHYSICS 3HD2, 4E03
3 units MED PHYS 4I03

MEDITCAL RADIATION SCIENCES

WEB ADDRESS: http://www.science.mcmaster.ca/MedRadSci

This program is offered jointly in partnership by Mohawk College of Applied Arts and Technology and McMaster University. Students pursue two qualifications simultaneously, and graduate with the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk and, effective September 2007, the McMaster Bachelor of Medical Radiation Sciences degree.

Students enrolled in the Medical Radiation Sciences programs, in addition to meeting the General Academic Regulations of the University, shall be subject to the following program regulations. Since the academic regulations are continually reviewed, the University reserves the right to change the regulations.

Enrolment in the MRSc program implies acceptance on the part of the student of the objectives of the program and the methods by which progress toward the achievement of those objectives is evaluated.

PROGRAM-SPECIFIC ACADEMIC REGULATIONS

QUALIFYING FOR LEVEL II PROGRAMS
Enrolment in each of the Level II programs is limited. All Medical Radiation Sciences I students who meet the admission requirements by the end of the previous Fall/Winter session will be guaranteed entry to a Level II program specialization. Level I students who, at the end of the review period, require the completion of additional academic work in order to meet the Level II admission requirements are not guaranteed admission to a Level II program specialization. Such students may be considered for admission after meet-
Beginning in Level II, to determine eligibility to continue, the Medical Radiation Sciences program will review students at the end of each term.

To continue in the Medical Radiation Science program, a student must maintain a minimum Cumulative Average of 5.0 and successfully complete all Medical Radiation Sciences courses. Failure to do so may prevent progression to the next term and/or level. A student whose Cumulative Average is at least 4.5 may, at the discretion of the Reviewing Committee, proceed in the program but will be placed on program probation for one review period of two consecutive terms. A student may be placed on program probation only once during the program.

A student who may not continue in the program if any of the following criteria is met. The student:
1. fails to obtain a Cumulative Average of at least 5.0 at the completion of the program probation;
2. obtains a Cumulative Average of less than 5.0 and has not been granted program probation;
3. fails any course that is required for completion of the level in which the student is registered;
4. fails the second attempt at any required course following readmission to the program;
5. fails any skills or clinical course following readmission to the program;
6. fails to complete the program requirements for graduation within the maximum allowable time (five years from the time of registration in Level II of the student's current specialization).

A student who may not continue in the program and whose Cumulative Average is between 3.0 and 3.4 may apply to transfer a program for which he/she qualifies. A Level I student who may not continue in the program and whose Cumulative Average is between 3.5 and 4.4 may apply to transfer into Science on Academic Probation. An upper level student who may not continue in the program may apply to transfer to a program for which he/she qualifies.

Deferred Examinations/Incomplete Course Work
See the heading Deferred Examinations under Examinations in the General Academic Regulations section of the Calendar for application procedures for Deferred Exams.

Students who have not completed all prerequisites for a clinical practicum will not be permitted to commence the clinical practicum. Such students will be reviewed by the Reviewing Committee to determine if the minimum prerequisite knowledge and skills have been attained to begin the clinical practicum. Failure to begin clinical practicum at the scheduled time could result in an extension of the time required to complete the program.

Workload
Students are required to be registered in a full load of courses as prescribed by Level and Term for their program.

Students in Medical Radiation Sciences I must complete at least 24 units during the Fall/Winter session. Transfer credit and credit earned during the Spring/Summer session may not be used to reduce this minimum load requirement.

Repeated Courses
Any failed course must be repeated if it is a required course for the program, or must be repeated or replaced if it is not explicitly required. The grades for both the failed course and its repetition or replacement, as appropriate, will be included in the calculation of the Cumulative Average.

Level of Registration
Students must register for all outstanding work of one level before attempting work for a higher level. Courses must be taken in the sequence specified by the program requirements.

Skills and Clinical Courses
All professional skills and clinical courses are graded on a pass/fail basis. The performance activities associated with each course are detailed in the course outline and manual, and must be successfully achieved for attainment of a passing grade in the course.

Students in clinical placements will be reviewed by their placement advisor prior to the last date to cancel a course without failure by default. Students who are not meeting the conditions of their Learning Contract will be required to cancel the course. Eligibility to complete the placement course in a subsequent session will be determined by the Review Committee.

Attendance is mandatory in all professional skills laboratory courses and clinical practica. Students are required to attend each clinical practicum on a full-time basis (i.e. 37.5 hours/week as scheduled by the clinical agency). Students are allowed a maximum of three personal absence days during a practicum. Absenteeism in excess of this may result in a Fail grade for the course.

The Medical Radiation Sciences program monitors and documents students' experience and performance in skills and clinical courses to provide evidence of the students' ability to meet program requirements and to meet the minimum practice requirements to be eligible for registration to practice.

Student Conduct in the Program
The University 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. The Medical Radiation Science Program reserves the right to remove a student from a clinical placement or laboratory setting at any point during the term if the student exhibits unsafe clinical practice or behavior. The Medical Radiation Science Program reserves the right to remove a student from a clinical placement or behavioral setting if the student exhibits unsafe clinical practice or behavior that places the patient or others at risk. Such removal may result in the student receiving a grade of F in the course and may result in dismissal from the program.

English Language Proficiency
While the minimum English language requirements may gain admission to the Medical Radiation Science I program, students will find a need for a high level of verbal proficiency. Students lacking these skills may be required to participate in additional ESL training. Lack of English proficiency may impact a student's ability to complete performance requirements in skills and clinical courses and, therefore, jeopardize the ability to attain a passing grade in these required courses.

Internal Readmission to the Program
A student who becomes ineligible to continue in the program may apply for readmission. Request for readmission may be made up to a maximum of two calendar years following the year in which the student becomes ineligible to continue. Readmission is neither automatic nor guaranteed.

Graduation
A student is eligible for graduation when all of the following criteria are met. The student must:
1. complete all required courses, including electives, with a Cumulative Average of at least 4.5;
2. complete all skills and clinical courses with a Pass grade;
3. complete all required courses in Levels II - IV within five years of registration in Level II.

Leave of Absence from the Program
Any student requesting a leave of absence from the program should note that the program requirements for graduation must be completed within a limited time period, and that the leave may jeopardize the student's ability to meet that requirement.

Application for a leave of absence is to be made in writing at least two months prior to the intended start of the leave. Forms are available through the Office of the Associate Dean of Science (Studies).

Any student who returns from a leave of absence into a clinical practicum term will be required to complete an additional non-credit course (for which a fee is involved) to ensure the student's professional knowledge and skills meet the minimum requirements for entrance to that clinical practicum. This course must be completed in the term immediately preceding the clinical practicum.

Notes
1. The overall program comprises ten semesters within four calendar years. Three full semesters are spent in clinical placement.
2. Understand for their Level I lamps selections during Winter term of Level I. At the end of Level I, eligible Medical Radiation Sciences students are streamed into one of three specializations:
Radiography, Radiation Therapy and Ultrasonography. All three have limited enrolment. Selection of students into Level II specializations is on the basis of academic achievement (for Level I students, the Sessional Average, on at least 24 units of study). Depending on a student's relative academic ranking in the list of those applying to enter a specialization, he/she may or may not be placed in the specialization of his/her choosing.

3. Transfer within Medical Radiation Sciences: Any Medical Radiation Sciences student currently registered in one program specialization who wishes to transfer into another specialization must submit the transfer request in writing to the program by the end of April. As admission into Level II programs is a competitive process normally based on the Level I Sessional Average, such transfer requests will be considered only after all eligible Level I students have been allocated into their specializations, and only if there is space remaining. Transfers are made into Level II only, and would result in an increase in the length of time required for the student to complete the program. Transfers may not be made into Level I from any other program. Transfers are neither automatic nor guaranteed.

4. Placements will be with agencies that have contracted in advance with Mohawk College to provide specific experiences and resources during the normal clinical semester schedule; therefore, placements are not available at any other agencies or during other times. The College, in accordance with established policy, will determine allocation of students to these clinical facilities. The final assignment of learning settings is constrained by the availability of site resources. Students may be required to attend clinical practicum in a setting that is not of their choosing. The College cannot accommodate any student requests for special consideration. Students must prepare financially and personally to relocate and/or commute to their assigned clinical placements. Students are responsible for arranging their own travel to and from assigned placements and are responsible for covering any costs incurred.

5. All students may be required to attend full-time clinical practica at a minimum of two different clinical agencies that may be located across Ontario.

6. Basic Cardiac Life Support Training: All Level II students are required to have obtained a current certificate in Basic Cardiac Life Support - Level C and First Aid Training prior to commencing Level II. Current certificates are also required for Clinical Practica 2 and 3 in Level IV.

7. All students will be required to act as simulated patients for their peers in skills course labs and during skills practice sessions.

8. Immunization and Health Screening: The Ontario Public Hospitals Act requires that all persons working or on educational placement in a hospital setting meet criteria regarding surveillance for infectious diseases. All Level II students will be required to attend clinical practicum in a setting that is not of their choosing. The College cannot accommodate any student requests for special consideration. Students must prepare financially and personally to relocate and/or commute to their assigned clinical placements. Students are responsible for arranging their own travel to and from assigned placements and are responsible for covering any costs incurred.

9. Mask fit testing and a satisfactory Police Records Check are required prior to the commencement of each clinical placement. All costs associated with these procedures are the responsibility of the student.

10. Graduation from the Medical Radiation Sciences program does not guarantee registration with the regulatory bodies of the respective professions or employment within Canada. All graduates who wish to engage in clinical practice in ultrasonography, radiography or radiation therapy are subject to any qualifying examinations and other requirements by the certifying and/or regulatory bodies for each of these professions. Regulatory requirements are subject to change.

11. Levels II through IV run consecutively from September of Level II to completion of the program at the end of April in Level IV. The pattern of semesters of clinical practicum and academic courses is shown in the chart below.

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### Levels II to IV

<table>
<thead>
<tr>
<th>Level</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>II (FALL AND WINTER)</td>
<td>33 UNITS (2008-2009)</td>
<td></td>
</tr>
<tr>
<td>II (SPRING AND SUMMER)</td>
<td>15 UNITS (See Program Note 2 above.)</td>
<td></td>
</tr>
<tr>
<td>III (FALL AND WINTER)</td>
<td>33 UNITS (2008-2009)</td>
<td></td>
</tr>
<tr>
<td>III (SPRING AND SUMMER)</td>
<td>15 UNITS</td>
<td></td>
</tr>
<tr>
<td>IV (FALL AND WINTER)</td>
<td>30 UNITS</td>
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### Medical Radiation Sciences (Radiation Therapy Specialization) {1408}

**PROGRAM NOTES**

1. Students in this program pursue two qualifications simultaneously, and graduates receive the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk and, effective September 2007, the McMaster Bachelor of Medical Radiation Sciences degree.

2. The timing of the Spring/Summer and the Level III and IV Fall/Winter sessions may not adhere to the Sessional Dates, as published in this Calendar.

**ADMISSION**

2008-2009 ONLY: Enrolment in this program is limited and admission is by selection but requires, as a minimum, completion of Medical Radiation Sciences I with a Cumulative Average of at least 5.0, including:

- 9 units MEDRADSC 1A03, 1B03, 1C03
- 9 units MEDRADSC 1D03, 2A03, 2B03, 2C03
- 9 units MEDRADSC 2S03, 2T03, 2U03
- 6 units KINESIOL 1Y03, 1YY3
- 3 units MATH 1A03
- 3 units STATS 1CC3

**REQUIREMENTS**

153 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 78 units of academic courses in Levels II to IV.
Medical Radiation Sciences (Radiography Specialization) {1406}

PROGRAM NOTES
1. Students in this program pursue two qualifications simultaneously, and graduates receive the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk and, effective September 2007, the McMaster Bachelor of Medical Radiation Sciences degree.

2. The timing of the Spring/Summer and the Level III and IV Fall/Winter sessions may not adhere to the Sessional Dates, as published in this Calendar.

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited and admission is by selection but requires, as a minimum, completion of Medical Radiation Sciences I with a Cumulative Average of at least 5.0 including:

- 9 units MEDRADSC 1A03, 1B03, 1C03
- 3 units BIOLOGY 1A03
- 3 units CHEM 1A03
- 6 units KINESIOL 1Y03, 1Y03
- 3 units MATH 1A03
- 3 units STATS 1CC3

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and admission is by selection but requires, as a minimum, completion of Medical Radiation Sciences I with a Fall/Winter Sessional Average (on a minimum of 24 units) of at least 5.0 and a Cumulative Average of at least 5.0 including:

- 12 units MEDRADSC 1A03, 1B03, 1C03, 1D03
- 6 units KINESIOL 1Y03, 1Y03
- 3 units from MATH 1A03, 1L5S

REQUIREMENTS
153 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 78 units of academic courses in Levels II to IV

LEVEL I
30 units from Academic Level II

LEVEL II (SPRING AND SUMMER): 15 UNITS (See Program Note 2 above.)

- 15 units MEDRADSC 2J15 (Clinical Practicum I)

LEVEL III (FALL AND WINTER): 33 UNITS (2008-2009 ONLY)

- 12 units MEDRADSC 3A03, 3F03, 3I03, 3X03
- 12 units MEDRADSC 3G03, 3H03, 3J03, 3K03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL III (FALL AND WINTER): 30 UNITS (EFFECTIVE 2009-2010)

- 9 units MEDRADSC 3A03, 3I03, 3X03
- 12 units MEDRADSC 3G03, 3H03, 3J03, 3K03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL III (SPRING AND SUMMER): 15 UNITS (See Program Note 2 above.)

- 12 units MEDRADSC 3B03, 3C03, 3E03, 3I03
- 3 units MEDRADSC 3D03
- 3 units CHEM 1A03
- 3 units PSYCH 1X03 (or 1AA3)
- 6 units Electives

LEVEL IV (FALL AND WINTER): 30 UNITS

- 15 units MEDRADSC 4A15 (Clinical Practicum II)
- 15 units MEDRADSC 4B15 (Clinical Practicum III)

Medical Radiation Sciences (Ultrasonography Specialization) {1407}

PROGRAM NOTES
1. Students in this program pursue two qualifications simultaneously, and graduates receive the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk and, effective September 2007, the McMaster Bachelor of Medical Radiation Sciences degree.

2. The timing of the Spring/Summer and the Level III and IV Fall/Winter sessions may not adhere to the Sessional Dates, as published in this Calendar.

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited and admission is by selection but requires, as a minimum, completion of Medical Radiation Sciences I with a Cumulative Average of at least 5.0 including:

- 9 units MEDRADSC 1A03, 1B03, 1C03
- 3 units BIOLOGY 1A03
- 3 units CHEM 1A03
- 6 units KINESIOL 1Y03, 1Y03
- 3 units MATH 1A03
- 3 units STATS 1CC3

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and admission is by selection but requires, as a minimum, completion of Medical Radiation Sciences I with a Fall/Winter Sessional Average (on a minimum of 24 units) of at least 5.0 and a Cumulative Average of at least 5.0 including:

- 12 units MEDRADSC 1A03, 1B03, 1C03
- 3 units BIOLOGY 1A03
- 3 units CHEM 1A03
- 6 units KINESIOL 1Y03, 1Y03
- 3 units MATH 1A03
- 3 units STATS 1CC3

REQUIREMENTS
153 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 78 units of academic courses in Levels II to IV

LEVEL I
30 units from Academic Level II

LEVEL II (SPRING AND SUMMER): 15 UNITS

- 15 units MEDRADSC 2J15 (Clinical Practicum I)

LEVEL III (FALL AND WINTER): 33 UNITS (2008-2009 ONLY)

- 12 units MEDRADSC 3A03, 3F03, 3I03, 3X03
- 12 units MEDRADSC 3G03, 3H03, 3J03, 3K03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL III (FALL AND WINTER): 30 UNITS (EFFECTIVE 2009-2010)

- 9 units MEDRADSC 3A03, 3I03, 3X03
- 12 units MEDRADSC 3G03, 3H03, 3J03, 3K03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL III (SPRING AND SUMMER): 15 UNITS (See Program Note 2 above.)

- 12 units MEDRADSC 3B03, 3C03, 3E03, 3I03
- 3 units MEDRADSC 3D03
- 3 units CHEM 1A03
- 3 units PSYCH 1X03 (or 1AA3)
- 3 units from MEDRADSC 3DA3, 3DB3, 3DD3, 3DE3

LEVEL IV (FALL AND WINTER): 30 UNITS

- 15 units MEDRADSC 4A15 (Clinical Practicum II)
- 15 units MEDRADSC 4B15 (Clinical Practicum III)

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LEVEL II
30 units from Academic Level II

LEVEL III (FALL AND WINTER): 33 UNITS (2008-2009 ONLY)

- 21 units MEDRADSC 2A03, 2B03, 2C03, 2D03, 2E03, 2F03, 2X03
- 9 units MEDRADSC 2G03, 2H03, 2I03
- 3 units PSYCH 1X03 (or 1AA3)

LEVEL III (FALL AND WINTER): 33 UNITS (EFFECTIVE 2009-2010)

- 18 units MEDRADSC 2A03, 2B03, 2D03, 2E03, 2F03, 2X03
- 9 units MEDRADSC 2G03, 2H03, 2I03
- 3 units CHEM 1A03
- 3 units PSYCH 1X03 (or 1AA3)

LEVEL IV (FALL AND WINTER): 30 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 9 units MEDRADSC 3G03, 3H03, 3J03, 3K03
- 3 units MEDRADSC 3Y03
- 3 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives

LEVEL IV (SPRING AND SUMMER): 15 UNITS

- 12 units MEDRADSC 3A03, 3B03, 3D03, 3F03, 3I03, 3X03
- 3 units MEDRADSC 3Y03
- 6 units Electives
FACULTY OF SCIENCE

12 units MEDRADSC 1A03, 1B03, 1C03, 1D03
3 units BIOLOGY 1A03
6 units KINESIOL 1Y03, 1YY3
3 units from MATH 1A03, 1LS3

REQUIREMENTS
153 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 78 units of academic courses in Levels II to IV

LEVEL I: 30 UNITS
30 units (See Admission above.)

LEVEL II (FALL AND WINTER): 33 UNITS (2008-2009 ONLY)
9 units MEDRADSC 2A03, 2B03, 2C03
21 units MEDRADSC 2K03, 2L03, 2M03, 2N03, 2O03, 2P03, 2Q03
3 units PSYCH 1X03 (or 1AA3)

LEVEL II (FALL AND WINTER): 33 UNITS (EFFECTIVE 2009-2010)
6 units MEDRADSC 2A03, 2B03
21 units MEDRADSC 2K03, 2L03, 2M03, 2N03, 2O03, 2P03, 2Q03
3 units CHEM 1A03
3 units PSYCH 1X03 (or 1AA3)

LEVEL II (SPRING AND SUMMER): 15 UNITS
(See Program Note 2 above.)
15 units MEDRADSC 2R15 (Clinical Practicum I)

LEVEL III (FALL AND WINTER): 33 UNITS (2008-2009 ONLY)
6 units MEDRADSC 3A03, 3X03
18 units MEDRADSC 3M03, 3N03, 3O03, 3P03, 3PA3, 3Q03
3 units MEDRADSC 3Y03
6 units Electives

LEVEL III (EFFECTIVE 2009-2010)
6 units MEDRADSC 3A03, 3X03
15 units MEDRADSC 3M03, 3N03, 3O03, 3P03, 3Q03
3 units MEDRADSC 3Y03
6 units Electives

LEVEL III (SPRING AND SUMMER): 15 UNITS
(See Program Note 2 above.)
12 units MEDRADSC 3B03, 3C03, 3E03, 3R03
3 units from MEDRADSC 3DC3, 3DF3, 3DG3

LEVEL IV (FALL AND WINTER): 30 UNITS
15 units MEDRADSC 4C15 (Clinical Practicum II)
15 units MEDRADSC 4D15 (Clinical Practicum III)

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<thead>
<tr>
<th>LEVEL II</th>
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<td>Summer Term</td>
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MOLECULAR BIOLOGY
(See Interdisciplinary Programs)

ORIGINS RESEARCH SPECIALIZATION
(See Interdisciplinary Programs)

DEPARTMENT OF PHYSICS
AND ASTRONOMY

WEB ADDRESS: http://www.physics.mcmaster.ca/

Honours Arts & Science and Physics
(B.Arts.Sc.; See Arts & Science Program)

Honours Mathematics and Physics
(See Department of Mathematics and Statistics)

Honours Medical and Health Physics
(See Medical Physics and Applied Radiation Sciences)

Honours Medical and Health Physics Co-op
(See Medical Physics and Applied Radiation Sciences)

Honours Physical Sciences
(See Interdisciplinary Programs)

NOTES APPLICABLE TO ALL HONOURS PHYSICS PROGRAMS
1. In addition to the Honours Physics program, the Department offers four specializations. The Honours program consists of a specified set of basic requirements and a wide choice of electives (including those from outside the Faculty of Science), allowing for interdisciplinary studies or the opportunity to complete a Minor in another subject. Alternatively, students may wish to complete one of the following specializations which are more appropriate for graduate studies in Physics or Astronomy.
   • Astrophysics Specialization
   • Biophysics Specialization
   • Computation and Theory Specialization
   • Experimental Specialization

2. Transfer between options is possible at any time, subject to satisfying the requirements for that option.
3. Admission to Honours Physics Co-op is in Level III and is possible among any of these options.
4. The Physics Department considers the Astrophysics, Biophysics, Computation and Theory or Experimental specializations to be more appropriate for graduate studies in Physics or Astronomy.
5. A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Physics program.
6. Students in all Physics programs 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. PHYSICS 2G03 is recommended for students without those skills.

Honours Physics

ADMISSION NOTE (2008-2009 ONLY)
Completion of MATH 1B03 (or 1D03) is required by the end of Level II and is recommended in Level I.

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1AA3 with an average of at least 6.0
5 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1A83, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1AA3
5 units from Science I Course List (See Admission Note above.)

ADMISSION NOTE (EFFECTIVE 2009-2010)
Completion of MATH 1B03 is required by the end of Level II and is recommended in Level I.

ADMISSION
EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1AA3 with an average of at least 6.0
5 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1A83, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1AA3
6 units from Physical Sciences I Course List (See Admission Note above.)

REQUIREMENTS
121 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 31 UNITS (2008-2009 ONLY)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
0-3 units from MATH 1B03 (or 1D03) if not completed in Level I (See Admission Note above.)
6-9 units Electives
LEVEL II: 31 UNITS (EFFECTIVE 2009-2010)
6 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
0-3 units MATH 1B03 if not completed in Level I (See Admission Note above.)
6-9 units Electives

LEVEL III: 30 UNITS (2008-2009 ONLY)
6 units PHYSICS 3H03, 3M3
6 units MATH 3C03, 3D03
18 units Electives

LEVEL III: 30 UNITS (EFFECTIVE 2009-2010)
9 units PHYSICS 3H03, 3K03, 3MM3
6 units MATH 3C03, 3D03
6 units MATH 3C03, 3D03
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, GEO 3V03.
15-18 units Electives

Honours Physics

Astrophysics Specialization

ADMISSION NOTES (2008-2009 ONLY)
1. Completion of ASTRON 1F03 is required by the end of Level II and is strongly recommended in Level I.
2. Completion of MATH 1B03 (or 1D03) is required by the end of Level II and is recommended in Level I.

ADMISSION (2008-2009 ONLY): Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1A3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1B3A, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1A3
6 units from Science I Course List (See Admission Notes 1 and 2 above.)

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. Completion of ASTRON 1F03 is required by the end of Level II and is strongly recommended in Level I.
2. Completion of MATH 1B03 is required by the end of Level II and is recommended in Level I.

ADMISSION EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1A3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1B3A, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1A3
6 units from Physical Sciences I Course List (See Admission Notes 1 and 2 above.)

PROGRAM NOTES
1. One of ORIGINS 3A03, 3B03, 3CO3 or 3D03 is recommended.
2. PHYSICS 4G03 is recommended.

LEVEL I
121 units total (Levels I to IV), of which no more than 48 units may be Level I
30 units (See Admission above.)

LEVEL II: 31 UNITS (2008-2009 ONLY)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
3 units ASTRON 2E03
0-3 units ASTRON 1F03 if not completed in Level I (See Admission Note 1 above.)
0-3 units from MATH 1B03 (or 1D03) if not completed in Level I (See Admission Note 2 above.)
6-9 units Electives

LEVEL III: 31 UNITS (EFFECTIVE 2009-2010)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
3 units ASTRON 2E03
0-3 units ASTRON 1F03 if not completed in Level I (See Admission Note 1 above.)
0-3 units from MATH 1B03 (or 1D03) if not completed in Level I (See Admission Note 2 above.)
6-9 units Electives

Honours Physics

Biophysics Specialization

ADMISSION NOTES (2008-2009 ONLY)
1. Completion of BIOLOGY 1A03 is required by the end of Level II and is strongly recommended in Level I. BIOLOGY 1M03 (or 1AA3) is also strongly recommended.
2. Completion of MATH 1B03 (or 1D03) is required by the end of Level II and is recommended in Level I.

ADMISSION 2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1A3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1B3A, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1A3
6 units from Science I Course List (See Admission Notes 1 and 2 above.)

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. Completion of BIOLOGY 1A03 is required by the end of Level II and is strongly recommended in Level I. BIOLOGY 1M03 (or 1AA3) is also strongly recommended.
2. Completion of MATH 1B03 is required by the end of Level II and is recommended in Level I.

ADMISSION EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1A3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1B3A, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1A3
6 units from Physical Sciences I Course List (See Admission Notes 1 and 2 above.)

PROGRAM NOTES
1. Completion of ORIGINS 3A03 is recommended.
2. Completion of both BIOCHEM 3Y03 and 4Y03 is recommended.

LEVEL I
121 units total (Levels I to IV), of which no more than 48 units may be Level I
30 units (See Admission above.)

LEVEL II: 31-34 UNITS (2008-2009 ONLY)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
6 units BIOCHEM 2B03, 2BB3
0-3 units BIOLOGY 1A03 if not completed in Level I (See Admission Note 1 above.)
0-3 units from MATH 1B03 (or 1D03) if not completed in Level I (See Admission Note 2 above.)
6-9 units Electives
FACULTY OF SCIENCE

LEVEL II: 31-34 UNITS (EFFECTIVE 2009-2010)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
6 units BIOCHEM 2B03, 2BB3
0-3 units MATH 1B03 if not completed in Level I (See Admis-
sion Note 1 above.)
0-3 units MATH 1B03 if not completed in Level I (See Admis-
sion Note 2 above.)
0-3 units Electives

LEVEL III: 30 UNITS
12 units PHYSICS 3H03, 3K03, 3MM3, 3S03
6 units MATH 3C03, 3D03
6 units BIOCHEM 3L06
6 units Electives (See Program Note 1 above.)

LEVEL IV: 30 UNITS
3 units from BIOCHEM 3Y03, 4Y03
6 units PHYSICS 4A03, 4S03
3-6 units from PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics,
EARTH SC 3V03, GEO 3V03
9-12 units Electives (See Program Note 2 above.)

Honours Physics {2440888}
(Computation and Theory Specialization)

ADMISSION NOTE
Completion of MATH 1B03 is required by the end of Level II and
is strongly recommended in Level I.

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a
Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1AA3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1BA3, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1AA3
6 units from Science I Course List (See Admission Note above.)

ADMISSION NOTE (EFFECTIVE 2009-2010)
Completion of MATH 1B03 is required by the end of Level II and
is strongly recommended in Level I.

ADMISSION
EFFECTIVE 2009-2010: Completion of any Level I program with a
Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1AA3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1BA3, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1AA3
6 units from Physical Sciences I Course List (See Admission
Note above.)

REQUIREMENTS
121 units total (Levels I to IV), of which no more than 48 units may
be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 31-34 UNITS (2008-2009 ONLY)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
0-3 units from MATH 1B03 (or 1D03) if not completed in Level I
(See Admission Note above.)
6-9 units Electives

LEVEL II: 31 UNITS (EFFECTIVE 2009-2010)
16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
0-3 units MATH 1B03 if not completed in Level I (See Admission
Note above.)
6-9 units Electives

LEVEL III: 30 UNITS
9 units PHYSICS 3A03, 3BB3, 3H03, 3K03, 3MM3, 3S03
6 units MATH 3C03, 3D03
6 units Electives

LEVEL IV: 30 UNITS
9 units PHYSICS 4A03, 4B03, 4F03
3-6 units from PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics,
EARTH SC 3V03, GEO 3V03
9-12 units Electives

Honours Physics {2440412}
(Origins Research Specialization)

ADMISSION NOTES (2008-2009 ONLY)
1. Completion of BIOLOGY 1A03 and 1A13 (or 1M03) is required
by the end of Level II and is strongly recommended in Level I.
2. Completion of MATH 1B03 (or 1D03) is required by the end
of Level II and is recommended in Level I.
3. ASTRON 1F03 is recommended in Level I.

ADMISSION
2008-2009 ONLY: Completion of any Level I program with a
Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1AA3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1BA3, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1AA3
6 units from Science I Course List (See Admission Notes 1, 2
and 3 above.)

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. Completion of BIOLOGY 1A03 and 1M03 (or 1AA3) is required
by the end of Level II and is strongly recommended in Level I.
2. Completion of MATH 1B03 is required by the end of Level II
and is recommended in Level I.
3. ASTRON 1F03 is recommended in Level I.
ADMISSION

EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units MATH 1A03, 1A3 with an average of at least 6.0
3 units PHYSICS 1B03 with a grade of at least C+
3 units from PHYSICS 1BA3, 1BB3 with a grade of at least C+
6 units CHEM 1A03, 1A3
6 units from Physical Sciences I Course List (See Admission Notes 1, 2 and 3 above.)

PROGRAM NOTE

Completion of ORIGINS 2B03, 2FF3 and 2S03 is required by the end of Level III.

ORIGINS COURSE LIST

ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03

REQUIREMENTS

121 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVEL II: 31-37 UNITS (2008-2009 ONLY)

16 units PHYSICS 2B06, 2C03, 2E03, 2H04
6 units MATH 2A03, 2C03
3 units from ORIGINS 2B03, 2FF3 (See Program Note above.)
3 units ORIGINS 2S03
6 units MATH 2B03, 2F03
6 units from BIOLOGY 1A03, 1M03 (or 1A03) if not completed in Level I (See Admission Note 1 above.)
3 units from MATH 1B03 (or 1D03) if not completed in Level I (See Admission Note 2 above.)
3 units Electives (See Admission Note 3 above.)

LEVEL III: 30 UNITS (2008-2009 ONLY)

6 units PHYSICS 3H03, 3M03
6 units MATH 3C03, 3D03
3 units from ORIGINS 2B03, 2FF3
6 units from Origins Course List
3 units ORIGINS 3S03
6 units Electives

LEVEL III: 30 UNITS (EFFECTIVE 2009-2010)

9 units PHYSICS 3H03, 3K03, 3M03
6 units MATH 3C03, 3D03
3 units from ORIGINS 2B03, 2FF3
6 units from Origins Course List
3 units ORIGINS 3S03
3 units Electives

LEVEL IV: 30 UNITS

3 units PHYSICS 4A03
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, GEO 3V03
9 units ORIGINS 4A03
12 units Electives

Honours Physics Co-op

Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, completion of Level II Honours Physics with a Cumulative Average of at least 6.0. Information about the program and the selection procedure may be obtained from Science Career and Cooperative Education Office and the Chair of the Committee of Instruction.

PROGRAM NOTES

1. This is a five-level (year) co-op program which includes two eight-month work terms which must be spent in Physics related placements.
2. Students must be registered full-time and take a full academic work load as prescribed by Level and Term.
3. Students are required to complete SCIENCE 2C00 before the first work placement and are recommended to complete this course in Level II.
4. Students considering postgraduate studies in Physics should take PHYSICS 4D03 as one of the electives in Level V.
5. PHYSICS 4B03 is strongly recommended.

REQUIREMENTS

121 units total (Levels I to IV) of which no more than 48 units may be Level I

LEVEL I: 30 UNITS

Completed prior to admission to the program

LEVEL II: 31 UNITS

Completion of any Level II Honours Physics program
1 course SCIENCE 2C00

LEVEL III

Consists of Academic Term 1 (Fall) and completion of the first eight-month work term, Term 2 (Winter) and Summer Term

TERM 1 (FALL): 16 UNITS

3 units MATH 3C03
7 units PHYSICS 2G03, 3HC1, 3K03
6 units Electives

TERM 2 (WINTER) AND SUMMER

Work Term

LEVEL IV

Consists of Academic Level IV Term 1 (Fall) and Academic Level III, Term 2 (Winter), second eight-month work term, Summer Term

TERM 1 AND 2 (FALL AND WINTER): 31 UNITS (2008-2009 ONLY)

3 units MATH 3D03
7 units PHYSICS 3K03, 3M03, 4AA1
3-6 units PHYSICS 4L03, 4P06
3 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, GEO 3V03
12-15 units Electives (See Program Note 5 above.)

TERM 1 AND 2 (FALL AND WINTER): 31 UNITS (EFFECTIVE 2009-2010)

3 units MATH 3D03
4 units PHYSICS 3MM3, 4AA1
3-6 units PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, GEO 3V03
12-15 units Electives (See Program Note 5 above.)

SUMMER

Work Term

LEVEL V

Consists of completion of the second half of the second eight-month work term, Term 1 (Fall) and Academic Level IV, Term 2 (Winter)

TERM 1 (FALL)

Work Term

TERM 2 (WINTER): 13 UNITS

4 units PHYSICS 3H02, 4AB2
9 units Electives (See Program Note 4 above.)
B.Sc. Three-Level Degree

A three-level program with a Physics orientation is available through the B.Sc. in Physical Sciences. Please see Interdisciplinary Programs in this section of the Calendar.

Minor in Astronomy

NOTES
1. Students with credit in CHEM 2PA3 and 2PB3 may use these courses as substitutions for CHEM 2R03.
2. Students with credit in ISCI 1A24 do not need to complete ASTRON 1F03.

REQUIREMENTS
24-25 units total
3 units from ASTRON 1F03, 2E03
6 units MATH 2A03, 2C03
3 units PHYSICS 2A03
3-4 units from CHEM BIO 2P03, CHEM 2PC3, 2R03, EARTH SC 2G03, PHYSICS 2H04.
3 units from PHYSICS 2D03, 2E03
6 units ASTRON 3X03, 3Y03

Minor in Physics

NOTES
1. MATH 2A03 is the minimum mathematics required in order to complete a Minor in Physics. However, more flexibility is possible if MATH 2C03 is also completed.
2. Students with credit in ISCI 1A24 do not need to complete PHYSICS 1903, 1B03 (or 1BB3).

REQUIREMENTS
24 units total
6 units from PHYSICS 1B03, 1BA3 (or 1BB3)
15 units from EARTH SC 3V03, GEO 3V03, Levels II, III, IV Astronomy, Physics, including at least six units from Levels II, IV Astronomy, Physics

DEPARTMENT OF PSYCHOLOGY, NEUROSCIENCE AND BEHAVIOUR

WEB ADDRESS: http://www.mcmaster.ca/psychology

Honours Arts & Science and Psychology (B.Arts.Sc.; See Arts & Science Program)

Honours Biology and Psychology (B.Sc.; See Department of Biology)

Honours Life Sciences (See, Interdisciplinary Programs)

Honours Linguistic Cognitive Science (B.A.; See Faculty of Humanities, Department of Linguistics and Languages)

Honours Psychology, Neuroscience and Behaviour (B.A.) and B.A. in Psychology
(See Faculty of Social Sciences, Department of Psychology, Neuroscience and Behaviour)

Honours Psychology, Neuroscience and Behaviour (B.A) (Music Cognition Specialization)
(See Faculty of Social Sciences, Department of Psychology, Neuroscience and Behaviour)

Honours Psychology, Neuroscience {2463} and Behaviour (B.Sc.)

FORMERLY HONOURS PSYCHOLOGY (B.Sc.)

ADMISSION NOTES (2008-2009 ONLY)
1. It is recommended that students complete both CHEM 1A03 and PHYSICS 1B03. Chemistry is particularly useful for neuroscience and biological aspects of psychology. Physics is particularly useful for perception, electrophysiology and mathematical modelling of psychological processes.

2. MATH 1B03 is strongly recommended for students intending to pursue graduate work in psychology or neuroscience. COMP SCI 1MA3 or PHYSICS 2G03 is highly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate work in psychology.

3. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

1. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.

PROGRAM NOTES
1. Prior to registering in PSYCH 4D06 or 4D09, students must complete a lab course.

2. The Department of Psychology, Neuroscience and Behaviour pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D05, 4D09), and the Individual Study courses (PSYCH 2Q03, 3Q03, 3QQ3, 4Q03, 4QQ3). Students wishing to take these courses must complete and submit a ballot by mid February.

3. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.

4. A maximum of six units from PSYCH 3AB3, 3AC3, 3BB3, 3CB3, 3CD3 may be used as electives.
LAB COURSE LIST
PSYCH 3E03, 3L03, 3L13, 3MM3, 3S03, 3V03

CAPSTONE COURSE LIST
PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

PSYCHOLOGY COURSE LIST
BIOLOGY 4T03; HTH SCI 4BB3; KINESIOL 3E03, 4P03; MUSICOCG 2A03, 2A03, 3B03; all Level III and IV Psychology courses except PSYCH 3A03, 3AC3, 3BA3, 3CB3, 3CD3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission note above)

LEVEL II: 30 UNITS (2008-2009 ONLY)
6 units PSYCH 2RA3, 2RB3
3 units from PSYCH 2D03, 2F03
9 units PSYCH 2E03, 2H03, 2TT3
3 units from Faculty of Science courses
9 units Electives (See Admission Note 2 and 3 above)

LEVEL II: 30 UNITS (EFFECTIVE 2009-2010)
6 units PSYCH 2RA3, 2RB3
3 units from PSYCH 2D03, 2F03
9 units PSYCH 2E03, 2H03, 2TT3
0-3 units from CHEM 1A03, PHYSICS 1B03 or 1L03 if not completed in Level I (See Admission Note 1 above)
9-12 units Electives (See Admission Note 2 above)

LEVEL III: 30 UNITS
12 units: from Psychology Course List
3 units from Lab Course List (See Program Notes 1 and 2 above)
15 units Electives (See Program Note 3 above)

LEVEL IV: 30 UNITS
6 units from Psychology Course List
9 units: 6 units from Capstone Course List and 3 units from Psychology Course List or PSYCH 4D09 (See Program Note 2 above)
15 units Electives (See Program Note 3 above)

Honours Psychology, Neuroscience {2463371} and Behaviour (B.Sc.) (Music Cognition Specialization)

Subject to approval by the Ministry of Training, Colleges and Universities. Beginning in the 2008-2009 academic year, an Honours Bachelor of Science program in Psychology, Neuroscience and Behaviour (Music Cognition Specialization) will be offered.

ADMISSION NOTES (2008-2009 ONLY)
1. One of CHEM 1A03, PHYSICS 1B03 or 1L03 is required for admission, however, completion of CHEM 1A03 and one of PHYSICS 1B03 or 1L03 is required by the end of Level II. It is strongly recommended that both CHEM 1A03 and one of PHYSICS 1B03 or 1L03 be completed in Level I. Concepts from PHYSICS 1B03 are particularly useful for understanding neuroscience, mathematical modelling, and perception. Students interested in these areas are encouraged to take PHYSICS 1B03 followed by PHYSICS 1BB3.
2. MATH 1B03 is strongly recommended for students intending to pursue graduate work in psychology or neuroscience. COMP SCI 1MA3 or PHYSICS 2G03 is highly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate work in psychology.
3. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1A03 in Level I and consult with a departmental advisor.

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. Selection is based on academic achievement and written statement of interest but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
- 6 units PSYCH 1A03, 1AA3 with a grade of at least B- in each
- 3 units from MATH 1AA3, 1B03, 1D03
- 3 units from CHEM 1A03, PHYSICS 1B03 or 1L03
- 3 units from PSYCH 2D03, 2F03
- 9 units Electives (See Admission Note above)

2. Prior to registering in PSYCH 4D06 or 4D09, students must complete and submit a ballot by mid-Friday.
3. Specific dates will be announced during the fall term. Ballots can be obtained from the Department of Psychology, Neuroscience and Behaviour web site at http://www.mcmaster.ca/psychology.
4. Students wishing to take these courses must complete and submit a ballot by mid March.
5. Students wishing to take these courses must complete and submit a ballot by mid March.
6. Students wishing to take these courses must complete and submit a ballot by mid March.
7. The Department of Psychology, Neuroscience and Behaviour will be offered.

LAB COURSE LIST
PSYCH 3E03, 3L03, 3L13, 3MM3, 3Q03, 3S03, 3V03, 4QQ3

CAPSTONE COURSE LIST
PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

PSYCHOLOGY COURSE LIST
BIOLOGY 4T03; HTH SCI 4BB3; KINESIOL 3E03, 4P03; all Level III and IV Psychology courses except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above)
Honours Psychology, Neuroscience {2463412} and Behaviour (B.Sc.)

(Origins Research Specialization)

ADMISSION NOTES (2009-2010)

1. It is recommended that students complete both CHEM 1A03 and PHYSICS 1B03. Chemistry is particularly useful for neuroscience and biological aspects of psychology. Physics is particularly useful for perception, electrophysiology and mathematical modelling of psychological processes.

2. MATH 1B03 is strongly recommended for students intending to pursue graduate work in psychology or neuroscience. COMP SCI 1MA3 or PHYSICS 2G03 is highly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate work in psychology.

3. Students wishing to have more mathematical statistics may replace PSYCH 2R3A3 and 2R3B3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.

4. One of ASTRON 1F03, PHYSICS 1B03, 1BB3, 1F03, 1L03 must be completed by the end of Level II. Completion in Level I is strongly recommended.

5. One of CHEM 1AA3, ENVIR SC 1G03 must be completed by the end of Level II. Completion in Level I is strongly recommended.

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

1. 9 units ORIGINS 2B03, 2FF3, 2S03
2. 6 units PSYCH 2E03, 2H03, 2I03, 2L03 (See Admission Note 2 above.)
3. 3 units Electives (See Program Note 3 above.)

LEVEL II: 30 UNITS (2009-2010)

1. One of CHEM 1AA3, PHYSICS 1B03 or 1L03 is required for admission, however, completion of CHEM 1A03 and one of PHYSICS 1B03 or 1L03 is required by the end of Level II. It is strongly recommended that both CHEM 1A03 and one of PHYSICS 1B03 or 1L03 be completed in Level I. Concepts from PHYSICS 1BB3 are particularly useful for understanding neuroscience, mathematical modelling, and perception. Students interested in these areas are encouraged to take PHYSICS 1BB3 followed by PHYSICS 1BB3.

2. MATH 1B03 is strongly recommended for students intending to pursue graduate work in psychology or neuroscience. COMP SCI 1MA3 or PHYSICS 2G03 is highly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate work in psychology.

3. Students wishing to have more mathematical statistics may replace PSYCH 2R3A3 and 2R3B3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1AA3 in Level I and consult with a departmental advisor.

4. One of ASTRON 1F03, PHYSICS 1B03, 1BB3, 1F03, 1L03 must be completed by the end of Level II. Completion in Level I is strongly recommended.

5. One of CHEM 1AA3, ENVIR SC 1G03 must be completed by the end of Level II. Completion in Level I is strongly recommended.

PROGRAM NOTES

1. A maximum of 6 units from FSYCH 3A3B3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.

2. The Department of Psychology, Neuroscience and Behaviour pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09) and the Individual Study courses (PSYCH 2Q3Q, 3Q03, 4Q03, 4Q03, 4Q03). Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3E06, 3L03, 3LL3, 3MM3, 3S03, 3V03). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the fall term. Ballots can be obtained from the Department of Psychology, Neuroscience and Behaviour web site at http://www.mcmaster.ca/psychology. Priority will be given to students registered in Honours Psychology, Neuroscience and Behaviour and Combined Honours Psychology programs.

LAB COURSE LIST

PSYCH 3E03, 3L03, 3LL3, 3MM3, 3S03, 3V03

PSYCHOLOGY COURSE LIST

BIOLOGY 4T03; HTH SCI 4BB3; KINESIOL 3E03 4P03; MUSICCOG 2A03, 3A03, 3B03, 3L03; all Level III and IV Psychology courses except PSYCH 3A03, 3AC3, 3BA3, 3CB3, 3CD3

ORIGINS COURSE LIST

ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS (2008-2009 ONLY)

3 units from PSYCH 2D03, 2F03
6 units from PSYCH 2E03, 2H03, 2T03
6 units from PSYCH 2R3A3, 2R3B3
9 units from BIOLOGY 2P03, 2FFS, 2S03
0-3 units from ASTRON 1F03, PHYSICS 1B03, 1A03, 1BB3, 1F03
0-3 units from CHEM 1AA3, ENVIR SC 1G03 if not completed in Level I (See Admission Note 4 above.)
0-6 units Electives
Honours Psychology (Core) {2461856}

The Honours Psychology (Core) program is being phased out and is being replaced by Honours Psychology, Neuroscience and Behaviour. Students who intended to register in this program should see Honours Psychology, Neuroscience and Behaviour above. Entry to Level IV Honours Psychology (Core) will be last available in 2008-2009.

PROGRAM NOTES
1. Students who completed PSYCH 3QQ3 or 4QQ3 prior to September 2007, may use this credit towards fulfilling the Level III lab requirement. Effective September 2007, PSYCH 3QQ3 and 4QQ3 no longer fulfill this requirement.
2. Students intending to do a thesis (PSYCH 4D06 or 4D09) are advised to complete the lab requirement prior to doing a thesis. Effective September 2008, completing a lab prior to doing a thesis will become a requirement.
3. The Department of Psychology, Neuroscience and Behaviour pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09), and the Individual Study courses (PSYCH 2QQ3, 3QQ3, 4QQ3). Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3EE3, 3MM3, 3LM3, 3LM5, 3LM9, 3VT3). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the Fall term. Ballots can be obtained from the Department of Psychology, Neuroscience and Behaviour web site at http://www.mcmaster.ca/psychology. Priority will be given to six units registered in Honours Psychology, Neuroscience, and Behaviour and Combined Honours Psychology programs.
4. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.

LAB COURSE LIST
PSYCH 3BL3, 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3VT3

CAPSTONE COURSE LIST
PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

PSYCHOLOGY COURSE LIST
BIOLOGY 4T03; HTH SCI 4BB3; KINESIO 3E03, 4P03; MUSICCOG 2A03, 3A03, 3B03; all Level III and IV Psychology courses except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL II: 30 UNITS (EFFECTIVE 2009-2010)
3 units from PSYCH 2D03, 2F03
6 units from PSYCH 2E03, 2H03, 2TT3
6 units PSYCH 2RA3, 2RB3
9 units ORIGINS 2B03, 2FF3, 2S03
0-3 units from ASTRON 1F03, PHYSICS 1B03, 1BA3, 1BB3, 1F03
0-3 units from CHEM 1AA3, ENVIR SC 1G03 if not completed in Level I (See Admission Note 4 above.)
0-6 units Electives

LEVEL III: 30 UNITS
3 units from PSYCH 2E03, 2H03, 2TT3
6 units from Psychology Course List
6 units from Lab Course List (See Program Note 2 above.)
6 units from Origins Course List
3 units from ORIGINS 3S03
9 units Electives (See Program Note 1 above.)

LEVEL IV: 30 UNITS
12 units from Psychology Course List
9 units ORIGINS 4A09
9 units Electives (See Program Note 1 above.)

Honours Psychology (Developmental Specialization) {2461862}

The Honours Psychology (Developmental Specialization) is being phased out. Registration in Level III will be last available in September 2008.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL III: 30 UNITS
3 units from PSYCH 3QQ3, 3AA3, 3BB3, 3BN3, 3D03, 3FA3, 3HH3, 3J03, 3M03, 3Y03
6 units from Psychology Course List, PSYCH 2D03, 2E03, 2H03, 2TT3
3 units from Lab Course List. PSYCH 3EE3, 3L03, 3MM3 or 3V03 is recommended. (See Program Notes 1, 2 and 3 above.)
12 units Electives, of which at least six units must be selected from the Faculty of Science (See Program Note 4 above.)

LEVEL IV: 30 UNITS
6 units from BIOLOGY 4T03, PSYCH 2D03, 3A03, 3AA3, 3BN3, 3D03, 3FA3, 3HH3, 3J03, 3M03, 3Y03, 4BN3, 4F03, 4Y03
3 units from Psychology Course List
9 units 6 units from Capstone Course List and 3 units from Psychology Course List or PSYCH 4D09 (See Program Note 3 above.)
12 units Electives (See Program Note 4 above.)

Honours Psychology (Behavioural Neuroscience Specialization) {2461858}

The Honours Psychology (Behavioural Neuroscience Specialization) is being phased out. Registration in Level III will be last available in September 2008.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL III: 30 UNITS
9 units from PSYCH 2D03, 3A03, 3AA3, 3BN3, 3D03, 3FA3, 3HH3, 3J03, 3M03, 3Y03
6 units from Psychology Course List, PSYCH 2D03, 2E03, 2H03, 2TT3
3 units from Lab Course List. PSYCH 3EE3, 3L03, 3MM3 or 3V03 is recommended. (See Program Notes 1, 2 and 3 above.)
12 units Electives, of which at least six units must be selected from the Faculty of Science (See Program Note 4 above.)

LEVEL IV: 30 UNITS
6 units from BIOLOGY 4T03, PSYCH 2D03, 3A03, 3AA3, 3BN3, 3D03, 3FA3, 3HH3, 3J03, 3M03, 3Y03, 4BN3, 4F03, 4Y03
3 units from Psychology Course List
9 units 6 units from Capstone Course List and 3 units from Psychology Course List or PSYCH 4D09 (See Program Note 3 above.)
12 units Electives (See Program Note 4 above.)
**FACULTY OF SCIENCE**

3 units from Lab Course List. PSYCH 3EE3, 3LL3 or 3V03 is recommended. (See Program Notes 1, 2 and 3 above.)

12 units Electives, of which at least six units must be from the Faculty of Science. (See Program Note 4 above.)

**LEVEL IV: 30 UNITS**

6 units from PSYCH 3HH3, 3IL3, 3JJ3, (if not completed in Level III), 3B03, 3C03, 3Z03, 3ZZ3, 4C03

3 units from Psychology Course List

9 units 6 units from Capstone Course List and 3 units from Psychology Course List

or PSYCH 4D09 (See Program Note 3 above.)

12 units Electives (See Program Note 4 above.)

**Honours Psychology (Evolution and Social Behaviour Specialization)**

The Honours Psychology (Evolution and Social Behaviour Specialization) is being phased out. Registration in Level III will be last available in September 2008.

**REQUIREMENTS**

130 units total (Levels I to IV), of which no more than 48 units may be Level I

**LEVEL III: 30 UNITS**

9 units PSYCH 2C03, 3A03, 3F03, 3J3, 3M03, 3T03, 3Y03, 3YY3, 4R03, 4V03

6 units from Psychology Course List, PSYCH 2D03, 2E03, 2F03, 2H03

3 units from Lab Course List. PSYCH 3LL3 or 3S03 is recommended. (See Program Notes 1, 2 and 3 above.)

12 units Electives, of which at least six units must be from the Faculty of Science. (See Program Note 4 above.)

**LEVEL IV: 30 UNITS**

6 units PSYCH 2C03, 3A03, 3F03, 3J3, 3M03, 3T03, 3Y03, 3YY3, 4R03, 4V03

3 units from Psychology Course List

9 units 6 units from Capstone Course List and 3 units from Psychology Course List

or PSYCH 4D09 (See Program Note 3 above.)

12 units Electives (See Program Note 4 above.)

**B.Sc. Three-Level Degree**

A three-level program with a general Life Sciences orientation is available through the B.Sc. in Life Sciences. See Interdisciplinary Programs in this section of the Calendar.

**Minor in Psychology**

**NOTES**

1. As all courses have enrolment capacities, the Faculty cannot guarantee registration in courses, even when prerequisites have been met. Completion of the Minor in Psychology may not be possible.

2. When choosing Level II courses students should consider the prerequisites for Level III courses.

3. Students who have completed SCI 1A24 do not need to take PSYCH 1X03 and 1XX3 but must complete 18 units from Level II, III Psychology courses.

**REQUIREMENTS**

24 units total

3 units from PSYCH 1A3, 1X03

21 units PSYCH 1A03, 1XX3, Level II, III Psychology courses, including at least six units from Level III Psychology courses

**INTERDISCIPLINARY PROGRAMS**

**Honours Biology and Environmental Sciences (B.Sc.)**

{2050211}

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2008-2009 academic year, an Honours Bachelor of Science program in Biology and Environmental Sciences will be offered.

Honours Biology and Environmental Sciences is a flexible program that focuses on interdisciplinary studies among these two fields. Jointly offered by the Department of Biology and the School of Geography and Earth Sciences, this program prepares students to select courses according to their interests; to develop general knowledge, and understanding of the linkages between biological processes and environmental ones; and to apply these to questions of biological, biomedical, or environmental interests. This program prepares students for graduate studies, careers in industry or academic research laboratories.

**ADMISSION NOTE**

- Students are strongly recommended to take CHEM 1A03 and 1AA3 in Level I.

**ADMISSION**

2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

1. 3 units MATH 1A03, 1AA3

2. 6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0

3. 12 units from ENVIR SC 1A03, 1B03 with a grade of at least C+ from ASTRON 1F03, CHEM 1A03, 1AA3, COMP SCI 1F03, 1MA3, 1MD3, ENVIR SC 1A03, 1B03, 1C03, 1K03, KINESIOL 1Y03, 1YY3, MATH 1A03, 1AA3, 1B03, PHYSICS 1B03, 1B3, 1BB3, 1F03, PSYCH 1A03, 1AA3

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

1. 3 units MATH 1A03, 1LS3

2. 6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0

3. 12 units from ENVIR SC 1A03, 1B03 with a grade of at least C+ from ASTRON 1F03, CHEM 1A03, 1AA3, COMP SCI 1F03, 1MA3, 1MD3, ENVIR SC 1A03, 1B03, 1C03, 1K03, KINESIOL 1Y03, 1YY3, MATH 1A03, 1AA3, 1B03, 1LS3, PHYSICS 1B03, 1B3, 1BB3, 1F03, 1LS3, PSYCH 1X03, 1XX3

**PROGRAM NOTES**

1. The Biology and Environmental Sciences program allows students to choose Biology and Environmental Science courses that reflect their own interests. Students are strongly encouraged to discuss their course selections with an academic advisor in the Department of Biology or the School of Geography and Earth Sciences.

2. Pre-requisites for upper year courses must be checked carefully when selecting courses in Level II. Biochemistry and Organic Chemistry prerequisites exist in many upper year biology courses. Students are encouraged to take six units from CHEM 2A03, 2B03, 2C03, 2D03.

3. Students interested in completing a thesis may take one of BIOLOGY 4C09, 4F06 or EARTH SC 4MT6 in Level IV, subject to meeting the prerequisites. Students considering graduate studies are recommended to complete a thesis course.

4. Only one of BIOLOGY 4C09, 4F06 or EARTH SC 4MT6 may be completed as part of the program requirements.

**COURSE LIST 1**

- BIOCHEM 2E3, 3G03; BIOLOGY 2A03, 2B03, 2C03, 2D03, 2EE3, 2F03, 2G03; CHEM 2A03, 2B03, 2C03, 2D03; STATS 2B03
FACULTY OF SCIENCE

COURSE LIST 2
EARTH SC 3RD3, 4MT6; ENVIR SC 2B03, 2C03, 2E03, 2G03, 2G13, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3G13, 3J03, 3L03, 3Q03, 3Q03, 3SA3, 3U03, 3W03, 4B03, 4C03, 4G13, 4HH3, 4L03, 4Q03, 4W03, 4WW3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I.

LEVEL I
30 units (See Admission above.)

LEVELS II-IV: 90 UNITS
9 units from ENVIR SC 2B03, 2C03, 2E03, 2G03, 2Q03, 2W03
12 units from BIOLOGY 2A03, 2B03, 2C03, 2D03, 2EE3, 2F03, 2G03
6 units from Course List 1 or 2
21 units Levels III, IV courses from Course List 2
18 units Levels III, IV Biology, excluding BIOLOGY 3Q03 and 3Q03
3 units ENVIR SC 4EA3
21 units Electives

Honours Computational Biology {2054}

Honours Computational Biology is a research-intensive program that focuses on interdisciplinary studies among Biology, Mathematics and Computer Science, preparing students for graduate studies or careers in industry or academic research laboratories. The program enables students to develop knowledge and understanding of the power of mathematics and computer technology and to apply these to questions of biological and biomedical interest.

ADMISSION NOTES (2008-2009 ONLY)
1. Students who have not completed BIOLOGY 1X03 may still be considered for admission; however, it must be completed by the end of Level II.
2. Students who have not completed Grade 12 Chemistry U must complete CHEM 1R03 in Level I.

ADMISSION 2008-2009 ONLY: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
3 units BIOLOGY 1X03 (See Admission Note 1 above.)
6 units CHEM 1A03, 1AA3 (See Admission Note 2 above.)
6 units from MATH 1A03 (or 1X03), 1AA3 (or 1XX3)
3 units PHYSICS 1B03

ADMISSION NOTE (EFFECITIVE 2009-2010)
Students who have not completed BIOLOGY 1X03 may still be considered for admission; however, it must be completed by the end of Level II.

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:
6 units BIOLOGY 1A03, 1AA3 with an average of at least 6.0
3 units BIOLOGY 1X03 (See Admission Note 1 above.)
6 units CHEM 1A03, 1AA3 (See Admission Note 2 above.)
6 units from MATH 1A03 (or 1X03), 1AA3 (or 1XX3)
3 units from PHYSICS 1B03, 1L03

PROGRAM NOTES
1. This program is administered through the Department of Biology.
2. Information may be obtained through the Program Administrator in Life Sciences Building, Room 119A who can refer students to the appropriate faculty advisor.
3. MATH 2A03 is not a sufficient prerequisite for many advanced Mathematics courses and, therefore, students are encouraged to take MATH 2XX3. Completion of MATH 2XX3 is strongly recommended.
4. MATH 2X03 is the prerequisite of MATH 3F03.
5. BIOLOGY 4D03 and MATH 3DC3 are not offered every year.
6. With permission, students may complete a thesis course, supervised by faculty from the Departments of Mathematics and Statistics or Computing and Software.
7. Students with interests in computational genetics are encouraged to complete BIOLOGY 3103, 3Q03, 4EE3. Students with interests in other areas of computational biology should seek advice on their choices.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I.

LEVEL I
30 units (See Admission above.)

LEVELS II-IV: 90 UNITS
24 units from BIOLOGY 2A03, 2B03, 2C03, 2Y03, 2Z03, 3F03, 3S03, 3Y13
9 units from COMP SCI 1MD3, 2SC3, 3DA3
6 units MATH 1B03, 2C03
6 units STAT 2D03, 2MD3
3 units from BIOLOGY 2D03, 2E03, 2F03
9 units from BIOLOGY 3Q03, 4MD3 (See Program Note 7 above.)
6-9 units from BIOLOGY 4C09, 4DF0 (See Program Note 6 above.)
6 units from BIOCHEM 3Y03, 4Y03, BIOLOGY 4AA3, 4DD3, 4F03
3 units from MATH 2A03, 2X03 (See Program Note 3 above.)
3 units from MATH 2E03, 3DC3, 3F03 (See Program Note 4 above.)
0-3 units BIOLOGY 1X03 if not completed in Level I (See Admission Note above.)
0-6 units CHEM 1A03 and 1AA3 if not completed in Level I (See Admission Note 2 above.)
3-15 units Electives

Honours Integrated Science (ISCI) (B.Sc.)

Subject to approval by the Ministry of Training, Colleges and Universities, beginning in the 2009-2010 academic year, an Honours Bachelor of Science program in Integrated Science will be offered.

The Honours Integrated Science program is an interdisciplinary, research-based science program targeting highly motivated, high-achieving students. The science curriculum will be taught in a fully integrated way; and will allow students to understand how knowledge has accumulated within and across scientific disciplines, and how new scientific thought is created. Beginning in Level I, students will engage in research and will have opportunities throughout each level of the program to work with faculty members on interdisciplinary research projects in laboratory and field settings. Research collaborations and internships with government, industrial and community partners will also be encouraged. The Integrated Science program will intentionally teach scientific literacy in its broadest sense and students will learn and develop skills in the areas of scientific writing, research ethics, and critical thinking.

HONOURS INTEGRATED SCIENCE I (ISCI I) {0301}

(EFFECTIVE 2009-2010)

ENROLMENT IN THIS PROGRAM IS LIMITED.

PROGRAM NOTES
1. As places in the Honours Integrated Science program are limited to approximately 60 students, admission is by selection, and possession of published minimum requirements does not guarantee admission.
2. The University reserves the right to grant admission to a limited number of students and to refuse re-admission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the program for a period in excess of one academic year.
3. All Level I Integrated Science students will be asked to complete an orientation course prior to the start of classes in September. The course will serve to review and consolidate material covered by the secondary school math and science curriculum and will be especially valuable to those who have not completed one of Biology U, Chemistry U and Physics U.
4. SCIENCE 1A00, a one-hour mandatory Health and Safety course, is a co-requisite to BIOLOGY 1A03, CHEM 1A03, ENVIR SC 1B03, ISCI 1AA4, KINESIOL 1A03, 1Y13, PHYSICS 1B03.

REQUIREMENTS: 30 UNITS
24 units ISCI 1A24
6 units Electives
HONOURS INTEGRATED SCIENCE (ISCI) (2299)

ADMISSION (EFFECTIVE 2010-2011)
Completion of Honours Integrated Science I with a Cumulative Average of at least 6.0 including ISCI 1A24.

PROGRAM NOTE
Beginning at Level II, Integrated Science students may complete Combined Honours programs in the following disciplines within the Faculty of Science:
- Biochemistry
- Biology
- Chemistry
- Computer Science
- Earth and Environmental Sciences
- Mathematics and Statistics
- Physics
- Psychology, Neuroscience and Behaviour

Application for admission to Level II is required for all Combined Honours programs (See Degree Programs, Admission to Level II Programs, in this section of the Calendar).

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVEL II: 30 UNITS
15 units ISCI 2A18
12 units Electives

LEVEL III: 30 UNITS
12 units ISCI 3A12
18 units Electives

LEVEL IV: 30 UNITS
12 units ISCI 4A12
18 units Electives

Honours Life Sciences (2514)

FORMERLY HONOURS SCIENCE (LIFE SCIENCE)
(Includes Biochemistry, Biology and Psychology)

ADMISSION NOTE (2008-2009 ONLY)
BIOLOGY 1A03, 1AA3 (or 1M03), PSYCH 1A03 (or 1XX3), 1AA3 (or 1X03) must be completed by the end of Level I.

ADMISSION 2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units MATH 1A03
3 units from MATH 1AA3, 1B03, 1D03, STATS 1CC3
9 units from BIOLOGY 1A03, 1AA3, PSYCH 1A03, 1AA3 with an average of at least 6.0
9 units from Science I Course List (See Admission Note above.)

ADMISSION NOTES (EFFECTIVE 2009-2010)
1. BIOLOGY 1AC3, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1X03 (or 1A03) must be completed by the end of Level II.
2. Completion of one of PHYSICS 1B03 or 1L03 will be required by the end of Level II.

ADMISSION EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 6.0 including:
3 units - from MATH 1A03, 1L03
9 units from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1X03 (or 1A03) with an average of at least 6.0
12 units from Life Sciences I Course List (See Admission Notes 1 and 2 above.)

PROGRAM NOTES
1. For students who entered the program in September 2007 or prior, at each academic review after completion of Level I, a Cumulative Average of at least 6.0 is required to continue in the Honours Life Sciences program.
2. Students who intend to complete Biochemistry courses or who wish to be eligible for a wider selection of Biology and Psychology courses, must complete CHEM 1A03, 1AA3.
3. Registration in the Honours Life Sciences program does not guarantee access to all courses. Some courses have program restrictions and students are responsible to read course prerequisites carefully.

4. Students who entered the program prior to September 2008, may use the following courses toward the Honours Life Sciences Course List requirements: BIOCHEM 2B03, 2BB3, CHEM 2B03, 2BB3, 2N03, 2R03, PSYCH 3AA3, 3K03, SCIENCE 1D03, 2J03.
5. Students who entered the program prior to September 2007, are restricted to a maximum of 36 units of Level II, III or IV Psychology (maximum 12 units per Level) toward their elective.
6. Students with credit in Biology 1AA3 may substitute it for BIOLOGY 1M03.

HONOURS LIFE SCIENCES COURSE LIST
BIOCHEM 2EE3, 3G03, 3H03, 3N03, 4E03, 4Q03; BIOLOGY 2A03, 2B03, 2C03, 2D03, 2E03, 2F03, 2G03, 2Y13, 2Z03, 3AA3, 3BB3, 3CC3, 3FF3, 3HH3, 3I03, 3K03, 3ML3, 3MM3, 3Q03, 3Q03, 3Q03, 3R03, 3S03, 3S03, 3T13, 3U03, 3UU3, 3V03, 3Y03, 3Y03, 4A03, 4AA3, 4B03, 4D03, 4E03, 4EE3, 4J03, 4P03, 4PP3, 4R03, 4T03, 4U03, 4X03, 4Y03, CHEM 2E03, 2O03, 2403, CHEM 2A03, 2D03, EARTH SC 2E13; ENVIR SC 2B03, 2G03, 3CC3, 3EP3, 3W03, 4E33, 4WW3; GEO 2A03, 2B03, 2G03, 3AA3, 3CC3, 3W03, 4A03, 4W03; HTH SCI 3I03, 3K03, 4I13; KINESIOL 3E03, 3Y03; MATH 2E03; MED PHYS 2A03, 3R03, 4A03, 4B03, 4S23, 4XX3; MOL BIOL 4H03; PHYSICS 1BB3; PSYCH 2AA3, 2B03, 2C03, 2D03, 2E03, 2F03, 2H03, 2S03, 2T13, 3AA3, 3BB3, 3B03, 3BB3, 3N03, 3CC3, 3D03, 3F03, 3F03, 3G03, 3H03, 3I03, 3J03, 3L03, 3K03, 3M03, 3N03, 3Q03, 3Q03, 3T03, 3V03, 3Y03, 3Y03, 4B03, 4Y03, 4Z03; SCIENCE 2A03, 2B03, 2K03, 2L03, 3AA3, 4B03, 4E03, 4S23, 4XX3; STATS 2B03

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission above.)

LEVELS II-IV: 90 UNITS (REQUIREMENTS FOR STUDENTS WHO ENTER IN SEPTEMBER 2008)
42 units from Honours Life Sciences Course List, of which at least 24 units must be Levels III, IV (See Program Note 4 above.)
0-3 units from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) if not completed in Level I (See Admission Note above.)
15 units from Faculty of Science courses which may include Honours Life Sciences Course List (See Program Note 4 above.)
30-33 units Electives, excluding Psychology (See Program Note 5 above.)

LEVELS II-IV: 90 UNITS (REQUIREMENTS FOR STUDENTS ENTERING IN 2009-2010)
42 units from Honours Life Sciences Course List, of which at least 24 units must be Levels III, IV
0-3 units from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) if not completed in Level I (See Admission Note above.)
0-3 units from PHYSICS 1B03, 1L03 if not completed in Level I (See Admission Note 2 above.)
15 units from Faculty of Science courses which may include Honours Life Sciences Course List
27-33 units Electives, excluding Psychology (See Program Note 5 above.)

B.Sc. in Life Sciences (1312)

(Includes Biochemistry, Biology, and Psychology)

ADMISSION NOTE
BIOLOGY 1A03, 1AA3 (or 1M03), PSYCH 1AA3 (or 1X03), 1AA3 (or 1X03) must be completed by the end of Level II.

ADMISSION 2008-2009 ONLY: Completion of any Level I program with a Cumulative Average of at least 3.5 including:
3 units MATH 1A03
3 units from MATH 1AA3, 1B03, 1D03, STATS 1CC3
9 units from BIOLOGY 1A03, 1AA3, PSYCH 1X03 (or 1AA3), 1X03 (or 1A03) with an average of at least 4.0
9 units from Science I Course List (See Admission Note above.)
EFFECTIVE 2009-2010: Completion of any Level I program with a Cumulative Average of at least 3.5 including:

3 units from MATH 1A03, 1L3S
9 units from BIOLOGY 1A03, 1M03 (or 1A3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1AO3) with an average of at least 4.0
12 units from Life Sciences I Course List (See Admission Note above.)

PROGRAM NOTES

1. Students who intend to complete Biochemistry courses or who wish to be eligible for a wider selection of Biology and Psychology courses must complete CHEM 1A03, 1A3.
2. Registration in the B.Sc. Life Sciences program does not guarantee access to all courses. Some courses have program restrictions and students are responsible to read course prerequisites carefully.
3. Students who entered the program prior to September 2008, may use the following courses toward the B.Sc. Life Sciences Course List requirements: CHEM 2B03, 2BB3, 2N03, 2R03, PSYCH 3Y03, SCIENCE 1D03, 2J03.

B.SC. LIFE SCIENCES COURSE LIST

BIOCHEM 2E03, 3G03, 3H03, 3N03, 4E03, 4Q03; BIOLOGY 2A03, 2B03, 2C03, 2D03, 2F03, 2R03, 2S03, 2Y3, 2Z03, 3A3, 3B3, 3BB3, 3C3, 3F3, 3H03, 3H5, 3I03, 3K03, 3M03, 3MM3, 3O03, 3P03, 3Q03, 3Q3, 3R03, 3S03, 3SS3, 3T3, 3Y03, 3Y3S, 4A03, 4U03; CHEM 2E03, 2O3A, 2O3B; EARTH SC 2E13; ENVIR SC 2B03, 2G03, 3C3, 3E3, 3P3, 3W3, 3WW3; GEO 2A03, 3A03, 3C3, 3W03, 4A03, 4W3; HTH SCI 3I03, 3K03, 4I3; KINESIOL 3E03, 3M03, 3E03, 3Y03; MED PHYS 2A03, 3R03, 4A03, 4B03; PHYSICS 1BB3, 2A03, 2C03, 2E03, 2F03, 2H03, 3B03, 3S3, 3T3, 3X03, 3X3, 3X4, 3X5, 3X6, 3X7, 3X8, 3X9, 3Y03, 3Y3S; SCIENCE 2A03, 2B03, 2K03, 2L3, 3S03; STATS 2B03

REQUIREMENTS 90 units total (Levels I to III), of which no more than 42 units may be Level I

LEVEL I 30 units (See Admission above.)

LEVELS II-III: 60 UNITS

24 units from B.Sc. Life Sciences Course List, of which at least 12 units must be Level III (See Program Note 3 above.)
9 units from Faculty of Science courses which may include Biochemistry and Molecular Medicine
3 units from MATH 1A03, 1LS3 (See Program Notes 1 and 3 above.)
0-3 units from BIOLOGY 1A03, 1M03 (or 1A3), PSYCH 1X03 (or 1A3), 1XX3 (or 1AO3) if not completed in Level I (See Admission Note above.)
24-27 units Electives, excluding Psychology

Honours Molecular Biology

Honours Molecular Biology is a research-intensive program that focuses on laboratory research and communication skills, preparing students for graduate studies or careers in industry or academic research laboratories. Jointly offered by the Departments of Biology, Biochemistry and Biomedical Sciences and Pathology and Molecular Medicine to provide students with a broad view and understanding of biological processes from a molecular perspective. Students will develop knowledge and understanding of the structure, interaction and function of biomolecules and the molecular basis of cellular and organismal biology.

ADMISSION NOTE 2008-2009

Students who have not completed PHYSICS 1B03 will be considered for admission, however, completion of the course is required by the end of Level II. Completion of PHYSICS 1B03 is also recommended.

ADMISSION 2008-2009 ONLY: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1A3, with an average of at least 6.0
6 units CHEM 1A03, 1AA3
3 units MATH 1A03
3 units PHYSICS 1B03 (See Admission Note above.)
3 units STATS 1CC3
3 units from Science I Course List A grade of at least C+ in three of CHEM 1A03, 1A3, MATH 1A03, STATS 1CC3 is required.

ADMISSION NOTE (EFFECTIVE 2009-2010)

PHYSICS 1B03 must be completed by the end of Level II. Completion of PHYSICS 1B03 is also recommended.

ADMISSION EFFECTIVE 2009-2010: Enrolment in this program is limited and possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units BIOLOGY 1A03, 1M03 (or 1A3), with an average of at least 6.0
6 units CHEM 1A03, 1AA3 with a minimum grade of C+ in each
3 units from MATH 1A03, 1LS3 with a minimum grade of C+
3 units from PHYSICS 1B03, 1L03 (See Admission Note above.)
6 units from Life Sciences I Course List

PROGRAM NOTES

1. This program is administered within the Faculty of Science through a Committee of Instruction and also draws on the Departments of Biology, Biochemistry and Biomedical Sciences and Pathology and Molecular Medicine.
2. Information may be obtained through the Program Administrators in Life Sciences Building, Room 119A or Health Science Centre, Room 4H45 who can refer students to the appropriate faculty counsellor.
3. A Minor in Biochemistry, Biology, or Chemistry is not permitted in the Honours Molecular Biology program.
4. Students who do not meet all of the requirements of the program may apply to transfer to Honours Biology or Honours Biochemistry.
5. BIOLOGY 2A03, 2D03, CHEM 2N03, 2R03, CHEM B0 2A03, 2P03, ORIGINS 2FF3 are recommended electives in Level II.
6. MOL BIOL 3I03 is strongly recommended as an elective in Level III.
7. Completion of STATS 2B03 by the end of Level III is recommended.

REQUIREMENTS 120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I 30 units (See Admission above.)

LEVELS II-IV: 90 UNITS (2008-2009 ONLY)

12 units BIOCHEM 2B03, 2BB3, 3D03, 4E03
12 units BIOLOGY 2C03, 2E03, 3S03, 3S3
6 units CHEM 20A3, 2BB3
27 units MOL BIOL 2B03, 2L06, 3A03, 3V03, 4A03, 4R09
6 units from BIOLOGY 3H03, 3H3, 3I03, 3M03, HTH SCI 3I03
9 units from BIOCHEM 4E03, 4H03, 4P03, 4Q03, BIOLOGY 4B03, 4E03, 4P03, 4PP3, 4P3, 4T03, HTH SCI 4I13, MOL BIOL 4H03, 4J03, STATS 2B03 (See Program Note 7 above.)
0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note above.)
15-18 units Electives (See Program Notes 5 and 6 above.)

LEVELS II-IV: 90 UNITS (EFFECTIVE 2009-2010)

12 units BIOCHEM 2B03, 2BB3, 3D03, 4E03
12 units BIOLOGY 2C03, 2E03, 3S03, 3S3
6 units CHEM 20A3, 2BB3
27 units MOL BIOL 2B03, 2L06, 3A03, 3V03, 4A03, 4R09
3 units STATS 2B03 (See Program Note 7 above.)
6 units from BIOLOGY 3H03, 3H3, 3I03, 3M03, HTH SCI 3I03
9 units from BIOCHEM 4E03, 4H03, 4P03, 4Q03, BIOLOGY 4B03, 4E03, 4P03, 4PP3, 4P3, 4T03, HTH SCI 4I13, MOL BIOL 4H03, 4J03
0-3 units PHYSICS 1B03 if not completed in Level I (See Admission Note above.)
12-15 units Electives (See Program Notes 5 and 6 above.)
ORIGINS INSTITUTE

The Origins Institute is a scientific academy that promotes, maintains, and strengthens transdisciplinary collaboration among researchers who are interested in answering scientific questions concerning six origins themes:

- space-time
- elements
- structure in the cosmos
- life
- species and biodiversity
- humanity

The Origins Research Specialization curriculum is designed to introduce natural science to students through these themes. Students graduating from the specialization will possess comprehensive, multifaceted knowledge about the natural world.

NOTE

The Origins Research Specialization curriculum may be taken in conjunction with the Honours program in Biochemistry, Biology, Chemistry, Life Sciences, Mathematics and Statistics, Physics, or Psychology, Neuroscience and Behaviour. It may also be taken in conjunction with the Honours Arts & Science program. Students seeking admission to the specialization must choose a program from the aforementioned lists and subsequently complete the requirements for that Honours program and 27 units from Origins courses, as specified in the appropriate section in this calendar.

Origins Research Specialization

Enrollment in this specialization is limited. Selection is based on academic achievement and requires completion of any Level I program with a Cumulative Average of at least 6.0, and the completion of admission requirements for an appropriate Honours program (see Note above), and completion of at least the following courses:

- 3 units from MATH 1A03, 1LS3
- 3 units from PHYSICS 1B03, 1L03
- 3 units from CHEM 1A03

Additionally, if not already completed in Level I, the following courses must be completed by the end of Level II:

- 6 units from BIOLOGY 1A03, 1M03 (or 1AA3), however, completion of at least one of these courses is strongly recommended in Level I
- 3 units from MATH 1AA3, 1B03, or a Level II Statistics course, if prescribed by the combined program
- 3 units from PHYSICS 1B03
- 3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3, 1F03
- 3 units from CHEM 1AA3, ENVIR SC 1G03

PROGRAM NOTES

1. Information about the specialization and the admission and selection procedures may be accessed at The Origins Institute website at http://origins.mcmaster.ca or by contacting the Associate Director (Jon Stone, Life Sciences Building, Room 327, 905-525-9140 ext. 26136 or email jstoner@mcmaster.ca). Students must apply for their Level II Honours program with the Origins Research Specialization using the Application for Admission to Level II on SOLAR (Student On-line Academic Registration). See Admission to Level II Programs in this section in the Calendar.

2. Students must refer to the description for the Honours program that they seek to combine with the Origins Specialization for specific admission and program requirements.

3. ORIGINS 2B03, 2FF3 and 2S03 must be completed by the end of Level III.

4. Students must satisfy all requirements for an appropriate Honours program and the Origins Research Specialization. Unless specific program requirements are stated in the Undergraduate Calendar, students should consult with program administrators and the Associate Director for the Origins Institute to devise a curriculum.

COURSE LIST

ORIGINS 3A03, 3B03, 3C03, 3D03, 3E03, 3F03

REQUIREMENTS

27 units total (Levels II to IV)

- 6 units from ORIGINS 2B03, 2FF3, 2S03 (See Program Note Sabove.)
- 6 units from Origins Course List
- 12 units from ORIGINS 3S03, 4A09

Honours Physical Sciences

FORMERLY HONOURS SCIENCE (PHYSICAL SCIENCE)

The Honours Physical Sciences program has been phased out. Registration in Level III of this program will be last available in September 2008. Students who intend to register in Level II of this program should consult the Office of the Associate Dean of Science (Studies) regarding an alternative program of study.

HONOURS PHYSICAL SCIENCES COURSE LIST

All Levels II, III, IV Astronomy, Chemical Biology, Chemistry, Medical Physics, Physics courses; EARTH SC 2Q03, 3Q03, 3V03; GEO 2Q03, 3Q03, 3V03; MATH 2A03, 2C03, 3C03, 3D03

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVELS III-IV: 60 UNITS

- 30 units from LEVELS II, III, IV Courses from Honours Physical Sciences Course List, of which at least 24 units must be Levels III, IV
- 9 units from Faculty of Science courses excluding Honours Physical Sciences Course List
- 21 units Electives

B.Sc. in Physical Sciences

(1435)

ADMISSION NOTE

Twelve units from CHEM 1A03, 1AA3, PHYSICS 1B03, 1BA3, 1BB3 must be completed by the end of Level II.

ADMISSION 2008-2009 ONLY:

- 6 units from MATH 1A03, 1AA3
- 9 units from CHEM 1A03, 1AA3, PHYSICS 1B03, 1BA3, 1BB3 with an average of at least 4.0 (See Admission Note above.)
- 9 units from Science I Course List (See Admission Note above.)

EFFECTIVE 2009-2010:

- Completion of any Level I program with a Cumulative Average of at least 3.5 including:
  - 6 units from MATH 1A03, 1AA3
  - 9 units from CHEM 1A03, 1AA3, PHYSICS 1B03, 1BA3, 1BB3 with an average of at least 4.0 (See Admission Note above.)
  - 9 units from Physical Sciences I Course List (See Admission Note above.)

PROGRAM NOTES

1. Students are responsible for ensuring that prerequisites for anticipated courses for Level III are completed in Level II. As an aid in selecting appropriate courses for Level II, students should refer to the program requirements for the Core programs for Honours Chemistry, Honours Medical and Health Physics, or Honours Physics.

2. Students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the Department of Chemistry, Medical Physics or Physics.

3. Students proceeding in Physics must include PHYSICS 2B06 and MATH 2A03 and 2C03 in Level II.

4. Students intending to take upper level Physics courses should complete MATH 1B03 by the end of Level II.

5. Registration in the B.Sc. Physical Sciences program does not guarantee access to all courses. Some courses have program restrictions and students are responsible to read course prerequisites carefully.

B.S.C. PHYSICAL SCIENCES COURSE LIST

Levels II, III Astronomy, Chemical Biology, Chemistry, Medical Physics and Physics courses; EARTH SC 2Q03, 3Q03, 3V03; GEO 2Q03, 3Q03, 3V03; MATH 3C03, 3D03

REQUIREMENTS

90 units total (Levels I to III), of which no more than 42 units may be Level I

LEVEL I

- 30 units (See Admission above.)

LEVELS II-III: 60 UNITS

- 24 units from LEVELS II, III Courses from B.Sc. Physical Sciences Course List, of which at least 12 units must be Level III
  - 0-3 units from CHEM 1A03, 1AA3, PHYSICS 1B03, 1BA3, 1BB3
  - if not completed in Level I (See Admission Note above.)
- 9 units from Faculty of Science courses
- 24-27 units Electives
The social sciences are concerned with the study of human activities and relationships and their social, political, economic, cultural and spatial contexts. Through the pre-industrial to the post-industrial eras, social scientists examine social, economic, cultural and political issues experienced by individuals, groups, and societies as well as the interactions between people and their environments, both natural and built.

The Faculty offers a range of degree programs in Anthropology, Economics, Geography, Gerontology, Health Studies, Kinesiology, Labour Studies, Political Science, Psychology, Religious Studies, Social Work and Sociology. In addition, there are various opportunities for students to link their academic goals with their career interests. These experiential education initiatives include, but are not limited to, inquiry, internships, academic placements, a career planning course, student project grants, and undergraduate summer research assistantships.

Students are strongly advised to take advantage of the extensive advisory services provided by the Faculty. New students in particular should plan a program of study that will allow them a number of options for Level II.

The Faculty of Social Sciences encourages students to become engaged in a wide variety of learning opportunities. These experiences can enrich learning, open new fields of study, and build transferable skills that prepare you for further academic work and for a range of careers. However, you should note that some courses, and many important extra-curricular opportunities for students in the Faculty of Social Sciences, require students to have cleared police criminal checks which can be obtained through Hamilton-Wentworth Police Services. Additionally, students may be required to pass TB tests and have immunization for some contagious diseases. Costs related to these requirements are the responsibility of the student.

PROGRAMS AND DEGREES

A. Level I Programs

Social Sciences I

PROGRAM NOTE
Students should select courses based on their academic interests and anticipated Level II program of study. Elective courses may be taken from other faculties, where requisites are met.

B. Degree Programs

HONOURS PROGRAMS (HONOURS BACHELOR OF ARTS AND HONOURS BACHELOR OF KINESIOLOGY)

Honours Bachelor of Arts programs and the Honours Bachelor of Kinesiology degree program consist of a total of 120 units of work normally completed over four years. Honours programs 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. Kinesiology students who successfully complete all requirements of the first three levels of an Honours Kinesiology degree may request permission of the Office of the Associate Dean of Social Sciences for transfer to graduate with a three-level Bachelor of Kinesiology degree.

Combined Honours Bachelor of Arts Programs: Subject to possible timetable restrictions, and provided that the student meets the requirements for entry into each of the relevant Honours programs, 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 programs in the Faculty of Humanities, and with the Arts and Science Program. All Combined Honours programs must be approved by both Departments concerned as well as by the Office of the Associate Dean(s) of Studies. Students will normally complete approximately 36 units of work beyond Level I in each component of the program (normally 12 units per level in each subject). The Honours B.Kin. degree is not available in combination with another subject.

Minor: A Minor is an option available to students enrolled in a four- or five-level program. Normally students must complete a minimum of 24 units in the Minor subject. Students are responsible for ensuring that the courses taken meet the requirements for a Minor. 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. For further information see Minors in the General Academic Regulations section of this calendar.

Combined B.A./B.S.W.: The School of Social Work offers a Combined B.A./B.S.W. program of studies leading to a B.A. and a B.S.W. degree. (See the program 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 Arts Programs: B.A. programs consist of a total of 90 units of work, normally completed over three years. Three-level Combined Bachelor's degree programs are available only in Indigenous Studies and Another Subject. The other subject may be from the Faculty of Social Sciences or the Faculty of Humanities. These programs may also be combined with the B.S.W. as a four-level program.

Internship Options: Internships allow students to explore careers, to develop employability skills and to make important contacts for job searches after graduation. The Faculty of Social Sciences offers both part-time and full-time, non-credit, paid work opportunities of four, eight, or 12 months duration. Part-time and summer internships are open to all students and provide valu-
able workplace experience without extending their degree. Full-time internships of eight, months or more, require registration in an Honours program and there is a nominal administrative fee. Only those students who have successfully completed all of their Level I program requirements and SOCL 2ELO may apply for posted opportunities. Internships must be undertaken before a student has completed all requirements for the degree. A brief notation describing the internship is placed on the student’s transcript upon receipt of a job report from the student and a performance evaluation by the employer.

Further details of internship options may be obtained from:
Internalship Coordinator,
Kenneth Taylor Hall, Room 102
(905) 525-9140, extension 23228
email: exp.ed@mcmaster.ca

ACADEMIC REGULATIONS

STUDENT ACADEMIC RESPONSIBILITY
You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES
All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that their program of study is not extended. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students from particular programs or Faculties. All students are encouraged to register as soon as MUGS/SOLAR is available to them.

Students enrolled in a program 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 TO LEVEL II PROGRAMS
Any student seeking admission to a Level II program in the Faculty of Social Sciences, with the exception of Combined B.A./B.S.W. programs, for the following Fall/Winter session must submit an Application for Admission to Level II through MUGS/SOLAR by April 1. The application allows students to rank four program choices. Students will be notified of their eligibility for the Level II programs to which they have applied on their grade report in June.

TRANSFER TO THE FACULTY OF SOCIAL SCIENCES
Students from other Faculties are able to transfer to degree programs offered by the Faculty of Social Sciences provided they have obtained a Cumulative Average of at least 3.5 and have completed the necessary admission requirements.

Students who do not meet these requirements must consult with the Office of the Associate Dean. Requests for transfer will be considered at the same time as applications for reinstatement (see below).

REINSTATEMENT
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 Reinstatement Request Form by the application deadline for the session. See the Sessional Dates section of this Calendar. Reinstatement forms will be carefully reviewed and the evidence considered which will include the student’s academic performance before and after admission to McMaster, a letter of explanation and documentation of any extenuating circumstances.

Reinstatement is not automatic or guaranteed. Decisions are normally made after June 30 for September entry. Effective September 1997, the Cumulative Average for students who are reinstated is reset to 0.0 on zero units. Credit is retained for courses in which passing grades have been achieved. NOTE: If at a review after reinstatement the Cumulative Average falls below 3.5, the student will be required to withdraw from the University for a period of at least 12 months.

Former Kinesiology students will be considered for reinstatement to Kinesiology upon completion of a minimum of 24 units of university work taken on a full-time basis in a non-Kinesiology program with a minimum average of 7.0 (B-). Application forms are available from the Office of the Associate Dean or the Department of Kinesiology. The application deadline is April 30 for September entry. Reinstatement is not guaranteed.

DEADLINES
The Faculty of Social Sciences will not consider applications for admission, admission to a second degree or continuing studies, reinstatement, 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.

HUMANITIES/RELIGIOUS STUDIES REQUIREMENT
Students registered in the Faculty of Social Sciences, except for those in Honours Kinesiology, Honours Psychology 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 programs are required to complete six units from the Faculty of Humanities.

Students in the B.A. Psychology programs should note the additional Humanities or Science requirements.

ACADEMIC ADVISING
The aim of academic advising is to help students tailor a program of studies to fit their interests. Advising also involves reviewing these interests from time to time to accommodate changing plans, needs and academic performance.

Advising is available throughout the year from the Office of the Associate Dean of Social Sciences and the departments offices or academic units in the Faculty of Social Sciences. It is strongly recommended that students consult with a Departmental Undergraduate Advisor during March in conjunction with the Level II program application.

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
Normally students may not register in more than 30 units during the Fall/Winter Session (36 units for students in a B.A./B.S.W. program). In the following circumstances an overload of up to six units may be taken:

1. If a student has a Sessional Average of at least 7.0 in the immediately preceding review period.

2. If a student is registered in the final level of his/her program.

Students wishing to register in more than 12 units during the Spring/Summer Session, or more than six units in either term of that Session may do so only with the permission of the Office the Associate Dean, Social Sciences.

WITHDRAWAL
Students who wish to withdraw from the University may cancel courses on SOLAR and must surrender their McMaster Identification Card validation sticker to Financial Services Office 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. 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 PROGRAMS

McMaster University has agreements with institutions in Canada and abroad, including Australia, France, and the United Kingdom, to provide students the opportunity to participate in an exchange program for one year or a term. Exchanges allow students to gain a varied perspective on their course of study and enhance their professional and personal goals. In addition, exchange programs 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 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 programs go abroad for the third Level of an Honours program.

Students interested in any exchange program must discuss their plans with their department and with the Office of the Associate Dean if they intend to transfer credit to their McMaster degree program. 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 student exchanges can also be found in the Academic Facilities, Student Services and Organizations section of this Calendar under the heading Centre for Student Development, International Student Services.

Acceptance to the Ontario University-wide Exchange Programs is by recommendation. Application forms can be obtained from:
Centre for Student Development
Student Exchanges
Gilmour Hall, Room 104
Telephone: (905) 525-9140, extension 24748

WEB ADDRESS: http://www.socsci.mcmaster.ca/anthro/

FACULTY OF SOCIAL SCIENCES

Honours Anthropology {2010}

ADMISSION

Completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from ANTHROP 1A03, 1B03, 1Z03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

12 units ANTHROP 2E03, 2F03, 2PA3, 3L03

3 units from ANTHROP 2D03, 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03

3 units ANTHROP 4103

9 units Level IV Anthropology

24 units Levels II, III or IV Anthropology

3 units from SOC SCI 2J03 or STATS 1CC3

56 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 program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from ANTHROP 1A03, 1B03, 1Z03. Satisfaction of admission requirements for the Honours program in the other B.A. subject.

NOTE

Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty, with programs in the Faculty of Humanities and with the Arts and Science Program.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

12 units ANTHROP 2E03, 2F03, 2PA3, 3L03

3 units from ANTHROP 2D03, 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03

3 units ANTHROP 4103

3 units Level IV Anthropology

15 units Levels II, III or IV Anthropology

36 units Electives. If not completed in Level II, 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 {1010}

ADMISSION

Completion of any Level I program with a Cumulative Average of at least 3.5 including an average of at least 4.0 in six units from ANTHROP 1A03, 1B03, 1Z03.

REQUIREMENTS

90 units total (Levels I to Ill), of which 42 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

6 units from ANTHROP 2E03, 2F03, 2PA3

18 units Levels II, III or IV Anthropology

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.
**FACULTY OF SOCIAL SCIENCES**

**Minor in Anthropology**

**REQUIREMENTS**
- 24 units total
- 6 units from ANTHROP 1A03, 1B03, 1Z03
- 3 units from ANTHROP 2E03, 2F03, 2PA3
- 15 units Levels II, III or IV Anthropology

**INTERDISCIPLINARY MINOR IN ARCHAEOLOGY**

See the Interdisciplinary Minors and Thematic Areas section of this Calendar.

**DEPARTMENT OF ECONOMICS**

**WEB ADDRESS:** http://www.mcmaster.ca/economics/

**Honours Arts & Science and Economics (B.Arts.Sc.; See Arts & Science Program)**

**Honours Economics (Specialist Option) [2151]**

Students who entered this program prior to 2008 may see an Academic Advisor in the Office of the Associate Dean for program requirements.

**Honours Economics [2150]**

**ADMISSION**
Completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in ECON 1B03 and 1B33. Credit in Grade 12 Advanced Functions and Introductory Calculus U or Grade 12 Calculus and Vectors U or MATH 1K03 (or 1F03) or equivalent is required.

**NOTES**
1. COMMERCE 2F3A may be substituted for ECON 2103.
2. Students with prior credit in a course equivalent to ECON 2B03 are exempt from this requirement. See ECON 2B03 in the Course Listings section of this Calendar for equivalencies.
3. Many graduate programs in Economics require ECON 3G03, 4T03 and 4TT3. Students interested in an M.A. in Economics are advised to consult a departmental advisor for more detailed information.

**REQUIREMENTS**
- 120 units total (Levels I to IV), of which 48 units may be Level I
  - 30 units from the Level I program completed prior to admission to the program. (See Admission above.)
  - 18 units, ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 4A03 (See Note 3 above.)
  - 24 units Levels II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2T03, 2J03, 2N03, 2P03, 2T03 (See Note 4 above.)
  - 6 units ECON 2B03 and 3U03 (See Note 2 above.)
  - 3 units* from MATH 1A03, 1LS3, 1M03
  - 3 units** from STAT 1L03 (or Grade 12 Mathematics of Data Management U)
  - 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 number of units of Economics courses above Level I (excluding ECON 2B03 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 Grade 12 U courses, these units will be taken as electives.

**Combined Honours in Economics and Another Subject**

**ADMISSION**
Completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in ECON 1B03 and 1B33. Credit in Grade 12 Advanced Functions and Introductory Calculus U or Grade 12 Calculus and Vectors U or MATH 1K03 (or 1F03) or equivalent is required. Satisfaction of admission requirements for the Honours program in the other B.A. subject.

**NOTES**
1. Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty of Humanities and with the Arts and Science Program.
2. One of Grade 12 Mathematics of Data Management U, STATS 1L03 is a prerequisite for the research methods courses offered by the Department of Economics (ECON 2B03).
3. Students registered in Combined Honours programs 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.
4. COMMERCE 2F3A may be substituted for ECON 2103.

**REQUIREMENTS**
- 120 units total (Levels I to IV), of which 48 units may be Level I
  - 30 units from the Level I program completed prior to admission to the program. (See Admission above.)
  - 18 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 4A03 (See Note 3 above.)
  - 15 units Levels II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2T03, 2J03, 2N03, 2P03, 2T03 (See Note 4 above.)
  - 36 units courses specified for the other subject
  - 6 units ECON 2B03 and 3U03; or, in combined programs within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject. (See Note 2 above.)
  - 3 units* from MATH 1A03, 1LS3, 1M03
  - 3 units** from STAT 1L03 (or Grade 12 Mathematics of Data Management U)
  - 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 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 Grade 12 U courses, these units will be taken as electives.

**Honours Economics [2150145] and Computer Science**

**ADMISSION**
Completion of any Level I program with a Cumulative Average of at least 6.0, including an average of at least 7.0 in ECON 1B03 and 1B33, and a weighted average of at least 7.0 in ECON 1B03, 1B33, COMP SCI 1MD3 and 1FC3; MATH 1A03, 1AA3 and 1B03. MATH 1B03 may be postponed until Level II.

**NOTES**
1. COMMERCE 2F3A may be substituted for ECON 2103.
2. Students with prior credit in a course equivalent to ECON 2B03 are exempt from this requirement. See ECON 2B03 in the Course Listings section of this Calendar for equivalencies.

**REQUIREMENTS**
- 120 units total (Levels I to IV), of which 48 units may be Level I
  - 30 units from the Level I program completed prior to admission to the program. (See Admission above.)
  - 18 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 4A03 (See Note 3 above.)
  - 18 units Levels II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2T03, 2J03, 2N03, 2P03, 2T03
  - 18 units COMP SCI 2CA3, 2ME3, 2MF3, 2MJ3, 2003, 2SC3
  - 9 units from COMP SCI 3CN3, 3DA3, 3DB3, 3IS3, 3MH3, 4HC3, 4WW3
  - 3 units Levels II or IV Computer Science except COMP SCI 4ZP6
  - 6-9 units STATS 2D03 and either STATS 2MB3, or 3DO3 and 3DD3 (or 3D06); or ECON 2B03 and 3U03 (See Note 2 above.)
  - 15-18 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.
Honours Economics {2150320} and Mathematics

Students who entered this program prior to 2007 may see an Academic Advisor in the Office of the Associate Dean for program requirements.

**ADMISSION**

Completion of any Level I program with a Cumulative Average of at least 6.0 including MATH 1A03 and 1X03. Completion of at least 7.0 in ECON 1B03 and 1BB3 and a grade of at least B- in each of MATH 1AA3 (or 1XH3) and 1B03.

**NOTES**

1. COMMERCE 2FA3 may be substituted for ECON 2B03.
2. Students with prior credit in a course equivalent to ECON 2B03 are exempt from this requirement. See ECON 2B03 in the **Course Listings** section of this Calendar for equivalencies.
3. Neither ECON 2B03 nor 3U03 can be used to satisfy these requirements.
4. Neither MATH 1A03 nor 1B03 can be used to satisfy these requirements.

**REQUIREMENTS**

30 units total (Levels I to IV), of which 48 units may be Level I.

- 24 units from the Level I program completed prior to admission to the program. (See Admission above.)

18 units ECON 2G03, 2G33, 2H03, 2H33, 3F03, 4A03
12 units Levels II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03. (See Note 1 above.)
18 units MATH 2C03, 2R03, 2X03 (or 2A03), 2XX3 (or 2AB3), 3A03, 3X03
12 units Levels II, III, IV Mathematics, Statistics with no more than six units at Level II, and at least three units at Level IV. (See Note 1 above.)
12 units six units from ECON 2B03, 3U03 and six units from Levels III, IV Mathematics or Statistics or six units from STATS 2D03, 2MB3 and six units from Levels III, IV Economics. (See Note 2 above.)

9-18 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.

**B.A. in Economics** {1150}

**ADMISSION**

Completion of any Level I program with a Cumulative Average of at least 3.5 and an average of at least 4.0 in ECON 1B03 and 1BB3. Credit in Grade 12 Advanced Functions and Introductory Calculus U or Grade 12 Calculus and Vectors U or MATH 1K03 (or 1F03) or equivalent is required.

**NOTES**

1. COMMERCE 2FA3 may be substituted for ECON 2B03.
2. Students with prior credit in a course equivalent to ECON 2B03 are exempt from this requirement. See ECON 2B03 in the **Course Listings** section of this Calendar for equivalencies.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I.

- 30 units from the Level I program completed prior to admission to the program. (See Admission above.)

9 units ECON 2B03, 2G03, 2H03 (See Note 2 above.)
15 units Levels II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03. (See Note 1 above.)
3 units* from MATH 1A03, 1LS3 or 1M03
3 units** from STATS 1L03 (or Grade 12 Mathematics of Data Management U)
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 and 3U03) must not exceed 36.

*If requirement completed in Level I, these units will be taken as electives.

**If requirement completed in Level I or with Grade 12 U courses, these units will be taken as electives.

**Minor in Economics**

**NOTES**

1. 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.
2. COMMERCE 2FA3 may be substituted for ECON 2B03.
3. COMMERCE 2Q03 (or equivalent statistics course) may be substituted for ECON 2B03.

**REQUIREMENTS**

24 units total
6 units Levels I, II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03. (See Notes above.)

**SCHOOL OF GEOGRAPHY AND EARTH SCIENCES**

WEB ADDRESS: http://www.science.mcmaster.ca/geo/

**Honours Arts & Science and Geography** (B.Arts.Sc.; See Arts & Science Program)

**HUMAN GEOGRAPHY SUBFIELDS**

(Applicable to all Geography programs) Human Geography at McMaster encompasses five major subfields or themes: Environment, GIS and Spatial Analysis, Health and Population, Location and Transportation, and Urban Geography. It should be noted that each subfield has its own sequence of courses and prerequisites (See the Course Listings section of this Calendar). Students can elect to take some or all of the upper level courses from different subfields. In addition, there is a core set of courses encompassing research design, data collection and analysis, field work, and the senior thesis or review paper.

**ENVIROMENT**

GEOG 2E13 (GEO 2A03), 3E13, 3E33, 3EP3 (GEO 3A03), 3ER3 (GEO 3H03), 4H33 (GEO 4H03)

**GEOPHYSICAL INFORMATION SYSTEMS (GIS)**

GEOG 2G13 (GEO 2I03), 3G13 (GEO 4I03), 3SA3 (GEO 4S03), 3SR3 (GEO 3Y03), 4G13 (GEO 3I03), 5G13 (GEO 4I03)

**HEALTH AND POPULATION**

GEOG 2H13, 3H33 (GEO 4H03), 3HP3 (GEO 4H03), 4HC3, 4HD3, 4EA3 (GEO 4A03), 4HH3 (GEO 4H03), 4HP3 (GEO 4H03)

**LOCATION AND TRANSPORTATION**

GEOG 2L13 (GEO 2H03), 3LT3 (GEO 3H03), 4LP3, 4LT3 (GEO 4D03)

**URBAN GEOGRAPHY**

GEOG 2U13, 3UG3 (GEO 2HD3), 3UP3 (GEO 4H03), 3UR3 (GEO 3H03), 4UH3 (GEO 4H03), 4UT3

**OTHER COURSES**

Courses not distinguished by subfield include the regional geography courses GEOG 2RC3 (GEO 2HC3), 2RU3 (GEO 2HC3), 3RF3 (GEO 3H03), 3RW3 (GEO 3H03), as well as the Earth Science courses EARTH SC 2GG3 (GEO 2G03), 2MM3 (GEO 2MM3), 2W33 (GEO 2W33), 3AA3 (GEO 3AA3) and 3DD3 (GEO 3DD3). In planning a program, it is important for students to take note of the prerequisites for certain upper-level courses.

**Honours Geography** {2240}

All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Science or Geography courses, please see Geography and Earth Sciences in the Course Listings section of this Calendar.

**ADMISSION**

Completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 6.0 in six units from GEOG 1HA3 (GEO 1H03), 1HB3 (GEO 1H03), 1NJ3 (GEO 1N03), 2X03, 1G03. (See Note 1 below.)
Analysis Specialization

The Honours Geography (G.I.S. and Spatial Analysis) has been cancelled. Students who had intended to register in this program should contact an advisor in the School of Geography and Earth Sciences regarding course selection.

Health Specialization

The Honours Geography (Health Specialization) has been cancelled. Students who are currently registered in this program should contact an advisor in the School of Geography and Earth Sciences regarding course selection.

Environment and Spatial Specialization

The Honours Geography (Environment and Spatial Specialization) has been cancelled. Students who are currently registered in this program should contact an advisor in the School of Geography and Earth Sciences regarding course selection.

Urban Social Geography Specialization

The Honours Geography (Urban Social Geography Specialization) has been cancelled. Students who are currently registered in this program should contact an advisor in the School of Geography and Earth Sciences regarding course selection.

Earth Sciences Specialization

The Honours Geography (Earth Sciences Specialization) has been cancelled. Students who are currently registered in this program should contact an advisor in the School of Geography and Earth Sciences regarding course selection.

Environmental Studies

All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Science or Geography courses, please see Geography and Earth Sciences in the Course Listings section of this Calendar.

Admission

Completion of any Level I program with a Cumulative Average Grade of at least 6.0 including an average of at least 6.0 in six units from GEOG 1HA3 (GEO 1HS3), 1HB3 (GEO 1HU3), ENV IR SC 1A03, 1B03, 1G03. (See Note 1 below.)

Notes

1. GEOG 1HA3 (GEO 1HS3), 1HB3 (GEO 1HU3) and one of ENVIR SC 1A03, 1B03, 1G03 must be completed by the end of 60 units.
2. Students are strongly encouraged to check prerequisites of upper-level Geo courses and to speak with an Undergraduate Advisor in the School of Geography and Earth Sciences regarding course selection.
3. Students enrolled in an Honours Geography program prior to September 2008 may substitute GEO 2HR3 for GEOG 2MA3 (GEO 2HR3).
4. Students enrolled in an Honours Geography program prior to September 2008 may substitute one of STAT 1CC3 or SOC SCI 2J03 for GEOG 2MB3 (GEO 3S03).
5. Students enrolled in an Honours Geography program prior to September 2008 may substitute EARTH SC 3FE3 (GEO 3HF3), for GEOG 3MF3 (GEO 3HF3).
6. Students intending to register in GEOG 4MT6 (GEO 4R06) must submit an application to the instructor by March 1 of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office after February 1. Students will be informed of their permission to register in GEOG 4MT6 on March 15. Registration in this course is conditional upon achieving a CA of at least 7.5.
7. Students interested in completing courses in the Geographic Information Systems (G.I.S.) and Spatial Analysis subfield are strongly encouraged to complete MATH 1K03 if a Grade 12 Mathematics U was not completed.

Requirements

120 units total (Levels I to IV), of which 48 units may be Level I

Level I: 30 Units

30 units from the Level I program completed prior to admission to the program (See Admission above.)

Level II: 30 Units

3 units GEOG 2GI3 (GEO 2I03)
6 units GEOG 2MA3 (GEO 2HR3), GEOG 2MB3 (GEO 3S03) (See Note 2 above.)
9 units from GEOG 2E13 (GEO 2A03), 2H13, 2L13 (GEO 2HA3), 2UI3 (See Note 4 above.)
12 units Electives

Level III and IV: 60 Units

6 units GEOG 3MF3 (GEO 3HF3), 3MR3 (GEO 3R03) (See Note 5 above.)
12 units Level III Geography, excluding GEOG 3RJ3 (GEO 3HJ3), 3RW3 (GEO 3HR3)
12 units Level IV Geography, including one of GEOG 4MR3 (GEO 4CC3) or 4MT6 (GEO 4R06) (See Note 6 above.)
30 units Electives. If not already completed, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

Environment and Spatial Analysis Specialization

The Honours Geography (Environment and Spatial Analysis) has been cancelled. Students who had intended to register in this program should contact an advisor in the School of Geography and Earth Sciences regarding course selection.

Requirements

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

18 units GEOG 2E13 (GEO 2A03), 2G13 (GEO 2I03), 3E3 (GEO 3A03), 3ER3 (GEO 3WE3), 3MR3 (GEO 3R03), 3RA3 (GEO 3AA3), 3RA3 (GEO 3AA3)
6 units GEOG 2MA3 (GEO 2HR3), GEOG 2MB3 (GEO 3S03) (See Notes 2 and 3 above.)
3 units GEOG 3MF3 (GEO 3HF3) (See Note 4 above.)
12 units Level IV Geography or Earth Science, including one of GEOG 4MR3 (GEO 4CC3) or 4MT6 (GEO 4R06) (See Note 6 above.)
12 units Level III Geography or Earth Science, excluding EARTH SC 3AA3 (GEO 3AA3), 3DD3 (GEO 3DD3), GEOG 3RR3 (GEO 3HR3), 3RW3 (GEO 3HR3) (See Note 5 above.)
12 units Levels II or III Geography or Earth Science, excluding EARTH SC 2GG3 (GEO 2GG3), 2MM3 (GEO 2M03), 2WW3 (GEO 2WW3), 3AA3 (GEO 3AA3), 3DD3 (GEO 3DD3), GEOG 2RC3 (GEO 2HH3), 2UR3 (GEO 2UH3), 3RR3 (GEO 3HR3), 3RW3 (GEO 3HR3) (See Note 5 above.)
Combined Honours in Geography and Another Subject

All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Science or Geography courses, please see Geography and Earth Sciences in the Course Listings section of this Calendar.

ADMISSION

Completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 6.0 in six units from GEOG 1HA3 (GEO 1HS3), 1HB3 (GEO 1HU3), ENVIR SC 1A03, 1B03, 1G03 and satisfaction of admission requirements for the Honours program in the other B.A. subject. (See Note 2 below.)

NOTES

1. Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty, with programs in the Faculty of Humanities and with the Arts and Science Program.

2. EFFECTIVE SEPTEMBER 2009 for student who enter an Honours Geography program, GEOG 1HA3 (GEO 1HS3) and 1HB3 (GEO 1HU3) must be completed by the end of 60 units. Students are strongly encouraged to check prerequisites of upper-level Geography courses and to speak with an Undergraduate Advisor in the School of Geography and Earth Sciences regarding course selection.

3. Students enrolled in an Honours Geography program prior to September 2008 may substitute GEO 2E03 for GEO 3MA3 (GEO 2HR3).

4. Students enrolled in an Honours Geography program prior to September 2008 may substitute one of STATS 1CC3 or SOC SCI 2J03 for GEOG 2MB3 (GEO 3S03).

5. Students in a combined Honours program within the Faculty of Social Sciences may substitute GEOG 2MA3 (GEO 2HR3) with the three or six unit Research Methods course specified for the other subject (i.e., GERONTOL 2C03, HEALTHST 2B03, POL SCI 3N06, SOCIOl 2203).

6. Students enrolled in an Honours Geography program prior to September 2008 may substitute EHART SC 3FE3 (GEO 3EF3), for GEOG 3MF3 (GEO 3HM3).

7. Students intending to enrol in GEOG 4MT6 (GEO 4R06) must submit an application to the instructor by March 1 of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office after February 1. Students will be informed of their permission to register in GEOG 4MT6 on March 15. Registration in this course is conditional upon achieving a CA of at least 7.5.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

6 units GEOG 2G13 (GEO 2I03), 3MR3 (GEO 3R03)

6 units GEOG 2MA3 (GEO 2HR3), GEOG 2MB3 (GEO 3S03)

3 units GEOG 3MF3 (GEO 3HF3) (See Note 6 above.)

6 units Level III Geography, excluding GEOG 3RJ3 (GEO 3HJ3), 3RW3 (GEO 3HR3)

9 units Levels II or III Geography, excluding GEOG 2RC3 (GEO 2HC3), 2RU3 (GEO 2HU3), 3RJ3 (GEO 3HJ3), 3RW3 (GEO 3HR3)
FACULTY OF SOCIAL SCIENCES

MINOR IN ENVIROMENTAL STUDIES

All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Science or Geography courses, please see Geography and Earth Sciences in the Course Listings section of this Calendar.

NOTES

1. The Minor in Environmental Studies is not permitted for students who entered the program before September 2008 and are registered in the Honours Geography/Environment and Health Specialization Program.
2. At least nine of the 12 Course List units must be selected from outside the student's own department or school.
3. At least six Course List units must be outside of the School of Geography and Earth Sciences.

COURSE LIST

ANTHROP 2AN3, 2FO3, 2H03, 2L03, 2C03, 3C03, 3Z03, 4AE3, 4P03

BIOLGY 2D03, 2E03, 2F03, 3SS3, 3TT3, 4Y03

ECON 2J03, 3W03

ENVIR SC 3CC3 (GEO 3CC3)

EARTH SC 2GG3 (GEO 2GG3), 2WW3 (GEO 2WW3)

GEOG 2E13 (GEO 2A03), 3EE3, 3ER3 (GEO 3HE3), 3H03 (GEO 3H03), 4E03 (GEO 4A03), 4H03 (GEO 4H03)

HEALTHST 4E03

PHILOS 2G03, 2N03

POL SCI 2E06, 3Z03, 3ZZ3, 3Z06

RELIG ST 2W03

REQUIREMENTS

24 units total

3 units from GEOG 1HA3 (GEO 1HS3), 1HB3 (GEO 1HU3)

3 units from ENVIR SC 1A03, 1B03, 1G03

6 units from GEOG 2E13 (GEO 2A03), 3EE3 (GEO 3HE3), 4 EA3 (GEO 4A03)

12 units from Course List including at least six units from Levels III or IV. (See Notes 2 and 3 above.)

MINOR IN GEOGRAPHIC INFORMATION SYSTEMS (G.I.S.)

All GEO courses have been renumbered and renamed Earth Sciences (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG). To determine the former GEO designations of the new Earth Sciences, Environmental Science or Geography courses, please see Geography and Earth Sciences in the Course Listings section of this Calendar.

NOTES

1. The Minor in Geographic Information Systems (G.I.S.) is not permitted for students who entered the program before September 2008 and who are registered in the Honours Geography/G.I.S. and Spatial Analysis Specialization Program.
2. Progression to Level III courses is conditional upon achieving a grade of at least C+ in GEOG 2G13 (GEO 2I03). Students who do not meet this requirement may not complete the Minor.
3. Students with credit in ISCI 1A24 do not need to complete ENVIR SC 1G03.

REQUIREMENTS

24 units total

6 units from ENVIR SC 1A03, 1B03, 1G03, GEOG 1HA3 (GEO 1HS3), 1HB3 (GEO 1HU3). (See Note 3 above.)

18 units GEOG 2G13 (GEO 2I03), 2MB3 (GEO 3SS3), 3G13 (GEO 4I03), 3SS3 (GEO 4S03), 3SR3 (GEO 3Y03), 4G13 (GEO 3I03). (See Note 2 above.)

CERTIFICATE IN G.I.S.

(Geographic Information Systems)

For further information see the Certificate and Diploma Programs section of this Calendar.

DEPARTMENT OF HEALTH, AGING AND SOCIETY

Web Address: www.socsci.mcmaster.ca/has-dept

Honours Arts & Science and Gerontology (B.Arts.Sc.; See Arts & Science Program)

Honours Arts & Science and Health Studies (B.Arts.Sc.; See Arts & Science Program)

Honours Gerontology

{2265}

Admission

Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a minimum Cumulative Average of 6.0 including a grade of at least B- in GERONTOL 1A03 or 1A06.

Notes

1. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
2. Students who have not taken GERONTOL 1A03 or 1A06 in Level I may be considered for admission to the program if they have an equivalent introductory gerontology course. Such students must contact the Administrator of the Department of Health, Aging and Society regarding equivalency prior to applying.
3. Courses other than those listed below in the Course List may be substituted with the prior permission of the Chair. Students wishing to apply for substitutions must contact the Administrator.
4. Students are strongly recommended to complete HLTH AGE 2A06 and SOC SCI 2G03 (or another approved statistics course) by the end of Level II and to complete HLTH AGE 3A06 by the end of Level III.
5. Students who have completed GERONTOL 2C03 are not required to complete HLTH AGE 2A06 and will complete three additional units of Levels II, III, IV Gerontology or Health, Aging and Society courses.
6. Students who have completed GERONTOL 3R03 are not required to complete HLTH AGE 3A06.
7. Students are strongly recommended to complete GERONTOL 2E03 prior to registration in GERONTOL 3B03.

COURSE LIST

ANTHROP 3Z03, 3Z23

ECON 3D03, 3Q03, 3Z03

GEOG 3H03 (GEO 3HG3), 3HH3 (GEO 3HH3)

HLTHAGE 3H03, 4C03

HEALTHST 2AA3, 2C03, 2D03, 3AA3, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3YY3, 4C03

HTH SCI 3B03

KINESIOL 3S03, 3SS3

PHILOS 2D03, 3C03

RELIG ST 2C03, 2M03, 2N03, 2W03

SOC WORK 3C03, 4L03, 4R03

SOCIOL 3CC3, 3Q03, 3HH3 or other designated and approved courses. (See Note 3 above.)

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

18 units GERONTOL 2B03, 2D03, 3B03, 3D03, 4A06

3 units Level IV Gerontology or Health Aging and Society

15 units Levels II, III or IV Gerontology or Health Aging and Society or courses from Course List

9 units HLTH AGE 2A06, 3A03 (See Notes 4, 5 and 6 above.)

3 units from SOC SCI 2J03, STATS 1CC3 (See Note 4 above.)

42 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 Gerontology and Another Subject

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a minimum Cumulative Average of 6.0 including a grade of at least B- in GERONTOL 1A03 or 1A06 and satisfaction of admission requirements for the Honours B.A. program in the other subject.

NOTES
1. Students enrolled prior to September 2003 in combined Honours B.A. in Gerontology, Health Studies and another subject should consult an academic advisor in the Office of the Associate Dean, Social Sciences for program requirements.
2. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
3. Students who have not taken GERONTOL 1A03 or 1A06 in Level I may be considered for admission to the program if they have an equivalent introductory gerontology course. Such students must contact the Administrator of the Department of Health, Aging and Society regarding equivalency prior to applying.
4. Courses other than those listed below in the Course List may be substituted with the prior permission of the Chair. Students wishing to apply for substitutions must contact the Administrator.
5. Students are strongly recommended to complete HLTH AGE 2A06 and SOC SCI 2J03 (or another approved statistics course) by the end of Level II and complete HLTH AGE 3A03 by the end of Level III.
6. Students who have not completed GERONTOL 2C03 are not required to complete HLTH AGE 2A06 and will complete three additional units of Level II, III, IV Gerontology or Health, Aging and Society courses.
7. Students who have completed GERONTOL 3R03 are not required to complete HLTH AGE 3A03.
8. Students who choose to complete a six unit, Level IV thesis (Independent Study) in the other subject may replace GERONTOL 4A06 with six units of Levels III or IV Gerontology or courses from Course List. This substitution must be approved by the Chair.
9. Students who are registered in the Combined Honours Gerontology and Health Studies program will complete GERONTOL 4A06 and are not required to take HEALTHST 4A03. Students who have completed GERONTOL 3R03 are not required to complete HLTH AGE 3A03.

B.A. in Gerontology

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a minimum Cumulative Average of 3.5 including a grade of at least C- in GERONTOL 1A03 or 1A06.

NOTES
1. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
2. Students who have not taken GERONTOL 1A03 or 1A06 in Level I may be considered for admission to the program if they have an equivalent introductory gerontology course. Such students must contact the Administrator of the Department of Health, Aging and Society regarding equivalency prior to applying.
3. Courses other than those listed below in the Course List may be substituted with the prior permission of the Chair. Students wishing to apply for substitutions must contact the Administrator.
4. Students in the B.A. in Gerontology and Social Work program should consult with the Chair regarding GERONTOL 3B03 (the Gerontology Field Observation requirement) and SOC WORK 3D06.
5. Students are strongly recommended to complete GERONTOL 2E03 prior to registration in GERONTOL 3B03.
6. Students who have completed GERONTOL 2C03 are not required to complete HLTH AGE 2A06 and will complete three additional units of Levels II, III or IV GERONTOL or Health Aging and Society courses.

COURSE LIST
ANTHROP 3Z03, 3ZZ3
ECON 3D03, 3Q03, 3Z03
GEOG 3HH3 (GEO 2HG3), 3HH3 (GEO 3HH3)
HLTH AGE 3H03, 4C03
HEALTHST 2AA3, 2C03, 2D03, 3AA3, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3Y03, 4C03
HHT SCi 3BB3
KINESIOL 3S03, 3SS3
PHILOS 2D03, 3C03
RELIG ST 2C03, 2M03, 2N03, 2WW3
SOC WORK 3C03, 4L03, 4R03
SOCIOL 3CC3, 3G03, 3HH3
or other designated and approved courses. (See Note 4 above.)

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
12 units GERONTOL 2B03, 2D03, 3B03, 3D03
6 units GERONTOL 4A06 or if available, a thesis in the other subject (See Notes 8 and 9 above.)
3 units Level IV Gerontology or Health Aging and Society
9 units Levels II, III or IV Gerontology or Health Aging and Society or courses from Course List (See Note 4 above.)
36 units Courses as specified for the other subject
9 units HLTH AGE 2A06, 3A03 (See Notes 5 and 7 above.)
3-6 units from SOC SCI 2J03, 3CC3* (or GERONTOL 3G03), or in combined programs within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject.
9-12 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.

*If requirement completed in Level I, these units will be taken as electives.

Minor in Gerontology

ADMISSION
Enrolment in the Minor is limited. Selection is based on academic achievement but requires, as a minimum, completion of GERONTOL 1A03 with a minimum grade of B- and registration in a four- or five-level program. The department will admit a maximum of 10 students to the Minor in Gerontology each year.
NOTES
1. Application for admission (forms available from the Department of Health, Aging and Society) must be made to the Chair by April 30.
2. Students may not transfer from the Minor in Gerontology to another Gerontology program except by the normal application process.
3. Students who completed a Minor in Gerontology may substitute KINÉSIOLOGIE 4S3S for GERONTOL 2B03.
4. Students completing a Minor in Gerontology must contact the Department of Health, Aging and Society to request permission for their Fall/Winter Gerontology courses by May 31.

COURSE LIST
ANTHROP 3Z03, 3ZZ3
CON 3D03, 3003, 3Z03
GEOG 3HH3 (GEO 2HH3), 3HH3 (GEO 3HH3)
GERONTOL 2F03, 2P03, 3H03, 3J03, 3K03, 3L03, 3M03, 3N03
HTH AGE 3H03, 4C03
HEALTHST 2A03, 2C03, 2D03, 3A03, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3YY3, 4C03
HTH SCI 3B03
KINÉSIOLOGIE 3Z03, 3SS3
PHILO 2D03, 3C03
RELIG ST 2C03, 2M03, 2N03, 2WW3
SOC WORK 3C03, 4L03, 4R03
SOCIOL 3CC3, 3G03, 3HH3

REQUIREMENTS
24 units total
3 units GERONTOL 1A03
9 units GERONTOL 2B03, 2D03, 3D03 (See Note 2 above.)
12 units from Course List or Health Aging and Society

Honours Health Studies (2273)

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a minimum Cumulative Average of 6.0 including a grade of at least B- in 3 units from HEALTHST 1A03, 1E03, 1S03. Students are strongly encouraged to complete HLTHAGE 2A06 with three units of Level II, III or IV Health Studies.

Notes
1. Application for admission must be made by April 30. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
2. Students who entered the program prior to September 2004 may substitute HEALTHST 3A03 for 3AAS.
3. Students who have completed GERONTOL 2B03 or 3Q03, prior to September 2005, may use these units to fulfill Course List requirements.

Course List
(Students are responsible for ensuring that course prerequisites are fulfilled.)
ANTHROP 2AN3, 2U03, 3C03, 3Y03, 3Z03, 3ZZ3
CON 3Z03
GEOG 3HH3 (GEO 3HH3)
GERONTOL 2F03, 3H03, 3K03, 3L03, 3N03
HTH SCI 2G03, 2J03
HISTORY 3V03
INDIG ST 3H03, 3HH3
KINÉSIOLOGIE 3A03, 3R03, 3SS3

PHILO 2D03, 3C03
PSYCH 3B03, 3N03,
RELIG ST 2C03, 2M03, 2N03, 2WW3
SOC WORK 3C03, 3O03
SOCIOL 3G03, 3HH3
WOMEN ST 2H03

REQUIREMENTS
120 units total (Levels I to IV, of which 48 units may be Level I)
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
3 units from HEALTHST 2A03, 2AA3
3 units HEALTHST 3A03 (See Note 4 above.)
15 units from Levels II, III, IV, Health Aging and Society, Health Studies or GERONTOL 4103
3 units HEALTHST 4A03
6 units from Level IV Health Aging and Society or Health Studies
12 units from Course List (See Notes 3 and 4 above.)
6 units HLTHAGE 2A06 (See Note 6 above.)
3 units HLTHAGE 3A03 (See Note 7 above.)
3 units from SOC SCI 2J03 or STATS 1C03* or an equivalent statistics course
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.
*If requirement completed in Level I, these units will be taken as electives.

Combined Honours in Health Studies and Another Subject

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a minimum Cumulative Average of 6.0 including a grade of at least B- in 3 units from HEALTHST 1A03, 1E03, 1S03, and satisfaction of admission requirements for the Honours B.A. program in the other subject.

NOTES
1. Application for admission must be made by April 30. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
2. Students are strongly encouraged to complete HLTHAGE 2A06 to satisfy the Research Methods requirement of the degree, but may complete the Research Methods course as required by the other component.
3. Students who previously completed SCIENCE 2G03 may use these units to fulfill Course List requirements.
4. Students who entered the program prior to September 2004 may substitute HEALTHST 3A03 for 3AA3.
5. Students who entered the program prior to September 2004 or students who have permission of the Chair to complete the Research Methods as required by their other component will replace HEALTHST 3G03 with three units of Level II, III or IV Health Studies.
6. Students who completed GERONTOL 2B03 or 3Q03, prior to September 2005, may use these units to fulfill Course List requirements.
7. Students who have completed HEALTHST 2B03 are not required to complete HLTHAGE 2A06 and will complete three additional units of Levels II, III or IV Health Aging and Society.
8. Students who have completed HEALTHST 3G03 are not required to complete HLTHAGE 3A03.

Course List
(Students are responsible for ensuring that course prerequisites are fulfilled.)
ANTHROP 2AN3, 2FF3, 2U03, 3C03, 3Y03, 3Z03, 3ZZ3
CON 3Z03
GEOG 3HH3 (GEO 3HH3)
GERONTOL 2F03, 3H03, 3K03, 3L03, 3N03
HTH SCI 2G03, 2J03
HISTORY 3V03
INDIG ST 3H03, 3HH3
KINÉSIOLOGIE 3A03, 3R03, 3SS3
REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I 30 units from the Level I program completed prior to admission to the program. (See Admission above.) 3 units from HEALTHST 2A03, 2AA3 3 units HEALTHST 3AA3 (See Note 4 above.) 12 units Levels II, III or IV Health Aging and Society, Health Studies or GERONTOL 4103, of which at least six units must be at Level IV 3 units HEALTHST 4A03 9 units from Course List (See Notes 3 and 6 above.) 36 units courses specified for the other subject 3-6 units HLTH AGE 2A06 or an equivalent research methods course if required by the other subject (See Notes 2 and 7 above.) 3 units HLTH AGE 3A03 (See Notes 5 and 8 above.) 3-6 units from SOC SCI 2J03 or STATS 1C3* or an equivalent statistics course as prescribed by other Social Sciences programs. 9-15 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. *If requirement completed in Level I, these units will be taken as electives.

B.A. in Health Studies

{1273}

ADMISSION

Enrollment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a minimum Cumulative Average of 3.5 including a grade of at least C- in 3 units from HEALTHST 1A03, 1E03 or 1S03.

NOTES

1. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar. 2. Courses other than those listed below in Course List may be substituted with the prior permission of the Chair. Students wishing to apply for substitutions must contact the Administrator of the Department of Health, Aging and Society. 3. Students who previously completed SCIENCE 2G03 before September 2003 may use these units toward the Minor requirements. 4. Students who completed GERONTOL 2B03, 3Q03 or HEALTHST 3A03 prior to September 2005, may use these units to fulfill Course List requirements. 5. Students who completed GERONTOL 2B03 or 3Q03, prior to September 2005, may use these units to fulfill Course List requirements. 6. Students who completed HEALTHST 2B03 are not required to complete HLTH AGE 2A06 and will complete three additional units of Levels II, III or IV Health Aging and Society or Health Studies.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I 30 units from the Level I program completed prior to admission to the program (See Admission above.) 3 units from HEALTHST 2A03, 2AA3 3 units HEALTHST 3AA3 (See Note 4 above.) 6 units HLTH AGE 2A06 (See Note 6 above.) 6 units Levels II or III Health Aging and Society or Health Studies, of which at least three units must be at Level III. 6 units from Course List (See Notes 3 and 5 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 Health Studies

NOTES

1. Students are responsible for ensuring that course prerequisites are fulfilled. 2. Students who completed SCIENCE 2G03 before September 2003 may use these units toward the Minor requirements. 3. KINESIOL 2G03 and 3A03 may be used to satisfy Health Studies requirements for Kinesiology students pursuing a Minor in Health Studies. 4. Students who completed GERONTOL 2B03, 3Q03 or HEALTHST 3A03 prior to September 2005, may use these units to fulfill Course List requirements.

REQUIREMENTS

24 units total 3 units from Level I Health Studies 21 units from the Course List or Health Aging and Society

COMBINED B.A. IN INDIGENOUS STUDIES AND ANOTHER SUBJECT

See the Combined B.A. Indigenous Studies and Another Subject section of this Calendar.

DEPARTMENT OF KINESIOLOGY

WEB ADDRESS: http://www.mcmaster.ca/kinesiology/

Honours Kinesiology (B.Sc.)
(See B.Sc. program in Kinesiology, Faculty of Science, Department of Kinesiology)

Honours B.Sc. Kinesiology
(See B.Sc. Kinesiology, Faculty of Science, Department of Kinesiology)

KINESIOLOGY 1

{0309}

NOTE

All students admitted to Kinesiology I register in the Faculty of Science in Level I. See Department of Kinesiology in the Faculty of Science section of this calendar. The Department of Kinesiology offers two Honours program options beyond Level I; an Honours Bachelor of Kinesiology and an Honours Bachelor of Science.
required Kinesiology courses are identical for both programs and are differentiated only by the elective courses. Both programs allow for the completion of prerequisites for various professional degree programs. For further information and program requirements for Honours Bachelor of Science Kinesiology, see Department of Kinesiology in the Faculty of Science section of this calendar.

Honours Bachelor of Kinesiology (B.Kin.) {2303}

ADMISSION
Completion of Kinesiology I with a Cumulative Average of at least 6.0 Including an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03.

NOTE
Kinesiology courses may not be used toward the elective component of the degree.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I

LEVEL I: 30 UNITS
30 units from Kinesiology I completed prior to admission to the program. (See Admission above.)

LEVEL II: 30 UNITS (EFFECTIVE 2008-2009)
18 units KINESIOL 2A03, 2C03, 2CC3, 2E03 2F03, 2G03
3 units from SOC SCI 2J03, STATS 2B03
9 units Electives

LEVELS III AND IV: 60 UNITS (EFFECTIVE 2009-2010)
36 units Levels III or IV Kinesiology of which at least nine units must be Level IV
24 units Electives (See Note above.)

Honours Bachelor of Arts in Labour Studies (B.Lab.St.) {2640}

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from LABR ST 1A03 and one of LABR ST 1C03 or 1203.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I

LEVELS I AND II: 30 UNITS
30 units Levels I or II in Labour Studies (See Note 1 above.)
30 units Electives (See Note 2 above.)

"If a requirement completed in Level I these units may be taken as electives.

LABOUR STUDIES

WEB ADDRESS: http://socserv.mcmaster.ca/labourstudies/

Honours Labour Studies {2640}

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from LABR ST 1A03 and one of LABR ST 1C03 or 1203.

NOTES
1. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
2. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.
3. Students who entered the program prior to September 2003, and who completed LABR ST/SOCIOL 2106, will use this course to satisfy six units of Course List 1 and not Course List 2.
4. Students who have completed a six unit Research Methods/Statistics course need not complete LABR ST 4D03 or 4E03.
5. Students are encouraged to consult the Labour Studies web site at: http://socserv.mcmaster.ca/labourstudies.
6. Students who entered the program prior to September 2003, and who completed LABR ST/SOCIOL 2106, will use this course to satisfy six units of Course List 1 and not Course List 2.
7. Students who have completed LABR ST 1203 may substitute three units Level II or III Labour Studies for LABR ST 2E03.
8. Students who completed ECON 2E03 or HISTORY 3N03 prior to September 2006 may use these as units towards Course List 2.

COURSE LIST 1

COMMERCE 2BA3, 2BC3, 2BD3
LABR ST 2B03, 2BB3, 2G03, 3A03, 3B03, 3C03, 3D03, 3E03, 3F03, 3G03, 3J03, 3W03
WOMEN ST 2A03

COURSE LIST 2

COMMERCE 3BC3
ECON 2F03, 2K03, 2N03
GERONTOL 3J03
HISTORY 3W03, 3WW3
POL SCI 3D03, 3E03, 3EE3, 3F03
SOCIOl 2E06, 2I03, 2Q06, 2R03, 2RR3, 2V06, 3E06, 3L3

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (See Admission above.)

18 units LABR ST 2A03, 2C03, 2E03, 3H03, 4A06 (See Note 8 above.)

3 units from Course List 1, where at least nine units must be Level II or III Labour Studies for LABR ST 2E03.

3 units from Course List 2 (See Notes 5 and 9 above.)

3 units from SOC SCI 2J03 or STATS 1CC3 or an equivalent Research Methods/Statistics course as prescribed by the other Social Sciences Programs. (See Note 4 above.)

42-45 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities or the Department of Religious Studies.

Combined Honours in Labour Studies and Another Subject

ADMISSION
Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from LABR ST 1A03 and one of LABR ST 1C03 or 1203. Satisfaction of admission requirements for the Honours B.A. program in the other subject.

NOTES
1. Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty, with programs in the Faculty of Humanities and with the Arts and Science Program.

2. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.


4. Students may not transfer to another Labour Studies program except by the normal application process.

5. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.

6. Students combining Labour Studies with a Humanities subject or with Religious Studies must complete LABR ST 4A06 and SOC SCI 2J03 or STATS 1CC3. Students in other Combined Honours Programs may complete the Honours Seminar requirement as specified by the other Department and replace LABR ST 4A06 with six units Level III Labour Studies courses.

7. Students who entered the program prior to September 2003, and who completed LABR ST/SOCIOL 2106, will use this course to satisfy six units of Course List 1 and not Course List 2.
NOTES

1. Application for admission (forms available from Labour Studies Office), must be made to the Chair, Admissions Committee, by April 1.
2. Students working towards a Minor in Labour Studies may take no more than three units of Level IV Labour Studies courses.
4. Students may not transfer from the Minor in Labour Studies to another Labour Studies program except by the normal application process.
5. Students who have completed LABR ST 2A06 may take nine units Levels II, III, IV Labour Studies instead of 12 units.

REQUIREMENTS

24 units total
6 units LABR ST 1A03 and 1C03 (or 1Z03)
6 units LABR ST 2A03, (See Note 5 above.) 2C03
12 units Levels II, III or IV Labour Studies (See Notes 2 and 5 above.)

DEPARTMENT OF POLITICAL SCIENCE

WEB ADDRESS: http://www.socsci.mcmaster.ca/polisci/

Honours Arts & Science and Political Science (B.Arts.Sc.; See Arts & Science Program)

FIELDS OF STUDY

CANADIAN POLITICS
POL SCI 2D03, 2DD3, 2F03, 2L03, 3C03, 3FF3, 3GG3, 3HH3, 3JJ3, 3NN6, 3SP3, 3Z03, 4A06, 4T06

COMPARATIVE POLITICS
POL SCI 2A06, 2B03, 2C03, 2N03, 2XX3, 3Z03, 3BB3, 3D03, 3EE3, 3F03, 3G03, 3GG3, 3I03, 3KK3, 3LL3, 3M03, 3MM3, 3T03, 3V03, 3Y03, 3YY3, 4A03, 4AA6, 4D06, 4G06, 4L06, 4Q06, 4R06

INTERNATIONAL RELATIONS
POL SCI 2BB3, 2C03, 2H03, 2I03, 2J03, 2XX3, 3AA3, 3E03, 3EE3, 3FF3, 3KK3, 3P03, 3Q03, 3QQ3, 3X03, 3Y03, 4D06, 4M06, 4MM6

POLITICAL THEORY
POL SCI 2G06, 3CC3, 4E06, 4P06

PUBLIC POLICY
POL SCI 2L03, 3D03, 3EE3, 3FF3, 3LL3, 3M03, 3S03, 3SP3, 3U03, 3YY3, 3Z03, 4A03, 4G06, 4L06, 4O06, 4R06

The following courses while satisfying the requirements of the program are not specific to any field of study: POL SCI 1G06, 3N06, 3U03, 4Z06, 4ZZ6

Honours Political Science

{2450}

ADMISSION

Completion of any Level I program with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1G06.

NOTES

1. Students should be alerted to those Levels 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.
2. Effective 2009-2010 for students entering Level II of an Honours B.A. or B.A. program in Political Science, one course from Canadian Politics Field of Study will be required (See Fields of Study above). For students who entered the program prior to 2009-2010, three units of Canadian Politics is strongly recommended.
3. POL SCI 3N06 and 2006 are required for students enrolled in Honours Political Science programs and they are recommended for students in the B.A. program.
4. Students may take a maximum of 12 units of Level IV Political Science.
REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
6 units POL SCI 2006
24 units Levels II, III Political Science of which a maximum of 12 units may be Level II (See Note 2 above.)
12 units Level IV Political Science (See Note 4 above.)
6 units POL SCI 3N06
42 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 program with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1G06. Satisfaction of the admission requirements for the Honours program in the other subject.

NOTES
1. Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty, with programs in the Faculty of Humanities and with the Arts and Science Program.
2. Effective 2009-2010 for students entering Level II of an Honours B.A. or B.A. program in Political Science, one course from Canadian Politics Field of Study will be required. (See Fields of Study above.) For students who entered the program prior to 2009-2010, three units of Canadian Politics is strongly recommended.
3. Students should be alerted 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.
4. POL SCI 2006 and 3N06 are required for students enrolled in Honours Political Science programs and they are recommended for students in the B.A. program.
5. Students may take a maximum of 10 units Level IV Political Science.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
6 units POL SCI 2006
9 units Level III Political Science
9 units Levels II, III Political Science (See Note 2 above.)
6 units Level IV Political Science (See Note 4 above.)
36 units courses specified for the other subject
6 units POL SCI 3N06 or in combined programs within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject.
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. 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 54 units.)

B.A. in Political Science {1450}

ADMISSION
Completion of any Level I program, with a Cumulative Average of at least 3.5 including a grade of at least C- in POL SCI 1G06.

NOTES
1. Students should be alerted 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.

2. Effective 2009-2010 for students entering Level II of an Honours B.A. or B.A. program in Political Science, one course from Canadian Politics Field of Study will be required. (See Fields of Study above.) For students who entered the program prior to 2009-2010, three units of Canadian Politics is strongly recommended.
3. POL SCI 2006 and 3N06 are required for students enrolled in Honours Political Science programs and they are recommended for students in B.A. programs.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
12 units Level II Political Science
12 units Level III Political Science (See Note 2 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. (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 students registered in Level IV of an Honours Political Science program.

REQUIREMENTS

24 units total
6 units Level I Political Science
18 units Levels II, III, IV Political Science of which up to 12 units may be Level II

DEPARTMENT OF PSYCHOLOGY, NEUROSCIENCE AND BEHAVIOUR

WEB ADDRESS: http://www.mcmaster.ca/psychology

Honours Arts & Science and Psychology (B.A.Sc.; See Arts & Science Program)

Honours Biology and Psychology (B.Sc.) (See 6.Sc. programs in Biology, Faculty of Science, Department of Biology)

Honours Linguistic Cognitive Science (B.A.)
(See Faculty of Humanities, Department of Linguistics and Languages)

Honours Psychology, Neuroscience and Behaviour (B.Sc.) (Formerly Honours Psychology) (See Faculty of Science, Department of Psychology, Neuroscience and Behaviour)

Honours Psychology, Neuroscience and Behaviour (B.Sc.) (Music Cognition Specialization)
(See Faculty of Science, Department of Psychology, Neuroscience and Behaviour)

Honours Psychology, Neuroscience and Behaviour (B.A.)

FORMERLY HONOURS PSYCHOLOGY (B.A.)

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0; a grade of at least B- in each of PSYCH 1A03 and 1A23; credit in one of BIOLOGY 1A03, 1A53 or 1K03; and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

EFFECTIVE 2009-2010: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0; a grade of at least B- in each of PSYCH 1X03 and 1X33 (or PSYCH 1A03 and 1A23); credit in one of BIOLOGY 1A03, 1M03 (or 1A53), 1P03 (or 1K03); and credit in MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03.

WEB ADDRESS: http://www.mcmaster.ca/psychology

Honours Arts & Science and Psychology (B.A.Sc.; See Arts & Science Program)

Honours Biology and Psychology (B.Sc.) (See 6.Sc. programs in Biology, Faculty of Science, Department of Biology)

Honours Linguistic Cognitive Science (B.A.)
(See Faculty of Humanities, Department of Linguistics and Languages)

Honours Psychology, Neuroscience and Behaviour (B.Sc.) (Formerly Honours Psychology) (See Faculty of Science, Department of Psychology, Neuroscience and Behaviour)

Honours Psychology, Neuroscience and Behaviour (B.Sc.) (Music Cognition Specialization)
(See Faculty of Science, Department of Psychology, Neuroscience and Behaviour)

Honours Psychology, Neuroscience and Behaviour (B.A.)

FORMERLY HONOURS PSYCHOLOGY (B.A.)

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0; a grade of at least B- in each of PSYCH 1A03 and 1A23; credit in one of BIOLOGY 1A03, 1A53 or 1K03; and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

EFFECTIVE 2009-2010: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0; a grade of at least B- in each of PSYCH 1X03 and 1X33 (or PSYCH 1A03 and 1A23); credit in one of BIOLOGY 1A03, 1M03 (or 1A53), 1P03 (or 1K03); and credit in MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03.
NOTES
1. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.

2. Students who entered the program prior to September 2008 but after September 2002, must have successfully completed BIOLOGY 1A03, 1A33 or 1K03 by the end of Level II.

3. Students with credit in PSYCH 2R3, do not need to complete PSYCH 2RA3 and 2RB3. Beginning September 2006, students with credit in STATS 1CC3 but not PSYCH 2R3 must complete both PSYCH 2RA3 and 2RB3 for any Honour's B.A. Psychology program.

4. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1A33 in Level I and consult a departmental advisor.

5. Students considering applying to graduate school should complete a course with a strong research component such as PSYCH 3QQ3, 4QQ3, 4D06, 4D09.

6. Students who completed PSYCH 3QQ3 or 4QQ3 prior to September 2007, may use this credit toward the Level III lab requirement. Beginning September 2007, PSYCH 3QQ3 and 4QQ3 no longer fulfill this requirement.

7. Effective September 2008, students must complete a Psychology lab course prior to registering in PSYCH 4D06 or 4D09.

8. Students who previously completed NEURCOMP 3W03 (Neural Computation) or PSYCH 3BL3 (Laboratory in Human Electrophysiology) may use these units as three units of Course List 1.

9. MATH 1B03 (Linear Algebra I) is strongly recommended for students intending to pursue graduate work in biology or neuroscience. COMP SCI 1MA3 (Computer Based Problem Solving) or PHYSICS 2G03 (Scientific Computing) is strongly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate research in biology.

10. Students who entered the program prior to September 2002, may replace six units of courses chosen from the Course List 2 (Capstone Courses) with any six units of Levels III or IV Psychology.

11. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.

12. The Department of Psychology, Neuroscience and Behaviour pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09) and the Individual Study courses (PSYCH 2QQ3, 3QQ3, 4QQ3, 4Q3Q). Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3EE3, 3L03, 3LL3, 3M33, 3S03, 3V03). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the fall term. Ballots can be obtained on the Department of Psychology, Neuroscience and Behaviour web site at: http://www.mcmaster.ca/psychology. Priority will be given to students in Honours Psychology, Neuroscience and Behaviour, and Combined Honours Psychology programs.

COURSE LIST 1 (LAB COURSES)
PSYCH 3EE3, 3L03, 3L33, 3M33, 3S03, 3V03

COURSE LIST 2 (CAPSTONE COURSES)
PSYCH 3IO3, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4Q3Q, 4R03, 4Y03

COURSE LIST 3 (PSYCHOLOGY COURSE LIST)
All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)

BIOL0GY 4T03
HTH SCI 4BB3
KINESIOL 3E03, 4P03
MUSICOOG 2A03, 3A03, 3B03

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I.

LEVEL I: 30 UNITS
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
4. Prior to registering in PSYCH 4D06, 4D09, students must complete a Psychology lab course.
5. PSYCH 3Q03 or 4Q03 will only fulfill the lab requirement if taken under the supervision or co-supervision of a faculty member in the Department of Psychology, Neuroscience and Behaviour.
6. MATH 1B03 (Linear Algebra I) is strongly recommended for students intending to pursue graduate work in psychology or neuroscience. COMP SCI 1M03 (Computer Based Problem Solving) or PHYSICS 2G03 (Scientific Computing) is strongly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate work in Psychology.
7. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
8. The Department of Psychology, Neuroscience and Behaviour pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09) and the Individual Study courses (PSYCH 2Q03, 3Q03, 3Q03, 4Q03, 4Q03). Students wishing to take these courses must compete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03). Students wishing to take these courses must compete and submit a ballot by mid April. Specific dates will be announced during the fall term. Ballots can be obtained on the Department of Psychology, Neuroscience and Behaviour website at: http://www.mcmaster.ca/psychology. Priority will be given to students in Honours Psychology, Neuroscience and Behaviour, and Combined Honours Psychology programs.

**COURSE LIST 1 (LAB COURSES)**

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<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
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<tr>
<td>PSYCH 3EE3, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4Q03</td>
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**COURSE LIST 2 (CAPSTONE COURSES)**

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</tbody>
</table>

**COURSE LIST 3 (PSYCHOLOGY COURSE LIST)**

All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I

**LEVEL I: 30 UNITS**

- 30 units from the Level I program completed prior to admission to the program. (See Admission above.)

**LEVEL II: 30 UNITS**

- 6 units PSYCH 2RA3, 2RB3 (See Note 2 above.)
- 9 units PSYCH 2E03, 2H03, 2TT3
- 3 units from PSYCH 2D03, 2F03
- 3 units MUSICCOG 2A03
- 6 units MUSIC 1CC3, 1D03
- 3 units Electives

**LEVEL III: 30 UNITS**

- 12 units from Course List 3
- 3 units from Course List 1 (See Notes 4, 5 and 8 above.)
- 6 units MUSICCOG 3A03, 3B03
- 6 units MUSIC 2CC3, 2H03
- 3 units Electives (See Notes 6 and 7 above.)

**LEVEL IV: 30 UNITS**

- 6 units from Course List 3
- 9 units from Course List 3, and six units from Course List 2 or MUSICCOG 4D06; or PSYCH 4D09 (See Note 8 above.)
- 15 units Electives (See Notes 6 and 7 above.)

**Honours Psychology Specializations**

The Honours Specialization programs are being phased out. Registration in Level III of each of these programs will be last available in September 2008-2009.

Upon satisfactory completion of Level II Honours Psychology, and subject to meeting the admission requirements, students may choose to register in one of the following four specializations. Students who choose not to specialize will remain registered in the Honours Psychology program.

**COURSE LIST 1 (LAB COURSES)**

<table>
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<th>Course Code</th>
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**COURSE LIST 2 (CAPSTONE COURSES)**

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**COURSE LIST 3 (PSYCHOLOGY COURSE LIST)**

All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)

**BIOLGYY 2T03**

**HTH SCI 4BB3**

**KINESIOL 3E03, 4P03**

**MUSICCOG 2A03, 3A03, 3B03**

**Behavioural Neuroscience**

**Specialization**

**ADMISSION**

Completion of Level II Honours Psychology, including PSYCH 2F03.

**REQUIREMENTS**

**LEVEL III: 30 UNITS**

- 9 units from PSYCH 2D03, 3A03, 3AA3, 3BN3, 3DO3, 3FA3, 3HH3, 3J03, 3M03, 3Y03
- 6 units from Course List 3; or three additional units from PSYCH 2D03, 2E03, 2F03, 2H03, 2TT3 and three units from Course List 3
- 3 units from Course List 1. PSYCH 3EE3, 3L03, 3MM3 or 3V03 is recommended.
- 12 units Electives

**LEVEL IV: 30 UNITS**

- 6 units from PSYCH 2D03, 3A03, 3AA3, 3BN3, 3DO3, 3FA3, 3HH3, 3J03, 3M03, 3Y03, 4BN3, 4F03, 4Y03, BIOLGGY 4T03
- 12 units six units from Course List 3 and six units from Course List 2 or three units from Course List 3 and PSYCH 4D09
- 12 units Electives

**Cognition and Perception**

**Specialization**

**ADMISSION**

Completion of Level II Honours Psychology, including PSYCH 2E03, 2H03.

**REQUIREMENTS**

**LEVEL III: 30 UNITS**

- 12 units from PSYCH 3A03, 3AA3, 3BB3, 3BN3, 3DO3, 3FA3, 3HH3, 3J03, 3M03, 3U03, 3V03
- 3 units from Course List 3; or three additional units from PSYCH 2D03, 2E03, 2F03, 2H03, 2TT3
- 3 units from Course List 1. PSYCH 3EE3, 3LL3, 3MM3 or 3V03 is recommended.
- 12 units Electives

**LEVEL IV: 30 UNITS**

- 6 units from PSYCH 3A03, 3AA3, 3BB3, 3BN3, 3DO3, 3FA3, 3HH3, 3J03, 3M03, 3U03, 3V03, 4BN3, 4C03, 4D03
- 12 units six units from Course List 3 and six units from Course List 2 or three units from Course List 3 and PSYCH 4D09
- 12 units Electives

**Developmental Specialization**

**ADMISSION**

Completion of Level II Honours Psychology.

**REQUIREMENTS**

**LEVEL III: 30 UNITS**

- 3 units PSYCH 3G03
- 6 units from PSYCH 3HH3, 3I03, 3JJ3
- 6 units from Course List 3; or three additional units from PSYCH 2D03, 2E03, 2F03, 2H03, 2TT3 and three units from Course List 3
- 3 units from Course List 1. PSYCH 3EE3, 3LL3 or 3V03 is recommended.
- 12 units Electives
Evolution and Social {2460880}

Behavior Specialization

ADMISSION
Completion of Level II Honours Psychology, including PSYCH 2TT3.

REQUIREMENTS

LEVEL III: 30 UNITS
9 units
PSYCH 2D03, 3A03, 3F03, 3JJ3, 3M03, 3T03, 3Y03, 3Y3Y
6 units
from Course List 3; or three additional units from
PSYCH 2D03, 2E03, 2F03, 2H03, 2TT3 and three units
from Course List 3
3 units
from Course List 1. PSYCH 3LL3 or 3S03 is recommended.
(See Notes 7 and 8 above.)

LEVEL IV: 30 UNITS
6 units
PSYCH 2C03, 3A03, 3F03, 3JJ3, 3M03, 3T03, 3Y03, 3YY, 4R03, 4Y03
6 units
from Course List 3 and six units from Course
List 2
or
three units from Course List 3 and PSYCH 4D09
12 units
Electives

Combined Honours in
Psychology and Another Subject (B.A.)

ADMISSION
2008-2009 ONLY: Enrolment in this program is limited.. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0; a grade of at least B- in each of PSYCH 1A03 and 1AA3; credit in one of BIOLOGY 1A03, 1AA3 or 1K03; and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

EFFECTIVE 2009-2010: Enrolment in this program is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Cumulative Average of at least 6.0; a grade of at least B- in each of PSYCH 1X03 and 1XX3 (or 1AA3 and 1AA3); credit in one of BIOLOGY 1A03, 1AA3 or 1K03; and credit in MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03.

NOTES
1. Application for admission must be made by April 1. See Admission to Level II Programs in Academic Regulations in this section of the Calendar.
2. Students who entered the program prior to September 2008 but after September 2002, must have successfully completed BIOLOGY 1A03, 1AA3 or 1K03 by the end of Level II.
3. Subject to meeting admission requirements, students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty, with programs in the Faculty of Humanities and with Arts and Science Programs.
4. Students with credit in PSYCH 2RR3, do not need to complete PSYCH 2RA3 and 2RB3. Beginning September 2006, students with credit in STATIST 1C03 but not PSYCH 2RR3 must complete both PSYCH 2RA3 and 2RB3 for any Honours B.A. Psychology program.
5. Students wishing to have more mathematical statistics may replace PSYCH 2RA3 and 2RB3 with STATS 2D03 and 2MB3. In this case, students are advised to take MATH 1A03 in Level I and consult with a departmental advisor.
6. Students considering applying to graduate school should complete a course with a strong research component such as PSYCH 3QQ3, 4QQ3, 4D06, 4D09.
7. Students who completed PSYCH 3QQ3 or 4QQ3 prior to September 2007, may use this credit toward the Level III lab requirement. Beginning September 2007, PSYCH 3QQ3 and 4QQ3 no longer fulfill this requirement.
8. Effective September 2008, students must complete a Psychology lab course prior to registering in PSYCH 4D06, 4D09.
9. Students who previously completed NEURCOMP 3W03 (Neural Computation) or PSYCH 3BL3 may use these units as three units of Course List 1.
10. MATH 1B03 (Linear Algebra I) is strongly recommended for students intending to pursue graduate work in psychology or neuroscience. COMP SCI 1MA3 (Computer Based Problem Solving) or PHYSICS 2G03 (Scientific Computing) is strongly recommended for students interested in neuroscience, cognition and perception, and for students intending to pursue graduate work in psychology.
11. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
12. The Department of Psychology, Neuroscience and Behaviour. pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09), and the Individual Study courses (PSYCH 2QQ3, 3QQ3, 4QQ3, 4Q03, 4Q03). Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3EE3, 3L03, 3LL3, 3M03, 3S03, 3V03). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the fall term. Ballots can be obtained on The Department of Psychology, Neuroscience and Behaviour web site at: http://www.mcmaster.ca/pysychology. Priority will be given to students in Honours Psychology, Neuroscience and Behaviour and Combined Honours Psychology programs.

COURSE LIST 1 (LAB COURSES)
PSYCH 3EE3, 3L03, 3LL3, 3M03, 3S03, 3V03

COURSE LIST 2 (PSYCHOLOGY COURSE LIST)
All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)
BIOL0GY 4T03
HTH SCI 4BB3
KINESIOL 3E03, 4P03
MUSI/C0G 2A03, 3A03, 3B03

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I

LEVEL II: 30 UNITS
6 units
PSYCH 2RA3, 2RB3 (See Notes 4 and 5 above.)
3 units
from PSYCH 2D03, 2F03
3 units
PSYCH 2E03, 2H03, 2TT3
12 units
courses as specified for the other subject
6 units
Electives

LEVEL III: 30 UNITS
3 units
Course List 1 (See Notes 7, 8, 9 and 12 above.)
3 units
from PSYCH 2E03, 2H03, 2TT3
6 units
from Course List 2
12 units
courses as specified for the other subject
6 units
Electives (See Notes 10 and 11 above.)

LEVEL IV: 30 UNITS
12 units
from Course List 2
12 units
courses as specified for the other subject
6 units
Electives (See Notes 10 and 11 above.)

REQUIREMENTS FOR STUDENTS WHO ENTERED LEVEL I PRIOR TO 2007-2008

LEVEL II: 30 UNITS
6 units
PSYCH 2RA3, 2RB3 (See Notes 4 and 5 above.)
8 units
from PSYCH 2D03, 2E03, 2F03, 2H03, 2TT3
3 units* from BIOLOGY 1A03, 1AA3 (or 1M03), 1K03 (or 1P03) (See Note 2 above.)
12 units
courses as specified for the other subject
3 units
Electives
*If requirement completed in Level I, these units will be taken as electives.
LEVEL II: 30 UNITS
3 units from Course List 1 (See Notes 7, 8, 9 and 12 above.)
6 units from Course List 2
3 units from MATH 1A03, 1F03, 1K03, 1L3S or 1M03 must be completed by the end of Level II. Completion in Level II is strongly recommended.
2. SOC SCI 2J03 must be completed by the end of Level II. As of September 2008, STATS 1A03 or 1CC3 will no longer be offered. Students with credit in STATS 1A03 or 1CC3 may use the credit towards fulfilling this requirement.
3. PSYCH 1XX3 and one of BIOLOGY 1A03, 1M03 (or 1AA3) or 1P03 (1K03) are strongly recommended and serve as prerequisites for some upper-level Psychology courses. Students are strongly encouraged to check requisites carefully.
4. Students wishing to take PSYCH 3903 and 3Q03 must complete and submit a pre-registration ballot by mid March. Students will be informed of the outcome by mid March. Specific dates will be announced during the fall term. Ballots can be obtained at the Department of Psychology, Neuroscience and Behaviour web site: http://www.mcmaster.ca/psychology. Priority will be given to students in Honours Psychology, Neuroscience and Behaviour and Combined Honours Psychology programs.
5. Students who entered Level II B.A. Psychology in September 2007 must complete at least six units of Level III Psychology.

LEVEL III: 30 UNITS
12 units from Level II Psychology, including at least nine units from Level III Psychology (See Note 5 above.)
12 units Electives, excluding Psychology
6 units Electives

Minor in Psychology
NOTES
1. As all courses have enrolment capacities, the Faculty cannot guarantee registration in courses, even when prerequisites have been met. Therefore, completion of the Minor in Psychology may not be possible.
2. When choosing Level II Psychology courses, students should consider the prerequisites for Level III courses.
3. Students who have completed ISCI 1A24 do not need to take PSYCH 1X03 or PSYCH 1AA3.

REQUIREMENTS
24 units total
3 units PSYCH 1AA3, 1X03
21 units PSYCH 1A03, 1XX3, Levels II or III Psychology courses of which at least six units must be from Level III

DEPARTMENT OF RELIGIOUS STUDIES

WEB ADDRESS: www.socsci.mcmaster.ca/elstu/

Honours Arts & Science and Religious Studies (B.Arts.Sc.; See Arts & Science Program)

FIELDS OF STUDY
The Department offers courses in four fields of study. Students are encouraged to specialize in one of these fields. Levels II, III and IV courses are allocated to the fields as follows:

I. ASIAN RELIGIONS
RELIG ST 2C03, 2F03, 2K03, 2L03, 2P06, 2TT3, 3AA3, 3E03, 3L03, 3P03, 3RR3, 3S03, 3U03, 3V03, 4H03
SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES
RELIG ST 2B03, 2D03, 2E03, 2G03, 2H03, 2V03, 2Y03, 2Z03, 3D03, 3G03, 3J03, 3K03, 3M03, 3N03, 3R03, 3T03, 4I03
HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT
RELIG ST 2C03, 2E03, 2FF3, 2Q03, 2L03, 2JJ3, 2KK3, 2LL3, 2MM3, 2NN3, 2QQ3, 2TT3, 2V03, 2Z03, 3A03, 3B03, 3C03, 3CC3, 3D03, 3E03, 3FF3, 3G03, 3HH3, 3KL3, 3MM3, 3NN3, 3Q03, 3U03, 3V03, 3Z03, 3ZZ3, 4H03

IV. CONTEMPORARY AND COMPARATIVE RELIGIONS
RELIG ST 2BB3, 2H03, 2M03, 2Q03, 2SS3, 2TT3, 2W03, 2WW3, 3EE3, 3FF3, 4P03

NOTE
Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit or Japanese or both early in their program (see the calendar offerings listed under these headings in the Course Listings section of this Calendar). 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

ADMISSION
Completion of any Level I program 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 encouraged to consult a departmental undergraduate advisor in the selection of their Levels III and IV courses.
2. Part-time students should note that RELIG ST 3P03 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 in fulfilling program requirements should consult a departmental undergraduate advisor as early as possible in their program.
3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

4. Students who entered the program prior to September 2004 may use RELIG ST 2EA3, 2EB3, 2Q03 or 2V03 toward the Contemporary and Comparative Fields of Study.

5. RELIG ST 4R06 is strongly recommended for students considering graduate work in Religious Studies.

6. Since not all Level IV seminars are offered each year, students in the Honours program are encouraged to take at least three units Level IV seminar in Level III.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I program completed prior to admission to the program. (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 (See Note 6 above.)

3 units RELIG ST 3F03

21 units Levels II, III Religious Studies of which at least nine 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 nine units of Level III.

3 units Level IV Religious Studies

36 units courses specified for the other subject

6 units* from Linguistics, a language other than English, Statistics or in combined programs within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject. (See Note 5 above.)

12 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities.

*If requirement completed in Level I, these units will be taken as electives.

Combined Honours in Religious Studies and Another Subject

ADMISSION

Completion of any Level I program 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 are encouraged 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 in fulfilling program requirements should consult a departmental undergraduate advisor as early as possible in their program.

3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

4. Students who entered the program prior to September 2004 may use RELIG ST 2EA3, 2EB3, 2Q03 or 2V03 toward the Contemporary and Comparative requirement Fields of Study.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

30 units from the Level I program completed prior to admission to the program. (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 (See Note 4 above.)

3 units RELIG ST 3F03

12 units Levels 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.)

B.A. in Religious Studies

{1475}

ADMISSION

Completion of any Level I program 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 are encouraged 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 in fulfilling program requirements should consult a departmental undergraduate advisor as early as possible in their program.

3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

4. Students who entered the program prior to September 2004 may use RELIG ST 2EA3, 2EB3, 2Q03 or 2V03 toward the Contemporary and Comparative requirement Fields of Study.

REQUIREMENTS

24 units total

24 units Religious Studies courses with no more than six units from Level I
FACULTY OF SOCIAL SCIENCES

SCHOOL OF SOCIAL WORK

WEB ADDRESS: http://www.socsci.mcmaster.ca/socwork/

Combined Bachelor of Arts/Bachelor of Social Work (B.A./B.S.W.)

ADMISSION

Enrollment in this program is limited. Eligibility is dependent upon completion of any Level I program (a minimum of 30 units), including six units from SOC WORK 1A06 or SOCIOl 1A06 and six additional units of introductory level courses from the Course List (see below), normally with a minimum average of 6.0 on the most recent 30 units of university-level courses completed (five full credits) and evidence of personal suitability which may be evaluated by one or a combination of written statements, tests or interviews.

COURSE LIST

ANTHROP 1A03, 1B03, 1Z03
CMST 1A03, 1B03
ECON 1B03, 1BB3
GEOG 1A03 (GEO 1HS3), 1HB3 (GEO 1HU3)
GERONTOL 1A03
HEALTHST 1A03
INDIG ST 1A03, 1A93
INQUIRY 1S53
LABST 1A03, 1C03, 1203
PEACE ST 1A03, 1B03
POL SCI 1G06
PSYCH 1X03 (PSYCH 1AA3), 1X36 (PSYCH 1A03)
RELIG ST 1B06, 1DO3, 1EO3, 1LO3
SOC WORK 1A06
SOCIOl 1A06
WOMEN ST 1A03, 1A93 (or 1A06)

ADMISSION NOTES

1. Students who have successfully completed the two-year College of Applied Arts and Technology Social Services Diploma with a minimum Grade Point Average of 3.0 on a 4.0 scale (70%) are considered to have completed the equivalent of SOC WORK 1A06 and, therefore, are required to complete six additional units of introductory level courses from the Course List. (See Admission above.)

2. An applicant must complete Level I (a minimum of 30 units) by April of the year in which application is made.

3. When choosing Level I courses, the student should take courses that will allow entry to the B.A. program. Students should consult the relevant sections of the Calendar and/or the Office of the Associate Dean.

4. Students who intend to apply for the combined B.A. and B.S.W. program must follow the application instructions as found on the School of Social Work web site: http://www.socsci.mcmaster.ca/socwork/ugrdprog/admissions_app_instructions.cfm. Students who are unable to access this web site must consult the School of Social Work prior to the application deadline.

5. 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. Aboriginal students (includes First Nations and Métis) may select an alternate application process. Those who wish to do so should consult the School of Social Work for details.

Applicants transferring from other universities (see Two-Tier Applications below) must also apply through the Ontario Universities Application Centre (OUAC) and must complete Introductory Sociology or Social Work and six additional units from the Course List. (See Admission above.)

6. TWO-TIER APPLICATIONS

If you are transferring from a university other than McMaster, or a college, you must complete two application forms as follows:

a) General Application (December 1)

If you wish to study full-time, complete the OUAC 105D on-line application at http://www.ouac.on.ca showing both your interest in the B.A./B.S.W. program, and the subject you wish to take for the B.A. component.

b) Supplementary Application (March 1)

Students must follow the application instructions as found on the School of Social Work web site: http://www.socsci.mcmaster.ca/socwork/ugrdprog/admissions_app_instructions.cfm. Students who are unable to access this web site must contact the School of Social Work prior to March 1. 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. Questions or concerns may be directed to the School of Social Work.

7. Students admitted to the combined program who have completed 60 or more units beyond Level I normally will require three years after admission to complete the program.

PROGRAM NOTES

1. Course Groupings:

   a) Foundation for Social Work includes core courses which are required.


   c) Social and Political Context of Social Work courses may be taken for elective credit. All Social and Political Context of Social Work courses are limited enrolment.

2. Progression Within Program:

   Students must achieve a minimum grade of C+ in each of SOC WORK 2A06, 2B03, 2B33, 2E03, 3A03, 3D06, 4D06, 4J03, 4003, and 4X03, a Pass in SOC WORK 3D06 and 4DD6 and a CA of at least 6.0.

   Students must complete three units of Social Sciences Research Methods (e.g. SOCIOL 2203, or GERONTOL 2C03). A statistics course may not substitute for a research methods course.

3. Graduation: To qualify for the B.A./B.S.W. degrees, students must complete a total of at least 60 units of Social Work: 48 units towards the B.S.W. degree and 12 units Social and Political Context of Social Work courses including SOC WORK 4J03 as elective for the B.A. program. The B.S.W. degree component will be granted only if the student has achieved a minimum grade of C+ in each of SOC WORK 2A06, 2B03, 2B33, 2E03, 3A03, 3D06, 4D06, 4J03, 4003, and 4X03, a Pass in SOC WORK 3D06 and 4DD6 and a CA of at least 6.0.

   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

- 30 units from the Level I program completed prior to admission to the program. (See Admission above.)

15 units SOC WORK 2A06, 2B03, 2B33, 2E03, which must be completed prior to enrolling in SOC WORK 3D06 and 4DD6

12 units SOC WORK 3D06, 4DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)

9 units SOC WORK 3A03, 4003, 4X03

12 units SOC WORK 4J03 and nine additional units selected from the Social and Political Context of Social Work courses (See Program Note 1 above).

3 units Social Sciences Research Methods. These units will be taken as electives for the B.A. (See Program Note 3 above)

24 units courses specified for the B.A. (This may vary according to the B.S.W. program)

21 units Electives. Other requirements may be specified by the B.A. program.
Bachelor of Social Work (B.S.W.) {1620}

ADMISSION
Enrolment in this program is limited. Eligibility is dependent upon completion of an undergraduate degree from a recognized university, including six units from SOCIO1 1A06 or SOC WORK 1A06 and six additional units of introductory level courses from the Course List (see below), normally with a minimum average of 6.0 on the most recent 30 units of university-level courses completed (five full credits) and evidence of personal suitability which may be evaluated by one or a combination of written statements, tests or interviews.

COURSE LIST
- ANTHROP 1A03, 1B03, 1Z03
- CMST 1A03, 1B03
- ECON 1B03, 1B83
- GEO 1A03 (GEO 1HS3), 1B03 (GEO 1HU3)
- GERONTOL 1A03
- HEALTHST 1A03
- INDIQ ST 1A03, 1A33
- INQUIRY 1SS3
- LABST 1A03, 1C03, 1Z03
- PEACST 1A03, 1B03
- POL SCI 1G06
- PSYCH 1X03 (PSYCH 1AA3), 1XX3 (PSYCH 1A03)
- RELIG ST 1B06, 1D06, 1E03, 1I03
- SOC WORK 1A06
- SOCIOLOGY 1A06
- WOMEN ST 1A03, 1AA3 (or 1A06)

Students who have successfully completed the two-year College of Applied Arts and Technology Social Services Diploma with a minimum Grade Point Average of 3.0 on a 4.0 scale (75%) are considered to have completed the equivalent of SOC WORK 1A06 and, therefore, are required to complete six additional units from the Course List above. (See Admission above.)

An applicant is required to complete the prerequisite undergraduate degree work by April of the year in which application is made. Aboriginal students (includes First Nations and Metis) may select an alternate application process. Those who wish to do so should consult the School of Social Work for details.

Enrolment in the B.S.W. program is limited. Students who intend to apply to the B.S.W. program must follow the application instructions as found on the School of Social Work web site: http://www.socsci.mcmaster.ca/socwork/ugrdprog/admissions_app_instructions.cfm. Students who are unable to access this web site must contact the School of Social Work well before March 1 deadline for the Fall/Winter term. Applicants must also apply to the University.

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.

TWO-TIER APPLICATIONS
Individuals interested in the B.S.W. program must complete two application forms as follows:

1. General Application (December 1)
   - If you wish to study full-time, you must complete the 10G2 on-line application form http://www.ouac.on.ca or, if you are a McMaster graduate, obtain the McMaster Returning Student Application form at registrar.mcmaster.ca/EXTERNAL/APPLI/RETUR.HTM.
   - If you wish to study part-time, complete the Part-Time Degree Studies Application form at http://www.mcmaster.ca/parttime/application-procedure/index.html. McMaster University Part-time Application form or, if you are a McMaster graduate, a McMaster Returning Student Application form at http://registrar.mcmaster.ca/EXTERNAL/APPLI/RETUR.HTM.

In order to allow adequate time for the processing of the General Application, applicants are advised to submit their applications by December 1.

2. Supplementary Application (March 1)
   - Students must follow the application instructions as found on the School of Social Work web site: http://www.socsci.mcmaster.ca/socwork/ugrdprog/admissions_app_instructions.cfm. Students who are unable to access this web site must contact the School of Social Work well before the March 1 deadline for the Fall/Winter term. 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. Questions or concerns may be directed to the School of Social Work.

NOTES
1. Course Groupings: There are two groups of courses in the Social Work program:
   - Foundation of Social Work includes core courses which are required;

   FOUNDATION OF SOCIAL WORK
   - SOC WORK 2A06, 2B03, 2BB3, 2E03, 3A03, 3D06, 3D6D, 4D06, 4DD6, 4X03

   SOCIAL AND POLITICAL CONTEXT OF SOCIAL WORK
   - SOC WORK 3C03, 3H03, 3003, 4B03, 4C03, 4F03, 4G03, 4J03, 4L03, 4Q03, 4R03, 4U03, 4W03, 4Y03

2. Progression Within Program: Students must achieve a minimum grade of C+ in each of SOC WORK 2A06, 2B03, 2BB3, 2E03, 3A03, 3D06, 4D06, 4J03, 4L03 and 4X03, a Pass in SOC WORK 3D06 and 4D06, and a CA of at least 6.0.

3. Students must complete three units of Social Sciences research Methods (e.g. SOClOL 2U03 or GERONTOL 2C03). If this requirement was completed prior to admission, these units must be considered the equivalent of SOC WORK 2A06, 2B03, 2BB3, 2E03, 3A03, 3D06, 4D06, 4J03, and 4X03, a Pass in SOC WORK 3D06 and 4D06, and a CA of at least 6.0.

5. Students are expected to assume the cost of travelling to and from field practice agencies.

REQUIREMENTS
- 60 units total
- 15 units SOC WORK 2A06, 2B03, 2BB3, 2E03 (which must be completed prior to enrolling in SOC WORK 3D06 and 3D6D)
- 12 units SOC WORK 3D06, 3D6D (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)
- 12 units SOC WORK 4D06, 4DD6
- 9 units SOC WORK 4A03, 4C03, 4X03
- 9 units SOC WORK 4J03 and six additional units selected from the Social and Political Context of Social Work courses
- 3 units Social Sciences Research Methods. If requirement was completed prior to admission, these units must be chosen from Social and Political Context of Social Work courses. (See Note 3 above.)

DEPARTMENT OF SOCIOLOGY

WEB ADDRESS: http://www.socsci.mcmaster.ca/socology/

Honours Arts & Science and Sociology (B.Arts.Sc.; See Arts & Science Program)

Honours Sociology (Specialist Option) {2522}

Students who registered in this program prior to 2001 may see an Academic Advisor in the Office of the Associate Dean for program requirements.

Honours Sociology {2520}

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIO1 1A06.
FACULTY OF SOCIAL SCIENCES

NOTES
1. Students 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 web-site for prerequisites and course descriptions.
3. Students may take a maximum of nine combined units of SOCIOL 3GG3 and 4GG3.
4. Students who previously completed SOCIOL 303 may substitute this course with SOCIOL 3003 or 3W03 to satisfy the Advanced Sociological Methods requirement.
5. Students may take a maximum of 12 units of Level IV Sociology.

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
6 units SOCIOL 2S06
3 units from SOCIOL 3A03, 3P03, 3PP3
3 units from SOCIOL 3003, 3W03 (See Note 6 above.)
12 units Level IV Sociology (See Note 2 above.)
18 units Levels II or III Sociology
6-9 units SOCIOL 2Z03 which must be completed by the end of 60 units
6 units SOCIOL 3H06
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.

B.A. in Sociology

ADMISSION
Completion of any Level I program, with a Cumulative Average of at least 3.5 including a grade of at least C- in SOCIOL 1A06.

NOTE
Students should check both this Calendar and the Departmental web-site for prerequisites and course descriptions.

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
6 units SOCIOL 2506
3 units SOCIOL 2Z03
15 units Levels 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 web-site for prerequisites and course descriptions.

REQUIREMENTS
24 units total
6 units SOCIOL 1A06
6 units from SOCIOL 2C06, 2D06, 2R03 and 2RR3, 2V06 (See Note 1 above.)
12 units Levels II or III Sociology
INDIGENOUS STUDIES PROGRAM

COMBINED B.A. IN INDIGENOUS STUDIES AND ANOTHER SUBJECT

WEB ADDRESS: http://www.mcmaster.ca/indigenous/default.htm

Hamilton Hall, Room 103 Ext. 27426

Director
D.J. Martin-Hill/B.A., M.A., Ph.D.

Aboriginal Student Counsellor
R. McLester/B.A.

ACADEMIC REGULATIONS

STUDENT ACADEMIC RESPONSIBILITY
You are responsible for adhering to the statement on student academic responsibility found in the General Academic Regulations section of this Calendar.

ACCESS TO COURSES
All undergraduate courses at McMaster have an enrolment capacity. The University is committed to making every effort to accommodate students in required courses so that their program of study is not extended. Unless otherwise specified, registration is on a first-come basis and in some cases priority is given to students from particular programs or Faculties. All students are encouraged to register as soon as MUGSISOLAR is available to them.

The Combined B.A. Program in Indigenous Studies is governed by the general Academic Regulations of the University, and the regulations described below.

Combined B.A. Program in Indigenous Studies and Another Subject

ADMISSION
Completion of any Level I program, with a Cumulative Average of at least 3.5 including a grade of at least C- in three units from INDIG ST 1A03 or 1AA3 and three units from CAYUGA 1Z03, MOHAWK 1Z03 or OJIBWE 1Z03 and satisfaction of admission requirements for the B.A. program in the other subject.

NOTES
1. Those students who entered the program prior to September 2005 should follow the requirements as specified in the Calendar which was in effect the year they entered the program.
2. Three units of work in the other subject of the combined program which are also in the Course List may be used to fulfill the requirements of both program components.
3. Students who previously completed ANTHROP 3F03, INDIG ST 3I03, 3JJ3 or POL SCI 3C03 may use these units toward the Course List requirement.

COURSE LIST
ANTHROP
SOC WORK

INDIGENOUS STUDIES REQUIREMENTS
90 units total (Levels I to III), of which 42 may be Level I
30 units from the Level I program completed prior to admission to the program. (See Admission above.)
6 units from CAYUGA 2Z03, INDIG ST 2AA3, MOHAWK 2Z03, OJIBWE 2Z03
3 units from INDIG ST 2C03, 2D03
15 units from Level II, III Indigenous Studies, CAYUGA 2Z03, MOHAWK 2Z03, OJIBWE 2Z03 (if not taken to satisfy requirement above), courses from the Course List of which at least three units must be Level III. (See Notes 2 and 3 above.)

24 units courses specified for the other subject
12 units Electives

Minor In Indigenous Studies

NOTES
1. No more than six of the 18 units from Course List may be Level I courses.
2. At least 12 of the 18 units required for the Minor must be Indigenous Studies or Indigenous language courses.
3. Students who previously completed ANTHROP 3F03, INDIG ST 3I03, 3JJ3 or POL SCI 3C03 may use these units toward the Course List requirement.

COURSE LIST
INDIG ST 1A03
INDIG ST 1AA3
INDIG ST 2A03
INDIG ST 2AA3
INDIG ST 2B03
INDIG ST 2C03
INDIG ST 3D03
INDIG ST 3C03
INDIG ST 3CC3
INDIG ST 3D03
INDIG ST 3E03
INDIG ST 3G03
ANTHROP
SOC WORK

24 units total
6 units

Requirements
24 units total
6 units

from INDIG ST 1A03, 1AA3, CAYUGA 1Z03, MOHAWK 1Z03, OJIBWE 1Z03

from the Course List (See Notes above.)
INTERDISCIPLINARY MINORS AND THEMATIC AREAS

INTERDISCIPLINARY MINORS

The following two listings constitute University-sanctioned Minors in Archaeology and Jewish Studies.

No degree is granted for these programs of study, but students registered in four- or five-level programs can receive a Minor designation on their transcripts following graduation if their chosen Minor program is successfully completed. Please see the Minor subsection in the General Academic Regulations section of this Calendar for further information.

Note: Students should note that not all courses listed are available each year. As well, it is the student's responsibility to check carefully for prerequisites, corequisites and enrollment restrictions.

Archaeology

Coordinator
Eduard Reinhardt (Geography and Earth Sciences)

Committee of Instruction

The Interdisciplinary Minor in Archaeology is based on archaeology and archaeology-related courses offered in the School of Geography and Earth Sciences, and in the Departments of Classics and Anthropology. It requires students to gain knowledge and understanding of a broad range of arts and sciences relevant to the practice of archaeology, but also permits students the flexibility to specialize in topics of particular interest within related disciplines. Students planning a minor in Archaeology may wish to take CLASSICS 1M03 (History of Greece and Rome).

COURSE LIST

ANTHROP 2C03 Environmental Crises in Archaeological Perspective
ANTHROP 2FF3 Human Skeletal Biology and Bioarchaeology
ANTHROP 2PC3 Archaeology and Popular Culture
ANTHROP 2PF3 Religion and Power in the Past
ANTHROP 2003 Themes in the Archaeological History of North America
ANTHROP 2V03 The Maya before Columbus
ANTHROP 2W03 The Aztecs and Incas
ANTHROP 3A03 Archaeology and Society
ANTHROP 3C03 Ceramic Analysis
ANTHROP 3CC3 Archaeological Field School
ANTHROP 3DD3 Archaeology of Death
ANTHROP 3E03 Special Topics in Archaeology I
ANTHROP 3EE3 Special Topics in Archaeology II
ANTHROP 3K03 Archaeological Interpretation
ANTHROP 3N03 Primates Evolution
ANTHROP 3PP3 Paleopathology
ANTHROP 3X03 Zoarchaeology
ANTHROP 4E03 Advanced Topics in Archaeology I
ANTHROP 4F03 Current Debates in Archaeology
ANTHROP 4HF3 Archaeology of Hunter-Fisher-Gatherers
ANTHROP 4R03 Skeletal Biology of Earlier Human Populations
CLASSICS 2B03 Greek Art
CLASSICS 2C03 Roman Art
CLASSICS 3Q03 Greek Sanctoralities
CLASSICS 3S03 The Archaeology of the Roman City
CLASSICS 4B03 Seminar in Classical Archaeology
EARTH SC 2B03 Soils and the Environment
EARTH SC 2E03 Earth History
EARTH SC 2G03 Earth Surface Processes
EARTH SC 2GG3 Natural Disasters
EARTH SC 2GG3 Introduction to GIS
EARTH SC 3C03 Earth's Changing Climate
EARTH SC 3E03 Geoarchaeology of the Underwater Realm
EARTH SC 3E03 Sedimentary Environments
EARTH SC 3G03 Advanced Raster GIS
EARTH SC 3P03 Environmental Paleontology
EARTH SC 3Q03 Environmental Reconstruction Using Stable Isotopes
EARTH SC 3V03 Environmental Geophysics
EARTH SC 4E03 Coastal Environments
EARTH SC 4FF3 Topics of Field Research
EARTH SC 4G03 Glacial Sediments and Environments
EARTH SC 4G03 Advanced Vector GIS
ENVIR SC 1G03 Earth and the Environment

REQUIREMENTS

24 units total
12 units ANTHROP 1B03, 2PA3, CLASSICS 1A03, ENVIR SC 1G03
12 units from Course List (see above). At least nine of the 12 units must be selected from outside the student's own department

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 program 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 are also encouraged to engage in a year of study in Israel, normally done in the third year of a four-year program. Details are available through the Department of Religious Studies, University Hall, Room 104, ext. 24567, or the Office of International Affairs, Alumni Memorial Hall, Room 203.

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

COMP LIT 2G03 The Bible As Literature
COMP LIT 3MM3 The Literature of Israel and Palestine
HEBREW 2A03 Introduction to Biblical Hebrew I
HEBREW 2B03 Introduction to Biblical Hebrew II
HEBREW 3A03 Intermediate Hebrew I
HEBREW 3B03 Intermediate Hebrew II
HISTORY 2X03 Judaism, the Jewish People and the Birth of the Modern World
HISTORY 3D03 The Jewish World in New Testament Times
HISTORY 3ZZ3 Judaism and the Jewish People in the 20th Century

PHILOS 3J03 Modern Jewish Thought
RELIG ST 2B03 Women in the Biblical Tradition
RELIG ST 2DD3 The Five Books of Moses
RELIG ST 2EE3 Prophets of the Bible
RELIG ST 2V03 The Bible As Literature
RELIG ST 2X03 Judaism, the Jewish People and the Birth of the Modern World
RELIG ST 2Y03 The Bible and Film
RELIG ST 3A03 Modern Jewish Thought
RELIG ST 3D03 The Jewish World in New Testament Times
RELIG ST 3S03 Jews, Christians and Others in Antiquity
RELIG ST 3K03 The Bible through the Ages
RELIG ST 3M03 Songs of David: Poetry in the Hebrew Bible
INTERDISCIPLINARY MINORS AND THEMATIC AREAS

RELIG ST 3R03  Death and the Afterlife in Early Judaism and Christianity
RELIG ST 3ZZ3  Judaism and the Jewish People in the 20th Century

LIST B
ANTHROP 3G03  Comparative Mythology
ANTHROP 3H03  Anthropological Demography
CLASSICS 2P06  Ancient Greek Philosophy
HISTORY 3A03  The Modern Middle East
HISTORY 3I03  The International Relations of the European Powers, 1870-1945
PEACE ST 3F03  The Modern Middle East
Peace St 3I03  The International Relations of the European Powers, 1870-1945
PHILOS 2A06  Ancient Greek Philosophy
PHILOS 2D03  Moral Issues
PHILOS 3A06  From Kant to Hegel
PHILOS 3H03  Philosophy of Religion
POL SCI 3A03  International Politics in the Postwar Period
POL SCI 4D06  Human Rights and International Politics
RELIG ST 2C03  Moral Issues
SOC WORK 4C03  Racism and Social Marginalization in Canadian Society
SOC WORK 4J03  Social Change: Social Movements and Advocacy
SOC WORK 4M03  International and Comparative Social Welfare
SOCIO 2E06  Racial and Ethnic Group Relations
SOCIO 3Z03  Ethnic Relations

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. program.

Asian Studies

While there is no B.A. program 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 wishing to pursue Asian Studies may obtain further information from Dr. Virginia Aksan, Chester New Hall, Room 602, ext. 23641.

COURSES DEALING STRICTLY WITH ASIAN MATERIAL

ART HIST 2Z03  Art and Visual Culture in East Asia
ART HIST 3Z03  Chinese Art and Visual Culture 200-750
COMMERCE 4SF3  Japanese Business
GEOG 3RJ3  Geography of Japan
HISTORY 3A03  The Ottomans and the World around Them
HISTORY 3AA3  The Modern Middle East
HISTORY 3B03  Modern Japan
HISTORY 3GG3  Modern China
HISTORY 4BB6  Modern Japan
HISTORY 4GG6  Modern China
HISTORY 4R06  Middle Eastern and Islamic History
POL SCI 2N03  Politics of India and South Asia
RELIG ST 1J03  Great Books in Asian Religions
RELIG ST 2F03  Storytelling in East Asian Religions
RELIG ST 2I03  Storytelling in Indian Religion
RELIG ST 2K03  Introduction to Buddhism
RELIG ST 3L03  Life, Work and Teachings of Mahatma Gandhi
RELIG ST 2P06  Japanese Civilization
RELIG ST 2T03  Religion and Popular Culture in Contemporary Japan
RELIG ST 3AA3  Popular Religion in the Indian Tradition
RELIG ST 3E03  Japanese Religions
RELIG ST 3I03  The Indian Religious Tradition
RELIG ST 3RR3  Taoism
RELIG ST 3S03  The East Asian Religious Tradition
RELIG ST 3U03  The Buddhist Tradition in India
RELIG ST 3U03  Buddhism in East Asia
RELIG ST 4H03  Topics in Asian Religions

COURSES WITH SIGNIFICANT ASIAN CONTENT

HISTORY 2H03  Mediterranean Encounters 1500-1800
POL SCI 4MM6  Topics in International Political Economy
RELIG ST 1B06  World Religions
RELIG ST 2BB3  Images of the Divine Feminine
RELIG ST 2H03  Theory and Practice of Non-Violence
RELIG ST 2Q03  Cults in North America
RELIG ST 2WW3  Health, Healing and Religion

LANGUAGE COURSES

JAPANESE 1Z06  Beginner's Intensive Japanese
JAPANESE 2Z03  Intermediate Intensive Japanese
JAPANESE 2ZZ3  Intermediate Intensive Japanese II
JAPANESE 3A03  Advanced Intensive Japanese I
JAPANESE 3A03  Advanced Intensive Japanese II
JAPANESE 4A03  Advanced Readings in Current Affairs in Japanese
JAPANESE 4Z03  Advanced Oral Practice in Japanese
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 2C03  Contemporary Canadian Fiction
FRENCH 2E03  Survey of Quebec Literature
FRENCH 4U03  Gender and Migration in the Contemporary Quebec Novel
HISTORY 2T03  Survey of Canadian History, Beginnings to 1885
HISTORY 2T13  Survey of Canadian History, 1885 to the Present
HISTORY 3G03  Business History: the Canadian Experience in International Perspective
HISTORY 3NN3  Canada's Revolutions: 1939-1982
HISTORY 3P03  Religion and Society in Canada
HISTORY 3W03  Women in Canada and the U.S. from 1820
HISTORY 3W3  Women in Canada and the U.S. from 1920
HISTORY 3Y03  Death, Disease and Degeneration: a History of Health and Health Care in Canada
MUSIC 3T03  Canadian Music

SOCIAL SCIENCES

ANTHROP 2B03  Indigenous Peoples of North America
ANTHROP 2R03  Themes in the Archaeological History of North America
ANTHROP 3Y03  Aboriginal Community Health and Well-Being
ECON 2K03  Economic History of Canada
ECON 3B03  Economic History of Canada
GEOG 3R03  Geography of Japan
HISTORY 2T03  Survey of Canadian History, Beginnings to 1885
HISTORY 2T13  Survey of Canadian History, 1885 to the Present
HISTORY 3G03  Business History: the Canadian Experience in International Perspective
HISTORY 3NN3  Canada's Revolutions: 1939-1982
HISTORY 3P03  Religion and Society in Canada
HISTORY 3W03  Women in Canada and the U.S. from 1820
HISTORY 3W3  Women in Canada and the U.S. from 1920
HISTORY 3Y03  Death, Disease and Degeneration: a History of Health and Health Care in Canada
MUSIC 3T03  Canadian Music

Please see the Course Listings section for a detailed description of the above courses.
CERTIFICATE AND DIPLOMA PROGRAMS

APPROVED FOR ADVANCED CREDIT

All CCE Certificate and Diploma programs have been approved by the Senate of McMaster University for advanced credit, as indicated below. Information regarding advanced credit for degree study is outlined in Graduates of McMaster Certificate/Diploma Programs in the Admission Requirements section of this Calendar.

ACCOUNTING, DIPLOMA IN

Maximum Credit Toward Degree Studies - 24 units

This 11 course program is designed for individuals planning a career in managerial or financial accounting. All courses satisfy program requirements for both the Certified Management Accountants of Ontario (CMA) and the Certified General Accountants Association (CGA).

ADDITION CAREWORKER, DIPLOMA IN

Maximum Credit Toward Degree Studies - 24 units

This 10 course program complements a degree in Health Studies, Nursing, Psychology or Social Work as a specialization in Addictions. The program meets the core education hours required by The Canadian Addiction Counsellors Certification Federation (CACCF) for professional certification.

ADDITION STUDIES, CERTIFICATE IN

Maximum Credit Toward Degree Studies - 15 units

This 15 unit program is designed to provide elective studies in the field of addictions.

CASE MANAGEMENT, CERTIFICATE IN

Maximum Credit Toward Degree Studies - 15 units

This five-course program, is designed to develop and/or enhance the ability of health and social service professionals to perform case management functions in a variety of practice settings. Available on-line only.

CERTIFIED CLINICAL RESEARCH ASSOCIATE,

Maximum Credit Toward Degree Studies - 15 units

This five-course program is designed to develop the concepts, skills, strategies, attitudes and knowledge required to coordinate clinical trials.

FAMILY MEDIATION, CERTIFICATE/DIPLOMA IN

Maximum Credit Toward Degree Studies
- 15 units (Certificate)
- 24 units (Diploma)

This five-course (Certificate) or eight-course (Diploma) program provides participants with the skills required by people working in a variety of professions in the fields of alternative dispute resolution and family mediation.

HUMAN RESOURCES MANAGEMENT, DIPLOMA IN

Maximum Credit Toward Degree Studies - 24 units

This 24 unit program will provide the knowledge and skills essential to succeed as a practitioner in Human Resources Management. This program offers all courses required to fulfill the academic requirement of HRPAO to become eligible to write the certification exam for the Certified Human Resources Professional (CHRPM) designation.

MANAGEMENT STUDIES (GENERAL), DIPLOMA IN

Maximum Credit Toward Degree Studies - 24 units

This eight-course program offered in association with the Michael G. DeGroote School of Business at McMaster is designed to develop and/or enhance the business management skills needed to function within a management position.

MANAGEMENT STUDIES (CONCENTRATION IN PROJECT MANAGEMENT, BUSINESS ANALYSIS OR SOURCING MANAGEMENT), DIPLOMA IN

Maximum Credit Toward Degree Studies - 24 units

Offered in association with Nexient Learning, this program combines technical skills in a selected area of concentration with essential management topics.

MARKETING, DIPLOMA IN

Maximum Credit Toward Degree Studies - 24 units

This 24 unit program is designed to provide students with current knowledge and skills that are practical in application and readily portable to the workplace by police and security personnel.

WEB DESIGN AND DEVELOPMENT,

CERTIFICATE/DIPLOMA IN

Maximum Credit Toward Degree Studies
- 15 units (Certificate)
- 24 units (Diploma)

This 15 unit (Certificate) or 24 unit (Diploma) program focuses on the development of technical, design and communication skills as they relate to development in the field of website management.

AFFILIATED ASSOCIATIONS AND INSTITUTES

Many McMaster Certificate and Diploma credit courses are recognized as course equivalencies by the following professional associations and institutions:
- Association of Administrative Assistants (QAA)
- Canadian Addiction Counsellors Certification Federation (CACCF)
- Canadian Association of Rehabilitation Professionals (CARP)
- Canadian Institute of Certified Administrative Managers (CICAM)
- Canadian Institute of Management (CIM)
- Certified General Accountants Association of Ontario (CGA)
- Credit Institute of Canada
- Credit Union Institute of Canada (CUIC)
- Global Risk Management Institute
- Human Resources Professionals Association of Ontario (HRPAO)
- Institute of Canadian Bankers (ICB)
- Insurance Institute of Canada-Fellowship
- International Personnel Management Association (IPMA)
- Purchasing Management Association of Canada (PMAC)

Please contact the Centre for Continuing Education at extension 24321 or visit http://www.mcmastercce.com for details.
CERTIFICATES/DIPLOMAS FOR THE BACHELOR OF TECHNOLOGY (B.TECH) PROGRAM

WEB ADDRESS: http://btech.mcmastermohawk.ca
Communications Research Laboratory (CRL), Room 203
Ext. 27013

MCMASTER UNIVERSITY CERTIFICATE IN TECHNOLOGY
This program consists of fifteen units comprising five courses in the corresponding Bachelor of Technology program. Students may select any five courses subject to satisfying the prescribed prerequisite requirements. No more than two of the courses may be selected from the General Technology (management) group. The McMaster University Certificate in Technology is offered in four disciplines:
- Civil Engineering Infrastructure Technology
- Computing and Information Technology
- Energy Engineering Technology
- Manufacturing Engineering Technology

MCMASTER UNIVERSITY DIPLOMA IN TECHNOLOGY
This program consists of twenty-four units comprising eight courses offered in the corresponding Bachelor of Technology program. Students may select any eight courses subject to satisfying the prescribed prerequisite requirements. No more than three of the courses may be selected from the General Technology (management) group. The McMaster University Diploma in Technology is offered in four disciplines:
- Civil Engineering Infrastructure Technology
- Computing and Information Technology
- Energy Engineering Technology
- Manufacturing Engineering Technology

MCMASTER UNIVERSITY TECHNOLOGY (8925)
LEADERSHIP CERTIFICATE
This five-course certificate program focuses on the additional skills needed by graduate technologists to enable them to be more effective in their positions and to advance professionally. The courses are held in the evenings and on Saturdays and are oriented towards the needs of technologists already working in industry.

MCMASTER UNIVERSITY TECHNOLOGY (8926)
LEADERSHIP DIPLOMA
The five courses required for the certificate program are required as a prerequisite for the Diploma program. Three additional courses must be completed to satisfy the requirements for the Diploma.

For additional information on the Certificate/Diploma Programs, please contact Ms. Shirley Verhage, Program Administrator, Communications Research Laboratory, Room 203, (905) 525-9140, Ext. 27013.

SCHOOL OF GEOGRAPHY AND EARTH SCIENCES
The part-time certificate program offered by the School of Geography and Earth Sciences can be completed in one or two years and is intended for students with basic academic or experiential training in GIS/Geomatics who wish to obtain a qualification in the theoretical and practical aspects of spatial analysis as well as in the more technical aspects of GIS. Further information can be obtained at http://sciwebserver.science.mcmaster.ca/gislab/programs/certificate/index.html or by contacting the GIS Laboratory, School of Geography and Earth Sciences at (905) 525-9140 ext. 22542.
The courses listed in this section include all courses approved for the undergraduate curriculum for the 2008-2009 academic year. Not all courses in the approved curriculum will be offered during the year. Students are advised to refer to the course timetables available annually in March, May and August to determine which specific courses will be offered in the upcoming sessions.

POLICY ON ACCESS TO UNDERGRADUATE COURSES

McMaster's policy on access to Undergraduate courses is designed to ensure that resources are properly managed while enabling students to register in required courses so that their program admission requirements and course requisites can be met, and that their program of study is not extended.

1. Enrolment capacities are set on all undergraduate courses taking into account enrolment projections along with resources; enrolment trends and type of course (required or elective).
2. If need exceeds approved capacity, enrolment capacities for courses will be reviewed and may be adjusted.
3. Faculties and Department Offices are responsible for determining which courses require seats held back. These holdback seats must be managed so that students are able to complete program admission requirements, meet course requisites and register in courses required to meet their program of studies in a timely manner.
4. Where students are selecting from a list of required courses, access to a specific course is not guaranteed when there is another course available to meet a specific degree requirement.

ANTHROPOLOGY

WEB ADDRESS: http://www.socsci.mcmaster.ca/anthro/

Faculty as of January 15, 2008

Chair
Aubrey Cannon

Professors
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)
William L. Rodman/B.A. (Sydney), M.A., Ph.D. (Chicago)
Shelley Saunders/B.A., M.A., Ph.D. (Toronto)/F.R.S.C./Canada Research Chair in Human Disease and Population Relationships

Adjunct Professors
Regna Darnell/Western Ontario) B.A. (Bryn Mawr), M.A., Ph.D. (Pennsylvania)
Christopher Ellis/Western Ontario), B.A. (Waterloo), M.A. (McMaster), Ph.D. (Simon Fraser)
Ronald G. V. Hancock/B.Sc., M.Sc. (New Zealand), Ph.D. (McMaster)

Associate Professors
Ellen Badone/Religious Studies) B.A., M.A. (Toronto), Ph.D. (California-Berkeley)
Christina Moffat/B.Sc., (Toronto), B.A. (McMaster)
Hendrik Poiner/B.Sc., M.Sc. (Califomia), Ph.D. (Germany/Canada Research Chair in Paleogenomics
Petra Reithmann/B.A. (Vienna), M.A. (Munich), Ph.D. (McGill)
Wayne Wary/W.B.A., M.A. (McMaster), Ph.D. (ANU)
Dennis Wills/B.A. (Waterloo), M.A. (McMaster), Ph.D. (British Columbia)

Adjunct Associate Professors
Trudy Nicks/(Royal Ontario Museum) B.A., M.A., Ph.D. (Alberta)
Robert W. Park/Waterloo) B.A. (Toronto), M.A. (McMaster), Ph.D. (Alberta)
Larry Sawchuk/Toronto) B.A., M.A. (Manitoba), Ph.D. (Toronto)

Assistant Professors
María-Inés Arratia/B.A., M.A. (Western Ontario), Ph.D. (York)

Tristan Carter/B.A. (Nottingham), Ph.D. (University College London)
Kostalena Michelaki/B.A. (Greece), M.A., Ph.D. (Michigan)
Janet Padia/B.Sc., Ph.D. (Toronto)

Associate Members
Eduard G. Reinhardt/Geography and Earth Sciences) B.A., Ph.D. (Carleton)
Celia Rothenberg/Religious Studies) B.A. (Wellesley College), M.S. (Oxford), Ph.D. (Toronto)

Department Notes:

1. Not all Anthropology courses listed in this Calendar are taught every year. Students are advised to consult the department's webpage and the timetable which is published annually by the Registrar's Office to determine whether a course is offered.
2. Registration in all courses with a course code ending ** listed as selected topics and independent research require prior arrangement with the instructor; otherwise, no grade will be submitted for the course.
3. 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
An introduction to the cross-cultural study of existing peoples, their ways of life and the ways in which they interpret and experience the world. The course discusses a broad range of societies in order to explore some fundamental issues involving human knowledge and behaviour.
Two hours (lecture), one hour (tutorial); one term

ANTHROP 1B03 WORLD ARCHAEOLOGY
An overview of the chronology and diversity of human prehistory. Examples of archaeological evidence from around the world are used to illustrate the long-term processes of cultural history.
Two hours (lecture), one hour (tutorial); one term

ANTHROP 1D03 THE HUMAN SPECIES: BECOMING AND BEING HUMAN
The study of the interaction between biology and culture. Topics may include: human origins, non-human primates, the concept of race, disease, sex and gender.
Two hours (lecture), one hour (tutorial); one term

ANTHROP 2AN3 THE ANTHROPOLOGY OF FOOD AND NUTRITION
An anthropological perspective on nutrition at the population level. Prehistoric, historic and contemporary human nutrition, emphasizing links with the environment.
Three hours (lectures and discussion); one term
Prerequisite: Three units of Level I Anthropology or HEALTHST 1A03
Cross-list: HEALTHST 2AN3

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 2C03 ENVIRONMENTAL CRISIS IN ARCHAEOLOGICAL PERSPECTIVE
Examination of the influence of natural and human-induced environmental crises on long-term culture histories.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1B03

ANTHROP 2D03 GENETICS IN ANTHROPOLOGY
An introduction to human genetics, microevolution and macroevolution.
Three hours (one hour lecture, two hour lab); one term
(There will be a supplementary fee for supplies used in labs.)

ANTHROP 2D03 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
Prerequisite: Six units of Level I Anthropology
ANTHROP 2E03  HUMAN VARIATION AND EVOLUTIONARY CHANGE
An introduction to the study of human evolution and variability in living species of human and non-human primates. Three hours (lectures and discussion); one term
Prerequisite: Six units of Level I Anthropology. ANTHROP 1Z03 is strongly recommended.

This course is required of all students registered in an Honours Program in Anthropology, and is a prerequisite for advanced courses in Physical Anthropology.

ANTHROP 2F03  CULTURAL ANTHROPOLOGY
An introduction to concepts, theories and current debates in cultural anthropology. This course is designed to prepare students for more advanced courses in social and cultural anthropology. Three hours (lectures and discussion); one term
Prerequisite: Six units of Level I Anthropology. ANTHROP 1A03 is strongly recommended.

This course is required of all students registered in an Honours Program in Anthropology.

ANTHROP 2F3  HUMAN SKELETAL BIOLOGY AND BIOARCHAEOLOGY
Study of the human skeleton (bones and dentition) for application in archaeology and forensic anthropology. Includes determination of sex, age, stature and other individual characteristics. Three hours (lectures, discussion and lab); one term
Prerequisite: Registration in an Honours Anthropology program. Completion of ANTHROP 1Z03 is strongly recommended

ANTHROP 2G03  READINGS IN INDO-EUROPEAN MYTH
This course will acquaint students with the myths of Ancient Greece, Ancient India, the Celts and the Norse. Other traditions may also be examined. Three hours (lectures and discussion); one term

ANTHROP 2H03  ENVIRONMENT AND CULTURE
Relationships between human societies and their environments are examined. The focus is on how culture shapes our ideas of nature and the consequence of our actions. Case studies explore both environmental movements and aboriginal societies. Three hours (lectures and discussion); one term

ANTHROP 2L03  PHONETICS
A study of the sounds of language and human articulatory capabilities. Three hours; one term
Prerequisite: LINGUIST 1A03 or permission of the instructor
Cross-list: LINGUIST 2L03

This course is administered by the Department of Linguistics and Languages.

ANTHROP 2LL3  INTRODUCTION TO LINGUISTIC TYPOLOGY
The study of diversity in the languages of the world, language universals and the parameters of cross-linguistic analysis of grammatical systems. Three hours (lectures and discussion); one term
Prerequisite: LINGUIST 1A03 or permission of the instructor
Cross-list: LINGUIST 2L03

This course is administered by the Department of Linguistics and Languages.

ANTHROP 2M03  THE AZTECS AND INCAS
An introduction to prehistoric Maya society and culture, with an emphasis on the Classic period civilization. Three hours (lectures); one term
Antirequisite: ANTHROP 2V03

ANTHROP 2N03  RELIGION AND MAGIC IN THE PAST
A critical examination of the relationship between religion, political power and warfare in a sample of prehistoric and historic states and empires. Three hours (lectures and discussion); one term
Prerequisite: Three units of Level I Anthropology

ANTHROP 2P03  RELIGION AND POWER IN THE PAST
A critical examination of the relationship between religion, political power and warfare in a sample of prehistoric and historic states and empires. Three hours (lectures and discussion); one term
Prerequisite: Three units of Level I Anthropology

ANTHROP 2RP3  RELIGION AND POWER IN THE PAST
A critical examination of the relationship between religion, political power and warfare in a sample of prehistoric and historic states and empires. Three hours (lectures and discussion); one term
Prerequisite: Three units of Level I Anthropology

ANTHROP 2V03  THE MAYA BEFORE COLUMBUS
An introduction to prehistoric Maya society and culture, with an emphasis on the Classic period civilization. Three hours (lectures); one term
Not open to students with credit in ANTHROP 2V03, AZTECS, MAYA AND INCA prior to September 2001.

ANTHROP 2W03  THE AZTECS AND INCAS
An introduction to and comparison of the late pre-Columbian Aztec empire of Mexico and the Inca empire of Andean South America. Three hours (lectures); one term
Antirequisite: ANTHROP 2V03

ANTHROP 2X03  VIOLENCE IN ANTHROPOLOGICAL PERSPECTIVE
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 3A03  PHONOLOGY
A study of the patterns of distinctive sounds in the world's languages. Three hours; one term
Prerequisite: ANTHROP 2L03 or LINGUIST 2L03
Antirequisite: ANTHROP 2M03, LINGUIST 3A03
Cross-list: LINGUIST 3A03

This course is administered by the Department of Linguistics and Languages.

ANTHROP 3A3  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 I Anthropology

ANTHROP 3C03  HEALTH AND ENVIRONMENT: ANTHROPOLOGICAL APPROACHES
Examination of the ways in which humans adapt and cope with their environment. Topics include: health inequalities, nutrition, population, urbanization, resource utilization and industrial pollution. Three hours (lectures and discussion); one term
Prerequisite: Three units of Level I Anthropology or HEALTHST 1A03, and registration in Level III or IV of any program. ANTHROP 2E03 is strongly recommended.
Cross-list: HEALTHST 3C03

ANTHROP 3C3  CERAMIC ANALYSIS
Examination of theories and methods used by archaeologists to analyze ceramics and understand past ceramic technologies. The class will include strong hands-on and original-research components. Three hours (lectures, labs, discussion); one term
Prerequisite: ANTHROP 2PA3
Not open to students with credit in ANTHROP 3EE3, if the topic was Ceramic Analysis.

ANTHROP 3CC6  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
Not open to students with credit in an equivalent field school from another university.
ANTHROP 3D30 ARCHAEOLOGY OF DEATH
Archaeological analysis and interpretation of burial practices and other
death-rituals.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3

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 Hierarchy).
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3EE3 SPECIAL TOPICS IN ARCHAEOLOGY II
As per ANTHROP 3E03.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3G03 COMPARATIVE MYTHOLOGY
The reconstruction of lost mythic traditions by means of comparative
techniques drawn from historical linguistics. The Indo-European tradi-
tions of Eurasia will be examined.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2G03 or permission of the instructor

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 par-
ticularly pertinent to anthropological studies of past and present populations.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2E03

ANTHROP 3I03 SYNTAX
A study of how words are organized into sentences. The emphasis will be on
the Functional approach in comparison with other syntactic theories.
Three hours; one term
Prerequisite: One of ANTHROP 2LL3, LINGUIST 2LL3 or permission of the
Department
Cross-list: LINGUIST 3I03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

ANTHROP 3I13 SEMANTICS
A study of patterns of meaning in language; a critical survey of current
theories and issues.
Three hours; one term
Prerequisite: One of ANTHROP 3I03, 3M03, LINGUIST 3I03, or 3M03, and
six units of a language other than English; or permission of the Department
Cross-list: LINGUIST 3I13
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

ANTHROP 3I30 INDEPENDENT STUDY IN ANTHROPOLOGY
Independent study of a research problem through published materials and/or
fieldwork. It is incumbent upon the student to secure arrange-
mements with the supervising instructor prior to registration in this course;
otherwise, no grade will be submitted.
One term
Prerequisite: Registration in any program in Anthropology and permis-
sion of the instructor
ANTHROP 3I30 may be repeated, if on a different study, to a total of six units.

ANTHROP 3K03 ARCHAEOLOGICAL INTERPRETATION
Techniques and methodologies in the investigation of archaeological material.
Three hours (lectures, labs, discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3L03 HISTORY OF ANTHROPOLOGY
Some of the major developments and personalities in the history of anthro-
pology as a discipline, with emphasis upon the English-speaking world.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Honours Anthropology
Antirequisite: ANTHROP 2L03
This course is required of all students registered in an Honours Pro-
gram in Anthropology.

ANTHROP 3M03 MORPHOLOGY
The study of word formation in languages of the world; a critical survey of
current theories and issues.
Three hours; one term
Prerequisite: One of ANTHROP 2LL3, LINGUIST 2LL3 or permission of the
Department
Cross-list: LINGUIST 3M03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

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 3NN3

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 program in Anthropology

ANTHROP 3R03 GENETICS AND MODERN HUMAN ORIGINS
This course surveys genetic studies in anthropology and considers key
issues in the field, such as the human genome diversity project.
Three hours (one hour lecture, two hour lab), one term
(There will be a supplementary fee for supplies used in labs.)

ANTHROP 3R30 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 any Anthropology program

ANTHROP 3T03 POWER AND RESISTANCE
A critical examination of power in post-colonial conflicts. Examines con-
cepts 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 3V03 ANTHROPOLOGY AND THE HISTORICAL IMAGINATION
This course is situated at the intersection of history and anthropology, and
focuses especially on the ways in which social actors represent, give meaning to and strategically employ constructions of the past.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03 and registration in any program in Anthropology

ANTHROP 3W03** SPECIAL TOPICS IN ANTHROPOLOGY
The topic varies with each instructor (e.g. one class may examine Cur-
rent issues in Medical Anthropology and other classes may focus on
Readings in Myth or Contemporary Issues in Archaeology).
One term
Prerequisite: Registration in any program in Anthropology

ANTHROP 3X03 ZOOARCHAEOLOGY
Study of the long-term histories of human-environment interaction through
analysis of archaeologically recovered animal remains.
Three hours (labs and discussion); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 3Y03 ABORIGINAL COMMUNITY HEALTH AND WELL-BEING
A critical examination of the determinants of health in Aboriginal commu-
nities, processes of community revitalization and recent government policy
initiatives.
Three hours (lecture and discussion); one term
Cross-list: HEALTHST 3Y03

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 program. ANTHROP
2E03 or 2F03 is strongly recommended.
Antirequisite: COLLAB 2M03
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 program. ANTHROP 2E03 or 2F03 is strongly recommended.
Antirequisite: COLLAB 2M03

ANTHROP 4AE3  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 program; 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 4B03 may be repeated, if on a different topic, to a total of six units.

ANTHROP 4BB3  CURRENT PROBLEMS IN ANTHROPOLOGY II
2008-2009 Topic: Anthropology and Human Rights
As per ANTHROP 4B03.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Anthropology
ANTHROP 4BB3 may be repeated, if on a different topic, to a total of six units.

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. Students may be involved in academic placements within the community.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV Honours Anthropology

ANTHROP 4E03  ADVANCED TOPICS IN ARCHAEOLOGY I
Study at an advanced level of selected topics in the sub-discipline. Topics may change from year to year.
Three hours (seminar); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 4E03 may be repeated, if on a different topic, to a total of six units.

ANTHROP 4EE3  ADVANCED TOPICS IN ARCHAEOLOGY II
2008-2009 Topic: Peopling of the New World
As per ANTHROP 4E03; but on a different topic.
Three hours (seminar); one term
Prerequisite: ANTHROP 2PA3

ANTHROP 4F03  CURRENT DEBATES IN ARCHAEOLOGY
A seminar in current topics and issues in archaeological theory.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2PA3 and registration in any honours program

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 practices 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 this course; otherwise, no grade will be submitted.
One term
Prerequisite: Registration in any program 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 4H03  HUMAN EVOLUTIONARY GENETICS
The use of population genetics for resolving the origins of modern humans.
Three hours (seminar); one term
Priority will be given to Level IV Honours Anthropology students.

ANTHROP 4H03

ANTHROP 4HF3  ARCHAEOLOGY OF HUNTER-FISHER-GATHERERS
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 4I03  CONTEMPORARY ANTHROPOLOGICAL THEORY
Seminar on selected recent developments in anthropological theory.
Three hours (seminar); one term
Prerequisite: ANTHROP 3L03 and registration in Level IV Honours Anthropology.
Access will be provided to all Level IV Honours Anthropology students.

ANTHROP 4J03  ADVANCED TOPICS IN PHYSICAL ANTHROPOLOGY I
2008-2009 Topic: Molecules from Fossils: The Benefits of Time Travel
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 4J03 may be repeated, if on a different topic, to a total of six units.

ANTHROP 4JJ3  ADVANCED TOPICS IN PHYSICAL ANTHROPOLOGY II
2008-2009 Topic: Biocultural Anthropology
As per ANTHROP 4J03.
Three hours (seminar); one term
Prerequisite: ANTHROP 2E03
ANTHROP 4JJ3 may be repeated, if on a different topic, to a total of six units.

ANTHROP 4LB3  ADVANCED PHONETICS AND PHONOLOGY
This course will examine advanced issues in phonetics and phonology, seeking to evaluate current theory and to address data that fall beyond the explanatory capacities of those paradigms. The course is strongly data oriented, with material taken from several languages of the Caucasus.
Three hours; one term
Prerequisite: ANTHROP 2L03, 3A03
Cross-list: LINGUIST 4LB3
Antirequisite: ANTHROP 4LA3, LINGUIST 4LA3
This course is administered by the Department of Linguistics and Languages.

ANTHROP 4LC3  ADVANCED MORPHOLOGY AND SYNTAX
This course will examine advanced issues in morphology and syntax, seeking to evaluate current theory and to address data that fall beyond the explanatory capacities of those paradigms. The course is strongly data oriented, with material taken from several languages of the Caucasus.
Three hours; one term
Prerequisite: ANTHROP 3L03, 3M03
Cross-list: LINGUIST 4LC3
Antirequisite: ANTHROP 4LA3, LINGUIST 4LA3
This course is administered by the Department of Linguistics and Languages.

ANTHROP 4M03  ADVANCED TOPICS IN MYTHOLOGY
A seminar in current topics and issues in comparative mythology.
Three hours (seminar); one term
Prerequisite: ANTHROP 2G03, 3G03 and registration in any Honours program

ANTHROP 4N03  ANTHROPOLOGY AND EDUCATION
A comparison of the formal and informal ways in which people learn within their cultural contexts of foraging economies.
Three hours (seminar); one term
Prerequisite: Registration in any Honours program in the Faculty of Social Sciences

ANTHROP 4O03  GLOBAL PROCESSES AND LOCAL CONSEQUENCES
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 systemic; 3) to develop hypotheses for the framework of global scale social theory.
Three hours (seminar); one term
Prerequisite: Registration in any Honours program in the Faculty of Social Sciences
ANTHROP 4R03  SKELETAL BIOLOGY OF EARLIER HUMAN POPULATIONS
The analysis of human skeletal samples, including such topics as paleopathology, paleodemography, palaeonutrition and biological distance analyses. Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2E03
Antirequisite: ANTHROP 3006

ANTHROP 4S03  THE ANTHROPOLOGY OF INFECTIOUS DISEASE
The critical examination of the role of infectious diseases in the course of human history and contemporary society. Self-directed learning format. Three hours (seminar); one term
Prerequisite: ANTHROP 2E03 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 4XX3  ADVANCED TOPICS IN LINGUISTIC THEORY
Issues in different aspects of Linguistic Theory and Advanced Philology. Consult the Department of Linguistics and Languages for the topic to be offered. Two hours (seminar); one term
Prerequisite: One of ANTHROP 303, 3M03, LINGUIST 3103, 3M03
Cross-list: LINGUIST 4XX3
ANTHROP 4XX3/L/NGUIST 4XX3 may be repeated, if on a different topic, to a total of six units. Offered in alternate years.

This course is administered by the Department of Linguistics and Languages

Note:
Art courses are open only to students registered in a program in Honours Art.

Courses

ART 1F03  STUDIO FUNDAMENTALS I
An extensive exploration of spatial art practice. Taking the student through conceptual planning and expanding technical methods into the realm of contemporary visual strategies. Lectures, workshops, critiques and studio practice (four hours); one term
Prerequisite: Portfolio interview (See below.)
Corequisite: SCIENCE 1A00. Students registering in ART 1F03 must also register in SCIENCE 1A00 when completing their registration. Students who receive advanced credit for ART 1F03 must also register in SCIENCE 1A00 when registering in ART 1FF3.
Antirequisite: ART 1F06

ART 1FF3  STUDIO FUNDAMENTALS II
An introduction to two-dimensional studies beginning with drawing in various media and progressing to painting, with an emphasis on figurative work and colour analysis. Lectures, critiques and studio practice (four hours); one term
Prerequisite: ART 1F03
Corequisite: SCIENCE 1A00. Students registering in ART 1F03 must also register in SCIENCE 1A00 when completing their registration. Students who receive advanced credit for ART 1F03 must also register in SCIENCE 1A00 when registering in ART 1FF3.
Antirequisite: ART 1F06

Honours Art programs have limited enrolments. Entrance to any Honours Art program requires the permission of the School of the Arts and successful completion of ART 1F03 and 1FF3. Students who wish to enrol in ART 1F03 and 1FF3 in Level I must complete a portfolio interview to be eligible for permission to register in these courses. The portfolio should contain a variety of works in different media that represent the applicant's creative abilities and interests. Aptitude in art, academic ability and demonstrated commitment to the discipline are 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.


When applying for admission using the OUAC application, applicants who wish to study Art should select FH for the OUAC code and choose FINE ARTS for the subject of Major Interest.

ART 2A03  INTRODUCTORY PAINTING I
A series of studio projects designed to inform and expand the student's technical and conceptual abilities in painting. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2A06

ART 2A03/L/INTRODUCTORY PAINTING II
A continuation of studio projects designed to provide technical and conceptual investigations in the field of painting. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2A06

ART 2B03  INTRODUCTORY SCULPTURE I
A series of three-dimensional studio projects designed to provide technical and conceptual abilities in the field of sculpture. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2B06

ART 2BB3  INTRODUCTORY SCULPTURE II
A continuation of three-dimensional studio projects designed to provide technical and conceptual investigations in the field of sculpture. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2B06

ART 2C03  INTRODUCTORY DRAWING I
A series of studio projects designed to inform and expand the student's technical and conceptual abilities in drawing. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06).
Antirequisite: ART 2C06

ART 2CC3  INTRODUCTORY DRAWING II
A continuation of studio projects designed to provide technical and conceptual investigations in the field of drawing. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2C06

ART 2F03  INTRODUCTORY PRINTMAKING I
A series of studio projects designed to inform and expand the student's technical and conceptual abilities in printmaking. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2F06

ART 2FF3  INTRODUCTORY PRINTMAKING II
A continuation of studio projects designed to provide technical and conceptual investigations in the field of printmaking. Four hours; one term
Prerequisite: ART 1F03, 1FF3 (or 1F06)
Antirequisite: ART 2F06

ART 3DO3  PRACTICAL ISSUES IN STUDIO ART
This course is designed to familiarize students with a range of topics associated with the professional and practical aspects of producing art. This course utilizes the McMaster Museum of Art collections as a research base for studio production. Three hours; one term
Prerequisite: Registration in Level III Honours Art or a Combined Program with Honours Art.
ART 3E06 STUDIO PRACTICE AND CRITICISM
This course introduces self-directed studio study. Weekly critiques, evening Visiting Artists' lectures; two terms
Prerequisite: Registration in Level III Honours Art or Combined Program with Honours Art and a grade of at least B- in a minimum of six units of Level II Art

ART 3F03 INTEGRATED DRAWING AND PRINT MEDIA
This course enables advanced level studio exploration via the interconnections between print media and drawing which may include production of an image in multiple states and integration of a diverse range of two dimensional processes.
Four hours; one term
Prerequisite: Registration in Level III Honours Art or a Combined Program with Honours Art

ART 3G03 INTERDIMENSIONAL STUDIES IN PAINTING AND SCULPTURE
This course enables advanced level studio exploration via the interconnections between sculpture and painting which may include the exchange between three dimensional and two dimensional concepts of colour in painted reliefs, polychrome works and installations.
Four hours; one term
Prerequisite: Registration in Level III Honours Art or a Combined Program with Honours Art

ART 3H03 INTEGRATED PAINTING AND PRINT MEDIA
This course enables advanced level studio exploration via the interconnections between print media and drawing which may include: photo-based image making, cyanotypes, stencilling, hand-painted monotypes, etc.
Four hours; one term
Prerequisite: Registration in Level III Honours Art or a Combined Program with Honours Art

ART 3I03 INTERDIMENSIONAL STUDIES IN SCULPTURE AND DRAWING
This course enables advanced level studio exploration via the interconnections between sculpture and drawing and may include exploration in media such as two dimensional studies for three dimensional productions, installation designs, etc.
Four hours; one term
Prerequisite: Registration in Level III Honours Art or a Combined Program with Honours Art

ART 4C06 MINOR STUDIO PROJECT
This course combines advanced level, self-directed studio study with critique sessions and a visiting artist lecture series.
Weekly critiques, evening Visiting Artists' lectures; two terms
Prerequisite: Registration in Level IV of a Combined Honours Art and Another Subject program and a grade of at least B- in ART 3E06
Antirequisite: Credit or registration in ART 4E12

ART 4E12 ADVANCED STUDIO PRACTICE AND CRITICISM
This course combines an intensive block of advanced level, self-directed studio study with critique sessions and a visiting artist lecture series.
Weekly critiques, evening Visiting Artists' lectures; two terms
Prerequisite: Registration in Level IV of any Honours Art Program and a grade of at least B- in ART 3E06
Antirequisite: ART 4C06

ART HISTORY
Courses and programs in Art History are administered within the School of the Arts of the Faculty of Humanities.

Courses

ART HIST 1A03 INTRODUCTION TO THE STUDY OF ART
A course that introduces students to the visual arts through a consideration of principles and elements of painting, sculpture and architecture and a discussion of various genres.
Two lectures, one tutorial; one term

ART HIST 1AA3 INTRODUCTION TO THE HISTORY OF ART
A brief overview of the Western artistic tradition as embodied in the history of painting, sculpture and architecture.
Two lectures, one tutorial; one term

ART HIST 2A03 VISUAL LITERACY
A course of lectures and discussions that explores the concept of visual literacy and examines the ways in which fine and popular arts structure our understanding through images.
One lecture (two hours), one tutorial/discussion; one term
Prerequisite: Registration in Level II or above
Cross-list: CMST 2108

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 or above
Cross-list: CLASSICS 2B03
This course is administered by the Department of Classics.

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
This course is administered by the Department of Classics.

ART HIST 2D03 19TH- AND 20TH-CENTURY ART AND VISUAL CULTURE
A study of art and visual culture from c. 1800 to c. 1970 and an examination of critical frameworks such as modernism and postmodernism.
Three lectures; one term
Prerequisite: Registration in Level II or above

ART HIST 2F03 THE HISTORY OF GRAPHIC DESIGN
An introduction to the history of graphic, two-dimensional design. The course demonstrates the admixture of high and popular culture that informs advertising, posters, book design and illustration, etc.
Three lectures; one term
Prerequisite: Registration in Level II or above
Prior completion of ART HIST 1A03 and 1AA3 is recommended
Cross-list: CMST 2N03, MMEDIA 2F03
This course is administered by the Department of Communication Studies & Multimedia.

ART HIST 2G03 FILM HISTORY TO THE SECOND WORLD WAR
An introduction to the history of narrative film from its beginnings to the Second World War. It focuses on narrative cinema's development from aesthetic, social, technological and economic perspectives while also touching on a selected number of issues in film theory.
Two lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above
Cross-list: THTR&FLM 2F03
Antirequisite: CMST 2X03, DRAMA 2X06
This course is administered by Theatre & Film.

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 or above
Cross-list: CLASSICS 2H03
Offered in alternate years.
This course is administered by the Department of Philosophy.

ART HIST 2I03 RENAISSANCE ART
An introduction to the history of European art in the period 1400 to 1580.
Three lectures; one term
Prerequisite: Registration in Level II or above

ART HIST 2J03 ART AND VISUAL CULTURE IN EAST ASIA
An introduction to the history of the arts in China, Korea and Japan from antiquity to modern times, highlighting the impact of cultural exchange and diversity.
Three lectures; one term
Prerequisite: Registration in Level II or above

ART HIST 3A03 CONTEMPORARY ART AND VISUAL CULTURE
An examination of international art and visual culture applying theoretical approaches such as modernism, postmodernism, feminism, masculinity, post-colonial and queer theories.
Three lectures; one term
Prerequisite: ART HIST 2D03 and registration in Level II or above
Alternates with ART HIST 3J03.
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<td>ART HIST 3B03</td>
<td>ASPECTS OF CANADIAN ART</td>
<td>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 program. Alternates with ART HIST 3D03.</td>
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<tr>
<td>ART HIST 3D03</td>
<td>SEVENTEENTH-CENTURY ART</td>
<td>An examination of art and architecture produced in the seventeenth century and global variations of Baroque Art. Three lectures; one term. Prerequisite: Registration in Level II or above. Prior completion of ART HIST 2I03 is recommended. Alternates with ART HIST 3B03.</td>
</tr>
<tr>
<td>ART HIST 3E03</td>
<td>LATE ANTIQUE AND EARLY CHRISTIAN ART</td>
<td>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 Cross-list: CLASSICS 3G03 Alternates with ART HIST 3H03.</td>
</tr>
<tr>
<td>ART HIST 3F03</td>
<td>ARCHAIC GREEK ART</td>
<td>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: ART HIST 2B03</td>
</tr>
<tr>
<td>ART HIST 3G03</td>
<td>ITALIAN PAINTING AND SCULPTURE 1400-1580</td>
<td>An advanced level lecture course dealing with selected artists and works from the Early Renaissance to Manierism. Three lectures; one term. Prerequisite: Registration in Level II or above. Prior completion of ART HIST 2I03 is recommended. Alternates with ART HIST 3S03.</td>
</tr>
<tr>
<td>ART HIST 3H03</td>
<td>ISSUES IN 19TH-CENTURY ART AND VISUAL CULTURE</td>
<td>An historical and critical investigation of selected issues and artists of the 19th century. Three lectures; one term. Prerequisite: ART HIST 2D03 and registration in Level II or above. Alternates with ART HIST 3A03.</td>
</tr>
<tr>
<td>ART HIST 3I03</td>
<td>THEORIZING CULTURE THROUGH PERFORMANCE</td>
<td>Students will explore artists' practices in making performances and will analyze how artists work with theories, texts, spaces, bodies, audiences and produce challenges to artistic, social and political norms. Three hours; one term. Prerequisite: One of ART HIST 2D03, 3A03, CMST 2G03, 2P03, 2S03, THTR&amp;FLM 2C03, 2D03, 2E03 Cross-list: CMST 3L03, THTR&amp;FLM 3I03.</td>
</tr>
<tr>
<td>ART HIST 3J03</td>
<td>ISSUES IN STUDY CRITICISM</td>
<td>A course that allows non-Art students to explore current studio practice and to investigate approaches to the evaluation of quality in contemporary art. Students taking this course are required to attend a prescheduled number of Studio Critiques and Visiting Artists' Talks. Seminar (two hours); one term. Prerequisite: Registration in Level III of an Art History program. *Studio Art Critiques are regularly scheduled sessions during which the work of Art students is discussed by their peers, faculty members and visiting professionals from the art world. Visiting Artists' talks are held on weekday evenings on the same day as the Studio Critiques.</td>
</tr>
<tr>
<td>ART HIST 3K03</td>
<td>ART AND CIVILIZATION AT THE DAWN OF THE ITALIAN RENAISSANCE 1200-1400</td>
<td>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 II or above. Prior completion of ART HIST 2I03 is recommended. Alternates with ART HIST 3I03.</td>
</tr>
<tr>
<td>ART HIST 3L03</td>
<td>FILM HISTORY: 1941 TO THE PRESENT</td>
<td>An exploration of narrative film from 1941 to the present day, incorporating a study of a variety of narrative cinema styles. Theoretical issues will include questions of cinema's relationships to other art forms, narrative, genre and authorship. Two lectures, plus one weekly film screening; one term. Prerequisite: ART HIST 2G03 Cross-list: THTR&amp;FLM 3L03 Antirequisite: CMST 3X03. Offered in alternate years. This course is administered by Theatre &amp; Film.</td>
</tr>
<tr>
<td>ART HIST 3M03</td>
<td>CHINESE ART AND VISUAL CULTURE 200-750</td>
<td>An examination of how recent archaeological finds are re-defining our understanding of the pluralistic achievements in various arts during the transformative Period of Disunity leading to the Golden Age in China. Three lectures; one term. Prerequisite: ART HIST 2203.</td>
</tr>
<tr>
<td>ART HIST 3N03</td>
<td>ISSUES IN 19TH-CENTURY ART AND VISUAL CULTURE</td>
<td>An in-depth examination of one or more significant movements in contemporary art, theory and criticism from c. 1970 to the present. Seminar (two hours); one term. Prerequisite: ART HIST 3A03 or 3J03; or registration in Level III or IV of an Honours program in Art History. ART HIST 3A03 may be repeated, if on a different topic, to a total of six units. Offered in alternate years.</td>
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<tr>
<td>ART HIST 3O03</td>
<td>SEMINAR IN CONTEMPORARY ART AND VISUAL CULTURE</td>
<td>A focused study of issues concerning art and visual culture of the tenth through fourteenth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3I03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3P03</td>
<td>SEMINAR IN ANCIENT ART</td>
<td>A focused study of issues concerning art and visual culture of the eighteenth through twentieth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3L03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3Q03</td>
<td>SEMINAR IN ART AND VISUAL CULTURE 1400-1750</td>
<td>A focused study of issues concerning art and visual culture of the fourteenth through eighteenth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3L03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3R03</td>
<td>SEMINAR IN ART AND VISUAL CULTURE 1750 TO THE PRESENT</td>
<td>A focused study of issues concerning art and visual culture of the eighteenth through twentieth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3I03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3S03</td>
<td>SEMINAR IN ART AND VISUAL CULTURE 1400-1750</td>
<td>A focused study of issues concerning art and visual culture of the fourteenth through eighteenth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3L03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3T03</td>
<td>SEMINAR IN ART AND VISUAL CULTURE 1750 TO THE PRESENT</td>
<td>A focused study of issues concerning art and visual culture of the eighteenth through twentieth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3L03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3U03</td>
<td>SEMINAR IN ART AND VISUAL CULTURE 1750 TO THE PRESENT</td>
<td>A focused study of issues concerning art and visual culture of the eighteenth through twentieth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3L03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
</tr>
<tr>
<td>ART HIST 3V03</td>
<td>SEMINAR IN ART AND VISUAL CULTURE 1750 TO THE PRESENT</td>
<td>A focused study of issues concerning art and visual culture of the eighteenth through twentieth centuries. Consult the School of the Arts concerning the topic to be offered. Seminar (two hours); one term. Prerequisite: Registration in Level III or IV of an Honours program in Art or Art History. Prior completion of one of ART HIST 3L03, 3S03 or 3G03 is recommended. Offered in alternate years. ART HIST 3G03 may be repeated, if on a different topic, to a total of six units.</td>
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</table>
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 program in Art or Art History, Communication Studies or Multimedia.
Offered in alternate years.

ART HIST 4X03  INTRODUCTION TO ART
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 program in Art or Art History
Offered in alternate years.

ARTS AND SCIENCE
WEB ADDRESS:  http://www.mcmaster.ca/artsci
Commons Building, Room 105
Ext. 24655 or 23153

Director
Peter G. Sutherland

Council of Instructors as of January 15, 2008

Narayanaswamy Balakrishnan (Mathematics and Statistics)
James Benn (Religious Studies)
John D. Browning (Linguistics and Languages)
Alan Chen (Physics and Astronomy)
Nibaldo H. Galleguillos (Political Science)
Kathleen Garay (Women's Studies and History)
Louis I. Greenspan (Religious Studies)
Robert Henderson (Kinesiology)
Atif Kubursi (Economics)
Alan Mendelson (Religious Studies)
Miroslav Lovric (Mathematics and Statistics)
Alan Mendelson (Religious Studies)
Sara H. Mendelson (Arts and Science)
Carmel E. Mothersill (Medical Physics and Applied Radiation Sciences)
Patangi K. Rangachari (Medicine)
Victor Satzewich (Sociology)
Deborah Schrader
Colin B. Seymour (Medical Physics and Applied Radiation Sciences)
Peter G. Sutherland (Physics and Astronomy)
Mark Walker (Philosophy)
Jean Wilson (Linguistics and Languages; Comparative Literature and Arts & Science)

Notes:
1. Prerequisites: The prerequisite for all Level I, II, III and IV Arts & Science courses is registration in the Arts and Science Program.
2. Limited Enrolment: Enrolment in Level I of the Arse and Science Program is limited to approximately 60 students.

Courses

ARTS&SCI 1A06  WESTERN CIVILIZATION
An examination of significant themes in Western social and intellectual history, including theories of historical change and the influence of class, race and gender on the evolution of social systems.

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
This inquiry course, designed to develop skills basic to the systematic evidence-based investigation of public issues, focuses on 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 1A03 or MATH 1A3 is a prerequisite.
Antirequisite: MATH 1A03, 1A3, 1X03, 1XX3

ARTS&SCI 1E03  MOLECULAR PHYSIOLOGY
Historical examples will be used to explore cellular signalling mechanisms. The course will blend didactic and problem-based approaches.

 ARTS&SCI 2A06  MODERN WESTERN CIVILIZATION
Development of political, moral and religious thought in the writings of such major figures as Hobbes, Locke, Rousseau, Adam Smith, Burke, Marx, Mill, Weber, von Hayek, Nietzsche, Freud and Arendt.

ARTS&SCI 2D06  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, cultures and historical periods will be examined with a focus on how great writers have treated enduring ethical concerns. It aims to show how literature is an indispensable means of thinking about human life and society.
Prerequisite: Registration in Level III or above

ARTS&SCI 3B03  TECHNOLOGY AND SOCIETY I
The Culture of Technology. Technological practices and approaches are studied as cultural activities in the contexts of beliefs, philosophies, values and social structures both past and present.
Antirequisite: STPP 2A08

ARTS&SCI 3BB3  TECHNOLOGY AND SOCIETY II
The Social Control of Technology. The dominant mechanisms of the social control of technology will be studied, including an examination of assessment methods and the role of ethics.

ARTS&SCI 3CF3  INQUIRY TOPIC: DISCOVERY:
THE CONTEXT OF SCIENTIFIC RESEARCH I
Using an issue-based approach, the antecedents and consequences of scientific discoveries will be explored, focusing on themes such as the role of imagination in leading scientific discovery.

ARTS&SCI 3CG3  INQUIRY TOPIC: DISCOVERY:
THE CONTEXT OF SCIENTIFIC RESEARCH II
Using an issue-based approach, the antecedents and consequences of scientific discoveries will be explored, focusing on themes such as the art of interpreting scientific research.

ARTS&SCI 3C13  INQUIRY TOPIC:
DIVERSITY AND MULTICULTURALISM I
The social and economic impact in Canada of factors such as race, gender and culture will be explored from an historical perspective.

ARTS&SCI 3C3J  INQUIRY TOPIC:
DIVERSITY AND MULTICULTURALISM II
This course will focus on issues of diversity in Canada with respect to the Canadian model of multiculturalism and how it relates to other models, e.g. European, Australian and American models.

ARTS&SCI 3CK3  INQUIRY TOPIC:
CLIMATE CHANGE AND GLOBAL WARMING
An exploration of: the evidence for climate change, the consequences of and timeline(s) for global warming and credible options for mitigating negative outcomes.
ARTS&SCI 3CM3 INQUIRY TOPIC: ENVIRONMENTAL EDUCATION I
Environmental crisis will be explored as a crisis of western culture’s inability to live in a harmonious relationship with the earth. Intentional communities will be a focus with a residential field experience.

ARTS&SCI 3CN3 INQUIRY TOPIC: ENVIRONMENTAL EDUCATION II
Environmental crisis will be explored as a crisis of western culture’s inability to live in a harmonious relationship with the earth. Intentional communities will be a focus with a residential field experience. Prerequisite: ARTS&SCI 3CM3

ARTS&SCI 3CP3 INQUIRY TOPIC: MEDIA I
This course consists of four sections dealing with theoretical and analytical perspectives, political economy of the media, new media and entertainment media and their cultural effects.

ARTS&SCI 3CQ3 INQUIRY TOPIC: MEDIA II
This course consists of four sections dealing with theoretical and analytical perspectives, political economy of the media, new media and entertainment media and their cultural effects.

ARTS&SCI 3EE3 EXPERIENTIAL LEARNING STUDY I
Experiential study under the supervision of a McMaster faculty member, including a presentation at a final defence. Prerequisite: Registration in Level III or above. Permission is based on a study proposal submitted to the review committee, outlining the nature of the inquiry, the learning objectives and proposed modes of evaluation. An information package is available from the Arts & Science Office.

ARTS&SCI 3L03 THE EAST ASIAN RELIGIOUS TRADITION
Readings of Indian texts in translation will centre around themes such as the nature of human nature, free will and determinism; renunciation and social action; violence and non-violence; altruism and selfishness. Two lectures, one tutorial; one term. Prerequisite: Registration in Level III or above. Cross-list: RELIG ST 3L03.

ARTS&SCI 3S03 THE EAST ASIAN RELIGIOUS TRADITION
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 or above. Cross-list: RELIG ST 3S03, JAPAN ST 3S03.

ARTS&SCI 4A06 INDIVIDUAL STUDY
This course consists of four sections dealing with theoretical and analytical perspectives, political economy of the media, new media and entertainment media and their cultural effects. Prerequisite: Registration in Level III or above. Permission is based on a study proposal submitted to the review committee, outlining the nature of the inquiry, the learning objectives and proposed modes of evaluation. An information package is available from the Arts & Science Office.

ARTS&SCI 4A12 INDIVIDUAL STUDY
The same as ARTS&SCI 4A06 but based on more extensive study.

ARTS&SCI 4C06 THESIS
This course consists of original research under the supervision of a McMaster faculty member. Proposal deadline is March 1; information package is available in the Program office.

ARTS&SCI 4C12 THESIS
The same as ARTS&SCI 4C06 but based on more extensive research.

ARTS&SCI 4EE6 EXPERIENTIAL LEARNING STUDY II
Experiential study under the supervision of a McMaster faculty member, including a presentation at a final defence. Prerequisite: ARTS&SCI 3EE3 and registration in Level IV or above. Permission is based on a study proposal submitted to the review committee, outlining the nature of the inquiry, the learning objectives and proposed modes of evaluation. An information package is available from the Arts & Science Office.

ASIAN STUDIES
(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

ASTRONOMY
(SEE PHYSICS AND ASTRONOMY)

AUTOMOTIVE AND VEHICLE TECHNOLOGY
(SEE TECHNOLOGY, AUTOMOTIVE AND VEHICLE TECHNOLOGY)
<table>
<thead>
<tr>
<th>Courses</th>
<th>If no prerequisite is listed, the course is open.</th>
<th>BIOCHEM 3G03 PROTEINS AND NUCLEIC ACIDS</th>
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<tbody>
<tr>
<td>BIOCHEM 2B03 NUCLEIC ACID STRUCTURE AND FUNCTION Fundamentals concepts and experimental methods in studying both DNA and RNA. Nature of genetic information and its storage. Molecular basis of replication, transcription and translation. Three lectures; first term Prerequisite: BIOLOGY 1A03, CHEM 1A03, credit or registration in CHEM 2BA3 or 2OA3, registration in Honours Biochemistry, Honours Chemical Biology or Honours Molecular Biology; or registration in Honours Physics (Biophysics Specialization) Antirequisite: BIOCHEM 3G03</td>
<td>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 2OA3 and 2OB3; or CHEM 2BA3 and 2BB3; or CHEM 2OC3 and 2OD3; or a grade of at least B+ in CHEM 2E03; or CHEM 2E03 and registration in a Chemical Engineering program or Honours Physics (Biophysics Specialization) Antirequisite: BIOCHEM 2B03, 2BB3</td>
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<tr>
<td>BIOCHEM 2BB3 PROTEIN STRUCTURE AND ENZYME FUNCTION Fundamental concepts and experimental methods in studying structures of proteins, including membrane proteins. Nature of enzyme catalysis. Introduction to enzyme kinetics and mechanism. Three lectures; second term Prerequisite: BIOCHEM 2B03, one of CHEM 2PA3, 2R03 or CHEM BIO 2P03, credit or registration in CHEM 2BB3 or 2BB3, registration in Honours Biochemistry, Honours Chemical Biology or Honours Molecular Biology; or registration in Honours Physics (Biophysics Specialization) Antirequisite: BIOCHEM 3G03</td>
<td>BIOCHEM 3H03 CLINICAL BIOCHEMISTRY An outline of clinical chemistry; its relation to disease and relevance to health care. Three lectures; second term Prerequisite: BIOCHEM 3D03; or BIOCHEM 2EE3 and 3G03; or a grade of at least C+ in BIOCHEM 2EE3; or HTH SCI 2E03</td>
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<tr>
<td>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: One of CHEM 2BA3, 2E03, 2OA3, 2OC3 Antirequisite: BIOCHEM 3D03 Not open to students registered in an Honours Biochemistry or Honours Molecular Biology program.</td>
<td>BIOCHEM 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; second term Prerequisite: BIOCHEM 3D03; or BIOCHEM 2EE3 and 3G03; or a grade of at least C+ in BIOCHEM 2EE3; or HTH SCI 2E03</td>
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<tr>
<td>BIOCHEM 2L06 INQUIRY IN BIOCHEMICAL TECHNIQUES An inquiry approach to learning about current techniques in biochemical research. Students will work in small groups in labs and workshops, with a focus on how to search the primary literature, prepare and deliver written and oral presentations. One lecture (one hour), one lab or workshop (four hours); two terms Prerequisite: Credit or registration in BIOCHEM 2BB3 or 2BB3 and registration in Honours Arts &amp; Science and Biochemistry, Honours Biochemistry or Honours Physics (Biophysics Specialization) Cross-list: MOL BIOL 2L06 Antirequisite: BIOCHEM 3L03</td>
<td>BIOCHEM 3P03 ADVANCED BIOCHEMISTRY LABORATORY A preparation for independent experimental work in molecular biology and biochemistry. Multiple techniques are used to answer complex biochemical questions in a research project. One lab (three hours), one tutorial (three hours); first term Prerequisite: BIOCHEM 2L06 or 3L03; and registration in Honours Arts &amp; Science and Biochemistry or an Honours Biochemistry Specialization Antirequisite: BIOLOGY 3V03, MOL BIOL 3V03 Enrolment is limited.</td>
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<tr>
<td>BIOCHEM 3A03 BIOCHEMICAL RESEARCH PRACTICE A twelve week research project undertaken in a biochemistry laboratory during the fall, winter or summer term which requires the submission of a formal report. Students are responsible to arrange a suitable project, location and agreement of the supervisor. For further information, please refer to <a href="http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm">http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm</a>. Prerequisite: BIOCHEM 2B03, 2BB3; and registration in Honours Biochemistry or Honours Molecular Biology. Permission of the Department is required.</td>
<td>BIOCHEM 3X03 STRUCTURE AND FUNCTION OF MACROMOLECULES Elucidation of the structure of proteins and macromolecular assemblies and how structure determines protein function through relevant examples. Three lectures; first term Prerequisite: BIOCHEM 2BB3 or 3G03 Antirequisite: BIOCHEM 4K03 Enrolment is limited.</td>
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<td>BIOCHEM 3C03 CELLULAR BIOCHEMISTRY Biochemical basis of complex cellular processes such as compartmentalization, vesicular traffic, movement and programmed cell death. Emphasis is placed on the principles of evaluation of current research literature. Three lectures; second term Prerequisite: BIOCHEM 3D03; and registration in Honours Biochemistry (Molecular Biology Specialization), Honours Arts &amp; Science and Biochemistry or Honours Physics (Biophysics Specialization)</td>
<td>BIOCHEM 3Y03 INTRODUCTION TO COMPUTATIONAL BIOCHEMISTRY Introduction to biochemical databases, biological data mining and analysis tools, molecular modelling, and ligand docking. Use of internet resources of biological information, computers and software for solving structure- and information-related problems in a biomedical lab. Three lectures/tutorials in a computer lab; second term Prerequisite: Completion of any Biochemistry course Enrolment is limited.</td>
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<tr>
<td>BIOCHEM 3D03 METABOLISM AND REGULATION Principles of bioenergetics. Major pathways for carbohydrates and lipids in energy production. Photosynthesis. Nitrogen metabolism. Biosynthesis of small biomolecules. Integration and regulation of metabolic activities. Three lectures; first term Prerequisite: BIOCHEM 2B03, 2BB3 Antirequisite: BIOCHEM 2EE3</td>
<td>BIOCHEM 4B06 SENIOR RESEARCH PROJECT An extended research project supervised by a member or associate member of the Department of Biochemistry and Biomedical Sciences. It provides a suitable experience for graduate school or industry. Assessment is based on laboratory work, a poster presentation and a final report. Two or three terms Prerequisite: BIOCHEM 3P03 and registration in an Honours Biochemistry Specialization; or registration in Honours Physics (Biophysics Specialization). Permission of the Department is required. Application for permission must be received by March 1st of the academic year prior to registration. Students are expected to have a CA of at least 8.0. For further information, please refer to <a href="http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm">http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm</a>. Antirequisite: BIOCHEM 4C03, 4F09, 4L03, 4P03 Enrolment is limited.</td>
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<tr>
<td>BIOCHEM 3E03 INQUIRY IN BIOCHEMISTRY 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; second term Prerequisite: Registration in Level IV Honours Biochemistry Antirequisite: BIOCHEM 4B06, 4F09, 4P03</td>
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BIOCHEM 4E03 RECOMBINANT DNA TECHNOLOGY AND GENE EXPRESSION
Recombinant DNA techniques; theory and applications to the study of gene function and evolution and to disease diagnostics and gene therapy. Current concepts of gene regulation at different levels.
Three lectures; first term
Prerequisite: BIOCHEM 2B03; or BIOLOGY 3H03 and BIOCHEM 3G03; or a grade of at least B+ in BIOCHEM 3G03; or HTH SCI 2E03.

BIOCHEM 4EE3 ADVANCED TOPICS IN GENE EXPRESSION
A critical study of the literature from recent primary manuscripts on gene regulation and inter-related regulatory pathways. Emphasis is on the molecular and cellular biology of multiple pathways that interact to affect phenomena in biology and disease.
Three lectures; second term
Prerequisite: BIOCHEM 4E03.

BIOCHEM 4F09 SENIOR THESIS
A thesis based on a major research project supervised by a member or associate member of the Department of Biochemistry and Biomedical Sciences. The results will also be presented to the department in a seminar as part of a poster session.
Two terms
Prerequisite: BIOCHEM 3P03 and registration in an Honours Biochemistry Specialization. Permission of the department is required. Application for permission must be received by March 1st of the academic year prior to registration. Students are expected to have a C.A. of at least 9.5. For further information, please refer to http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm.
Antirequisite: BIOCHEM 4B06, 4C03, 4L03, 4P03.
Enrollment is limited.

BIOCHEM 4H03 BIOTECHNOLOGY AND DRUG DISCOVERY
Selected topics on genomics, proteomics and bioinformatics illustrating the modern application of molecular biology and biochemistry to pharmaceutical and other research. Three lectures; first term
Prerequisite: Either BIOLOGY 2B03 or HTH SCI 2K03, and either BIOLOGY 3H03 or HTH SCI 3D03, and either BIOLOGY 3X03 or HTH SCI 3I03, and HTH SCI 4I13; or permission of the instructor.
Cross-list: HTH SCI 4J03, MOL BIOL 4J03.
This course is administered by the Bachelor of Health Sciences (Honours) Program.

BIOCHEM 4L3 BIOTECHNOLOGY AND GENETIC ENGINEERING LABORATORY
Recombinant DNA technology including cloning, directed mutagenesis, DNA sequencing and expression of cloned genes. Reaction kinetics and -reactor design for enzyme and fermentation reactions. Advanced separation methods for bioprocessing operations.
Two labs (four hours); second term
Prerequisite: BIOCHEM 3D03 and registration in an Honours Biochemistry (Biotechnology and Genetic Engineering Specialization); or BIOCHEM 3G03 and registration in a Chemical Engineering program; or HTH SCI 2E03.

BIOCHEM 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: Either BIOLOGY 2B03 or HTH SCI 2K03, and either BIOLOGY 2C03 or HTH SCI 2D03, and either BIOLOGY 3X03 or HTH SCI 3I03, and HTH SCI 4I13; or permission of the instructor.
Cross-list: HTH SCI 4J03, MOL BIOL 4J03.
This course is administered by the Bachelor of Health Sciences (Honours) Program.

BIOCHEM 4N03 MOLECULAR MEMBRANE BIOLOGY
Properties and structures of membranes, molecular components of biological membranes and their interactions, strategies for signal transduction, cascade, hormones, receptors.
Three lectures; second term
Prerequisite: BIOCHEM 3D03 or 3G03; or BIOCHEM 2BB3 and registration in Honours Chemistry (Biological Specialization); or HTH SCI 2E03.
Antirequisite: BIOCHEM 4I03, 4K03, 4M03.

BIOCHEM 4P03 RESEARCH PROJECT
A project supervised by a member or associate member of the Department of Biochemistry and Biomedical Sciences. Assessment is based on laboratory work and a final report. May be taken first or second term.
Prerequisite: BIOCHEM 3P03; and registration in an Honours Biochemistry Specialization or Honours Physics (Biophysics Specialization). Permission of the Department is required. Application for permission must be received by March 1st of the academic year prior to registration. Students are expected to have a C.A. of at least 7.0. For further information, please refer to http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm.
Antirequisite: BIOCHEM 4B06, 4C03, 4F09, MOL BIOL 4R09.
Enrollment is limited.

BIOCHEM 4Q03 BIOCHEMICAL PHARMACOLOGY
Introduction to the basic concepts of pharmacology. Mechanisms of action of antibacterial, antiviral, antifungal and anticancer drugs, toxins and how cellular resistance to such agents develop. Applications of drug-resistant mutants for genetic, biochemical pharmacological and cellular biological studies.
Three lectures; first term
Prerequisite: BIOCHEM 3D03; or BIOCHEM 2EE3 and 3G03; or HTH SCI 2E03.

BIOCHEM 4S03 INTRODUCTION TO MOLECULAR BIOPHYSICS
A presentation of recent contributions made to the fields of molecular and cell biology by the use of physical approaches. Topics include physical properties of biomolecules, protein folding, molecular motors, cell motion and cell adhesion. Emphasis on the critical evaluation of current research literature.
Three lectures; second term
Prerequisite: One of CHEM 2R03, MATLS 2B03 or PHYSICS 2H04. PHYSICS 3S03 is recommended.
Cross-list: PHYSICS 4S03.
This course is administered by the Department of Physics and Astronomy.

BIOCHEM 4Y03 GENOMES AND EVOLUTION
Three lectures; second term
Prerequisite: BIOCHEM 2B03 or 3G03.
Antirequisite: BIOLOGY 4DD3.

BIOLOGY
WEB ADDRESS: http://www.science.mcmaster.ca/biology/

Faculty as of January 15, 2008

Chair
Turlough M. Finan

Associate Chairs
Patricia Chow-Fraser/Undergraduate Studies
Elizabeth A. Weretilnyk/Graduate Studies

Distinguished University Professor
Christopher M. Wood/B.Sc., M.Sc. (British Columbia), Ph.D. (East Anglia), F.R.S.C./Senior Canada Research Chair

Professors
Andrée Bédard/B.Sc. (Montreal), Ph.D. (McGill)
Ana Campos/B.A., M.A. (Rio de Janeiro), Ph.D. (Brandeis)
Patricia Chow-Fraser/B.Sc., M.Sc. (Waterloo), Ph.D. (Toronto)
Turlough M. Finan/B.Sc., M.Sc. (Galway), Ph.D. (Guelph)
G. Brian Golding/B.Sc., M.Sc. (Dalhousie), Ph.D. (Alberta)/Senior Canada Research Chair
Delsworth G. Hamish/P (Pathology and Molecular Medicine) B.Sc., M.Sc. (Queen's), Ph.D. (McMaster)

John A. Hassell/Biochemistry and Biomedical Sciences, Pathology and Molecular Medicine) B.Sc. (Brooklyn College), Ph.D. (Connecticut)
J. Roger Jacobs/B.Sc., M.Sc., Ph.D. (Toronto)
Jurek Kolasa/M.Sc., Ph.D. (Poznan)
Colin A. Nurse/B.Sc. (Western Ontario), Ph.D. (Harvard)
Michael J. O'Donnell/B.Sc., Ph.D. (Toronto)
James S. Quinn/B.Sc. (Queen's), M.Sc. (Brock), Ph.D. (Oklahoma)
Andrew J. Rainbow/B.Sc. (Manchester), M.Sc. (London), Ph.D. (McMaster)
C. David Rollo/B.Sc., M.Sc. (Guelph), Ph.D. (British Columbia)
Herbert E. Schellhorn/B.Sc., M.Sc. (Guelph), Ph.D. (North Carolina)
Rama S. Singh/B.Sc. (Agra), M.Sc. (Canpur), Ph.D. (California-Davis)
Elizabeth A. Weretilnyk/B.Sc., Ph.D. (Alberta)

Associate Professors

Christian Baron/Dipl. Microbiol, Ph.D. (Munich)
Robin K. Cameron/B.Sc. (Waterloo), Ph.D. (McGill)
Juliet M. Daniel/B.Sc. (Queen's), Ph.D. (British Columbia)
Susan A. Dudley/B.Sc., M.Sc. (McGill), Ph.D. (Chicago)
Suleiman A. Idgoura/B.Sc. (Victoria), M.Sc. (Western Ontario), Ph.D. (McGill)
Jianping Xu/B.Sc. (Jiangxi), M.Sc. (Nanjing and Toronto), Ph.D. (Toronto)

Adjunct Associate Professors

David A. Galbraith/(Royal Botanical Gardens), B.Sc., M.Sc. (Guelph), Ph.D. (Queen's)
James S. Pringle/(Royal Botanical Gardens), A.B. (Dartmouth), M.S. (New Hampshire), Ph.D. (Tennessee)

Assistant Professors

Kimberley Dej/B.Sc. (Toronto), Ph.D. (Johns Hopkins)
Jonathan Dusthoff/B.Sc. (Pennsylvania), Ph.D. (Princeton)
Marie Elliot/B.Sc./Ph.D. (to be named), Canada Research Chair
Ben Evans/B.Sc. (Waterloo), M.S., M.Phil., Ph.D. (Toronto)
Bhagwati Gupta/B.Sc. (Banaras Hindu), M.Sc. (Jawaharlal Nehru), Ph.D. (TATA Institute)/Canada Research Chair
Lovaye Kajiura/B.Sc., M.Sc., Ph.D. (McMaster)
Grant B. McClelland/B.Sc. (Ottawa), Ph.D. (British Columbia)
Jonathon Stone/B.Sc., M.Sc., Ph.D. (Toronto)/SHARCNet Chair in Computational Biology/Associate Director, Origins Institute
Joanna Wilson/B.Sc. (McMaster), M.Sc. (Victoria), Ph.D. (MIT/Woods Hole Oceanographic Institution)
Xu-Dong Zhu/B.Sc. (Nanjing), M.Sc. (Regina), Ph.D. (Toronto)

Instructional Assistants

Alison Cowie/L.I. Biol. (Bromley), M.Sc. (McMaster)
Lori Goff/B.Sc., M.Sc. (Guelph)
Marvin Gunderman/B.Sc., M.Sc. (McMaster)
Thélma Leech/B.Sc., M.Sc. (Guelph), M.Sc.(T.) (McMaster)
Beryl Piccinin/B.Sc. (Mount Allison), M.Sc. (McMaster)
Raymond Prowat/B.Sc. (McMaster), B.Ed. (Toronto)

Note:

No more than 12 units of Level II, III Biology (six units per year) may be taken in total by students enrolled in a three year Baccalaureate degree program.

Detailed course descriptions are available on the program web site at http://www.science.mcmaster.ca/biology/undergraduate_CourseOfferings

Courses

If no prerequisite is listed, the course is open.

BIOLOGY 1A93 INTRODUCTION TO COMPUTATIONAL BIOLOGY

Methods with which computers are used to study living systems are introduced. Computational techniques such as modelling, simulation and data analysis to conduct biological research are surveyed.

Three lectures, one tutorial; one term
Prerequisite: BIOLOGY 1AA3 or credit in BIOLOGY 1MO3 or HTH SCI 1E06; and credit or registration in MATH 1A03; and registration in a program in the Faculty of Science or permission of the instructor.

Not open to students with credit or registration in ISCI 1A24.

BIOLOGY 2A03 INTEGRATIVE PHYSIOLOGY OF ANIMALS

Fundamental principles of animal physiology, including: cellular energetics, diffusion, osmosis, membrane transport, excitability and contractility, gas exchange, fluid dynamics, electrolyte balance.

Three lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 1A03, 1A93 (or 1M03); or ISCI 1A24
Antirequisite: MED PHYS 4XX3, SCIENCE 4XX3.

Not open to students with credit or registration in BIOLOGY 3P03, 3U03, 3UU3, HTH SCI 1H03, 1HH3, 2F03, 2FF3, KINESIOL 1A06, 1Y03, 1YY3.

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, one lab (three hours), one tutorial; one term
Prerequisite: BIOLOGY 1A03, 1A93 (or 1M03), CHEM 1A03; or ISCI 1A24
Antirequisite: HTH SCI 2K03, MOL BIOL 2B03.

Not open to students registered in the Honours Molecular Biology program.

BIOLOGY 2C03 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, one tutorial (three hours); one term
Prerequisite: BIOLOGY 1A03, 1A93 (or 1M03), CHEM 1A03; or ISCI 1A24; and registration in an Honours program in the Faculty of Science, or a program in Arts & Science, Health Sciences or Kinesiology. Students are required to have a C.A. of at least 6.0; students who require this course for completion of their program are guaranteed admission. Enrolment is limited.

BIOLOGY 2D03 PLANT BIODIVERSITY

An introduction to plants emphasizing their diversity in structure, development, ecology, mechanisms of reproduction, adaptations for survival in different environments, and human uses.

Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 1A03 (or 1M03) and either BIOLOGY 1A03 or ENVIR SC 1B03; or ISCI 1A24.

BIOLOGY 2E03 INTRODUCTION TO MICROBIOLOGY AND BIOTECHNOLOGY

Introduction to microbial cell biology, ecology, pathogenicity, physiology, taxonomy, antimicrobial agent action and to the application of microorganisms in biotechnology.

Two lectures, one lab (three hours); one term
Prerequisite: ISCI 1A24 or BIOLOGY 1A03 and 1A93 (or 1M03) and CHEM 1A93 and credit or registration in one of CHEM 2B03, 2E03, 2O3, 2OC3; or registration in Level III Chemical Engineering and Bioengineering Antirequisite: BIOLOGY 3E03.

BIOLOGY 2F03 FUNDAMENTAL AND APPLIED ECOLOGY

An introduction to fundamental ecological principles and illustration of how these are applied to current environmental problems at the level of organisms, populations and ecosystems.

Three lectures, one optional tutorial, one lab (three hours); one term
Prerequisite: Biology 1AA3 (or 1M03) or ISCI 1A24.

BIOLOGY 2G03 INQUIRY I - CURRENT ISSUES IN BIODIVERSITY

An interactive course exposing students to current issues in the understanding, preservation and management of biodiversity and ecological integrity.

One lecture (three hours), one tutorial (two hours); one term
Prerequisite: BIOLOGY 2D03, 2F03; and registration in Level II or III of any program in the Faculty of Science, Health Sciences or the Arts & Science Program.

Note: Please note, BIOLOGY 3G03 is open only to students registered in the Biodiversity Specialization of the Honours Biology Program.
Antirequisite: BIOLOGY 2I03.
BIOLGY 2Y3: PRACTICAL DATABASES AND DATA MINING IN BIOLOGY
An introduction to the use of databases in the life sciences. How to find, add data to, and extract knowledge from computer databases.
Three lectures, one tutorial; one term.
Prerequisite: COMP SCI 1MD3 or PHYSICS 2G03
Offered in alternate years.
BIOLGY 2Z3: SIMULATIONS AND DYNAMICAL SYSTEMS IN BIOLOGY
A practical introduction to programming simulations of biological systems in order to answer questions in the life sciences.
Three lectures, one tutorial; one term.
Prerequisite: COMP SCI 1MD3 or PHYSICS 2G03
Offered in alternate years.
BIOLGY 3A3: 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.
Two lectures, one lab (three hours); one term.
Prerequisite: One of BIOLOGY 2A03; HTH SCI 2FF3; PSYCH 2F03; and one of BIOCHEM 2A06, 2BB3, 2EE3 or registration in BIOCHEM 3G03.
BIOLGY 3P3: PLANT PHYSIOLOGY
Principles of physiology and plant cell metabolism. Topics include: photosynthesis, photorespiration, mineral nutrition, water relations and transpiration.
Two lectures, one lab (three hours); one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03; and BIOLOGY 2D03
BIOLGY 3B3: 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 or MOL BIOL 2B03; and BIOLOGY 2D03
Offered on an irregular rotation basis.
BIOLGY 3CC3: MICROBIAL GENOMES AND SYSTEMS BIOLOGY
Advanced topics of microbial physiology/biochemistry and introduction to systems approaches based on microbial genomics, transcriptomics, proteomics and metabolomics projects.
Two lectures, one lab or tutorial (three hours); one term.
Prerequisite: BIOCHEM 2B03 or 2EE3; and BIOLOGY 2B03 or MOL BIOL 2B03; and BIOLOGY 2C03; and BIOLOGY 2D03; and BIOLOGY 2E03; or registration in one of CHEM 2A06, 2B03, 2C03
BIOLGY 3F03: VERTEBRATE ANATOMY
An introduction to the development of structure and function in vertebrates.
Three lectures, one lab (three hours); one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03. BIOLOGY 2A03 is strongly recommended.
Enrolment is limited.
BIOLGY 3FF3: EVOLUTION
The major theoretical concepts and empirical findings in micro- and macroevolution are surveyed.
Three lectures, one tutorial; one term.
Prerequisite: BIOLOGY 2C03
BIOLGY 3G03: INQUIRY II - CURRENT RESEARCH IN BIODIVERSITY
An interactive course highlighting current research programs in the general area of biodiversity within the Biology Department. Preparation for BIOLOGY 4C09 and 4F06 project on a biodiversity topic. A mandatory weekend field trip will be held in September. Students enrolling in this course must pay both the nominal incidental fees as prescribed by the instructor and regular tuition fees.
One lecture (three hours), one tutorial (two hours); one term.
Prerequisite: BIOLOGY 2G03. Restricted to students registered in Level III Honours Biology (Biodiversity Specialization).

BIOLGY 3H03: MOLECULAR BIOLOGY OF THE NUCLEUS
Structure of the nucleus and of chromatin; organization of DNA sequences; DNA replication, transcription; gene expression; some relevant techniques.
Two lectures, one tutorial (two hours); one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03
Antirequisite: BIOCHEM 3B03
BIOLGY 3H3: ORGANIZATION OF THE CYTOPLASM
A detailed examination of the molecular organization and function of cytoplasmic structures in metazoans, with particular focus on the differentiation and specialization of the cell surface and the cytoskeleton.
Three lectures, one tutorial; one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03
BIOLGY 3I3: EUKARYOTIC GENETICS
Molecular genetics of eukaryotes, with focus on molecular mechanisms of eukaryotic DNA replication, DNA repair and recombination, cell cycle and cancer, telomeres and telomerase.
Three lectures, one tutorial; one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03; and BIOLOGY 2C03
BIOLGY 3K03: ANIMAL HISTOLOGY
The structure, function, and organization of cells, tissues, organs and organ systems.
Three lectures, one lab (three hours); one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03. BIOLOGY 2A03 is strongly recommended.
Enrolment is limited.
BIOLGY 3M03: FUNDAMENTAL CONCEPTS OF DEVELOPMENT
Recent advances using genetic and molecular approaches will be discussed in the context of classical experiments. Various model systems (mice, fruitflies, worms) will be examined.
Two lectures, one tutorial or lab (three hours); one term.
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03; and BIOLOGY 2C03
BIOLGY 3M3: INVERTEBRATE FORM AND FUNCTION
Analysis of sensory reception, nervous control systems, feeding, skeletal support, locomotion, excretion, respiration, and reproduction in selected invertebrates.
Two lectures, one lab/tutorial (three hours); one term.
Prerequisite: BIOLOGY 2A03; or BIOLOGY 1A03 (or ISCI 1A24) and either KINESIOL 1A06 or one of 1A03; and one of 1A03 or 1A24 or 3G03
BIOLGY 3N03: MICROBIAL GENETICS
The genetics of bacteriophages, bacteria and fungi. Special emphasis will be placed on relationships between microbial genetics and general problems in genetics and gene regulation.
Three lectures, one tutorial; one term.
Prerequisite: BIOLOGY 2C03; and credit or registration in BIOLOGY 2E03 or 3E03
BIOLGY 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 or lab (three hours); one term.
Prerequisite: BIOLOGY 2A03 or PSYCH 2F03; or both BIOLOGY 1A03 (or ISCI 1A24) and either KINESIOL 1A06 or both KINESIOL 1A03 and 1A24; or both KINESIOL 1Y03 and 1Y03; and credit or registration in one of BIOCHEM 2A06, 2BB3 or 3G03
BIOLGY 3Q03: PEER MENTORING IN BIOLOGY (CELLULAR AND MOLECULAR BIOLOGY)
This course gives students theoretical and practical experience with teaching methods in cellular and molecular biology and focuses upon effective presentation and scientific writing skills.
One lecture (two hours), one practicum; one term.
Prerequisite: BIOLOGY 1A03 (or ISCI 1A24); and registration in Level III or above of a program in Arts & Science or the Faculty of Science; and permission of the instructor.
Antirequisite: BIOLOGY 3Q03, HTH SCI 4X03
Enrolment is limited. Applications must be submitted to the Undergraduate Assistant, Life Sciences Building, Room 119A prior to registration. Placements announced after completion of a successful interview.
**BIOLOGY 3QQ3**  
**PEER MENTORING IN BIOLOGY**  
(BIODIVERSITY, EVOLUTION AND HUMANITY)  
This course gives students theoretical and practical experience with teaching methods in biodiversity, evolution and ecology and focuses on effective presentation and scientific writing skills.  
One lecture (two hours), one practicum; one term  
Prerequisite: Biology 1A03 (or 1M03) or ISCI 1A24; and registration in Level III or above of a program in Arts & Science or the Faculty of Science; and permission of the instructor  
Antirequisite: BIOLOGY 3Q03, HTH SCI 4X03  
Enrolment is limited. Applications must be submitted to the Undergraduate Assistant, Life Sciences Building, Room 119A prior to registration. Placements announced after completion of a successful interview.

**BIOLOGY 3RR3**  
**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. This module must differ from any completed for credit in BIOLOGY 4J03, 4JJ3. Available modules are posted in December 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: ISCI 1A24 or BIOLOGY 1A03 and 1AA3 (or 1M03), or one of ENVIR SC 1A03, 1B03 or 1G03; and permission of the Course Administrator, Life Sciences Building, Room 119A. Some modules have additional prerequisites. For information on Field Biology, please refer to the Biology web site at http://www.science.mcmaster.ca/biology/biology_undergraduate_CourseOfferings and click on BIOLOGY 3R03, or contact the Course Administrator.  
Enrolment is limited.

**BIOLOGY 3S03**  
**AN INTRODUCTION TO BIOINFORMATICS**  
This course introduces the techniques and methods of basic computer analysis of sequence data, including alignment, databases, and phylogenetic reconstruction.  
Three lectures, one tutorial; one term  
Prerequisite: BIOLOGY 2C03  
Antirequisite: BIOLOGY 4K03

**BIOLOGY 3S33**  
**POPULATION ECOLOGY**  
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 3T33**  
**COMMUNITY ECOLOGY**  
Community structure; succession; patterns of diversity and their relevance to conservation; elements of biological control; energy flow; nutrient cycling and climatic influences.  
Three lectures, one lab (three hours); one term  
Prerequisite: BIOLOGY 2F03. BIOLOGY 2D03 and STATS 1CC3 or 2B03 are recommended.

**BIOLOGY 3U03**  
**ANIMAL PHYSIOLOGY - HOMEOSTASIS**  
Respiration, circulation, acid-base balance and renal function.  
Two lectures, one lab/tutorial (three hours); one term  
Prerequisite: BIOLOGY 2A03, or both BIOLOGY 1A03 (or ISCI 1A24) and six units from KINESIOL 1A03, 1AA3 (or 1A06), 1Y03, 1YY3, and registration in Level III or above of any Honours program. BIOCHEM 2EE3 and 3G03 are recommended.  
Antirequisite: MED PHYS 4X3, SCIENCE 4X3  
Not open to students registered in the Faculty of Health Sciences or with credit or registration in HTH SCI 2F03 or 2FF3.  
Enrolment is limited.

**BIOLOGY 3U33**  
**ANIMAL PHYSIOLOGY - REGULATORY SYSTEMS**  
Regulation associated with major features and functions of organisms (e.g. feeding, reproduction, thermoregulation, growth, stress, sleep, aging). Emphasis on endocrinology, evolution, vertebrates and ecology. Material will include selected readings.  
Three lectures; or two lectures, one tutorial; one term  
Prerequisite: BIOLOGY 2A03, or both BIOLOGY 1A03 (or ISCI 1A24) and six units from KINESIOL 1A03, 1AA3 (or 1A06), 1Y03, 1YY3, BIOLOGY 2B03 (or MOL BIOL 2B03) and 2C03 are recommended.  
Antirequisite: BIOLOGY 4D03, MED PHYS 4X3, SCIENCE 4X3  
Not open to students registered in the Faculty of Health Sciences or with credit or registration in HTH SCI 2F03 or 2FF3.  
Enrolment is limited.

**BIOLOGY 3V03**  
**TECHNIQUES IN MOLECULAR GENETICS**  
A laboratory course involving basic experiments in Molecular Genetics. One lecture, two labs (three hours each); one term  
Prerequisite: Credit or registration in BIOLOGY 3O03 and registration in Level III or above of any Honours Biology program  
Antirequisite: BIOCHEM 3P03, MOL BIOL 3V03  
Enrolment is limited.

**BIOLOGY 3W33**  
**MICROBIOLOGY INQUIRY**  
An interactive course highlighting current research programs in the general field of microbiology as well as specific interests in microbiology within the Department of Biology.  
One lecture (three hours), one tutorial; one term  
Prerequisite: Registration in Level III Honours Biology (Microbiology and Biotechnology Specialization)

**BIOLOGY 3Y03**  
**PLANT RESPONSES TO THE ENVIRONMENT**  
How plants respond at the genetic, molecular, biochemical and phenotypic levels to environmental stress. Manipulation of these responses to improve crops will be explored.  
Three lectures; one term  
Prerequisite: BIOLOGY 2B03 or MOL BIOL 2B03; and BIOLOGY 2C03, 2D03

**BIOLOGY 3Y33**  
**INTRODUCTION TO GENOMICS**  
An introduction to the field of genomics. The technologies used to do high throughput biological experiments, the results of large genomic studies and how these studies affect society.  
Three lectures, one tutorial; one term  
Prerequisite: BIOLOGY 2C03  
First offered in 2009-2010.

**BIOLOGY 3Z33**  
**TOPICS IN PHYSIOLOGY**  
An advanced seminar focusing on current topics in physiology. One seminar (two hours); two terms  
Prerequisite: Registration in Honours Biology (Physiology Specialization)

**BIOLOGY 4A03**  
**ADVANCED TOPICS IN ECOLOGY**  
Examination of current topics in ecology including ecosystem and landscape ecology, evolutionary ecology and behavioural ecology.  
Two lectures, one tutorial (three hours); one term  
Prerequisite: One of BIOLOGY 3FF3, 3J03, 3SS3 or 3TT3; and registration in Level III or above of any Honours program  

**BIOLOGY 4A33**  
**CONSERVATION BIOLOGY**  
Examination of how biological principles, mainly from population biology and genetics can be applied to conserving diversity in the natural world.  
Three lectures, one lab (three hours); one term  
Prerequisite: BIOLOGY 2C03; and one of BIOLOGY 3FF3, 3J03, 3SS3 or 3TT3; and registration in Level III or above of any Honours program  
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: One of BIOCHEM 2A06, 2BB3 or 3G03; and registration in Level III or above of any Honours program  
BIOLOGY 4C09  
**SENIOR THESIS**  
A thesis based upon a research project in an area of biology carried out under the direction of a member of the Biology department.  
Prerequisite: Registration in Level IV of any Honours Biology program and permission of the Course Administrator, Life Sciences Building, Room 119A. Students are expected to have a C.A. of at least 8.5. Arrangements to take BIOLOGY 4C09, including agreement of the supervisory committee, should be made according to Departmental Guidelines before the end of March in Level III. For information on Departmental Guidelines, please refer to the Biology web site at http://www.science.mcmaster.ca/biology/biology_undergraduate_CourseOfferings and click on BIOLOGY 4C09, or contact the Course Administrator.  
Enrolment is limited.
BIOL 4DD3 MOLECULAR EVOLUTION
The study of how molecules change over time within and between species. The experimental data, techniques and theories will be examined.
Two lectures, one tutorial; one term
Prerequisite: ANTHROP 2003 or BIOL 4FF3; and registration in Level III or above of any Honours program
Antirequisite: BIOCHEM 4Y03
Offered in alternate years. Offered in 2008-2009.

BIOL 4EE3 POPULATION GENETICS
Conceptual foundations of evolutionary theory and principles of population genetics.
Three lectures; or two lectures, one tutorial; one term
Prerequisite: BIOL 2003, 3FFF; and registration in Level III or above of any Honours program
Antirequisite: BIOL 3J03

BIOL 4E3 HUMAN DIVERSITY AND HUMAN NATURE
The nature of genetic diversity in humans; the nature versus nurture debate in relation to genetic determinism and biological basis of behaviour.
Three lectures, one tutorial; one term
Prerequisite: BIOL 2003, 3FFF and registration in Level II; or above of any Honours program

BIOL 4F06 SENIOR PROJECT
Students undertake an experimental or library project in a specialized area of biology under the direction of a member of the Biology department.
Prerequisite: Registration in Level IV of any Honours Biology program and permission of the Course Administrator, Life Sciences Building, Room 119A.
Students are expected to have a C.A. of at least 8.5. Arrangements to take BIOL 4F06, including the agreement of the supervisory committee, should be made according to Departmental Guidelines before the end of March in Level III. For information on Departmental Guidelines, please refer to the Biology web site at http://www.science.mcmaster.ca/biology/biology_undergraduate_CourseOfferings and click on BIOL 4F06; or contact the Course Administrator.
Enrolment is limited.

BIOL 4G90 SENIOR GENETICS CO-OP THESIS
A thesis based upon a research project in an area of genetics carried out under the direction of a member of the Department of Biology.
Prerequisite: Registration in Level IV of the Honours Biology Genetics Specialization Co-op program and permission of the Course Administrator, Life Sciences Building, Room 119A. Arrangements to take BIOL 4G90, including the agreement of the supervisory committee, should be made according to Departmental Guidelines before the end of March in Level III. For information on Departmental Guidelines, please refer to the Biology web site at http://www.science.mcmaster.ca/biology/biology_undergraduate_CourseOfferings and click on BIOL 4G90; or contact the Course Administrator.
Enrolment is limited.

BIOL 4F03 MEDICAL MICROBIOLOGY
Two lectures, one tutorial (three hours); one term
Prerequisite: BIOL 2EE3 or 3EQ; and registration in Level III or above of any Honours program. Credit or registration in BIOL 3003 is strongly recommended.

BIOL 4PP3 MICROBIAL DIVERSITY AND ENVIRONMENTAL BIOTECHNOLOGY
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 tutorial (three hours); one term
Prerequisite: BIOL 2EE3 or 3EQ; and registration in Level III or above of any Honours program. Credit or registration in BIOL 3003 is strongly recommended.

BIOL 4O03 HUMAN GENETICS
The human genome and genetic medicine. Topics include normal and pathological cytology; human genome project; gene mapping, linkage and therapy.
Two lectures; one tutorial; one term
Prerequisite: BIOL 2003 or MOL BIOL 2003; and BIOL 2003, 3003; and registration in Level III or above of any Honours program

BIOL 4O03 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 neurological disorders.
Two lectures, one tutorial (three hours); one term
Prerequisite: BIOL 3O03 and registration in Level III or above of any Honours program

BIOL 4O03 ENVIRONMENTAL PHYSIOLOGY
The influence of environmental factors on the physiology of animals and the adaptation of animals to diverse environments in the context of biodiversity.
Three lectures; or two lectures, one tutorial; one term
Prerequisite: One of BIOL 2B03, 2C03 or MOL BIOL 2B03; and credit or registration in one of MED PHYS 3T03, 4B03, PHYSICS 3T03; or registration in Level IV of Medical and Physics Co-op

BIOL 4X3 WORKSHOP IN MOLECULAR GENETICS
An intensive two week laboratory/lecture course. Topics covered will include scientific reasoning, ethics, technology transfer, molecular genetics techniques, techniques used in cell culture and gene expression studies.
Note: Course will consist of two weeks of laboratory instruction, seminars and workshops. To be held the first two weeks of May.
Prerequisite: BIOL 2EE3 or 3EQ; and registration in Honours Biology (Genetics Specialization or Microbiology and Biotechnology Specialization) or Honours Biology Genetics Specialization Co-op. Permission of the instructor. Application for permission must be received by March 31st of the academic year prior to registration.
Enrolment is limited.

BIOL 4Y03 ECOLOGY OF INLAND WATERS
Physical, chemical and biological interrelationships of inland waters, including aspects of pollution.
Two lectures, one lab (three hours); one term
Prerequisite: BIOL 2F03 and credit or registration in one of BIOL 3G03, 3H03, 3T03 and registration in Level III or above of any Honours program
BIOTECHNOLOGY
(SEE TECHNOLOGY, BIOTECHNOLOGY)

BUSINESS
(SEE COMMERCE)

CANADIAN STUDIES
(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

CAYUGA
(SEE INDIGENOUS STUDIES, CAYUGA)

CHEMICAL BIOLOGY
(SEE CHEMISTRY)

CHEMICAL ENGINEERING

WEB ADDRESS:  http://www.chemeng.mcmaster.ca

Chair
A. N. Hrymak

Distinguished University Professors

Professors
Rafik O. Loufy/B.Sc., M.Sc. (Ain Shams), Ph.D. (Western Ontario), M.B.A. (Toronto), F.C.I.C.

Thomas E. Marlin/B.S. (SUNY), M.S. (Dayton), Ph.D. (Massachusetts)

Robert H. Petlon/E.Sc., M.Sc. (Guelph), Ph.D. (Bristol/Senior Canada Research Chair


Shiping Zhu/B.Eng. (Zhejiang), Ph.D. (McMaster), P.Eng./Canada Research Chair

Adjunct Professor
Lyndon W. J. Jones/B.Sc. (Wales), Ph.D. (Aston)

Associate Professors
Raja Ghosh/B.Sc., M.S. (Jadavpur), D.Phil. (Oxford)/Canada Research Chair

Christopher L. E. Swartz/B.Sc.Eng. (Cape Town), Ph.D. (Wisconsin), P.Eng.

Heather Sheardown/B.Eng. (McMaster), Ph.D. (Toronto), P.Eng.


Adjunct Associate Professors
Theodora Kourtii/Dipl. Eng. (Chemical) (Aristotle), Ph.D. (McMaster)

Qing Liu/B.Sc., M.S. (University of Science and Technology, China), Ph.D. (Technical University of Technology, Beijing)

Yiliang Wu/B.Sc. (Sichuan), M.Sc. (University of Science and Technology, China), Ph.D. (Tokyo Institute of Technology)

Assistant Professors
Carlos Filipé/B.Sc. (Universidade Catolica Portuguesa), Ph.D. (Clemson)

Kim Jones/B.Sc. (Waterloo), M.Sc. (Guelph), Ph.D. (Toronto)

Prashant M. 11askar/B.Tech (IIT), M.S. (Louisiana State), Ph.D. (California-Los Angeles)

Adjunct Assistant Professors
Santiago Faucher/B.Sc. (Queen’s), Ph.D. (McMaster)

Leopold K. (Kris) Kostinski/M.Eng., Ph.D. (Technical University of Szczecin)

Honglu Yu/B.Eng., M.Eng. (Tsinghua, China), Ph.D. (McMaster)

Industry Professor
Paul Szabo/B.Eng., M.Eng. (Bucharest), P.Eng

Associate Members
Michael Brook/Chemistry) B.Sc. (Toronto), Ph.D. (McGill)
Joseph McDermdid/Mechanical Engineering) B.A.Sc. (Queens) M.Eng., Ph.D. (McGill)

Judith West-Mays/(Pathology and Molecular Medicine) B.Sc. (Wilfrid Laurier), M.Sc., Ph.D. (Waterloo)

Department Note:
All Chemical Engineering courses are open to students registered in a Chemical Engineering program, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other Engineering departments and other faculties.

Courses
CHEM ENG 2A04  HEAT TRANSFER
Steady and unsteady conduction and convection, condensation and boiling. Understanding fundamentals behind heat exchangers, and finned arrangements. Numerical simulations of complex heat transfer systems.
Three lectures, one tutorial (two hours); second term
Prerequisite: Registration in a Chemical Engineering or Materials Engineering program
Corequisite: One of CHEM ENG 2B03, 2F04, MATLS 2B03, 2D03

CHEM ENG 2B03  INTRODUCTION TO BIOPROCESS ENGINEERING
Unit operations approach; material and energy balances; survey of momentum, heat, and mass transfer; basics of chemical process design. Two lectures (one hour each), one tutorial (two hours); first term
Prerequisite: Registration in Level II Honours Biochemistry (Biotechnology and Genetic Engineering Specialization); or Level II Honours Biology (Microbiology and Biotechnology Specialization)
Not open to students registered in a Chemical Engineering program

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 of any Chemical Engineering program

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 2G03  PROBLEM SOLVING AND TECHNICAL COMMUNICATION
Developing awareness, strategies, creativity, analysis and interpersonal skills in the context of solving homework problems and preparing technical communications. Interpretation, retrieval manipulation and communication of information.
Three lectures; first term

CHEM ENG 3B03  BIO-REACTION ENGINEERING
Three lectures; first term
Prerequisite: Registration in Level IV of any Chemical Engineering program; or CHEM ENG 2B03; or permission of the Department

CHEM ENG 3B03  BIOSEPARATIONS ENGINEERING
Introduction to bioseparations engineering, cell disintegration, adsorption, precipitation, protein separation processes, extraction, adsorption, chromatography, centrifugal separations, filtration, membrane based separation processes, electrophoresis.
Three lectures; second term
Prerequisite: Registration in Level IV of a Chemical Engineering Program; or CHEM ENG 2B03; or permission of the Department
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; and MATH 2M06 (or 2M03 and 2MM3) or both MATH 2P04 and 2P06

CHEM ENG 3G04  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. Three lectures, one tutorial (two hours); second term
Prerequisite: CHEM ENG 2F04, 2G03; and credit or registration in CHEM ENG 2G03

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: MATH 2M06 (or 2M03 and 2MM3) or both MATH 2P04 and 2P06 and registration or credit in CHEM ENG 2F04 and 3D03; or a grade of at least B+ in CHEM ENG 2B03 and permission of the Department

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 3G04 and credit or registration in CHEM ENG 2A04 and 3004

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 2G04

CHEM ENG 3N04  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 2M03 and 2MM3) or both MATH 2P04 and 2P06 and registration or credit in CHEM ENG 2F04 and 3D03; or a grade of at least B+ in CHEM ENG 2B03 and permission of the Department

CHEM ENG 3P04  PROCESS CONTROL
Transient behaviour of chemical processes. Theory and practice of automatic control. Introduction to computer process control. Three lectures, one tutorial (two hours); second term
Prerequisite: MATH 2M06 (or 2M03 and 2MM3) or both MATH 2P04 and 2P06 and credit or registration in CHEM ENG 2A04, 3E04, 3K04, 3004
Antirequisite: CHEM ENG 3P03

CHEM ENG 3Q04  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: One of CHEM 2E03, 2Q03, 2B03, 2W2

CHEM ENG 4B03  POLYMER REACTION ENGINEERING
Kinetics of polymerization: step-growth and chain-growth (free radical, anionic, anionic coordination and cationic). Polymerization processes: solution, bulk, suspension, emulsion, gas-phase, slurry and reactive processing. Principles of polymer process and reactor design, optimization and control. Three lectures; first term
Prerequisite: CHEM ENG 3K04

CHEM ENG 4C03  STATISTICS FOR ENGINEERS
Linear regression analysis in matrix form, non-linear regression, multiple response estimation, design of experiments including factorial and optimal designs. Special emphasis on methods appropriate to engineering problems. Three lectures; first term
Prerequisite: One of COMMERCE 2QA3, STATS 3N03 or 3Y03

CHEM ENG 4E03  DIGITAL COMPUTER PROCESS CONTROL
This course addresses key aspects of implementing control via discrete calculations using digital computers. Topics include discrete-time dynamic models, system identification, analysis of discrete-time systems, design of digital control systems and model predictive control. Three lectures; first term
Prerequisite: CHEM ENG 3P03 or 3P04

CHEM ENG 4G03  OPTIMIZATION IN CHEMICAL ENGINEERING
The application of optimization methods to important engineering problems in equipment design and operation, statistics, control, engineering economics and scheduling. The course will emphasize problem definition, model formulation and solution analysis, with sufficient detail on existing algorithms and software to solve problems. Two lectures, one tutorial (two hours); second term
Prerequisite: CHEM ENG 3E04, 3G04, 3M04, 3P03, 3P04 (or 3P04)

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 of any Chemical Engineering program

CHEM ENG 4L3  BIO LABORATORIES
Recombinant DNA technology including cloning, directed mutagenesis, DNA sequencing and expression of cloned genes. Reaction kinetics and reactor design for enzyme and fermentation reactions. Advanced separation methods for bioprocessing operations. Two labs (four hours); second term
Prerequisite: BIOCHEM 4H03 and registration in Honours Biochemistry (Biotechnology and Genetic Engineering Specialization); or BIOCHEM 3G03 and registration in Chemical Engineering and Bioengineering Antirequisite: BIOCHEM 4B06, 4B08, 4F09, 4G03, 4L03 Cross-list: BIOCHEM 4L3
This course is administered by the Department of Biochemistry and Biomedical Sciences.

CHEM ENG 4M03  SEPARATIONS
Overview of separation processes, liquid-liquid extraction, supercritical fluid extraction, adsorption, filtration, membrane separation processes. Three lectures; first term
Prerequisite: CHEM ENG 2A04, 3004, 3M04

CHEM ENG 4N04  ENGINEERING ECONOMICS AND PROBLEM SOLVING
Making decisions about the design and operation of engineering systems, with the analysis emphasizing safety, economics, equipment performance, uncertainty, flexibility and monitoring, including troubleshooting. Students will work individually and in groups on problem-based projects. Three lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 3K04, 3M04, 3P03, 3P04 (or 3P04); and registration in CHEM ENG 3G04
Antirequisite: ENGINEER 2B03, 4B03

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; second term
Prerequisite: One of CHEM ENG 3D04, ENG PHYS 3003, 3004 or MECH ENG 3004
CHEM ENG 4W04 CHEMICAL PLANT DESIGN AND SIMULATION
Projects, often in cooperation with industry, usually involve steady-state computer simulation of an existing process or design 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 the final level of any Chemical Engineering program.
Corequisite: CHEM ENG 4N04

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; one term. Prerequisite: One of CHEM ENG 2A04, MATLS 3E04 or MECH ENG 3R03; and CHEM ENG 3004 or MECH ENG 3004

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 the final level of any Chemical Engineering program and a CA of at least 9.5. CHEM ENG 4Z03 INTERFACIAL ENGINEERING
The physics and chemistry at the "nano" scale including interactions forces, colloids, surface active systems, wetting, adhesion, and flocculation. Three lectures; second term. Prerequisite: Registration in final level of any Engineering program.

CHEMISTRY

WEB ADDRESS: http://www.chemistry.mcmaster.ca
A.H. Bourns Science Building, Room 156 Ext. 23490

Faculty as of January 15, 2008

Chair
Brian E. McCurry

Associate Chair
Jacques Barbier

Professors
Alexander D. Bair/B.Sc. (Toronto), M.Sc. (British Columbia), Ph.D. (Cambridge)
Jacques Barbier/M.Sc. (Toronto), Ph.D. (ANU)
John D. Brennan/B.Sc., M.Sc., Ph.D. (Toronto)Canada Research Chair
Michael A. Brook/B.Sc. (Toronto), Ph.D. (McGill)
John E. Greedan/B.A. (Bucknell), Ph.D. (Tufts), F.C.I.C.
Adam P. Hitchcock/B.Sc. (McMaster), Ph.D. (British Columbia), F.C.I.C.
Senior Canada Research Chair in Materials Research - CLS/CCRS, F.C.I.C, F.R.S.C.
William J. Leigh/B.Sc., M.Sc., Ph.D. (Western Ontario), F.C.I.C.
Brian E. McCurry/B.Sc. (British Columbia), Ph.D. (Stanford), F.C.I.C.
Stephen A. Jarlskog Chair in Environment and Health
Gary J. Schrobilgen/B.Sc. (Loras College, Iowa), M.Sc. (Brock), Ph.D. (McMaster), F.R.S.C.
Harald D.H. Stover/B.Sc. (Darmstadt), Ph.D. (Ottawa)
Johan K. Terlouw/B.Sc., M.Sc., Ph.D. (Utrecht)

Adjunct Professor
Yuning Li/Xerox Research Centre Canada), B.Sc., M.Sc. (Dalian University of Technology, China), Ph.D. (Japan Advanced Institute of Science and Technology)

Associate Professors
Alex Adronov/B.Sc. (McMaster), Ph.D. (California-Berkeley)
Paul W. Ayers/B.S. (David Lipscomb), Ph.D. (North Carolina-Charlotte Hill)Canada Research Chair
Paul J. Berti/B.Sc. (Waterloo), M.Sc. (Ottawa), Ph.D. (McGill)
Alfredo Caprara/B.Sc., Ph.D. (McMaster)
Randall S. Dumont/B.Sc. (Western Ontario), Ph.D. (Toronto)
Gillian R. Goward/B.Sc. (McMaster), Ph.D. (Waterloo)
Paul H.M. Harrison/B.A. (Oxford), Ph.D. (Alberta)
Yingfu Li/B.Sc. (Anhui, China), M.Sc. (Beijing Agr.), Ph.D. (Simon Fraser)Canada Research Chair

Jim McNulty/B.Sc., M.Sc., Ph.D. (Toronto)
John F. Valliant/B.Sc., Ph.D. (McMaster)
Ignacio Vargas-Baca/B.Sc., M.Sc. (UNAM), Ph.D. (Calgary)

Assistant Professors
James F. Britten/B.Sc. (St. Francis Xavier), Ph.D. (McMaster)
Philip Britz-McKibbin/B.Sc. (Toronto), Ph.D. (British Columbia)Undergraduate Advisor
David J.H. Emslie/B.Sc., Ph.D. (Bristol)
Donald W. Hughes/B.Sc., Ph.D. (McMaster)
Peter Kruse/Dipl. Chem. (FSU-Jena), Ph.D. (California-San Diego)
Philippa Lock/B.Sc., Ph.D. (McMaster)
Giuseppe Melacini/B.Sc., Ph.D. (Milan)
Yuri Mozharovsky/B.Sc., M.Sc. (Lviv State), Ph.D. (Iowa State)
Kalachcheli Saravanamuttu/B.Sc., Ph.D. (McGill)

Associate Members
Raman Chirakkal/Radiology B.Sc. (Kerala, India), M.Sc. (Brock), Ph.D. (McMaster)
Richard M. Epand/Biochemistry and Biomedical Sciences AB. (Johns Hopkins), Ph.D. (Columbia)
Robert H. Pelton/Chemical Engineering M.Sc. (Guelph), Ph.D. (Bristol)
Gerald D. Wright/Biochemistry and Biomedical Sciences B.Sc., Ph.D. (Waterloo)

Department Note:
Students not in a Science program should note that CHEM 1A03 is a prerequisite for CHEM 2E03 and that CHEM 2E03 is a prerequisite for BIOCHEM 2E03.

CHEMICAL BIOLOGY

If no prerequisite is listed, the course is open.

CHEM BIO 2A03 INTRODUCTION TO BIO-ANALYTICAL CHEMISTRY
An introductory course covering basic principles of quantitative analysis of biological samples based on classical volumetric techniques and modern instrumental methods including spectroscopy and chromatography. Three lectures, one lab; one term.
Prerequisite: CHEM 1A03, 1AA3 and registration in an Honours Biochemistry, Honours Biology, Honours Chemical Biology or Honours Life Sciences program.

CHEM BIO 2P03 BIO-PHYSICAL CHEMISTRY
A survey of thermodynamic and kinetic principles and their application to biological and environmental systems. Three lectures; one term.
Prerequisite: CHEM 1A03, 1AA3 and registration in an Honours Biochemistry, Honours Biology, Honours Chemical Biology or Honours Life Sciences program.

CHEM BIO 2L03 INQUIRY FOR CHEMICAL BIOLOGY
Systematically investigate issues in Chemical Biology while developing skills in formulating and refining questions, searching and analyzing the scientific literature, and written and oral presentation. Three lectures; one term.
Prerequisite: Registration in Honours Chemical Biology.

CHEM BIO 2L03 CHEMICAL BIOLOGY LABORATORY I
Students will be introduced to the standard tools and techniques employed in Chemical Biology research.
One lecture, one lab; one term.
Prerequisite: Registration in Honours Chemical Biology.

CHEM BIO 2P03 PHYSICAL CHEMISTRY
A survey of thermodynamic and kinetic principles and their application to biological and environmental systems. Three lectures; one term.
Prerequisite: CHEM 1A03, 1AA3 and registration in an Honours Biochemistry, Honours Biology, Honours Chemical Biology or Honours Life Sciences program.

CHEM BIO 2P03 INQUIRY FOR CHEMICAL BIOLOGY
Systematically investigate issues in Chemical Biology while developing skills in formulating and refining questions, searching and analyzing the scientific literature, and written and oral presentation. Three lectures; one term.
Prerequisite: CHEM BIO 2L03.

First offered in 2009-2010.
CHEM BIO 3OA3 BIO-ORGANIC CHEMISTRY
Chemistry and biology of primary metabolism, synthesis, biosynthesis and degradation of carbohydrates, nucleotides, and proteins are compared and contrasted by studying reaction mechanisms and catalysis.
Three lectures; one lab; one term
Prerequisite: One of CHEM 2BB3, 2OB3, 2OD3
Antirequisite: CHEM 3FF3
May be offered in alternate years.
First offered in 2009-2010.

CHEM BIO 3OB3 APPLICATIONS OF SPECTROSCOPY: STRUCTURAL ELUCIDATION
Applications of spectroscopy detailing the use of NMR, MS, IR, and UV in determining structures of small molecules and biomolecules with a particular focus on natural products.
Three lectures; one term
Prerequisite: One of CHEM 2BB3, 2OB3, 2OD3
May be offered in alternate years.
First offered in 2009-2010.

CHEM BIO 3P03 BIOMOLECULAR INTERACTIONS
Principles of interactions between macromolecules (proteins, nucleic acids), and macromolecules with small ligands. Techniques for characterizing and quantifying biomolecular interactions in vitro and in vivo.
Three lectures; one term
Prerequisite: CHEM BIO 2P03
May be offered in alternate years.
First offered in 2009-2010.

CHEM BIO 4A03 BIO-ANALYTICAL CHEMISTRY AND ASSAY DEVELOPMENT
Advanced separation and detection principles for high-throughput bioassays for drug targets, as well as recent global analytical strategies for genomic, proteomic and metabolomic analyses.
Three lectures; one term
Prerequisite: CHEM 3AA3
May be offered in alternate years.
First offered in 2010-2011.

CHEM BIO 4G03 RESEARCH PROJECT IN CHEMICAL BIOLOGY
A project supervised by a member or associate member of the Department of Chemistry Involved in the Chemical Biology program.
Prerequisite: Registration in Level III or above of Honours Chemical Biology
Antirequisite: CHEM BIO 4GG9
First offered in 2010-2011.

CHEM BIO 4GG9 SENIOR THESIS IN CHEMICAL BIOLOGY
A thesis based on a major research project supervised by a member or associate member of the Department of Chemistry Involved in the Chemical Biology program.
Prerequisite: Registration in Level III or above of Honours Chemical Biology and a Cumulative Average of at least 8.0
Antirequisite: CHEM BIO 4G03
First offered in 2010-2011.

CHEM BIO 4IB3 BIO-INORGANIC CHEMISTRY
Inorganic elements and their behaviour in biological systems. Topics for study include metalloenzymes, bio-redox agents, transport proteins, biomimetic inorganic complexes, metallo-drugs, and radiopharmaceuticals.
Three lectures; one term
Prerequisite: CHEM 3I13
May be offered in alternate years.
First offered in 2009-2010.

CHEM BIO 4OA3 NATURAL PRODUCTS
A description of basic building blocks and reaction mechanisms involved in the (bio)synthesis of naturally occurring compounds.
Three lectures; one term
Prerequisite: One of CHEM 2BB3, 2OB3, 2OD3
May be offered in alternate years.
First offered in 2010-2011.

CHEM BIO 4OB3 MEDICINAL CHEMISTRY: DRUG DESIGN AND DEVELOPMENT
Topics will include lead compound discovery strategies; high-throughput screening and "in silico" screening; exploration of structure-activity relationships; drug targets and molecular mechanisms of drug action; strategies for drug optimization.
Three lectures; one term
Prerequisite: One of CHEM 2BB3, 2OB3, 2OD3
May be offered in alternate years.
First offered in 2010-2011.

CHEM 1A03 INTRODUCTORY CHEMISTRY I
A discussion of chemical fundamentals, including bonding, structure, reactivity, and energetics, with emphasis on applications to health, energy, and the environment. Laboratories highlight hands-on experimental techniques; tutorials support the development of problem-solving skills.
Three lectures, one tutorial, one lab (three hours) every other week; one term
Prerequisite: Grade 12 Chemistry U and either registration in one of Science I, Engineering I, Arts & Science I, Health Science I, Kinesiology I, Mathematics and Statistics I, Medical Radiation Sciences I, any program above Level I; or a grade of at least 60% in Grade 12 Chemistry U; or CHEM 1R03
Corequisite: SCIENCE 1A00. Students registering in CHEM 1A03 must also register in SCIENCE 1A00 if not already completed.
Antirequisite: CHEM 1EQ3
Not open to students with credit or registration in ISCI 1A24.

CHEM 1A03 INTRODUCTORY CHEMISTRY II
A discussion of organic chemistry, chemical kinetics, acid-base equilibria, and the energetics of phase transformations, with emphasis on relevant experimental techniques and solving real problems ranging from drug discovery to environmental chemistry.
Three lectures, one tutorial, one lab (three hours) every other week; one term
Prerequisite: One of CHEM 1A03, 1E03 or ISCI 1A24
Not open to students with credit or registration in ISCI 1A24.

CHEM 1E03 GENERAL CHEMISTRY FOR ENGINEERING I
An introduction to chemical principles for Engineering students, including reactivity, bonding, structure, energetics and electrochemistry.
Three lectures, one tutorial (one hour), one lab (three hours) every other week; one term
Prerequisite: Registration in a program in Engineering
Antirequisite: CHEM 1A03
Not open to students with credit or registration in ISCI 1A24.

CHEM 1R03 GENERAL CHEMISTRY
A general introduction to chemistry, suitable for students without Grade 12 Chemistry U.
Three lectures; second term
Prerequisite: Grade 11 Chemistry SCH 3U
Not open to students with 80% or higher in Grade 12 Chemistry U or with credit or registration in CHEM 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, one lab (three hours); one term
Prerequisite: One of EARTH SC 2Q03, GEO 2Q03 or registration in a Chemical Engineering program
Antirequisite: CHEM 2N03, 2AA3, CHM BIO 2A03
CHEM 2A03 ANALYTICAL CHEMISTRY II
Not open to students with 80% or higher in Grade 12 Chemistry U or with credit or registration in CHEM 1A03.

CHEM 2A03 QUANTITATIVE CHEMICAL ANALYSIS
The art and science of performing quantitative analysis on samples based on classical volumetric techniques and modern instrumental methods including electrochemistry, optical spectroscopy, and chromatography.
Three lectures; one term
Prerequisite: CHEM 1AA3 or ISCI 1A24
Antirequisite: CHEM 2A03, 2N03, CHEM BIO 2A03

CHEM 2E03 INTRODUCTORY ORGANIC CHEMISTRY
An introduction to the chemistry of monofunctional aliphatic and aromatic compounds.
Three lectures, one tutorial; one term
Prerequisite: CHEM 1A03 or ISCI 1A24
Antirequisite: CHEM 2BA3, 2OA3, 2OC3
CHEM 2E03 is not a prerequisite for further courses in Organic Chemistry.

CHEM 2I13 INTRODUCTORY INORGANIC CHEMISTRY: STRUCTURE AND BONDING
The basic theories and models of bonding and structure that explain the combination of elements across the periodic table with primary emphasis on the main-group elements.
Three lectures, one tutorial; one term
Prerequisite: CHEM 1A03 or ISCI 1A24
Antirequisite: CHEM 2I03, 2WWW
CHEM 2LA3 TOOLS FOR CHEMICAL DISCOVERY I
Selected experiments that introduce and develop the basic techniques and skills of chemical synthesis, characterization and analysis.
One lecture, two labs; one term
Prerequisite: Registration in an Honours Chemistry program

CHEM 2LB3 TOOLS FOR CHEMICAL DISCOVERY II
Advanced techniques for synthesis and the use of modern instrumentation in chemistry.
One lecture, two labs; one term
Prerequisite: CHEM 2LA3 and registration in an Honours Chemistry program

CHEM 2OA3 ORGANIC CHEMISTRY I
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; one term
Prerequisite: CHEM 1A13 and registration in an Honours Program. Students with a grade of less than C- in CHEM 1A13 are encouraged to seek counselling before attempting this course.
Antirequisite: CHEM 2BA3, 2E03, 2OC3
Students with credit in CHEM 2E03 will forfeit credit upon completion of this course.

CHEM 20B3 ORGANIC CHEMISTRY II
Nucleophilic substitutions at carbonyl centres, aromatic chemistry, carbohydrates, applications of spectroscopic techniques in organic chemistry.
Three lectures, one lab (three hours) every other week; one tutorial (two hours) every other week; one term
Prerequisite: CHEM 2OA3, 2OD3
Antirequisite: CHEM 2BB3

CHEM 2OC3 STRUCTURE AND REACTIVITY OF ORGANIC MOLECULES
Examines how structure affects properties and chemistry of organic molecules important for life, health, and advanced technologies. Fundamentals of organic reaction mechanisms and structure determination.
Three lectures; one term
Prerequisite: CHEM 1A13 or ISC1 1A24
Antirequisite: CHEM 2BA3, 2E03, 2OA3

CHEM 2OD3 SYNTHESIS AND FUNCTION OF ORGANIC MOLECULES
Survey of fundamental reactions used to construct organic molecules, with emphasis on reaction mechanisms. Introduction to functional group interconversions, and construction of complex organic molecules.
Three lectures; one term
Prerequisite: CHEM 2OA3 or 2OC3
Antirequisite: CHEM 2BB3, 2OB3

CHEM 2PC3 MATHEMATICAL TOOLS FOR CHEMICAL PROBLEMS
An introduction to vector calculus, differential equations and linear algebra - including solving linear equations, eigenvalues and eigenvectors - motivated by problems of chemical equilibrium and kinetics.
Three lectures; one term
Prerequisite: MATH 1A03; or MATH 1LS3, with a grade of at least A-

CHEM 2PD3 EQUILIBRIA AND KINETICS
Thermodynamics and its application to physical transformations and equilibria. Microscopic and macroscopic aspects of chemical kinetics.
Three lectures; one term
Prerequisite: CHEM 1A13 or ISC1 1A24; and CHEM 2PC3 or MATH 1B03
Antirequisite: CHEM 2PA3, 2RO3, HTH SCI 2P01, PHYSICS 2H04, CHEM BIO 2P03

CHEM 2Q03 INQUIRY IN CHEMISTRY
An introduction to the tools of inquiry and their use in the investigation of modern issues of chemical and societal importance, with emphasis on central applications of chemistry and the role chemistry plays in addressing problems of societal relevance.
Three lectures; one term
Prerequisite: Registration in an Honours Chemistry program

CHEM 2W2 Introductory Inorganic Chemistry
An introduction to inorganic chemistry. Emphasis on bonding and structure in inorganic compounds of representative main group and transition elements.
Two lectures; one term
Prerequisite: One of CHEM 1A03, 1E03 or ISC1 1A24; and registration in a program administered by the Department of Materials Science and Engineering Antirequisite: CHEM 2IF3, 2IO3, 3I13, 3Q03

CHEM 3A03 ANALYTICAL CHEMISTRY II
An introduction to modern instrumental methods of analysis.
Two lectures, one lab (three hours); one term
Prerequisite: CHEM 2A03 or 2N03; and CHEM 2PA3 or 2P03
Antirequisite: ENVIR SC 3A03

CHEM 3AA3 INSTRUMENTAL ANALYSIS
Modern instrumental analytical techniques will be examined, including atomic and molecular spectroscopy, mass spectrometry and chromatography with emphasis on analytical design and data interpretation.
Three lectures; one term
Prerequisite: CHEM 2A03 or CHEM BIO 2A03
Antirequisite: CHEM 3A03
First offered in 2009-2010.

CHEM 3BA3 QUANTUM MECHANICS AND SPECTROSCOPY I
An introduction to quantum chemistry, quantum structures, group theory and symmetry, and vibrational and rotational spectroscopy, and molecular orbital theory.
Three lectures, one lab (three hours), one tutorial; one term
Prerequisite: CHEM 2PB3; and PHYSICS 1BA3 or 1BB3
Antirequisite: CHEM 3B03

CHEM 3BB3 QUANTUM MECHANICS AND SPECTROSCOPY II
An introduction to the electronic structure and spectroscopy of atoms and molecules.
Three lectures; one term
Prerequisite: CHEM 3BA3; and MATH 2A03 or 2P04
Antirequisite: CHEM 3B03

CHEM 3D03 ORGANIC CHEMISTRY
A mechanistically oriented discussion of mono- and polyfunctional organic compounds with emphasis on applications to synthesis.
Three lectures, one lab (three hours); one term
Prerequisite: CHEM 2BB3 or 2OB3
Antirequisite: CHEM 3F03

CHEM 3FF3 BIO-ORGANIC CHEMISTRY
Topics in bio-organic chemistry focusing on catalysis in chemistry and biology.
Three lectures, one lab (three hours); one term
Prerequisite: CHEM 2BB3 or 2OB3
Antirequisite: CHEM 3F03

CHEM 3I03 INDUSTRIAL CHEMISTRY
A systematic study of modern processes in the chemical, petrochemical and polymer industries, as well as their environmental impact and the role of emerging green chemistry technologies.
Three lectures; first term
Prerequisite: CHEM 2103 and one of CHEM 2BB3, 2E03, 2OB3; or registration in Level III or IV of a Chemical Engineering program

CHEM 3I13 INTRODUCTION TO TRANSITION METAL CHEMISTRY
An introduction to transition metal chemistry, with focus on the relationships between structure, bonding, orbitals, properties, spectroscopy and applications.
Three lectures, one tutorial; one term
Prerequisite: CHEM 1A13
Antirequisite: CHEM 3Q03, 2WW2
First offered in 2009-2010.

CHEM 3LA3 STRATEGIES FOR CHEMICAL DISCOVERY
An advanced laboratory course that emphasizes the principles of inquiry and the development of advanced experimental techniques, with elective projects in molecular science and advanced materials chemistry.
One lecture, two labs; one term
Prerequisite: CHEM 2LB3
First offered in 2009-2010.

CHEM 3LB3 APPLICATIONS OF CHEMICAL INQUIRY
Advanced experimental inquiry projects in molecular science and advanced materials.
One lecture, two labs; one term
Prerequisite: CHEM 3LA3
First offered in 2009-2010.
CHEM 3L13 CHEMISTRY LABORATORY INQUIRY
An advanced experimental chemistry laboratory.
Two labs (three hours each); one term
Prerequisite: CHEM 2A03, 2BB3, 2IO3, 2PB3 and registration in a Level III Honours Chemistry program
Antirequisite: CHEM 4TA3

CHEM 3O3A ORGANIC SYNTHESIS
A survey of contemporary organic synthesis, including functional group manipulations, use of protecting groups, and strategic carbon-carbon bond forming reactions. Applications involving multistep syntheses of complex organic molecules will be presented.
Three lectures; one term
Prerequisite: CHEM 2OB3 or 2OD3
Antirequisite: CHEM 3D03, CHEM 3F03
May be offered in alternate years.
First offered in 2009-2010.

CHEM 3P03 TRANSITION METAL CHEMISTRY
The chemistry of the heavier transition elements; an introduction to organometallic chemistry and bio-inorganic chemistry.
Three lectures, one lab (three hours); one term
Prerequisite: CHEM 3Q03

CHEM 3PA3 QUANTUM MECHANICS AND SPECTROSCOPY
An introduction to quantum chemistry and its applications in spectroscopy and structure and unusual phenomena at the nanoscale.
Three lectures; one term
Prerequisite: CHEM 2PC3 or MATH 1B03
Antirequisite: CHEM 3B03
First offered in 2009-2010.

CHEM 3PB3 PHYSICAL CHEMISTRY OF ADVANCED MATERIALS
Microscopic origins of macroscopic properties with applications to nanomaterials, optical and magnetic materials, and green chemistry.
Three lectures; one term
Prerequisite: CHEM 2PD3, 3PA3
Antirequisite: CHEM 3Z03, 3Z33
May be offered in alternate years.
First offered in 2009-2010.

CHEM 3Q03 INORGANIC CHEMISTRY
The properties, structures and reactions of inorganic compounds with emphasis on transition metal chemistry.
Three lectures, one lab (three hours); one term
Prerequisite: CHEM 2123
Antirequisite: CHEM 2W22

CHEM 3QA3 RESEARCH IN CHEMISTRY
A 12-16 week research project undertaken in a chemistry laboratory during the summer following completion of Level III of an Honours Chemistry program, requiring the submission of a formal report. Students are responsible for arranging a suitable project, location, and agreement of the supervisor. Registration in the course will be in Term 1 of the Fall/Winter session immediately following the project.
Prerequisite: Completion of Level III of an Honours Chemistry program and permission of the Department
Not open to students in the Honours Chemistry Co-op program.

CHEM 3Z23 PROPERTIES OF MATERIALS
Familiar material properties—optical, thermal, electromagnetic and mechanical—and their exploitation in commercial applications, are investigated in terms of the physical chemistry toolkit of quantum mechanics, spectroscopy and introductory statistical mechanics.
Three lectures; one term
Prerequisite: CHEM 2PB3 and credit or registration in CHEM 3B03; or permission of the instructor
Antirequisite: CHEM 3PS3, 3Z03

CHEM 4A03 ADVANCED ORGANIC CHEMISTRY
An introduction to the principles of physical organic chemistry and the elucidation of organic reaction mechanisms, and either pericyclic organic reactions or organic photochemistry.
Three lectures; one term
Prerequisite: CHEM 3D03 or 3F03

CHEM 4A03 RECENT ADVANCES IN ORGANIC CHEMISTRY
Recent advances in synthetic chemistry will include an introduction to retrosynthetic analysis, and as new developments in separation science and mass spectrometry.
Three lectures; one term
Prerequisite: CHEM 3A03
Antirequisite: CHEM 4P03
May be offered in alternate years.
First offered in 2009-2010.

CHEM 4B03 CHEMICAL APPLICATIONS OF SPECTROSCOPY
Aspects of molecular spectroscopies and their application to the solution of chemical problems.
Three lectures; one term
Prerequisite: CHEM 3B03
Last offered in 2009-2010.

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.
Three lectures; one term
Prerequisite: CHEM 3Q03

CHEM 4D03 ORGANIC STRUCTURE AND SYNTHESIS
Application of spectroscopic methods to structure determination. Synthetic methodology in organic chemistry.
Three lectures; one term
Prerequisite: CHEM 3D03 or 3F03
Last offered in 2009-2010.

CHEM 4D03 MECHANISTIC BIOLOGICAL CHEMISTRY
Amino acid, nucleic acid, enzyme and coenzyme chemistry with emphasis on molecular reaction mechanisms.
Three lectures; one term
Prerequisite: One of CHEM 3D03, 3F03 or 3FF3
Last offered in 2009-2010.

CHEM 4F03 SURFACE CHEMISTRY
Current topics in surface science; surface characterization and microscopy; adsorption and heterogeneous catalysis; applications in electronic materials and nanotechnology.
Three lectures; one term
Prerequisite: CHEM 3B03 or permission of the instructor

CHEM 4G09 SENIOR THESIS
A thesis based on a research project under the direction of a Chemistry Department faculty member.
Prerequisite: Registration in Level IV of any Honours Chemistry program and a C.A. of at least 6.0; or permission of the Department
Antirequisite: CHEM 4G06
Enrolment is limited.

CHEM 4IA3 PHYSICAL METHODS OF INORGANIC STRUCTURE DETERMINATION
Structural methods such as multi-NMR, NQR, EPR, Mossbauer and vibrational spectroscopy are covered. Inquiry directed problems and topics illustrate applications in contemporary inorganic chemistry.
Three lectures, one tutorial; one term
Prerequisite: CHEM 2I13, 3I13
Antirequisite: CHEM 4G03
First offered in 2009-2010.

CHEM 4IB3 BIO-INORGANIC CHEMISTRY
Inorganic elements and their behavior in biological systems. Topics for study include metalloenzymes, bio-redox agents, transport proteins, biomimetic inorganic complexes, metallo drugs, and radiotherapeutics.
Three lectures, one tutorial; one term
Prerequisite: CHEM 3I13
May be offered in alternate years.
First offered in 2009-2010.

CHEM 4IC3 SOLID STATE INORGANIC MATERIALS: STRUCTURES, PROPERTIES, CHARACTERIZATION AND APPLICATIONS
Structure-property relationships that form the basis for the technological applications of non molecular inorganic solids, including oxides, metals and intermetallic compounds.
Three lectures, one tutorial; one term
Prerequisite: CHEM 2I13, 3I13
Antirequisite: CHEM 4C03
May be offered in alternate years.
First offered in 2009-2010.
CHEM 4I3  TRANSITION METAL ORGANOMETALLIC CHEMISTRY AND CATALYSIS
Organometallic complexes and their reactivity, with a view towards catalytic design. An inquiry project is included.
Three lectures, one tutorial; one term
Prerequisite: CHEM 2I3, 3I3
Antirequisite: CHEM 3P03
May be offered in alternate years.
First offered in 2009-2010.

CHEM 4OA3  NATURAL PRODUCTS
A description of basic building blocks and reaction mechanisms involved in the (bio)synthesis of naturally occurring compounds.
Three lectures; one term
Prerequisite: One of CHEM 2BB3, 2OB3, 2OD3
Antirequisite: CHEM 4PP3
May be offered in alternate years.
First offered in 2010-2011.

CHEM 4OB3  POLYMERS AND ORGANIC MATERIALS
Fundamental and modern polymerization methods, industrially and biomedically relevant polymers and their uses, will be covered. Emphasis will be placed on structure-property relationships.
Three lectures; one term
Prerequisite: One of CHEM 2BB3, 2OB3, 2OD3
Antirequisite: CHEM 4PP3
May be offered in alternate years.
First offered in 2009-2010.

CHEM 4P03  ADVANCED ANALYTICAL CHEMISTRY
A course dealing with modern topics in analytical chemistry.
Three lectures; one term
Prerequisite: CHEM 3A03; and CHEM 2PB3 or 2P03

CHEM 4PA3  MOLECULAR DRIVING FORCES
The microscopic underpinnings of chemical, biological and physical processes are explored using statistical thermodynamics, affording a deeper understanding of chemical and phase equilibria and kinetics.
Three lectures; one term
Prerequisite: CHEM 2P03, 3P03
May be offered in alternate years.
First offered in 2010-2011.

CHEM 4PB3  COMPUTATIONAL MODELS FOR ELECTRONIC STRUCTURE AND CHEMICAL BONDING
Modern computational methods for studying atoms, molecules, and materials.
Three lectures; one term
Prerequisite: CHEM 3P03
May be offered in alternate years.
First offered in 2009-2010.

CHEM 4PP3  POLYMER CHEMISTRY
Chemistry of monomers, polymers, polymerization mechanisms and processes, with emphasis on organic polymer chemistry.
Three lectures, one term
Corequisite: CHEM 3D03 or 3F03

CHEM 4QQ3  ADVANCED QUANTUM MECHANICS
Applications of quantum mechanics to problems of chemical interest.
Three lectures; one term
Prerequisite: CHEM 3BB3 or PHYSICS 3MM3

CHEM 4R03  ADVANCED TRANSITION METAL CHEMISTRY
A selection from the following topics: mechanisms of reactions involving transition metal ions; homogeneous catalysis; applications of NMR and other physical methods; organometallic chemistry; ligand field theory.
Three lectures; one term
Prerequisite: CHEM 3P03 or permission of the instructor
May be offered in alternate years.

CHEM 4S03  ADVANCED MAIN GROUP CHEMISTRY
A selection from the following topics: chemistry of selected main group elements, electron deficient compounds, and applications of physical methods to inorganic structure determination.
Three lectures; one term
Prerequisite: CHEM 3Q03

CIVIL ENGINEERING
WEB ADDRESS: http://www.eng.mcmaster.ca/civil/
John Hodgins Engineering Building, Room 301
Ext. 24287 or 24315

Faculty as of January 15, 2008
Chair
A. Ghani Razaqpur

Professors
Brian Baetz/B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Duke), P.Eng.
Ahmed Ghobarah/B.Sc. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng., Joe Ng/JNE Consulting Chair in Design, Construction and Management in Infrastructure Renewal
Gail Krantzberg/B.Sc. (McGill), M.Sc., Ph.D. (Toronto)
Susan Masten/B.S. (Fairleigh Dickinson), M.S.E. (West Virginia), Ph.D. (Harvard), P.E.
Stan Pietruszczyk/B.Sc., M.Sc. (Warsaw), Ph.D. (Polish Academy of Science)
A. Ghani Razaqpur/B.Sc. (American University of Beirut), M.Sc. (Hawaii), Ph.D. (Calgary), P.Eng., Chair in Effective Design of Structures

Associate Professors
Paulin Coulibaly/B.A.Sc., M.A.Sc. (Nice), Ph.D. (Laval)
Yiping Guo/B.Sc. (Zhejiang), M.A.Sc., Ph.D. (Toronto), P.Eng.

Assistant Professors

Adjunct Professors
John Emery/B.Sc., Ph.D. (British Columbia), P.Eng.
Dean Inglis/B.Eng., Ph.D. (McMaster)
Syed Moir/B.S. (Osmania), M.S. (Nevada), Ph.D. (McMaster), P.Eng.

Department Notes:
1. All Civil Engineering courses are open to students registered in a civil engineering program, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other engineering departments and other faculties.
2. Unless otherwise stated, the duration and the frequency of activities are as follows:
   • one lecture consists of one hour each week
   • one tutorial consists of two hours each week
   • one lab consists of three hours each week

Courses
CIV ENG 2A03  SURVEYING AND MEASUREMENT
Introduction to measurement and computational techniques of surveying, the theory of measurement and errors, adjustment of observations; laboratory measurement and instrumentation.
Two lectures, one tutorial or one lab; first term
Antirequisite: CIV ENG 2A02

CIV ENG 2B03  PRINCIPLES OF ENVIRONMENTAL ENGINEERING
Mass balances; fundamentals of thermodynamics, heat transfer, and environmental chemistry and microbiology; introduction to hydrological and ecological systems, water quality, water treatment and wastewater treatment; introduction to air pollution and climate change.
Three lectures; first term
CIV ENG 2C04 STRUCTURAL MECHANICS
Review of stress/strain state and strain-displacement relations; plastic deformations and residual stresses due to axial loading and bending; torsion of non-circular and thin-walled sections; unsymmetric bending and eccentric axial loading, shear stresses and unsymmetric loading of thin-walled members; transformation of stress and strain; stress/strain invariants; yield and fracture criteria energy methods; stability of columns.

Three lectures, one tutorial or one lab; second term
Prerequisite: Credit or registration in ENGININEER 2P04

CIV ENG 2E03 COMPUTER APPLICATIONS IN CIVIL ENGINEERING
Numerical techniques including error analysis, root finding, linear algebraic equations, curve fitting, integration and differentiation, ordinary differential equations; sensitivity analysis; use of several software packages for numerical analysis; civil engineering applications.

Two lectures, one tutorial; second term
Prerequisite: Credit or registration in ENGINEER 2P04

CIV ENG 2I03 COMMUNICATIONS IN CIVIL ENGINEERING
Oral and written communication in context of civil engineering activity. A professional liaison program involving site visits.

Two lectures, one tutorial (three hours); first term

CIV ENG 2J04 PRINCIPLES OF GEOLOGICAL AND GEO-ENVIRONMENTAL ENGINEERING
Principles of geological engineering and hydrological engineering; Composition of "earth"; processes that operate on or beneath the surface; fundamentals of: groundwater flow, monitoring, and sampling, contaminant movement in aquifers, solid waste management, hazardous waste management and remediation.

Two lectures (two hours and one hour), one tutorial (two hours), one lab; second term
Prerequisite: Credit or registration in CIV ENG 2B03
Antirequisite: CIV ENG 3G03

CIV ENG 2K03 PRINCIPLES OF GEOLGYCAL AND GEO-ENVIRONMENTAL ENGINEERING
Numerical techniques including error analysis, root finding, linear algebraic equations, curve fitting, integration and differentiation, ordinary differential equations; sensitivity analysis; use of several software packages for numerical analysis; civil engineering applications.

Two lectures, one tutorial or one lab; second term
Prerequisite: Credit or registration in ENGININEER 2P04, MATH 2M06 (or 2M03 and 2M05)

CIV ENG 2P04 FLUID MECHANICS
Fluid properties; hydrostatics; continuity, momentum and energy equations; potential flow; laminar and turbulent flow; flow in closed conduits, transients, open channel flow; hydraulic cross-sections.

Three lectures, one tutorial or one lab; second term
Prerequisite: Credit or registration in ENGINEER 2P04, MATH 2M06 (or 2M03 and 2M05)

CIV ENG 2Q03 ENGINEERING MECHANICS: DYNAMICS
Kinematics and dynamics of particles and rigid bodies. Motion with respect to a rotating frame of reference. Work, energy and momentum principles.

Two lectures, plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first term
Prerequisite: Credit or registration in ENGINEER 2P04
Antirequisite: CIV ENG 2P04

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 tutorial or one lab; first term
Prerequisite: CIV ENG 2J04, 2004

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 tutorial or one lab; second term
Prerequisite: Credit or registration in CIV ENG 3A03

CIV ENG 3C03 ENGINEERING SYSTEMS
Mathematical models and systems; economic comparison of projects; optimization; linear, nonlinear and dynamic programming; simulation modelling.

Two lectures, one tutorial; second term
Prerequisite: CIV ENG 2E03; and credit or registration in MATH 3J04 or STATS 3J04

CIV ENG 3G03 STRUCTURAL ANALYSIS
Structural analysis and modelling of linear elastic truss, beam and frame structures; stress resultants and deformations of statically determinate structures; methods for analysis of indeterminate structures; stiffness matrix method; plane frame computer analysis.

Two lectures, one tutorial; first term
Prerequisite: CIV ENG 2C04
Antirequisite: CIV ENG 3G03

CIV ENG 3G03 STRUCTURAL ANALYSIS
Structural analysis and modelling of linear elastic truss, beam and frame structures; stress resultants and deformations of statically determinate structures; methods for analysis of indeterminate structures; stiffness matrix method; plane frame computer analysis. Offered overseas as part of the Study Abroad Program.

Six lectures; one term (summer)
Prerequisite: CIV ENG 2C04 and permission of the Associate Dean (Academic) of Engineering
Antirequisite: CIV ENG 3G03

CIV ENG 3J04 REINFORCED CONCRETE DESIGN
Design by limit state methods to ensure adequate capacities for bending moment, shear and diagonal tension, 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; second term
Prerequisite: Credit or registration in CIV ENG 3G03, 3P03

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 characteristics, capacity and control for signalized and unsignalized intersections, and travel demand forecasting. Safety; social impacts.

Two lectures, one tutorial; first term

CIV ENG 3L03 WATER QUALITY
Physical, chemical and biological characteristics of water; Stoichiometry, reaction kinetics and material balances; mathematical modelling of physical systems; water quality in rivers, and lakes; water quality standards.

Two lectures, one tutorial; first term
Prerequisite: Credit or registration in CIV ENG 2B03
Antirequisite: CIV ENG 3M04

CIV ENG 3M03 MUNICIPAL HYDRAULICS
Analysis/design of water distribution networks; analysis and design of wastewater collection systems; pumps.

Two lectures, one tutorial or one lab; second term
Prerequisite: CIV ENG 2004; and credit or registration in MATH 3J04 or STATS 3J04
Antirequisite: CIV ENG 3M04

CIV ENG 3P03 CIVIL ENGINEERING MATERIALS AND DESIGN
Characteristics, behaviour and use of Civil Engineering materials: concrete, metals, wood, and composites; Physical, chemical and mechanical properties; Quality control and material tests; Concepts of Structural design, limit states design, estimation of structural loads.

Three lectures, two labs (three hours each); first term
Prerequisite: CIV ENG 2C04, MATLS 1M03
Antirequisite: ENGINEER 3P03

CIV ENG 3R03 PROJECT MANAGEMENT WITH CONSTRUCTION APPLICATIONS
An introduction to construction project management; tender documents, estimating, bidding, proposals, and construction contracts; project planning, scheduling, controlling of time, cost and quality, dispute resolution; Safety Act and construction regulations, liability, legal and ethical considerations; case histories.

Two lectures, one tutorial; first term
Prerequisite: Registration in Level III or above of a Civil Engineering program

CIV ENG 3S03 STEEL STRUCTURES
Introduction to design in steel, tension and compression members, plate buckling aspects, beam instability, beam design, beam-columns, bolted and welded connections. Applications employing steel structures building code.

Two lectures, one tutorial; second term
Prerequisite: Credit or registration in CIV ENG 3G03, 3P03
Antirequisite: CIV ENG 3S03

CIV ENG 3S03 STEEL STRUCTURES
Introduction to design in steel, tension and compression members, plate buckling aspects, beam instability, beam design, beam-columns, bolted and welded connections. Applications employing steel structures building code. Offered overseas as part of the Study Abroad Program.

Six lectures; one term (summer)
Prerequisite: Credit or registration in CIV ENG 3G03, 3P03 and permission of the Associate Dean (Academic) of Engineering
Antirequisite: CIV ENG 3S03
CIV ENG 3J03 PHYSICO-CHEMICAL PROCESSES IN WATER AND WASTEWATER TREATMENT
Water/waste water quality/characteristics; primary and secondary treatment; emphasis is placed on physical and chemical unit processes including coagulation, filtration, sedimentation, filtration, precipitation; advanced treatment processes, including ion exchange, chemical oxidation, and membranes are also addressed.
Two lectures, one tutorial; second term
Prerequisite: One of CHEM ENG 2D04, 2F04, CIV ENG 2B03

CIV ENG 4A04 ENGINEERING HYDROLOGY
Hydrologic cycle; climate; hydrologic processes, precipitation; unit hydrograph; hydrologic statistic, hydrologic routing; groundwater flow. Design units = 1.0
Three lectures, one tutorial (three hours); first term
Prerequisite: CIV ENG 3M03

CIV ENG 4C04 ENVIRONMENTAL IMPACT AND SUSTAINABILITY
Natural and urban ecosystems; environmental impact/assessment/legislation; energy and environmental audits; life cycle analysis; solid and hazardous wastes; air quality and control; sustainable infrastructure design. Design units = 3.0
Three lectures, one tutorial, capstone project; first term
Prerequisite: Registration in the final level of a Civil Engineering program
Antirequisite: CIV ENG 4C03

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 and traffic safety concepts. Design units = 3.0
Three lectures, one tutorial; first term
Prerequisite: CIV ENG 3K03
Antirequisite: CIV ENG 4DR4

CIV ENG 4DR4 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 and traffic safety concepts. Design units = 3.0
Offered overseas as part of the Study Abroad Program.
Three lectures, one tutorial; one term (summer)
Prerequisite: CIV ENG 3K03 and permission of the Associate Dean (Academic) of Engineering
Antirequisite: CIV ENG 4D04

CIV ENG 4G04 PAVEMENT MATERIALS AND DESIGN
Components of highway pavements; ground water and drainage for highway facilities; soil compaction and stabilization; aggregates; bituminous materials; asphalt mix design; flexible and rigid pavement design; embankment design. Design units = 3.0
Three lectures, one tutorial or lab; first term
Prerequisite: CIV ENG 3B03
Antirequisite: CIV ENG 4G03

CIV ENG 4H03 ANALYSIS OF TRANSPORTATION SYSTEMS
An introduction to the use of models in transportation planning. Topics include data issues, the four-stage approach to modelling transportation systems, discrete choice models and contextual factors such as land use. Design units = 0.0
Three lectures; one term
Prerequisite: MATH 3J04 or STATS 3J04
Cross-list: GEOG 4LT1
Antirequisite: CIV ENG 4H03, GEO 4D03
This course is administered by the School of Geography and Earth Sciences.

CIV ENG 4K04 MODERN METHODS OF STRUCTURAL ANALYSIS
Stiffness method; development and applications in structural analysis. Introduction to finite element method. Influence lines, elastic stability analysis of frames with and without sway effects. Application of computer programs. Design units = 0.0
Three lectures, one tutorial; second term
Prerequisite: CIV ENG 3G03; MATH 3J04 or STATS 3J04

CIV ENG 4L04 DESIGN OF WATER RESOURCES SYSTEMS
Investigation, planning, analysis and design of water resources systems. Introduction to GIS tools. Frequency analysis, design storms, urban drainage and analysis, floodplain analysis and flood control. Design units = 4.0
Two lectures, one tutorial (one hour), one lab; second term
Prerequisite: CIV ENG 3M03

CIV ENG 4R04 DESIGN AND SYNTHESIS OF STRUCTURES
Structural design process, gravity and lateral loading requirements, structural performance criteria, choice of structural systems. Analysis and design of different structural systems, such as frames, structural walls and slabs. Analysis and design of actual buildings. Design units = 4.0
Three lectures, one lab, capstone project; first term
Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4S03 FOUNDATION ENGINEERING
Principles of foundation design; bearing capacity, settlement and location, footings, deep foundations, piles, pile groups and drilled piers; retaining walls. Design units = 3.0
Two lectures, one tutorial; second term
Prerequisite: CIV ENG 3B03
Antirequisite: CIV ENG 4ZR4

CIV ENG 4W04 DESIGN OF LOW RISE BUILDINGS
Structural systems and load distribution, design of masonry, wood, and cold-formed steel. Introduction to building envelope design. Design units = 4.0
Three lectures, one tutorial; first term
Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4Y04 BRIDGES AND OTHER STRUCTURAL SYSTEMS
Bridge loads and analysis for load effects. Design of reinforced concrete solid-slab, T-beam type bridges, composite floor system and plate girders. Stresses, ultimate strength, and design of pre-stressed concrete structures. Fatigue Design. Design units = 4.0
Three lectures, one tutorial; second term
Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4Z04 INDEPENDENT STUDY
An experimental and/or analytical investigation related to any branch of civil engineering, under the direction of a faculty member. Students choose a project from a list of department approved projects. The student may be required to present a seminar and will submit a final written report before April 1. Design units = variable according to project
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, discussion or individual study.
Prerequisite: Registration in a final level of a Civil Engineering program, and a SA of at least 9.5.
Antirequisite: CIV ENG 4ZR4

CIV ENG 4ZR4 INDEPENDENT STUDY
An experimental and/or analytical investigation related to any branch of civil engineering, under the direction of a faculty member. The student will be required to present a seminar and will submit a final written report at the end of the course. Design units = variable according to project
Twenty labs (four hours); one term (summer)
Prerequisite: Registration in the final level of a Civil Engineering program, and a SA of at least 9.5; and permission of the Associate Dean (Academic) of Engineering
Antirequisite: CIV ENG 4Z04

CIV ENGINEERING INFRASTRUCTURE TECHNOLOGY
(SEE TECHNOLOGY, CIVIL ENGINEERING INFRASTRUCTURE TECHNOLOGY)

CLASSICS
WEB ADDRESS: http://www.humanities.mcmaster.ca/~classics/
Togo Salmon Hall, Room 706
Ext. 24311

Faculty as of January 15, 2008
Chair
Michele G. George
Professor
Courses

**CLASSICS 1A03**  
**INTRODUCTION TO CLASSICAL ARCHAEOLOGY**
A study of the history and methodology of Greek and Roman archaeology illustrated with material from excavated sites.
Three lectures; one term

**CLASSICS 1B03**  
**MYTH AND LITERATURE: THE TROJAN WAR AND BEYOND**
A study of Greek and Roman mythology and literature with emphasis on the heroes and heroines of the Trojan War. Texts such as Homer's Iliad and Odyssey and Vergil's Aeneid will be read in translation.
Two lectures, one tutorial; one term

**CLASSICS 1M03**  
**HISTORY OF GREECE AND ROME**
The history of Greece and Rome from the bronze age to the fall of Rome based on literary, documentary, and archaeological evidence.
Two lectures, one tutorial; one term
Antirequisite: CLASSICS 1L03, 1L13, HISTORY 1L03, 1L13
Cross-list: HISTORY 1M03

**CLASSICS 2B03**  
**GREEK ART**
The architecture, sculpture, and painting of the Greek and Hellenistic world.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: ART HIST 2B03

**CLASSICS 2C03**  
**ROMAN ART**
The architecture, sculpture, and painting of the Roman world.
Three lectures; one term
Prerequisite: CLASSICS 2B03
Cross-list: ART HIST 2C03

**CLASSICS 2D03**  
**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 or above
Cross-list: COMP LIT 2D03

**CLASSICS 2E03**  
**THE ANCIENT WORLD IN FILM**
The emphasis is on myth (Amazons, Hercules) and history (slave revolts, banquets, decadent emperors), studied via Greek and Latin accounts (in translation) and cinematic versions (e.g. Electra, Medea, Mighty Aphrodite, Apocalypse Now, Spartacus, I Claudius).
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: THTR&FLM 2E03
Antirequisite: CMST 2Y03

**CLASSICS 2K03**  
**HISTORY OF ANCIENT GREECE**
Greece from the rise of the city-state to the Peloponnesian War, with particular attention to political, social, and cultural development in the light of literary and archaeological evidence.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 2K03

**CLASSICS 2L03**  
**HISTORY OF ANCIENT GREECE II**
Greece from the Peloponnesian War to the coming of Rome, with particular attention to political, social, and cultural development in the light of literary and archaeological evidence.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 2L03
Antirequisite: CLASSICS 2L03, 3L13, HISTORY 2L03, 3L13
Alternates with CLASSICS 2L3.

**CLASSICS 2L3**  
**HISTORY OF ANCIENT ROME I**
Rome from its early development to the dictatorship of Caesar, with particular attention to the political, military, and social developments in the light of literary and archaeological evidence.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 2L3
Antirequisite: CLASSICS 2L03, 3L13, HISTORY 2L03, 3L13
Alternates with CLASSICS 2L3.

**CLASSICS 2L5**  
**HISTORY OF ANCIENT ROME II**
Rome from the dictatorship of Caesar to late Antiquity, with particular attention to the political, military, and social developments in the light of literary and archaeological evidence.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 2L5
Antirequisite: CLASSICS 2L03, 3L13, HISTORY 2L03, 3L13
Alternates with CLASSICS 2L3.

**CLASSICS 2P06**  
**ANCIENT GREEK PHILOSOPHY**
A study of Western philosophical thought from its earliest beginnings to late Roman times, with emphasis on Plato and Aristotle.
Three lectures; two terms
Prerequisite: One of three units of Philosophy, ARTS&SCI 1A06, registration in a program in Classics or Philosophy or permission of the Department
Cross-list: PHIL&SCI 2A06
This course is administered by the Department of Philosophy.

**CLASSICS 2Y03**  
**ANCIENT COMEDY**
Representative texts of the Greek and/or Roman comedic authors will be read in translation and considered in their literary, historical or social contexts. Relevant texts from other genres might also be considered.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: COMP LIT 2Y03
Antirequisite: CLASSICS 2Y03
Offered in alternate years.
CLASSICS 2Y3  GREEK TRAGEDY
Selected plays of the Greek tragic playwrights will be read in translation and considered in their literary, historical or social contexts.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: COMP LIT 2YY3
Offered in alternate years.

CLASSICS 3EE3  THE GREEK HISTORIANS
The study in translation of Herodotus, Thucydides, and other Greek historical writers, with consideration of the evolution of their genre and their contributions to the development of historiography.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2K03, 2L03, 2LA3, 2LB3 or registration in Level III or above of a program in Classics
Cross-list: HISTORY 3EE3
Offered in alternate years.

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: ART HIST 2C03 or CLASSICS 2C03
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 3H3  ROMAN SLAVERY
An examination of Roman slavery using a variety of sources (historical and juridical texts, funerary inscriptions, archaeological evidence) in order to determine its place in Roman social structure and its importance to the ancient economy and culture.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2K03, 2LC3, 2LD3, 2LL3, or registration in Level III or above of a program in Classics
Cross-list: ART HIST 3H3
Not open to students with credit in CLASSICS 3M03 or HISTORY 3MM3 if the topic was Roman Slavery.
Offered in alternate years.

CLASSICS 3I03  TOPICS IN CLASSICAL LITERATURE
Previous topics include: Greek and Roman Epic, Greek and Roman Elegiac and Lyric Poetry, The Legend of the Trojan War, Crime and Punishment, Satire, The Poet and Society. Consult the Department concerning the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Level II or III classics and registration in Level III or above of an Honours program in Classics
Cross-list: COMP LIT 3I03
CLASSICS 3I03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3M03  GREEK INTELLECTUAL REVOLUTION
A study of the birth of rationalistic and naturalistic thought in Greece, placing this intellectual revolution in its social, political and cultural context.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2K03, 2L03, 2LA3, 2LB3, 2P06 or registration in Level III or above of a program in Classics
Cross-list: HISTORY 3M03
Offered in alternate years.

CLASSICS 3MA3  TOPICS IN GREEK HISTORY
Studies of Greek history and institutions. Consult the department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2K03, 2L03, 2LA3, 2LB3; or registration in Level III or above of a program in Classics
Cross-list: HISTORY 3MA3
CLASSICS 3MA3 may be repeated, if on a different topic, to a total of six units.
Offered on an irregular rotation basis.

CLASSICS 3MB3  TOPICS IN ROMAN HISTORY
Studies of Roman history and institutions. Consult the department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2K03, 2LC3, 2LD3, 2LL3; or registration in Level III or above of a program in Classics
Cross-list: HISTORY 3MB3
CLASSICS 3MB3 may be repeated, if on a different topic, to a total of six units.
Offered on an irregular rotation basis.

CLASSICS 3Q03  GREEK SANCTUARIES
Ancient Greek sanctuaries and their social and political context. Topics will include architecture and art, as well as activities such as sacrifice, athletic games, healing, and oracular consultation.
Three lectures; one term
Prerequisite: CLASSICS 1A03 or 2B03
Alternates with CLASSICS 3S03.

CLASSICS 3S03  THE ARCHAEOLOGY OF THE ROMAN CITY
The archaeology of the city of Rome and other cities in Italy (e.g. Ostia, Pompeii), focusing on architecture and urban planning.
Three lectures; one term
Prerequisite: CLASSICS 1A03 or 2C03
Alternates with CLASSICS 3Q03.

CLASSICS 3T03  LEISURE AND ENTERTAINMENT IN GREECE AND ROME
Social life, leisure and festivals in the Greek and/or Roman world. Topics may include banqueting, bathing, theatre and spectacle, and religious holidays. Literature, art and archaeological evidence will be considered.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2D03, 2E03, 2H03, 2Y03, 2YY3 or registration in Level III or above of a program in Classics
Cross-list: COMP LIT 3YY3
Offered in alternate years.

CLASSICS 3T03  ROMAN RELIGION
A study of the role of religion in Roman public and private life using literary, documentary and archaeological evidence.
Three lectures; one term
Prerequisite: Six units from CLASSICS 2K03, 2LC3, 2LD3, 2LL3 or registration in Level III or above of a program in Classics
Cross-list: HISTORY 3T03
Offered in alternate years.

CLASSICS 3V03  OVID
Representative texts of the Latin poet Ovid will be read in translation, especially his erotic poetry and mythical stories. There will be literary analysis and later adaptations in literature and film will be considered.
Three hours; one term
Prerequisite: Six units from CLASSICS 2D03, 2E03, 2H03, 2Y03, 2YY3 or registration in Level III or above of a program in Classics
Cross-list: COMP LIT 3V03
Offered in alternate years.

CLASSICS 3BB3  SEMINAR IN CLASSICAL ARCHAEOLOGY
Consult the Department concerning the topic to be offered.
Seminar (two hours); one term
Prerequisite: Six units from CLASSICS 1A03, 3Q03, 3S03 and registration in Level III or above of an Honours program in Classics
CLASSICS 3BB3 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3BB3  SEMINAR IN ANCIENT ART
Consult the Department concerning the topic to be offered.
Seminar (two hours); one term
Prerequisite: CLASSICS 2B03, 2C03 and registration in Level III or above of an Honours program in Classics
Cross-list: ART HIST 4BB3
CLASSICS 3BB3 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4E03  SEMINAR IN ANCIENT CULTURE
Consult the Department for the topic to be offered.
Seminar (two hours); one term
Prerequisite: Six units from Level II or III Classics and registration in Level III or above of an Honours program in Classics
CLASSICS 4E03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4F03  SEMINAR IN ANCIENT HISTORY
Consult the Department for the topic to be offered.
Seminar (two hours); one term
Prerequisite: Six units from CLASSICS 2K03, 2L03, 2LA3, 2LB3, 2LC3, 2LD3, 2LL3, 3C03, 3CC3, 3E03, 3H3, 3LL3, 3M03, 3X03 and registration in Level III or above of an Honours program in Classics
CLASSICS 4F03 may be repeated, if on a different topic, to a total of six units.
Offered in alternate years.
GREEK 2A03, 2AA3

Two terms

Prerequisite: Grade 12 Greek U; or GREEK 1223 with a grade of at least C-, for admission to the B.A. program in Classics.

Courses

If no prerequisite is listed, the course is open.

GREEK 1203

BEGINNER'S INTENSIVE ANCIENT GREEK I

A rapid introduction to the basic grammar of Ancient Greek.

Four hours (lectures and tutorials); one term

Not open to graduates of Grade 12 Greek U, who must have special permission to register in the course.

GREEK 12Z3

BEGINNER'S INTENSIVE ANCIENT GREEK II

This course continues the study of the grammar of Ancient Greek begun in GREEK 1203.

Four hours (lectures and tutorials); one term

Prerequisite: GREEK 1203. Students with Grade 12 Greek U must obtain 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 program in Classics, or, with a grade of at least C-, for admission to the B.A. program in Classics.

GREEK 2A03

INTERMEDIATE GREEK I

This course continues the study of Greek grammar begun in GREEK 1203 and 12Z3 and introduces students to the reading of simple passages from Greek authors.

Three lectures; one term

Prerequisite: One of Grade 12 Greek U; or GREEK 12Z3 with a grade of at least C-. Students using this course as a Humanities I requirement will register for GREEK 2A03 and 2AA3.

GREEK 2A03

INTERMEDIATE GREEK II

A study of selected passages from Greek authors designed to further the student's proficiency in reading Greek. The course may also include grammatical exercises.

Three lectures; one term

Prerequisite: GREEK 2A03.

GREEK 3A03

GREEK HISTORIANS

Selected readings from Greek historical authors, such as Herodotus and Thucydides.

Three lectures; one term

Prerequisite: Six units of Level II Greek

GREEK 3A03 may be repeated, if on a different author/work, to a total of six units.

GREEK 3B03

GREEK EPIC

Selected readings from Homer, Hesiod, and/or other Greek epic authors.

Three lectures; one term

Prerequisite: Six units of Level II Greek

GREEK 3B03 may be repeated, if on a different author/work, to a total of six units.

GREEK 4AA3

GREEK PROSE

Selected readings in one or more Greek prose authors.

Three lectures; one term

Prerequisite: Six units of Level II Greek

GREEK 4AA3 may be repeated, if on a different author/work, to a total of six units.

GREEK 4B03

GREEK DRAMA

Selected readings from Greek tragedy and/or comedy.

Three lectures; one term

Prerequisite: Six units of Level II Greek.

GREEK 4B03 may be repeated, if on a different author/work, to a total of six units.

GREEK 4BB3

TOPICS IN GREEK LITERATURE

Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Level II Greek

GREEK 4BB3 may be repeated, if on a different topic, to a total of six units.

LATIN 1203

BEGINNER'S INTENSIVE LATIN I

A rapid introduction to the basic grammar of Classical Latin.

Four hours (lectures and tutorials); one term

Not open to graduates of Grade 12 Latin U, who must obtain special permission to register in the course.

LATIN 12Z3

BEGINNER'S INTENSIVE LATIN II

This course continues the study of Latin grammar begun in LATIN 1203 and 12Z3 and introduces students to the reading of simple passages from Latin authors.

Four hours (lectures and tutorials); one term

Prerequisite: LATIN 1203. Students with Grade 12 Latin U must obtain 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 program in Classics, or, with a grade of at least C-, for admission to the B.A. program in Classics.

LATIN 2A03

INTERMEDIATE LATIN I

This course continues the study of Latin grammar begun in LATIN 1203 and 12Z3 and introduces students to the reading of simple passages from Latin authors.

Three lectures; one term

Prerequisite: Latin 1203; or LATIN 12Z3 with a grade of at least C-. Students using this course as a Humanities I requirement will register for LATIN 2A03 and 2AA3.

LATIN 2A03

INTERMEDIATE LATIN II

A study of selected passages from Latin authors designed to further the student's proficiency in reading Latin. Attention will be given to grammar and techniques of literary criticism.

Three lectures; one term

Prerequisite: LATIN 2A03.

LATIN 3A03

LATIN HISTORIANS

Readings in selected Latin historians, such as Sallust, Livy, and Tacitus.

Three lectures; one term

Prerequisite: LATIN 2A03, 2AA3.

LATIN 3A03 may be repeated, if on a different author/work, to a total of six units.
LATIN 3B03  LATIN EPIC
Readings from Vergil, and/or other epic authors.
Three lectures; one term
Prerequisite: LATIN 2A03, 2AA3
LATIN 3B03 may be repeated, if on a different author/work, to a total of six units.

LATIN 4AA3  LATIN PROSE
Selected readings in one or more Latin prose authors.
Three lectures; one term
Prerequisite: Six units of Level II Latin
LATIN 4AA3 may be repeated, if on a different author/work, to a total of six units.

LATIN 4B03  LATIN LOVE POETRY
Readings in Latin Love Poetry.
Three lectures; one term
Prerequisite: LATIN 2A03, 2AA3
LATIN 4B03 may be repeated, if on a different author/work, to a total of six units.

LATIN 4BB3  TOPICS IN LATIN LITERATURE
Consult the Department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Level II Latin
LATIN 4BB3 may be repeated, if on a different topic, to a total of six units.

LATIN 4K03  INDEPENDENT STUDY IN LATIN
Selected readings from Latin 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 program in Classics; and permission of the Department.
LATIN 4K03 may be repeated, if on a different topic, to a total of six units.

COLLAB

(SEE NURSING, NURSING CONSORTIUM (D STREAM))

COMMERCe 201

WEB ADDRESS: http://www.degrooto.mcmaster.ca
DeGroote School of Business, Room 104
Ext. 24433

Faculty as of January 15, 2008

Chair, Strategic Market Leadership and Health Services Management Area
Devashish Pujari
Chair, Finance and Business Economics Area
Trevor Chamberlain
Chair, Accounting and Financial Management Services Area
Y.C. Lilian Chan
Chair, Human Resources and Management Area
Willi Wiesner
Chair, Information Systems Area
Khaled Hassanein
Acting Chair, Operations Management Area
John Miltenburg

Professors
Prakash L. Abad/B.Tech. (Indian Institute of Technology), M.S., M.B.A., Ph.D. (Cincinnati)/(Management Science)
Naresh C. Agarwal/B.A., M.A. (Delhi), Ph.D. (Minnesota)/(Human Resources)/Coordinator, Ph.D. Program (Human Resources)
Amin Amerishi/B.Sc. (University of East Africa), Ph.D. (British Columbia)/(Accounting and Financial Management Services Area)/AIC Chair in Investment and Portfolio Management
Vishwanath Baba/B. Eng. (Madras), M.B.A. (Western Illinois), Ph.D. (British Columbia)/(Organizational Behaviour)
Christopher K. Bart/B.A., M.B.A. (York), Ph.D. (Western Ontario), C.A./ (Business Policy)/Director Management of Innovation and Technology Research Centre
Trevor W. Chamberlain/B.Sc. (California-Berkeley), M.B.A. (McGill), Ph.D. (Toronto), C.A./Finance/Chair, Finance and Business Economics Area
M.W. Luke Chan/B.Sc. (Prince Edward Island), M.A., Ph.D. (McMaster) (Finance and Business Economics)/Associate Vice-President (International Affairs)
S. Sherman Cheung/B.S. (Louisiana State), M.S., Ph.D. (Illinois)/(Finance and Business Economics)
Robert G. Cooper/B.Eng., M.Eng. (McGill), M.B.A., Ph.D. (Western Ontario)/(Marketing)
Richard W. Deaves/B.A., M.A., Ph.D. (Toronto)/(Finance and Business Economics)
Rick D. Hackett/B.Sc. (Toronto), M.A. (Windsor), Ph.D. (Bowling Green State)/(Human Resources)/Canada Research Chair, Management of Organizational Behaviour and Human Performance
Eiko J. Kleinschmidt/Dip. Ing. (Staatliche Ingenieurschule, Hannover), M.B.A., Ph.D. (McGill)/(Marketing and International Business)
Claire C.Y. Kwan/Ph.D. (Ottawa), M.B.A. (McMaster), Ph.D. (Toronto), P.Eng.//(Finance)/CIBC Chair in Financial Markets
John W. Medcof/B.A. (New Brunswick), M.A., Ph.D. (Toronto)/(Organizational Behaviour)/Director, Engineering and Management Programs
G. John Miltenburg/B.Eng.Mgt., M.B.A. (McMaster), M.Eng. (Toronto), Ph.D. (Waterloo), P.Eng./(Production and Management Science)/Acting Chair, Operations Management Area
Ali R. Montazeri/H.N.D. (Teesseide Polytechnic), M.Sc. (Southampton), Ph.D. (Waterloo)/(Information Systems)
Dean C. Mountain/B.A. (McMaster), M.A., Ph.D. (Western Ontario)/(Finance and Business Economics)
S.M. Khalid Nalnar, B.A., M.A. (Delhi), Ph.D. (Florida)/(Accounting)
Mahmut Parlar/B.Sc., M.Sc. (Middle East Technical University), Ph.D. (Waterloo)/(Management Science)
Joseph B. Rose/B.B.A. (Adelphi), M.B.A. (California), Ph.D. (SUNY-Buffalo)/(Industrial Relations)
Sudipto Sarkar/B.Tech. (Indian Institute of Technology), Ph.D. (Columbia)/(Finance)
Mohamed M. Shehata/B.Com. (Tanta), M.S. ( Ain-Shams), M.B.A. (North Texas State), Ph.D. (Florida)/(Accounting)
George Steiner/M.Sc. (Budapest), Ph.D. (Waterloo)/(Production and Management Science)
Yufei Yuan/B.S. (Fudan), Ph.D. (Michigan)/(Information Systems)/Wayne C. Fox Chair
Isik U. Zeytinoglu/B.A., M.A. (Bogazici), M.S., Ph.D. (Pennsylavania)/(Management and Industrial Relations)

Associate Professors
Nick Bontis/B.A., Ph.D. (Western Ontario)/(Business Policy)/Director, Undergraduate Programs
Y.C. Lilian Chan/B.B.A. (Chinese University of Hong Kong), Ph.D. (Virginia Polytechnic Institute and State University) C.M.A., F.C.M.A./(Accounting)/Chair, Accounting and Financial Management Services Area
Naral Charapat/B.A. (Thammasat), M.B.A. (Drexel), Ph.D. (York)/(Finance)
Kenneth R. Deal/B.S., M.B.A., Ph.D. (SUNY-Buffalo)/(Marketing and Management Science)/(Business Policy)
Brian Detlor/B.Sc. (Western Ontario), M.I.S., Ph.D. (Toronto)/(Information Systems)/Director, Ph.D. Program
Khaled Hassanein/B.Sc. (Kuwait), M.A.Sc. (Toronto), Ph.D. (Waterloo), M.B.A. (Wilfrid Laurier)/(Information Systems)/Director, MeRCI/Chair, Information Systems
Ekrai Hassini/B.Sc. (Bilkent), M.A.Sc., Ph.D. (Waterloo)/(Management Science)
Milena Head/B.Math. (Waterloo), M.B.A., Ph.D. (McMaster)/(Management Science)/(Information Systems)/Associate Dean
Maureen Hupfer/B.Com., M.A., Ph.D. (Alberta)/(Marketing)
Kirdiran Kanagaretnam/B.Sc (Peradeniya), M.S.E.E. (Purdue), Ph.D. (Syracuse), C.M.A./(Accounting)
Rosemary Luo/B.Eng. (Business) (Beijing), M.A., Ph.D. (Western Ontario)/(Finance)
Susan McCracken/B.Com. (Queens), Ph.D.(Waterloo), C.A./(Accounting and Financial Management Services)
Peter Mull/B.Sc. (Hong Kong), M.B.A., Ph.D. (Toronto)/(Finance)
Devashish Pujari/B.Com., M.Com., M.Phil. (Kurukshetra), Ph.D. (Bradford)/(Marketing and Business Policy)/Chair, Strategic Market Leadership and Health Services Management Area
COMMERCE

Jiapeng Qiu/B.A. (Xiamen), M.Sc. (Hong Kong University of Science and Technology), Ph.D. (Toronto)/(Finance)
Kevin Tasa/B.Com. (Saskatchewan), M.Sc., Ph.D. (Toronto)/(Human Resource Management)
Dwayne Taylor/B.A. (Toronto), M.P.A., Ph.D. (York)/(Business and Public Policy)/Director, Health Services Management Stream
Willi Wiesner/B.A. (Wilfrid Laurier), M.A.Sc., Ph.D. (Waterloo)/(Human Resources)/Chair, Human Resources and Management Area

Assistant Professors

Catherine Connelly/B.Com. (McMaster), M.Sc., Ph.D. (Queen's)/(Organizational Behaviour)
Anna Daniellova/B.Sc. (Yerevan Polytechnic Institute), M.S. (American University of Armenia), M.A., Ph.D. (Indiana)/(Finance and Business Economics)
Terry Flynn/B.A. (Carleton), M.S., Ph.D. (Syracuse)/(Marketing)
Xinghua Liang/B. Econ. (Guangdong), M.Sc. (Concordia)/(Accounting)
Christopher Longo/B.A. (York), M.Sc. (Western Ontario), Ph.D. (Toronto)/(Marketing and Business Policy)
Emad Mohammud/B.A. (Kuwait), M.B.A., Ph.D. (Georgia State)/(Accounting)
Sourav Roy/B.Tech (Indian Institute of Technology), M.S. (Texas A&M), Ph.D. (Minnesota)/(Marketing)
Aaron Schat/B.A. (Redeemer), M.A., Ph.D. (Guelph)/(Organizational Behaviour)
Alfred Seaman/B.B.A.Admin. (New Brunswick), Ph.D. (Queen's)/C.M.A./(Accounting and Financial Management Services)
John Siam/B.A., M.A., Ph.D. (Concordia)/(Accounting and Financial Management Services)
Patricia Wakefield/B.S. (Alberta), M.S. (Cornell), M.P.A. (New York), Ph.D. (Boston)/(Marketing and Business Policy)/Director, AIC Institute for Strategic Business Studies

Industry Professor

Paul K. Bates/(Financial Management Services)/Dean

Lecturers

Rita Cossa/H.B.B.A. (Wilfrid Laurier), M.B.A. (McMaster)/(Marketing)
Horng-Tzu Hao/B.B.A. (Tamkang), M.B.A. (SUNY-Buffalo)/(Accounting)
Mandeep Malik/B.A. (Panjab), M.A. (Canberra)/(Marketing)
Teal McAttee/B.Com. (Queen's), M.R., Ph.D. (Toronto)/(Human Resources and Management)
Marvin G. Ryder/B.A., B.Sc. (Carleton), M.B.A. (McMaster)/(Marketing and Business Policy)
Tilina Salisbury/B.Com., M.B.A. (McMaster)/(Management Science and Information Systems)
Eckhard Schumann/B.Com. (Johnnburges), C.A.-(Forensic and Investigative Accounting)
Linda Stockton/M.B.A. (McMaster)/(Marketing and International Business)
Peter Vilkis/B.Sc.E.E. (Sunny-Buffalo), M.B.A. (McMaster), P.Eng.)/(Marketing)

Faculty Notes:

1. Upper Level Commerce courses are not open to Business I students.
2. The Commerce courses for the Business Minor are open to students registered in any four- or five-level McMaster degree program. For these students, enrolment will be limited to 40 spaces per course on a first-come, first-served basis in the following courses: COMMERCE 2AA3, 2AB3, 2BA3, 2FA3, 2MA3, 2KA3, 2QA3, 2CLC3, 3FA3, 3MC3.
3. Please note that all prerequisites for these courses must also be satisfied. Students registered in a McMaster Commerce, Engineering Management or Labour Studies program (where applicable) will be guaranteed enrolment in these courses. See Minor in Business in the Faculty of Business section of this Calendar. Students taking COMMERCE 2AA3, 2FA3, 2MA3 as Business Minor courses will also be required to have obtained a minimum grade of B- in ECON 1A06 or 1B03 as a prerequisite; or completion of ECON 2G03 or 2X03 with a minimum grade of B- as a prerequisite.
4. The Commerce courses for the Minor in Finance and the Minor in Accounting and Financial Management Services are open to students admitted to the Minor. Please note that all prerequisites for these courses must also be satisfied. Students taking COMMERCE 2AA3 and 2FA3 as Minor in Accounting and Financial Management Services courses will also be required to have obtained a minimum grade of B- in ECON 1A06 or an average of at least 7.0 in ECON 1B03 and 1B03 as a prerequisite.
5. Graduates of McMaster's Commerce programs or one of the Engineering Management programs may take, as part-time students, Level III and IV Commerce courses (not previously taken, to a maximum of 18 units), space permitting excluding COMMERCE 4AG3, *4AH*. *4AH*, with the permission of the Academic Programs Office. (See the Admission Requirements section of this Calendar under the heading Continuing Students.)
6. Other than those graduates specified above, Commerce courses are not open to Continuing Students.

Courses

COMMERCE 1E03 BUSINESS ENVIRONMENT AND ORGANIZATION
This course will examine the relationship between business organizations, their functional areas and the environments - social, political, legal and regulatory - that affect them.

Prerequisite: Registration in Business I

COMMERCE 1PA0 ORIENTATION TO UNDERGRADUATE BUSINESS PROGRAM
This course provides entering students with a comprehensive orientation of all programs and services within the DeGroote community. This course will be taught using a combination of in-class instruction and on-line resources.

Prerequisite: Registration in Business I

COMMERCE 2AA3 FINANCIAL ACCOUNTING I
This is an introduction to the basic principles and practices of financial accounting, which includes an examination of income measurement and asset and liability valuation, to provide an understanding of financial accounting information and the ethics of financial reporting.

Prerequisite: ECON 1A06 or 1B03 and registration in any Commerce, Engineering and Management or Honours Business Informatics program; or a grade of at least B- in ECON 1A06 or 1B03 and registration in any four or five-level Non-Commerce program

COMMERCE 2AB3 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 2AA3 and registration in any Commerce, Engineering and Management, Honours Business Informatics or four or five-level Non-Commerce program

COMMERCE 2BA3 ORGANIZATIONAL BEHAVIOUR
The central objective of this course is to develop an understanding of human behaviour in organizations with a view toward effective management of such behaviour.

Prerequisite: Registration in any Commerce, Engineering and Management, Honours Business Informatics, Labour Studies or four or five-level Non-Commerce program

KINESIOL 3L03

COMMERCE 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 or 1B03; and one of MATH 1A03, 1M03, or 1N03; and COMMERCE 2AA3; and registration in any Commerce, Engineering and Management, Honours Business Informatics or four or five-level Non-Commerce program.

COMMERCE students must have at least B- in ECON 1A06 or 1B03. Not open to students with credit or registration in ECON 2G03.
COMMERCE 2KA3 INFORMATION SYSTEMS IN BUSINESS
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, 3MC3, 1SA3, 3TA3, ENGINEER 1D04, MMEDIA 1A03; and registration in any Commerce or four or five-level non-Commerce program or non-Engineering and Management program
Antirequisite: COMMERCE 2QB3, 3QB3

COMMERCE 2MA3 INTRODUCTION TO MARKETING
This course introduces the fundamental underpinnings and operational facets of marketing with a primarily consumer (as opposed to industrial) focus.
Prerequisite: ECON 1A06 or 1B03 and registration in any Commerce, Engineering and Management or Honours Business Informatics program; or a grade of at least B- in ECON 1A06 or 1B03 and registration in any four or five-level non-Commerce program

COMMERCE 2QA3 APPLIED STATISTICS FOR BUSINESS
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: Finite Math (or Mathematics of Data Management U or equivalent) or STATS 1L03; and registration in any Commerce, Engineering and Management or four or five-level non-Commerce program
Antirequisite: ECON 2B03, ELEC ENG 3TQ4, ENG PHYS 3W04, HTH SCI 1F03, 2A03, SOC SCI 2J03, STATS 1CC3, 2MB3, 3J04, 3N03, 3Y03
Not open to students with credit or registration in both ENG PHYS 3W04 and MATH 3D03.

COMMERCE 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.
Prerequisite: Registration in a Commerce program

COMMERCE 2SB3 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.
Prerequisite: Registration in Level II or above of any Commerce or Engineering and Management program
Cross-list: PHILOS 2N03
This course is administered by the Department of Philosophy.

COMMERCE 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: COMMERCE 2AA3 and registration in any Commerce or Engineering and Management program.
(B.Com. students - see Note 6 above.)

COMMERCE 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: COMMERCE 3ABS and registration in any Commerce or Engineering and Management program.
(B.Com. students - see Note 6 above.)
Antirequisite: COMMERCE 4AB3

COMMERCE 3BC3 HUMAN RESOURCE MANAGEMENT AND LABOUR RELATIONS
This course builds on COMMERCE 2BA3, focusing on human resource management and labour relations issues and practices from a general management education perspective.
Prerequisite: COMMERCE 2BA3; and registration in any Commerce, Engineering and Management, Honours Business Informatics, Labour Studies, or four or five-level non-Commerce program
Antirequisite: COMMERCE 3BA3, 3BB3

COMMERCE 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: COMMERCE 2FA3 or ECON 2103; and registration in any Commerce, Engineering and Management, Honours Business Informatics or four or five-level non-Commerce program

COMMERCE 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: COMMERCE 2FA3 or ECON 2103; and registration in any Commerce or Engineering and Management program.
(B.Com. students - see Note 6 above.)

COMMERCE 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: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program.
(B.Com. students - see Note 6 above.)

COMMERCE 3IN0 COMMERCE INTERNSHIP PROGRAM
A Career Development series of workshops/lectures to equip students interested in the Commerce Internship Program. Successful completion of this course is required to participate in the Internship Program. Additional Internship requirements: employer evaluation and work term report at the end of the internship.
Lecture/workshop (ten sessions); first term or second term
Prerequisite: Successful completion of Level II Commerce. Transcript notation granted upon successful completion of an eight, 12 or 16 month approved internship.

COMMERCE 3KA3 SYSTEM ANALYSIS AND DESIGN
This course examines the role of the system analyst in today's business environment. Traditional and modern approaches to systems analysis and design will be covered. Students participate in a hands-on team project for a real-world business application.
Prerequisite: COMMERCE 2KA3 or 2QB3 and registration in any Commerce program; or registration in any Engineering and Management program.
(B.Com. students - see Note 6 above.)

COMMERCE 3MA3 MARKETING RESEARCH
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: COMMERCE 2MA3, 2QA3 and registration in any Commerce or Engineering and Management program; or COMMERCE 2MA3 and one of STATS 2MB3, 3J04, 3N03 or 3Y03 and registration in any Engineering and Management program.
(B.Com. students - see Note 6 above.)

COMMERCE 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: COMMERCE 2MA3 and registration in any Commerce or Engineering and Management program.
(B.Com. students - see Note 6 above.)

COMMERCE 3MC3 APPLIED MARKETING MANAGEMENT
This course builds upon material in COMMERCE 2M3 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: COMMERCE 2MA3 and registration in any Commerce, Engineering and Management or four or five-level non-Commerce program

COMMERCE 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: COMMERCE 2QA3 and registration in any Commerce or Engineering and Management program; or one of ELEC ENG 3TQ4, STATS 2MB3, 3J04, 3N03, 3Y03 or both ENG PHYS 3W04 and MATH 3D03, and registration in any Engineering and Management program
Chapter 1: Survey of the Nature, Determinants, and Impact of Collective Bargaining

Chapter 2: Introduction to Auditing

Chapter 3: Financial Accounting IV

Chapter 4: Accounting Information Systems

Chapter 5: Accounting Theory

Chapter 6: Special Topics in Accounting

Chapter 7: Personnel Selection

Chapter 8: Collective Bargaining

Chapter 9: Settlement of Industrial Disputes

Chapter 10: Labour Law and Policy

Chapter 11: Public Sector Collective Bargaining

Chapter 12: Training and Development

Chapter 13: The Management of Technology

Chapter 14: Occupational Health and Safety Management

Chapter 15: Strategic Human Resource Planning

Chapter 16: Applied Corporate Finance
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 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FE3 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 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

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 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.) Antirequisite: COMMERCE 4FC3

COMMERCE 4FG3 FINANCIAL THEORY
This course explores the theoretical foundations of finance and their applications to corporate financial 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 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.) Antirequisite: COMMERCE 4FB3

COMMERCE 4FH3 Mergers, Acquisitions and Corporate Control
This course examines the process by which mergers and other types of corporate control transactions take place, and the role of restructuring shifts in resource allocation by corporations. Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FI3 TRADING IN FINANCIAL MARKETS
This course attempts to develop practical skills in trading financial securities - fixed income, equities, futures and options - focusing on trading strategies based on market analysis and risk measurement. Prerequisite: COMMERCE 3FA3; and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.) Enrolment is limited.

COMMERCE 4FJ3 FIXED INCOME ANALYSIS
This course provides an advanced treatment of investments in the field of fixed income analysis and focuses on fixed income securities, fixed income portfolio management and fixed income derivatives. Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FK3 FINANCIAL STATEMENT ANALYSIS
This course provides a comprehensive and up-to-date treatment of the analysis of financial statements as an aid to decision making. The relationship between financial markets and financial statements is studied using computerized data sets on personal computers. Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FL3 PERSONAL FINANCIAL MANAGEMENT
The course covers various topics that are relevant to the financial decision making of individuals. These decisions include investment, retirement planning, debt and credit management, renting vs. buying a home, insurance and risk management and personal income tax planning and strategies. Prerequisite: COMMERCE 2FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.) Not open to students with credit in COMMERCE 4FX3, if the topic was Personal Financial Management (2004-2005 and 2005-2006).

COMMERCE 4FM3 FINANCIAL RISK MANAGEMENT
This course provides a systematic and advanced treatment of financial risk management. It focuses on interest rate risk, market risk, liquidity risk, credit risk and operational risk. It is designed for students pursuing careers in operations management as well as finance and accounting. Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FO3 SMALL BUSINESS AND ENTREPRENEURIAL FINANCE
This course is intended for students who wish to enhance their skills and knowledge in those areas of business that lead to successful entrepreneurship and/or small business management. The focus will be on those financial issues and decisions of particular concern to sole proprietors, partnerships, family-owned businesses and small non-public corporations. Prerequisite: COMMERCE 2FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FV3 VENTURE CAPITAL
This course focuses on financing and value creation strategies for early- and growth-stage companies. It is designed for students considering careers in financial services or as entrepreneurs. Prerequisite: COMMERCE 3FA3 and registration any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERCE 4FX3 SPECIAL TOPICS IN FINANCE
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: Announced at time of offering For information on course offerings, please refer to the School of Business web site at http://www.degrote.mcmaster.ca/programs/commerce/courses.html or contact the Academic Programs Office, DSB 104. COMMERCE 4FX3 may be repeated, if on a different topic, to a total of six units.

COMMERCE 4KD3 DATABASE DESIGN AND IMPLEMENTATION
This course is designed to introduce the basic concepts of database design, implementation and management. Students will gain hands-on experience through assignments and a team project. Prerequisite: COMMERCE 2KA3 or 2QB3 and registration in any Commerce program; or registration in any Engineering and Management program. (B.Com. students - see Note 6 above.) Antirequisite: COMMERCE 4QD3

COMMERCE 4KE3 SECOND GENERATION INTERNET AND BUSINESS APPLICATIONS
As a result of new and converging technologies, the telecommunications industry is moving all services to the 2nd generation Internet: called the broadband age. This course will take students through the changes and business impacts of entering the broadband age. Prerequisite: COMMERCE 2KA3 or 2QB3 and registration in any Commerce program; or registration in any Engineering and Management program. (B.Com. students - see Note 6 above.) Antirequisite: COMMERCE 4QE3 Not open to students with credit in COMMERCE 4OX3, if the topic was Specific Topics in Business Data Communication (if taken in September 1997).

COMMERCE 4KF3 PROJECT MANAGEMENT
Topics include: project selection, project organization structures, life cycles, planning, estimation, budgeting, resource allocation, contracting, project management software, reporting and controlling issues and conflict management. Prerequisite: COMMERCE 2B3A3 and registration in any Commerce program; or registration in any Engineering and Management program. (B.Com. students - see Note 6 above.) Antirequisite: COMMERCE 4QF3

COMMERCE 4KH3 MANAGEMENT ISSUES IN ELECTRONIC BUSINESS
This course will cover the issues that the modern business manager must deal with in making strategic decisions concerning the choice, implementation and execution of electronic business solutions. Prerequisite: COMMERCE 2KA3 or 2QB3 and registration in any Commerce program; or registration in any Engineering and Management program. (B.Com. students - see Note 6 above.) Antirequisite: COMMERCE 4QH3

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 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)
COMMERC 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: COMMERC 3MC3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERC 4ME3 SALES MANAGEMENT
Cases, presentations, field work, library research, role playing, and group exercises help to understand customers, the selling process, sales presentations, negotiation, legal and ethical responsibilities, self and team management.
Prerequisite: COMMERC 3MC3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.) Not open to students with credit or registration in COMMERC 4MX3, if the topic was Sales Management.

COMMERC 4MF3 RETAILING MANAGEMENT
This course will familiarize students with key managerial and policy issues involved in the design, implementation and assessment of the retail mix. It will cover several areas relating to the institution of retailing, elements of the retail environment; and retail strategies.
Prerequisite: COMMERC 3MC3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

COMMERC 4PA3 BUSINESS POLICY: STRATEGIC MANAGEMENT
As the capstone to the program, this course is designed to unify the student's learning experience by exploring the formulation and implementation of corporate strategy.
Prerequisite: COMMERC 3MC3; and registration in Level IV of a Commerce program or Level V of an Engineering and Management program.

COMMERC 4QA3 OPERATIONS MODELLING AND ANALYSIS
A course that looks at productions and operations management as practiced in engineering and manufacturing industries and the services sector.
Prerequisite: One of STATS 2MA3, 3H04, 3N03, 3Y03 or equivalent, and registration in any Engineering and Management, Honours Business Informatics or Mechanical Engineering program; or registration in Level IV or V of any Engineering Physics program
Antirequisite: COMMERC 3QC3

COMMERC 4QB3 ANALYSIS OF PRODUCTION/OPERATIONS 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. Enterprise resource planning system SAP may be used to highlight some of the concepts covered in the course.
Prerequisite: One of COMMERC 3QC3, 4QA3 or MECH ENG 4C03; and registration in any Commerce, Engineering and Management or Honours Business Informatics program. (B.Com. students - see Note 6 above.)

Enrolment is limited.

COMMERC 4QC3 MANAGERIAL DECISION MODELLING WITH SPREADSHEETS
This application-oriented course will cover several optimization modelling techniques that can be used to support managers and engineers in a wide variety of decision making situations in finance, marketing and production.
Prerequisite: COMMERC 3QA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)

Enrolment is limited.

COMMERC 4SA3 INTERNATIONAL BUSINESS
The key features of, and trends in, the global business environment. The implications of cultural and political differences. Comparative operational practices and multinational management.
Prerequisite: COMMERC 3MC3; and registration in Level IV of a Commerce program or Level V of any Engineering and Management program
Antirequisite: COMMERC 4PE3

COMMERC 4SB3 INTRODUCTION TO CANADIAN TAXATION
The principles of Canadian federal income taxation are examined in detail, emphasizing the application of both statute and common law to individuals and businesses situations.
Prerequisite: Credit or registration in COMMERC 3AB3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)
Antirequisite: COMMERC 4PB3

COMMERC 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: COMMERC 4SB3 or 4PB3; and registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)
Antirequisite: COMMERC 4PC3

COMMERC 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.
Prerequisite: Registration in any Commerce or Engineering and Management program. (B.Com. students - see Note 6 above.)
Antirequisite: COMMERC 4PD3

COMMERC 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: COMMERC 3FA3; and COMMERC 3MA3 or 3MC3; and registration in any Commerce or Engineering and Management program.

COMMERC 4SF3 JAPANESE BUSINESS
An introduction to Japan's business system. The approach is integrative, as the course examines Japan's economic history, culture, politics, industrial policy, management practices, advertising and doing business with Japan.
Prerequisite: Registration in any Commerce, Japanese Studies or Engineering and Management program. (B.Com. students - see Note 6 above.)
Cross-list: JAPAN ST 4S03

COMMERC 4SG3 INDEPENDENT STUDY IN BUSINESS
Faculty supervised project. A supervising faculty member must be arranged, and authorization of the Associate Dean secured, in the term preceding the term of study.
Prerequisite: To be determined by the supervising faculty member and registration in any Commerce or Engineering and Management program. Project forms are available from DSB-104. (B.Com. students - see Note 6 above.)

COURSES FOR PROFESSIONAL DESIGNATION...

COMMERC 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: COMMERC 4AC3, 4AF3; and registration in any Commerce or Engineering and Management program or graduation from a Commerce program
Available Summers subject to sufficient enrolments and availability of qualified instructors.

COMMERC 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: COMMERC 4AC3, 4AD3; and registration in any Commerce or Engineering and Management program or graduation from a Commerce program
Available Summers subject to sufficient enrolments and availability of qualified instructors.

COMMERC 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: COMMERC 4AC3, 4AD3; and registration in any Commerce or an Engineering and Management program or graduation from a Commerce program
Available Summers subject to sufficient enrolments and availability of qualified instructors.
**COMMUNICATION STUDIES AND MULTIMEDIA**

**WEB ADDRESS:** http://csmm.humanities.mcmaster.ca/

Togo Salmon Hall, Room 331
Ext. 23488

Faculty as of January 15, 2008

**Chair**
Graham Knight

**Professor**

Graham Knight/B.A. (Kent), M.A., Ph.D. (Carleton)

**Adjunct Professor**

Laurence Mussio/B.A. (Western Ontario), M.A. (McMaster), Ph.D. (York)

**Associate Professors**

Violetta Igneski/(Communication Studies and Multimedia; Philosophy)
B.A., M.A. (Western Ontario), Ph.D. (Toronto)
Andrew MacAvish/B.A. (Mount Saint Vincent), M.A. (Dalhousie), Ph.D. (Alberta)

**Assistant Professors**

Geoffrey Rockwell/B.A. (Haverford College), M.A., Ph.D. (Toronto)
Alexandre Sévigny/(Communication Studies and Multimedia; French)
B.A. (York), M.A., Ph.D. (Toronto)

**Assistant Professor**

Christina Baade/(Communication Studies and Multimedia; School of the Arts) B.Mus. (Northwestern), M.Mus., Ph.D. (Wisconsin-Madison)

**Philip Savage/B.A. (Carleton), M.A. (Simon Fraser), Ph.D. (York)**

Jeremy Stolow/(Communication Studies and Multimedia; Sociology) B.A. (Toronto), M.A., Ph.D. (York)

**Associate Member**

Henry Giroux/(English and Cultural Studies) B.S. (Maine), M.A. (Appalachian State), D. Arts (Carnegie-Mellon)/Global Television Network Chair in Communications

**Adjunct Lecturer**

Rocco Piro

**COMMUNICATION STUDIES ...**

**Courses**

If no prerequisite is listed, the course is open.

**CMST 1A03** INTRODUCTION TO COMMUNICATION

Students will examine both practical and fundamental concepts in communication studies and the effects of language, mass communications, performative acts and the internet on social, cultural and cognitive processes in the context of the Communication Studies Program.

Three hours (lectures and tutorials); one term

**CMST 2A03** QUANTITATIVE METHODS IN COMMUNICATION RESEARCH

An introduction to the basic approaches and principles for gathering and analyzing quantitative data in communication studies. Topics include sampling techniques, interviewing, questionnaire construction, focus groups, content analysis and the fundamentals of statistical analysis and inference.

Three hours (lectures and tutorials); one term

Prerequisite: CMST 1A03; and registration in a program in Communication Studies or Multimedia

**CMST 2B03** DEVELOPMENTS IN HUMAN COMMUNICATION: PAST AND PRESENT

An introduction to the theoretical and methodological approaches to cultural studies focusing on communicative practice. Students will analyse relationships between cultural identity, producers, consumers, institutions, technologies and practices of mediated communication.

Three hours; one term

Prerequisite: Registration in a program in Communication Studies

**CMST 2C03** COMMUNICATION THEORY I: FUNDAMENTAL PERSPECTIVES

An introduction to various theories on the organization, use and manipulation of language, such as semiotics, sociolinguistics, interpersonal communication, group communication and performance.

Three hours (lectures and tutorials); one term

Prerequisite: CMST 1A03; and registration in Level II or above of a program in Communication Studies or Multimedia

**CMST 2C13** COMMUNICATION RESEARCH

This course offers instruction on a variety of professional communication forms covering timely media topics such as television violence and internet spam. Students will examine both practical and fundamental concepts in communication studies and the effects of language, mass communications, performative acts and the internet on social, cultural and cognitive processes in the context of the Communication Studies Program.

Three hours (lectures, discussion and workshops); one term

Prerequisite: CMST 1A03; and registration in a program in Communication Studies or Multimedia

**CMST 2C23** COMMUNICATION THEORY II: SOCIAL PERSPECTIVES

An introduction to the qualitative research in communication studies. Topics may include research ethics, discourse analysis, textual analysis, ethnography, structuralist and poststructuralist approaches to the study of communication.

Three hours (lectures and tutorials); one term

Prerequisite: CMST 1A03; and registration in a program in Communication Studies or Multimedia

**CMST 2D03** MEDIA ORGANIZATIONS

An examination of the occupational, professional and organizational structures and processes of media production in the press, radio, television and digital media. Topics include news gathering, radio and TV production practices and media management.

Three hours; one term

Prerequisite: Registration in Level II or above of a program in Communication Studies

**CMST 2D13** COMMUNICATIONS RESEARCH

This course will investigate a variety of styles and registers from the conversational to the literate and academic.

Three hours; one term

Prerequisite: Registration in Level II or above

Cross-list: LINGUIST 2E03

This course is administered by the Department of Linguistics and Languages.

**CMST 2F03** PROFESSIONAL WRITING

This course offers instruction on a variety of professional communication forms such as resumes, letters of inquiry, proposals, press releases and the evaluation of web page design. Students will also read and evaluate arguments covering timely media topics such as television violence and Internet spam.

Three hours (lectures, discussion and workshops); one term

Prerequisite: Registration in Level II or above of a program in Communication Studies

**CMST 2G03** PERFORMANCE AND PERFORMATIVITY

An introduction to the study of performative modes of communication such as storytelling, gesture, movement, dress. Students will learn to analyze the relationship between cultural performances, such as games, garage bands, group facilitation, or live theatre and social structures.

Three hours (lectures and discussion); one term

Prerequisite: Three units of Communication Studies and registration in Level II or above

Cross-list: SOTA 2G03

**CMST 2H03** GENDER AND PERFORMANCE

An examination of gender as identities performed or constructed in complex social, historical and cultural processes and conditions, including how gender gives meaning to different performance texts, as well as to a range of performance practices in daily life.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level II or above of a program in Communication Studies, Women’s Studies or Multimedia

Cross-list: WOMEN ST 2J03
CMST 2003 Politicall Economy of the Media

A comparative examination of changing patterns of ownership and control of the mass media in light of globalization; technological change, government policy, market restructuring and corporate consolidation.

Three lectures; one term

Prerequisite: Registration in Level II or above

Cross-list: ART HIST 2A03

This course is administered by the School of the Arts.

CMST 2004 The History of Graphic Design

An introduction to the history of graphic, two-dimensional design. The course demonstrates the admixture of high and popular culture that informs advertising, posters, book design and illustration, etc.

Three lectures; one term

Prerequisite: Registration in Level II or above.

Cross-list: ART HIST 2F03, MMEDIA 2F03

CMST 2005 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 or above.

Cross-list: ART HIST 2H03, PHILCS 2H03

Offered in alternate years.

This course is administered by the Department of Philosophy.

CMST 2008 Dramatic Forms

Different performance techniques and conventions demand particular forms of dramatic narrative. By comparing the way similar stories are told in different media and genres, students identify the structuring elements of dramatic texts written for live performance, film television and music theatre.

Three hours (lectures and group presentations); one term

Prerequisite: Registration in Level II or above

Cross-list: ART HIST 2I03, PHILCS 2I03

Offered in alternate years.

This course is administered by the Department of the Arts.

CMST 2009 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

Cross-list: MUSIC 2A03

Offered in alternate years.

This course is administered by the School of the Arts.

CMST 2010 Popular Music in North America and the United Kingdom: Post-War II

Popular music, its social meanings and media and technology interactions, from rock-and-roll to now. Topics include rhythm and blues (Chuck Berry), pop (Madonna), metal (Led Zeppelin).

Three lectures; one term

Prerequisite: Registration in Level II or above

Cross-list: MUSICO 2I03

Antirequisite: MUSIC 2AA3

This course is administered by the School of the Arts.

CMST 2012 Visual Literacy

A course of lectures and discussions that explores the concept of visual literacy and examines the ways in which fine and popular arts structure our understanding through images.

One lecture (two hours), one tutorial/discussion; one term

Prerequisite: Registration in Level II or above of a program in Communication Studies

Cross-list: ART HIST 2A03

This course is administered by the School of the Arts.

CMST 2013 Music for Film and Television

An examination of how music functions to help create meanings in film and television programs. Examples will be drawn from throughout the history of film and television.

Three lectures; one term

Prerequisite: Registration in Level II or above

Cross-list: MUSIC 2F03, THTR&FLM 2T03

This course is administered by the School of the Arts.

CMST 2023 Politics and the Media

Theories and practices of the reciprocal relationship between the communications media and the political system.

Three hours (lectures and tutorials); one term

Prerequisite: CMST 1A03, and either CMST 1B03 or 2CC3; or POL SCI 1G06

Cross-list: POL SCI 2203

This course is administered by the Department of Political Science.

CMST 3003 Crime, Conflict and the Media

An examination of how different forms of crime and conflict, such as sexual violence, war, terrorism and industrial disputes are represented in both information and entertainment media.

Three hours; one term

Prerequisite: Registration in Level III or above of a program in Communication Studies.

CMST 3008 Practical Aspects of Media Production

In consultation with a faculty member, students will complete an independent project or an applied placement on an approved topic involving the application of communication skills, theories and methodologies. It is the student's responsibility to obtain the agreement of the instructor and to complete a proposal form (available in the Communication Studies Office). Independent Study proposals must be approved by the Committee of Instruction during the term before the project is to be done.

Prerequisite: Registration in Level III or IV of a program in Communication Studies with a Cumulative Average of at least 8.5 and permission of the Committee of Instruction.

CMST 3009 Women and Visual Culture

Students will explore ideas about representation, spectatorship and production in relation to issues of social difference, such as gender, race and class. Emphasis is on visual modalities such as film, video, television, advertising, etc.

Two hour lecture and discussion, plus one weekly film screening; one term

Prerequisite: Registration in Level III or above and one of ART HIST 2A03, CMST 2F03, 2103, THTR&FLM 1B03 or both WOMEN ST 1A03 and 1AA3 (or 1A06)

Cross-list: THTR&FLM 3P03, WOMEN ST 3BB3

Not open to students with credit or registration in WOMEN ST 3B03 if taken in 2001-2002.

This course is administered by Women's Studies.

CMST 3010 Media and Social Issues

An analysis of relationships between mass media and modern society. Topics may include ideology and agenda-setting in the media, representations of social problems (e.g., homelessness, violence), moral panics, media scandals, or public ceremonies.

Three lectures; one term

Prerequisite: Registration in Level III or above of a Communication Studies program or Multimedia; or SOCIOL 2L03 and registration in a Sociology program

Cross-list: SOCIOL 3C03

This course is administered by the Department of Sociology.

CMST 3013 Reading Film

A critical examination of selected films and film genres as cultural texts, using methods drawn from film theory and cultural studies.

Three hours, plus one weekly film screening; one term

Prerequisite: Registration in Level II or above of a program in Art History, Communication Studies, Comparative Literature, Cultural Studies and Critical Theory, Multimedia or Theatre and Film Studies. Completion of CMST 2X03 or THTR&FLM 2F03 is recommended.

Cross-list: COMP LIT 3L03, CMST 3CC3, ENGLISH 3CC3, THTR&FLM 3R03

This course is administered by the Department of English and Cultural Studies.
CMST 3D03 POLITICAL COMMUNICATION
The relationship between politics and the media is analyzed in terms of issues such as political news coverage, electioneering, political marketing, policy formation and publicity, and agenda-setting and public opinion.
Three lectures (three hours); one term
Prerequisite: Registration in a Communication Studies or Political Science program
Cross-list: POL SCI 3BB3
This course is administered by the Department of Political Science.

CMST 3E03 ARGUMENTATION THEORY
A study of some theoretical issues concerning the identification, analysis and evaluation of arguments.
Three hours (lectures and discussion); one term
Prerequisite: One of ARTS&SCI 1B06, CMST 2W03, HUMAN 2C03 or PHILOS 2B03; and registration in Level II or above
Cross-list: PHILO 3M03
This course is administered by the Department of Philosophy.

CMST 3F03 TOPICS IN VISUAL CULTURE
This course will examine a variety of topics in the critical study of visual culture, including gender and spectatorship, consumerism and the arts, and visual literacy in the 21st century.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: SOTA 3C03
This course is administered by the School of the Arts.

CMST 3G03 INTRODUCTION TO SOCIOLINGUISTICS
An introduction to sociolinguistics covering such topics as linguistic variation (regional, social, situational), language and gender, language and disadvantage/power, language choice, language change, pidgin and Creole languages.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3 and registration in Level III or above of a program in Communication Studies
Cross-list: LINGUIST 3X03
Antirequisite: ANTHROP 3X03
This course is administered by the Department of Linguistics and Languages.

CMST 3H03 CREATING CEREMONIES
An examination of the performative aspects of ceremonies and rituals such as weddings, funerals, political inaugurations, parades, mass, festivities around such religious celebrations as Christmas and Hanukkah, and the rituals associated with theatre and concert going.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above of a program in Communication Studies or Multimedia

CMST 3I03 COMMUNICATION POLICY AND LAW
An examination of the role of government policy, regulation, and law on the structure and functioning of the mass media. Topics include cultural policy, communication technology policy, free speech and privacy rights.
Three lectures; one term
Prerequisite: Registration in Level III or above of a program in Communication Studies or Multimedia

CMST 3J03 THE RISE OF THE MUSIC INDUSTRY
This course examines the role of early media, technology, performance and business practices in the development of popular music styles, audiences and cultural meanings. Topics include Tin Pan Alley, race records and big bands on radio.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above of a program in Communication Studies
Antirequisite: CMST 2RR3, MUSIC 2103

CMST 3K03 MEDIA AUDIENCES AND EFFECTS
An examination of the media/audience relationship in light of different theories of media effects including social learning, agenda-setting, uses and gratifications, active audiences and cultivation analysis.
Three lectures; one term
Prerequisite: CMST 2A03 and registration in Level III or above of a program in Communication Studies or Multimedia

CMST 3L03 THEORIZING CULTURE THROUGH PERFORMANCE
Students will explore artists’ practices in making performances and will analyse how artists work with theories, texts, spaces, bodies, audiences and produce challenges to artistic, social and political norms.
Three hours; one term
Prerequisite: One of ART HIST 2D03, 3AA3, CMST 2G03, 2P03, 2S03, THTR&FLM 2C03, 2D03, 2E03
Cross-list: ART HIST 3L03, THTR&FLM 3103
Offered in alternate years.
This course is administered by Theatre & Film.

CMST 3M03 THE INTERNET AND PUBLIC LIFE
This course examines how the internet and other digital media may be reshaping political and personal relationships and altering the nature of the public sphere.
Three hours; one term
Prerequisite: CMST 2Z03 or POL SCI 2Z03; and registration in Level II or above
Cross-list: POL SCI 3MM3
Not open to students with credit in CMST 3A03, TOPICS IN COMMUNICATION, if the topic was Public Life in a Digital Age.
This course is administered by the Department of Political Science.

CMST 3N03 ETHICAL ISSUES IN COMMUNICATION
This course will examine ethical issues as they arise in interpersonal communication and mass communication. The dominant moral theories and approaches to moral decision-making will be analysed and put to use to help students understand and evaluate concrete examples.
Three hours (lectures and discussion); one term
Prerequisite: CMST 2C03; and one of CMST 2A03 or 2B03; and registration in Level III or above of a program in Communication Studies, Multimedia or Peace Studies
Cross-list: PEACE ST 3N03
Not open to students with credit in CMST 3A03, TOPICS IN COMMUNICATION, if the topic was Ethical Issues in Communication.

CMST 3Q03 TOPICS IN ORGANIZATIONAL COMMUNICATION
This course focuses on communication as an effective management tool for issues including consensus-building, corporate culture, leadership and motivation, decision-making, cultural diversity and communicating change.
Three hours (lectures and discussion); one term
Prerequisite: CMST 2C03; and one of CMST 2A03 or 2B03; and registration in Level III or above of a program in Communication Studies

CMST 3S03 FILM, VIDEO AND ENTERTAINMENT CULTURE
Critical approaches to forms of entertainment culture which permeate our everyday lives (e.g., popular films, video culture, television). Topics may include the cultural meanings of popular imagery, star-gazing and commercialization.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: CMST 2X03 or THTR&FLM 2P03
Cross-list: THTR&FLM 3M03
Offered in alternate years.
This course is administered by the School of the Arts.

CMST 3U03 PERFORMANCE ART
This course will examine historical and contemporary concerns related to performance art including the relevance of traditional categories of artistic production, the roles of the audience, the institution and market, and the body as artistic medium.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: SOTA 3S03
This course is administered by the School of the Arts.

CMST 3U03 INDEPENDENT FILM AND VIDEO
An exploration of artists’ film and video produced outside of dominant institutions, including such practices as documentary, autobiography, community projects, experimental film, short film and video art.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: One of CMST 2S03, 2X03 or THTR&FLM 2P03
Cross-list: THTR&FLM 3N03
Offered in alternate years.
This course is administered by the School of the Arts.
CMST 3V03   PRAGMATICS
A discussion of the problems confronting the linguist in the study of text and discourse at the level beyond the sentence. The course will deal with the interaction between grammar and situational factors. Three hours; one term
Prerequisite: LINGUIST 1A03 and 1AA3 (or 1A06); or FRENCH 2H03; or permission of the Department of Linguistics and Languages
Cross-list: LINGUIST 3P03
Antirequisite: ANTHROP 3PL3.
The course is administered by the Department of Linguistics and Languages.

CMST 3Y03   PHILOSOPHY OF LANGUAGE
A survey of philosophical problems concerning language. Topics to be considered include reference, synonymy, truth and linguistic knowledge. Three lectures; one term
Prerequisite: At least six units of Philosophy or PHILOS 2B03; and registration in Level III or IV of any program
Cross-list: PHILOS 3E03
Offered in alternate years.
This course is administered by the Department of Philosophy.

CMST 4A03   INDEPENDENT RESEARCH PROJECT
Under the supervision of a faculty advisor students will complete an independent, original research project.
Prerequisite: Registration in Level IV of a program in Communication Studies with a Cumulative Average of at least 6.0

CMST 4C03   ISSUES IN PERFORMANCE STUDIES
This course serves to synthesize and expand students' engagement with issues studied in performance studies courses through the examination of writings that draw on anthropology, phenomenology, materialist analysis, psychoanalysis, gender theory, postmodernism, postcolonialism and intercultural reception. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies (Performance Studies or Cultural Studies Stream)

CMST 4D03   INTERNATIONAL COMMUNICATION
The relationship between globalization and the media is examined in light of the debates over cultural imperialism, information and technology flow, cultural hybridization and the media's impact on socio-economic development. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies

CMST 4E03   MEDIA AND PROMOTIONALISM
An examination of the media's role in the promotion of different interests, values and patterns of behaviour. Topics include advertising, public relations, social activism and public information campaigns. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies

CMST 4F03   STUDIES IN FILM
Senior seminar: An examination of selected films. Seminar (two hours); one term
Prerequisite: CMST 2S03 and registration in Level III or IV of a program in Communication Studies. THTFRFLM 2F03 is recommended. Cross-list: THTFRFLM 4E03
Priority will be given first to students registered in Level IV of any Theatre & Film Studies program and then to students registered in Level IV of the Communication Studies program. This course is administered by the School of the Arts.

CMST 4Q03   SECOND LANGUAGE ACQUISITION
The course examines empirical evidence and theoretical perspectives on language learning by adults. Two hours; one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics courses above Level I; or permission of the Department of Linguistics and Languages
Cross-list: LINGUIST 4B03
Antirequisite: ANTHROP 4BL3.
This course is administered by the Department of Linguistics and Languages.

CMST 4R03   CROSS-CULTURAL COMMUNICATION
Students explore the links between language and culture and learn skills necessary to be intermediaries between cultures. Topics include: communication between genders, the cognitive role of metaphor, language and perception, emotions across cultures, culture and advertising, body language and cultural stereotyping.
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics courses above Level I; or permission of the Department
Cross-list: LINGUIST 4R03

Not open to students with credit in CMST 4H03, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Cross-Cultural Communication. Offered on an irregular rotation basis.
This course is administered by the Department of Linguistics and Languages.

CMST 4N03   COMMUNICATION, CULTURE AND TECHNOLOGY
This course surveys social patterns of reception and adaptation of communication technologies and their interaction with cultural constructions of (gendered) bodies, everyday life, organization of space and time, and other cultural distinctions. Three hours (lectures and discussion); one term
Prerequisite: CMST 2B03 and registration in Level IV of a program in Communication Studies

CMST 4P03   SOCIAL ACTIVISM AND THE MEDIA
This course examines the role of print, electronic and digital media in the relationship between social movements, the state and corporate interests. Three hours (lecture and/or seminar); one term
Prerequisite: Registration in Level IV of a program in Communication Studies

CMST 4Q03   ADVANCED TOPICS IN COMMUNICATION I
Students will learn about specific areas or aspects of research in communication studies, such as critical media discourse, culture and consumption, media and globalization, etc.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies
Antirequisite: CMST 4K03, 4N03, 4QQ3.
Students may take only one of CMST 4N03, 4QQ3 or 4Q03.

CMST 4Q03   ADVANCED TOPICS IN COMMUNICATION II
Students will learn about specific areas or aspects of research in communication studies, such as critical media discourse, culture and consumption, media and globalization, etc.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies
Antirequisite: CMST 4N03, 4Q03
Students may take only one of CMST 4N03, 4QQ3 or 4Q03.

CMST 4M03   COMMUNICATION STUDIES AND MULTIMEDIA
This course examines the relationship between globalization and the media in light of the debates over cultural imperialism, information and technology flow, cultural hybridization and the media's impact on socio-economic development. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies (Performance Studies or Cultural Studies Stream)

CMST 4J03   INTERPERSONAL COMMUNICATION
This course offers an introduction to contemporary interpersonal communication theories and research. Topics include: small group communication, persuasive communication, argumentation strategies, conflict resolution, as well as computer mediated, intercultural, international and political communication.
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics courses above Level I; or permission of the Department
Cross-list: LINGUIST 4J03

Not open to students with credit in CMST 4H03, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Interpersonal Communication. Offered on an irregular rotation basis.
This course is administered by the Department of Linguistics and Languages.

CMST 4H03   NEWS ANALYSIS: THEORY AND PRACTICE
This course examines analysis of news media content and structure. Students will critically analyze and complete a major content analysis research project.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level IV of a program in Communication Studies
Antirequisite: CMST 4K03, 4Q03, 4QQ3.
Students may take only one of CMST 4N03, 4Q03 or 4QQ3.

CMST 4I03   FORENSIC LINGUISTICS
This course examines the problems confronting the linguist in the study of text and discourse at the level beyond the sentence. The course will deal with the interaction between grammar and situational factors.
Three hours (lectures and discussion); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics courses above Level I; or permission of the Department
Cross-list: LINGUIST 4I03

Not open to students with credit in CMST 4H03, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Forensic Linguistics. Offered on an irregular rotation basis.
This course is administered by the Department of Linguistics and Languages.
Courses

If no prerequisite is listed, the course is open.

**MMEDIA 1A03 INTRODUCTION TO DIGITAL MEDIA IN THE HUMANITIES**
Students will be introduced to the history, theory, and design of digital media in the context of the arts and humanities. Students will learn to use Internet research resources to create digital media.
One lecture (two hours), one tutorial; one term
Prerequisite: COMP SCI 1BA3, 1SA3, 1TA3
Antirequisite: COMP SCI 1BA3

**MMEDIA 1B03 THE DIGITAL IMAGE**
An introduction to the critique and creation of digital images. Readings will explore issues concerning the digital image and graphic design for the Internet. Students will be expected to use graphics software and create web pages in order to complete design assignments.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program
Antirequisite: ENGINEER 2GA3, MMEDIA 1BE3

**MMEDIA 1A03 INTRODUCTION TO MULTIMEDIA**
This course presents arts students with the fundamentals of computer-based multimedia. Students will read about and discuss how to critique multimedia works, create such works, and consider the application of multimedia technology.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program
Antirequisite: ENGINEER 2GA3, MMEDIA 1BE3

**MMEDIA 2B03 DIGITAL MEDIA (AUDIO AND VIDEO)**
A study of digital media where students will create and critique digital audio and video. Readings will explore the evolution of digital media and the technical and social aspects of digital audio and video.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program
Antirequisite: ENGINEER 2GB3, MMEDIA 2BE3

**MMEDIA 2C03 COMPUTER ARCHITECTURE FOR MULTIMEDIA**
This course covers fundamentals of microcomputers, operating systems, and multimedia peripherals with emphasis on: diagnostic knowledge of hardware; operating systems for multimedia development; media acquisition hardware; standards for connecting media devices; computing history.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program
Antirequisite: ENGINEER 2GB3

**MMEDIA 2D03 ELECTRONIC TEXTUALITY AND PROGRAMMING**
An introduction to the fundamentals of markup languages for multimedia and programming information applications. Students will develop a markup model, create an electronic text database, and write stylesheet and programs to transform the data within the context of an original project.
One lecture (two hours), one tutorial; one term
Prerequisite: One of MMEDIA 1A03, 1B03, 2I03, 2J03 or registration in the Honours Linguistic Cognitive Science program

**MMEDIA 2E03 COMPUTER GRAPHICS**
This course develops both technical and conceptual aspects of computer drawing using standard computer graphics tools. Students will concentrate on developing drawing abilities through the computer and will be expected to present their work and discuss that of others.
One lecture (one hour), one tutorial (one hour), one hour of independent study; one term
Prerequisite: MMEDIA 1A03 or 1B03

**MMEDIA 2F03 THE HISTORY OF GRAPHIC DESIGN**
An introduction to the history of graphic, two-dimensional design. The course demonstrates the admixture of high and popular culture that informs advertising, posters, book design and illustration, etc. Students will be introduced to desktop publishing.
Three lectures; one term
Prerequisite: Registration in Level II or above of a program in Art History, Communication Studies or Multimedia. Prior completion of ART HIST 1A03 and 1AA3 is recommended.

**MMEDIA 2G03 INTRODUCTION TO MIDI AND COMPUTER MUSIC**
Basic electroacoustic theory; introduction to digital music composition techniques, MIDI applications; computer music notation; aesthetics of music composition. Students produce at least one original work. Experience with computers/music composition not required.
Two lectures, one tutorial; one term
Prerequisite: Registration in a Multimedia program or registration in Level II or above of a Music program
Cross-list: MUSIC 2Z03

**MMEDIA 2H03 INTRODUCTION TO ANIMATION**
An introduction to the history and basic principles of animation. Students will create a significant work of computer animation displaying a variety of techniques. Readings and discussions will cover theatre, film studies and narrative. Students will be expected to attend screenings.
One lecture (two hours), one tutorial/screening; one term
Prerequisite: Registration in a Multimedia program
Antirequisite: ENGINEER 3GA3, MMEDIA 2HE3

**MMEDIA 2I03 DIGITAL RHETORIC AND COMMUNICATION**
An introduction to the history of rhetoric, the study of classical and electronic examples of oral discourse. Students analyze the persuasive technique of oral communication and deliver an expository speech with multimedia support.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above

**MMEDIA 3A03 ADVANCED MIDI**
A study of multimedia programming, expanding upon the issues and techniques introduced in MMEDIA 2A03. Students will design and develop multimedia applications that combine text, images, sound, video, and animation. Critical readings and discussion will cover theories of interactivity, hypertext, and instructional technology.
One lecture (two hours), one tutorial; one term
Prerequisite: MMEDIA 2A03 and registration in a Multimedia program

**MMEDIA 3B03 TOPICS IN THE PHILOSOPHY AND HISTORY OF COMPUTING**
Three hours; one term
Prerequisite: Registration in Level III or IV of a Multimedia program or a program in Communication Studies

**MMEDIA 3C03 ADVANCED MIDI AND DIGITAL AUDIO FOR MULTIMEDIA**
The creation of digital music and audio. Students work individually and in teams to develop skills for multimedia audio production. Topics include: advanced MIDI, mixing, audio processing, and frequency equalization.
Two lectures, one tutorial; one term
Prerequisite: MMEDIA 2G03 or MUSIC 2Z03
Cross-list: MUSIC 3Z03

**MMEDIA 3E03 INTERACTIVE DIGITAL CULTURE**
Covers works, forms, theories of digitally interactive culture. Works may include hypertext fiction, computer games, interactive digital art, video, music; theories may cover hypertext, interactivity, immersion, simulation, reception, participatory culture.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in Level III of a Multimedia program or a program in Communication Studies
Antirequisite: ENGINEER 4GA3, MMEDIA 3EE3
Alternates with MMEDIA 3K03.

**MMEDIA 3F03 HUMAN COMPUTER INTERFACE DESIGN**
Explores history and design of computer interfaces, focusing on the relationship between computers and people. Topics include computer interface usability/evaluation; drama, narrative, and interface; interface and representation; the politics of interface design.
One lecture (two hours), one tutorial; one term
Prerequisite: Six units of MMEDIA courses beyond Level I; and registration in a Multimedia program or the Honours Linguistic Cognitive Science program

**MMEDIA 3G03 NETWORK SERVICES FOR MULTIMEDIA**
This course covers network systems/services for multimedia, emphasizing diagnostic knowledge of networked systems and services used for multimedia deployment. Focus on Web servers; also history of networking, the Internet, and the WWW.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program
MCMEDIA 3H03. ADVANCED COMPUTER ANIMATION
An advanced study of computer animation with a focus on 3D animation. Students will create a significant work of 3D animation and critique current examples. Readings may cover theories and techniques of animation, performance, film and narrative. Students will attend screenings. One lecture (two hours), one lab (one hour every week); one term
Prerequisite: MCMEDIA 2H03 and registration in a Multimedia program

MCMEDIA 3I03 ADVANCED DIGITAL VIDEO
This course covers advanced techniques in digital video production, post production and delivery (i.e. interactive video, streaming media, video in multimedia.) Readings explore video art, digital and visual culture. Students create critical and theoretical digital video projects.
One lecture (two hours), one lab (one hour every week); one term
Prerequisite: MCMEDIA 2B03 and registration in a Multimedia program

MCMEDIA 3J03 PROGRAMMING FOR THE WEB
Students build dynamic web sites driven by databases and programmed with server-side and client-side scripting languages; examine operational database driven sites, interface design and documentation; create database-driven sites.
One lecture (two hours), one lab (one hour every week); one term
Prerequisite: MCMEDIA 2D03 or 3A03; and registration in a Multimedia program or the Honours Linguistic Cognitive Science program

MCMEDIA 3K03 DIGITAL GAMES
A study of the form, content, and playing of digital games. Topics include: form, genre, and technology; time and space; representation and narrative; and participatory play.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in Level III or above of a Multimedia program, a program in Communication Studies or the Software Engineering (Game Design) program
Alternates with MCMEDIA 3E03.

MCMEDIA 4A03 THE MANAGEMENT OF MULTIMEDIA
Students build and manage content collections; lead and participate in team based multimedia production; study case histories. Readings cover the design of large media collections, management theory, copyright and intellectual property.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in Level IV of a Multimedia program. (See Program Note under the heading Multimedia in the Faculty of Humanities section of the Calendar.)

MCMEDIA 4B03 SENIOR THESIS PROJECT
This course provides an opportunity to pursue individual advanced multimedia projects under the supervision of a Thesis Committee. Students will propose a multimedia project, have it approved by the Multimedia Program Committee and present their completed project publicly.
One term
Prerequisite: MCMEDIA 4A03 and registration in Level IV of a Multimedia program. (See Program Note under the heading Multimedia in the Faculty of Humanities section of the Calendar.)

MCMEDIA 4C03 COMPUTERS AND EDUCATION
A survey of the history of instructional technology and uses of computers in education. Students review instructional materials; create, evaluate, and present an instructional application; and study effects of technology on education.
One lecture (two hours), one tutorial; one term
Prerequisite: MCMEDIA 3A03

MCMEDIA 4D03 TOPICS IN VISUALIZATION
This course will introduce students to the design and theory of visualization. Projects may include the digital design of fictional spaces and data visualization as created through animation software and/or new media programming environments.
One lecture (two hours), one lab; one term
Prerequisite: Registration in Level III or above of a Multimedia program

COMPARATIVE LITERATURE
WEB ADDRESS: http://www.humanities.mcmaster.ca/~compLit
Togo Salmon Hall, Room 726
Ext. 24265

Courses and programs in Comparative Literature are administered within the Office of Interdisciplinary Studies of the Faculty of Humanities. For information and counselling, please contact the Director of Comparative Literature (Ext. 24091).

Faculty as of January 15, 2008
Director
Jean Wilson
Professor
Joseph Adamson/B.A. (Trent), M.A., Ph.D. (Toronto)
Associate Professor
Jean Wilson/B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto)

Committee of Instruction
Joseph Adamson (English and Cultural Studies; Comparative Literature)
Iris Bruce (Linguistics and Languages)
Nina Kolesnikoff (Linguistics and Languages)
John C. Stout (French)
Jean Wilson (Comparative Literature; Linguistics and Languages)

Notes:
1. No language other than English is required for courses listed under Comparative Literature.
2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.

Courses
If no prerequisite is listed, the course is open.

COMP LIT 1A03 INTRODUCTION TO COMPARATIVE LITERATURE I
Students engage in the close study of selected literary works from texts of antiquity to the beginnings of modern literature. Considerable attention is given to the development of critical skills in reading and writing.
Two lectures, one tutorial; one term

COMP LIT 1AA3 INTRODUCTION TO COMPARATIVE LITERATURE II
An introduction to comparative literary studies, through the exploration of selected works from the 18th century on. Considerable attention is given to the development of critical skills on reading and writing.
Two lectures, one tutorial; one term

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: Registration in Level II or above

COMP LIT 2AA3 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: Registration in Level II or above

COMP LIT 2BB3 NORTH AND SOUTH AMERICAN LITERATURES
A comparative study of key motifs in selected North and South American literary traditions which may include magic realism, the Gothic, poetry, fantasy and metafiction.
Three lectures; one term
Prerequisite: Registration in Level II or above

COMP LIT 2CC3 WORLD LITERATURE
An introduction to recent debates on what constitutes "world literature," focusing on a broad range of key works from several different continents, languages and cultures.
Three lectures; one term
Prerequisite: Registration in Level II or above

COMP LIT 2DD3 DRAMATIC FORMS
Different performance techniques and conventions demand particular forms of dramatic narrative. By comparing the way similar stories are told in different media and genres, students identify the structuring elements of dramatic texts written for live performance, film television and music theatre.
Lectures and group presentations (three hours); one term
Prerequisite: Three units of Level I Theatre & Film or Drama and registration in Level II or above of a Comparative Literature program
Cross-list: CMST 2P03, THTR&FLM 2C03
Antirequisite: DRAMA 2D03, 2D06
This course is administered by the School of the Arts.
COMP LIT 2E03 CONCEPTS OF CULTURE
An analysis of the development of the concept of culture from the En-
litement to the present. Theoretical readings combined with the analysis
of specific cultural texts, objects, forms and practices will allow stu-
dents to trace historical and contemporary debates concerning culture.
Three hours; one term
Prerequisite: Registration in a program in Communication Studies, Com-
parative Literature, Cultural Studies and Critical Theory or English
Cross-list: CSCT 2M03, ENGLISH 2M03
Antirequisite: CMST 2M03
This course is administered by the Department of English and Cultural
Studies.

COMP LIT 2EE3 MODERN COUNTERCULTURES
An exploration of a variety of cultural forms (e.g. literature, art, photog-
raphy, film, music) produced by avant-gardes and counter-cultural groups
from the mid-19th century to the present. Areas of investigation may include
the beats, the sixties, situationalism and punk. Three hours; one term
Prerequisite: Registration in a program in Communication Studies, Com-
parative Literature, Cultural Studies and Critical Theory or English
Cross-list: CSCT 2M03, ENGLISH 2M03
Antirequisite: CMST 2M03
This course is administered by the Department of English and Cultural
Studies.

COMP LIT 2F03 CONTEMPORARY CRITICAL APPROACHES TO LITERATURE
The course will offer a grounding in reading literary texts from a range of
contemporary critical approaches. Three hours; one term
Prerequisite: Registration in a program in English, Comparative Literature or
permission of the Departmental Counsellor for English and Cultural Studies
Cross-list: ENGLISH 2A03
This course is administered by the Department of English and Cultural
Studies.

COMP LIT 2G03 THE BIBLE AS LITERATURE
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 or above
Cross-list: RELIG ST 2V03
This course is administered by the Department of Religious Studies.

COMP LIT 2J03 TWENTIETH-CENTURY GERMAN FILM AND FICTION
A study of literary and cinematic representations and appropriations of
German culture from the Weimar Republic to the present. Three lectures; one term
Prerequisite: Registration in Level II or above

COMP LIT 2M03 GREEK AND ROMAN MYTHOLOGY
A study of the myths of Greek and Roman gods and heroes, their expla-
nation 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 or above
Cross-list: CLASSICS 2D03
This course is administered by the Department of Classics.

COMP LIT 2Y03 ANCIENT COMEDY
Representative texts of the Greek and/or Roman comic authors will be
read in translation and considered in their literary, historical or social
contexts. Relevant texts from other genres might also be considered. Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CLASSICS 2Y03
Antirequisite: CLASSICS 2H03
Offered in alternate years.
This course is administered by the Department of Classics.

COMP LIT 2YY3 GREEK TRAGEDY
Selected plays of the Greek tragic playwrights will be read in translation
and considered in their literary, historical or social contexts. Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CLASSICS 2Y03
Offered in alternate years.
This course is administered by the Department of Classics.

COMP LIT 3AA3 THEORIES OF GENDER AND SEXUALITY
This course explores a range of theories of gender and sexuality by
working through readings from the intersecting fields of feminist, queer
and masculinity studies. Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural
Studies and Critical Theory, English or Women's Studies
Cross-list: CSCT 3A03, ENGLISH 3A03, WOMEN ST 3H03
This course is administered by the Department of English and Cultural
Studies.

COMP LIT 3BB3 NORTHPRYE AND GENRE
This course focuses on the poetics of literary structures and genres as
outlined in the seminal work of Northrop Frye. Seminar (two hours); one term
Prerequisite: Registration in Level II or above of a Comparative Literature program
Not open to students with credit in COMP LIT 3D03, TOPICS IN LITER-
ARY GENRES II, if the topic was Northrop Frye and Genre.

COMP LIT 3C03 TWENTIETH-CENTURY THEATRE
An exploration of important formal and social experiments that marked twen-
tieth-century theatre and paved the way for contemporary theatre forms.
Lecture and discussion (three hours); one term
Prerequisite: Three units of Theatre & Film or Drama and registration in
Level III or IV of a Comparative Literature program
Cross-list: THTR&FLM 3E03
Offered in alternate years.
This course is administered by the School of the Arts.

COMP LIT 3EE3 KAFKA AFTER KAFKA
This course examines the influence of Franz Kafka's fiction on writers,
critics, and film makers of the 20th century. Three hours; one term
Prerequisite: Registration in Level II or above
Not open to students with credit in COMP LIT 3U03, TOPICS IN MOD-
ERN LITERATURE if the topic was Kafka after Kafka.

COMP LIT 3F03 THE METAMORPHOSES OF DON JUAN
The development of the myth of Don Juan from its origins to the present.
Three lectures; one term
Prerequisite: Registration in Level II or above

COMP LIT 3FF3 THE LITERATURE OF THE DELINQUENT
A study of the picaresque mode in European literature from 1550 to
1800. Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 3S03

COMP LIT 3G03 EUROPEAN DRAMA
A study of representative plays by major European dramatists from the
18th-century to the present. Two hours; one term
Prerequisite: Registration in Level II or above

COMP LIT 3H03 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 hours; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 3S03
This course is administered by the Department of English and Cultural
Studies.

COMP LIT 3HH3 WORLD POETRY
Using a wide range of poetry from different cultures and historical peri-
ods as examples, this course explores the numerous characteristic fea-
tures that constitute the diversity of the lyric. Seminar (two hours); one term
Prerequisite: Registration in Level II or above of a Comparative Literature program
Not open to students with credit in COMP LIT 3D03, TOPICS IN LITER-
ARY GENRES I, if the topic was The Lyric.

COMP LIT 3I03 TOPICS IN CLASSICAL LITERATURE
Previous topics include: The Poet and Society, Greek and Roman Elegiac
and 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 program
Cross-list: CLASSICS 3I03
COMP LIT 3I03 may be repeated, if on a different topic, to a total of six units.
This course is administered by the Department of Classics.
COMP LIT 3J06  THE AGE OF ELIZABETH I
A consideration of this tumultuous age, galvanized by revolutions in exploration, religion, and selfhood, and ruled by a female monarch. Authors include Spenser, Sidney and women writers.
Three hours; two terms
Prerequisite: Registration in a program in Comparative Literature
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3JJ3  THE FAIRY TALE
An examination of fairy tales from a variety of cultures and historical periods. Students will also explore theories of the folk tale and their implications for our understanding of other literary genres.
Seminar (two hours); one term
Prerequisite: Registration in Level II or above of a Comparative Literature program
Not open to students with credit in COMP LIT 3DD3, TOPICS IN LITERARY GENRES II, if the topic was The Fairy Tale.

COMP LIT 3K03  TWENTIETH-CENTURY RUSSIAN LITERATURE
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 or above

COMP LIT 3L03  READING FILM
A critical examination of selected films and film genres as cultural texts, using methods drawn from film theory and cultural studies.
Three hours, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above of a program in Art History, Communication Studies, Comparative Literature, Cultural Studies and Critical Theory, English, Multimedia or Theatre & Film Studies. It is recommended that students should already have completed one of CMST 2X03, 2X06, DRAMA 2X06, THTR&FLM 2F03
Cross-list: CMST 3CC3, CSCT 3CC3, ENGLISH 3CC3, THTR&FLM 3R03
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3MM3  THE LITERATURE OF ISRAEL AND PALESTINE
Through the study of relevant literature and film, with a focus on contemporary Israeli and Arab texts, students gain a context for the exploration of conflicts in the Middle East.
Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3MM3

COMP LIT 3Q03  THE HISTORY OF CRITICAL THEORY
A survey of the main developments in critical theory from Plato to the end of the 19th century. Areas of investigation may include: art, aesthetics, civil society, representation, ethics and knowledge.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory or English
Cross-list: CSCT 3Q03, ENGLISH 3Q03
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3Q03  CONTEMPORARY CRITICAL THEORY
This course examines selected issues in contemporary critical theory. Areas of investigation may include: representation, power/knowledge, discourse, subjectivity, and the body.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory or English
COMP LIT 3Q03, CSCT 3Q03 or ENGLISH 3Q03 is recommended.
Cross-list: CSCT 3Q03, ENGLISH 3Q03
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3R06  POSTCOLONIAL CULTURES: THEORY AND PRACTICE
A study of contemporary texts including literature, film, art and other forms of popular culture that engage the implications of living in a postcolonial world. Close consideration will be given to issues of imperialism, globalization, race, gender, ethnicity, nation, language and representation.
Three hours; two terms
Prerequisite: Registration in Level III or IV of a Comparative Literature program
Cross-list: CSCT 3R06, ENGLISH 3R06, PEACE ST 3E06
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3RR3  CRITICAL RACE STUDIES
This course examines contemporary debates in critical race theory in an attempt to critically decode the operations of race in literary and cultural texts.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory, English, Peace Studies or Women's Studies
Cross-list: CSCT 3A03, ENGLISH 3A03, PEACE ST 3A03, WOMEN ST 3H03
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3SS3  NINETEENTH-CENTURY RUSSIAN LITERATURE
A study of a major novels by Dostoevsky and Tolstoy.
Three lectures; one term
Prerequisite: Registration in Level II or above

COMP LIT 3VV3  TOPICS IN NATIONAL CINEMAS I
This course examines film in relation to nations and national contexts. Areas of investigation include filmic production of a particular country, national belonging and transnational identitites.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: One of DRAMA 2B03, 2X06, THTR&FLM 1B03, 2E03, 2F03; and registration in Level III or IV of a Comparative Literature program
Cross-list: THTR&FLM 3Q03
Antirequisite: CMST 3T03
Offered on an irregular rotation basis.
This course is administered by the School of the Arts.

COMP LIT 3VV3  TOPICS IN NATIONAL CINEMAS II
This course examines film in relation to nations and national contexts. Areas of investigation include filmic production of global/local characteristics.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: One of DRAMA 2B03, 2X06, THTR&FLM 1B03, 2E03, 2F03
Cross-list: THTR&FLM 3Q03
Antirequisite: CMST 3T03, DRAMA 3T03
Offered on an irregular rotation basis.
This course is administered by the School of the Arts.

COMP LIT 3WW3  INTERNATIONAL WOMEN WRITERS
A critical analysis of a selection of literary works by women authors across the globe, with an emphasis on theories of gender and sexuality.
Two hours; one term
Prerequisite: Registration in Level II or above
Cross-list: WOMEN ST 3WW3

COMP LIT 3Y03  OVlD
Representative texts of the Latin poet Ovid will be read in translation, especially his erotic poetry and mythtical stories. There will be literary analysis and later adaptations in literature and film will be considered.
Three hours; one term
Prerequisite: Six units from CLASSICS 2D03, 2E03, 2H03, 2Y03, 2YY3 or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3Y03
Offered in alternate years.
This course is administered by the Department of Classics.

COMP LIT 4AA3  EUROPEAN ROMANTICISM
A study of selected literary texts of European Romanticism, including women's writing of the period. Attention is also given to Romantic aesthetic theory.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature program
Antirequisite: COMP LIT 4A03

COMP LIT 4D03  LITERATURE AS PEACE RESEARCH
An exploration of new ways of thinking about war, peace, human security and conflict transformation, with emphasis on a close study of selected literary texts.
Two hours; one term
Prerequisite: Registration in Level III or IV of a program in Comparative Literature or Peace Studies
Cross-list: PEACE ST 4D03

COMP LIT 4E03  TOPICS IN COMPARATIVE LITERATURE
Previous topics include: 20th-century Women Writers, Literature and Ideology. Consult the Office of Interdisciplinary Studies concerning topic to be offered.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature program
COMP LIT 4E03 may be repeated, if on a different topic, to a total of six units.
COMP LIT 4F03 **PSYCHE AND CULTURE**

This course explores the psychoanalytic understanding of culture with reference to three main areas: ideology, gender polarity and imaginative culture (the arts and literature). Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature program

Antirequisite: CSCT 4PC3, ENGLISH 4PC3

Not open to students with credit in COMP LIT 4C03, LITERATURE AND OTHER DISCIPLINES, if the topic was Psyche and Culture.

COMP LIT 4G03 **BERLIN/VIENNA: THE CULTURAL LIFE OF A CITY**

Students will embark on an interdisciplinary journey into the cultural history of a city from the 19th century to the present. Through literary texts, songs, films, works of art and architecture varied presentations of the city in high and popular culture will be examined.

Three hours; one term

Prerequisite: Registration in Level III or IV

Cross-list: GERMAN 4G03

Offered on an irregular rotation basis.

This course is administered by the Department of Linguistics and Languages.

COMP LIT 4I13 **INDEPENDENT STUDY**

The student will prepare, under the supervision of a faculty member, a research paper involving independent study of an approved topic.

Prerequisite: Registration in Level IV of a Comparative Literature program and permission of the Director of Comparative Literature

COMP LIT 4J03 **THE SPLIT SCREEN: RECONSTRUCTING NATIONAL IDENTITIES IN WEST AND EAST GERMAN CINEMA**

This course examines German film texts of the post-war period and their representation of West and East German identities. Films will be discussed within the context of important political, social and cultural developments at the time of the films' production.

Two hours plus one film screening per week; one term

Prerequisite: Registration in Level III or IV

Cross-list: GERMAN 4J03, THTR&FLM 4J03

Offered on an irregular rotation basis.

This course is administered by the Department of Linguistics and Languages.

COMP LIT 4T03 **SPECIAL TOPICS**

Previous topics include: Lesbian and Gay Literature, Postmodern Fiction. Consult the Office of Interdisciplinary Studies concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature program

COMP LIT 4T03 may be repeated, if on a different topic, to a total of six units.

COMPUTER ENGINEERING

(SEE ELECTRICAL AND COMPUTER ENGINEERING)

COMPUTER SCIENCE

(SEE COMPUTING AND SOFTWARE)

COMPUTING AND INFORMATION TECHNOLOGY

(SEE TECHNOLOGY, COMPUTING AND INFORMATION TECHNOLOGY)

COMPUTING AND SOFTWARE

WEB ADDRESS: http://www.cas.mcmaster.ca

Information Technology Building, Room 202

Ext. 24614

Faculty as of January 15, 2008

Chair

Martin von Mohrenschildt

Professors

Ivan Bruha/Dipl. Ing. (CZVT, Prague), RNDr (Charles, Prague), Ph.D. (CZVT, Prague)


Frantisek Franek/M.Sc., R.N.Dr. (Charles, Prague), Ph.D. (Toronto)

Ryszard Janicki/M.Sc. (Warsaw), Ph.D., D.Hab. (Polish Acad. Sci.)


Sanzheng Qiao/B.Sc., M.S. (Shanghai Teacher's College), M.S. (Toronto), Ph.D. (McMaster), P.Eng.

Antone Deza/M.Sc. (Ecole Nationale des Ponts et Chaussées, Paris), Ph.D. (Tokyo Institute of Technology)

Douglas G. Down/B.A.Sc., M.Sc. (Toronto), Ph.D. (Illinois-Urbana)

Bruno Kahl/M.Sc. (Oxford), Ph.D. (University of the German Armed Forces, Munich)

Jan Moderitzki/Dipl.Math., Ph.D. (Hamburg), Hab. (Lybeck)


Mark S. Lawford/B.Sc. (Queen's), M.A.Sc., Ph.D. (Toronto), P.Eng.

Spencer Smith/B.A.Sc., M.Eng., Ph.D., (McMaster), P.Eng.

Michael Soltys/B.Sc., M.Sc., Ph.D. (Toronto)


W.F. Skipper Poehlman/B.Sc. (Niagara), B.Sc. (Brock), M.Sc., Ph.D. (McMaster), P.Eng.

Frantisek Franek/M.Sc., R.N.Dr. (Charles, Prague), Ph.D. (Toronto)

Tamás Terlaky/M.Sc., Ph.D. (Loránd Eötvös)

Jeffery I. Zucker/B.Sc. (Witwatersrand), Ph.D. (Stanford)

Associate Professors

Christopher Anand/B.Math. (Waterloo), M.Sc., Ph.D. (McGill)

Jacques Crette/B.Math. (Waterloo), M.Sc. (Montreal), Ph.D. (Paris-Sud)


Ryan Leduc/B.Eng (Victoria), M.A.Sc., Ph.D. (Toronto), P.Eng.

Kamran Sarpial/B.Sc., M.Sc. (Tehran), Ph.D. (Waterloo)

COMPUTER SCIENCE

Department Notes:

1. The administration of the (B.Sc.) Computer Science program has been transferred from the Faculty of Science to the Faculty of Engineering and the program now leads to a Bachelor of Applied Science degree. Students interested in pursuing this degree in Computer Science should see the Faculty of Engineering section of this Calendar. The Honours Computer Science program in the Faculty of Science leading to a B.Sc. degree is being phased out and no new registrants are being accepted.

2. Students interested in pursuing a Minor in Computer Science should see the Honours Computer Science program in the Faculty of Engineering section of this Calendar.

Courses

If no prerequisite is listed, the course is open.

COMP SCI 1A83 **INTRODUCTION TO COMPUTING AND COMPUTER USE FOR BUSINESS**

Organization of microcomputers and introduction to computer communications; introduction to operating systems; basics of word processing/desktop publishing and information exchange using the Internet; problem solving using electronic spreadsheets; elementary database concepts.

Three lectures, one tutorial; one term

Prerequisite: Registration in the School of Business and one Grade 12 U or M Mathematics credit; or one of MATH 1K03, 1M03, STATS 1L03

Antirequisite: COMP SCI 1T3, ISCI 1A24, MMEDIA 1A03

COMP SCI 1FC3 **MATHMATICS FOR COMPUTING**

Introduction to logic and proof techniques; functions, relations, and sets; counting; trees and graphs; concepts are illustrated using computational tools.

Three lectures, one tutorial (two hours); second term

Prerequisite: Credit or registration in one of ARTS&SCI 1D06, ISCI 1A24, MATH 1A03, 1M03, 1X03, 1X03

Antirequisite: SFWR ENG 2D3M

COMP SCI 1MA3 **COMPUTER BASED PROBLEM SOLVING**

A first course in computer science, focusing on the practice of problem solving, in the context of interesting software applications. Problem formulation, problem decomposition, procedural formulation of problem solution.

Three lectures, one tutorial, one lab; one term

Prerequisite: MATH 1K03 or Grade 12 Advanced Functions and Introductory Calculus U

Antirequisite: ENGINEER 1D04, ISCI 1A24

Not open to students registered in the Faculty of Business.
COMP SCI 1MD3  INTRODUCTION TO PROGRAMMING
Introduction to disciplined programming; programming environments; debugging; imperative programming constructs; values and types; libraries; file input-output. Computer Science concepts are illustrated.
Three lectures; one tutorial; first term
Prerequisite: Credit or registration in one of ARTS&SCI 1D06, MATH 1A03, 1M03, 1N03, 1X03
Antirequisite: ISCI 1A24

COMP SCI 1TA3  ELEMENTARY COMPUTING AND COMPUTER USE
Organization of microcomputers (hardware and operating systems) and overview of computer communications; introduction to information exchange using word processing/presentation software, the Internet and Web pages; problem solving using electronic spreadsheets and database applications.
Three lectures, one tutorial; one term
Antirequisite: COMP SCI 1B3A, 1S3A, ENGINEER 1D04, ISCI 1A24, MMEDIA 1A03
Not open to students with registration in the Faculty of Business or with credit or registration in COMP SCI 1MA3, 1MC3 or HUMAN 2E03.

COMP SCI 2CA3  COMPUTER ARCHITECTURE AND ORGANIZATION
Computer design: RISC/CISC, instruction sets, memory hierarchy; parallelism: instruction level, software level, multi-threading; storage systems: RAID levels, error/failures, networks, clusters.
Three lectures; first term
Prerequisite: COMP SCI 2MF3
Antirequisite: COMP ENG 3D4R, COMP SCI 3MG3, SFWR ENG 3GA3

COMP SCI 2CS3  COMMUNICATION SKILLS
Oral and written presentation skills; types and structure of technical documents; software documentation for the user; formulating and presenting proposals.
Three lectures; first term
Prerequisite: Registration in Level I or above
Antirequisite: ISCI 1A24, SFWR ENG 3I03

COMP SCI 2ME3  SOFTWARE DESIGN FUNDAMENTALS
Software development models; modularization; information hiding; specification and abstraction; software requirements; software maintenance; metrics; testing theory and strategies; documentation.
Three lectures; second term
Prerequisite: COMP SCI 2SC3 or ISCI 1A24
Antirequisite: SFWR ENG 2AA4

COMP SCI 2MF3  DIGITAL SYSTEMS AND SYSTEMS PROGRAMMING
Basic computer technology: gates, registers, memory; machine programming; arithmetic: representations, arithmetic/logic unit, floating point systems; system component details: CPU, memory, I/O devices; pipelining.
Three lectures, one tutorial; second term
Prerequisite: COMP SCI 1MD3 or ISCI 1A24
Antirequisite: COMP ENG 2D14, ELEC ENG 2D14, SFWR ENG 2D3A, SFWR ENG 3F03

COMP SCI 2MJ3  THEORY OF COMPUTATION
Finite state machines, regular languages, regular expressions, applications of regular languages, grammars, context-free languages, models of computation, introduction to complexity theory.
Three lectures, one tutorial (two hours); first term
Prerequisite: COMP SCI 1FC3 or registration in the Mathematics and Computer Science program.

COMP SCI 2003  OBJECT ORIENTED PROGRAMMING
The object oriented approach to software: classes, objects, fields, methods; modelling and problem decomposition techniques using classes; concurrency, threads, synchronization, communication; inheritance; interface documentation; design documentation.
Three lectures, one tutorial; second term
Prerequisite: COMP SCI 2SC3

COMP SCI 2SC3  IMPERATIVE PROGRAMMING AND BASIC DATA STRUCTURES
Disciplined programming in the C language; problem decomposition; iteration and recursion; dynamic memory allocation; design, use and implementation of elementary fixed-size and dynamic data structures.
Three lectures, one tutorial; first term
Prerequisite: COMP SCI 1MD3
Antirequisite: COMP ENG 2SH4, SFWR ENG 2S03

COMP SCI 3CN3  COMPUTER NETWORKS AND SECURITY
Networked computer systems: physical media, TCP/IP protocols, switching methods; net layering and components: data link; network, transport; application: wireless, ubiquitous; secure systems: protocols, perimeter defences, access control issues, retrofitting.
Three lectures; one lab; second term
Prerequisite: COMP SCI 3MH3
Antirequisite: SFWR ENG 4C03

COMP SCI 3DA3  DATA STRUCTURES AND ALGORITHMS
Abstract data structures; implementation of dense and sparse structures; hashing; sorting; dynamic programming; greedy algorithms; graph algorithms; complexity; organization of libraries.
Three lectures; first term
Prerequisite: Credit or registration in COMP SCI 2SC3
Antirequisite: COMP ENG 2S14, COMP SCI 2MD3, ELEC ENG 2S14, SFWR ENG 2C03

COMP SCI 3DB3  DATA BASES
Data models, relational databases; SQL; integrity; security; object-oriented and other databases; data storage; query processing; transactions; concurrency control; recovery; distributed and parallel database architectures.
Three lectures; second term
Prerequisite: Credit or registration in COMP SCI 2CA3 or 3MH3
Antirequisite: COMP SCI 2EB3, SFWR ENG 3H03, 4M03

COMP SCI 3EA3  SOFTWARE SPECIFICATIONS AND CORRECTNESS
Formal specifications in software development; logical formalisms; functional and relational specifications; completeness and consistency of specifications; verification; validation; presentation of information; tool supported verification.
Three lectures; first term
Prerequisite: COMP SCI 2ME3
Antirequisite: SFWR ENG 3A04

COMP SCI 3IS3  INFORMATION SECURITY
Basic principles of information security; threats and defences; cryptography; introduction to network security and security management.
Three lectures; first term
Prerequisite: Credit or registration in COMP SCI 2MJ3

COMP SCI 3MH3  OPERATING SYSTEMS
Processes and threads, synchronization and communication; scheduling, memory management; file systems; resource protection; structure of operating systems; distributed file systems; networking.
Three lectures; second term
Prerequisite: COMP SCI 2SC3
Antirequisite: COMP SCI 3SH3, 4SH3, SFWR ENG 3BB4, 3SH3

COMP SCI 3MI3  PRINCIPLES OF PROGRAMMING LANGUAGES
Design space of programming languages; abstraction and modularization concepts and mechanisms; programming in non-procedural (functional and logic) paradigms; introduction to programming language semantics.
Three lectures; second term
Prerequisite: COMP SCI 2003, 2SC3
Antirequisite: SFWR ENG 3E03

COMP SCI 3SH3  OPERATING SYSTEM CONCEPTS
Design principles of major components of an operating system: Management of processes, threads, memory, files, and I/O systems; network communication protocols, security, and command interpreter systems.
Three lectures and small projects; second term
Prerequisite: COMP SCI 2D14 or ELEC ENG 2D14; and one of COMP SCI 3SL4, SFWR ENG 3K04, 3L04, 3M04
Cross-list: SFWR ENG 3SH3
Antirequisite: COMP ENG 4S14, COMP SCI 3MH3, 4SH3

COMP SCI 3SR3  SOFTWARE REQUIREMENTS
Requirements models; requirements gathering techniques; functional and non-functional requirements; requirements validation; requirements management; legal and ethical issues.
Three lectures; first term
Prerequisite: COMP SCI 3EA3
Antirequisite: SFWR ENG 3R03, 3RA3
COMP SCI 4AR3  SOFTWARE ARCHITECTURE
Software architecture concepts; architectural styles; design patterns, components, libraries, configurations; modelling languages; software re-engineering.
Three lectures; first term
Prerequisite: Credit or registration in COMP SCI 3SR3

COMP SCI 4CD3  DISTRIBUTED COMPUTER SYSTEMS
Distributed operating systems: deadlock, casual/concurrent events, multitreading, group communications; distributed computers: multi-processors, multi-computers, middleware, reliability; distributed services; n-tier architecture, WWW systems; special systems: real time, multimedia, grid-computing.
Three lectures, one lab (three hours); second term
Prerequisite: Credit or registration in COMP SCI 3MH3. Completion of COMP SCI 3CN3 is recommended.

COMP SCI 4E03  PERFORMANCE ANALYSIS OF COMPUTER SYSTEMS
Use of queuing models and simulation to predict computer system performance and find bottlenecks in a system. Types of models, distributions. Markov models. Modelling storage and network behaviour, locks, critical sections, concurrency. Introduction to analytical system reliability.
Three lectures, one tutorial (one hour); first term
Prerequisite: One of STATS 2D03, 2MA3, 3N03 or 3Y03
Cross-list: SFWR ENG 4E03

COMP SCI 4HC3  HUMAN COMPUTER INTERACTION
Computer-human interface designs: principles, types, models; human factors: ergonomics, physiological issues, cognitive engineering, task analysis, hardware; GUI evaluations: usability, surveys, ethnographic; practical examples; data visualization.
Three lectures; first term
Prerequisite: Credit or registration in COMP SCI 3MH3 or SFWR ENG 3B04
Antirequisite: SFWR ENG 4D03

COMP SCI 4MN3  SCIENTIFIC COMPUTATION
Number representations and computer arithmetic; linear systems; linear least square; regression; root finding; Minima-Maxima; Interpolation; Integration
Three lectures; second term
Prerequisite: COMP SCI 2CA3 or 3M3G; and MATH 2A03, 2R03
Antirequisite: SFWR ENG 3X03

COMP SCI 4Q03  OPERATIONS RESEARCH
Linear programming; Integer programming, decision trees, network flow problems, graph algorithms, route planning, applications to engineering problems.
Three lectures, one tutorial (one hour); second term
Prerequisite: COMP SCI 3DA3 or SFWR ENG 2C03
Cross-list: SFWR ENG 4Q03

COMP SCI 4TB3  SYNTAX-BASED TOOLS AND COMPILERS
Lexical analysis, syntax analysis, type checking; syntax-directed translation, attribute grammars; compiler structure; Implications of computer architecture; mapping of programming language concepts; code generation and optimization.
Three lectures; second term
Prerequisite: COMP SCI 3M13 or SFWR ENG 3E03

COMP SCI 4TC3  RECURSIVE FUNCTION THEORY AND COMPUTABILITY
Recursive and primitive recursive functions, computability, decidability and undecidability, Church-Turing Thesis.
Three lectures; second term
Prerequisite: COMP SCI 3M13 or permission of the instructor
Antirequisite: MATH 4S03

COMP SCI 4TE3  CONTINUOUS OPTIMIZATION ALGORITHMS
Fundamental algorithms and duality concepts of continuous optimization. Motivation, applicability, information requirements and computational cost of the algorithms is discussed. Practical problems will illustrate the power of continuous optimization techniques.
Three lectures; first term
Prerequisite: MATH 2R03; and one of MATH 2A03, 2M06 (or 2M03 and 2M33) or 2004
Cross-list: SFWR ENG 4TE3

COMP SCI 4W03  WEB SYSTEMS AND WEB COMPUTING
World wide web as networks: protocols, clients/servers and social issues; programming systems: markups, scripts, styles; platform technologies; WWW services: standard systems, browser-based, security issues, examples.
Three lectures; first term
Prerequisite: Credit or registration in COMP SCI 3MH3. Completion of COMP SCI 3CN3 is recommended.

COMP SCI 4Z03  DIRECTED READINGS
Directed readings in an area of computer science of interest to the student and the instructor.
Prerequisite: Permission of the Chair of the Department and registration in Level IV of an Honours program in Computer Science. Application for permission must be received by March 31st of the academic year prior to registration.

COMP SCI 4Zpr  CAPSTONE PROJECT
Students, in teams of two to four students, undertake a substantial project in an area of computer science by performing each step of the software life cycle. The lecture component presents an introduction to software management and project management. Lecture component in Term 1, weekly tutorials; two terms
Prerequisite: Registration in Level IV of Honours Computer Science

SOFTWARE ENGINEERING ...

Department Note:
All Software Engineering courses are open to students registered in a Software Engineering or Mechatronics Engineering program, subject to prerequisite requirements. Prior permission of the Department is necessary for other students.

Courses

SFWR ENG 2A4  SOFTWARE DESIGN I - SOFTWARE COMPONENT DESIGN
Development of small software units. Precise specifications expressed using logic and discrete mathematics. Design methods and design patterns. Implementation and testing.
Three lectures; one tutorial (two hours); second term
Prerequisite: SFWR ENG 2DM3, 2S03
Corequisite: SFWR ENG 2FA3
Antirequisite: COMP SCI 2ME3, SFWR ENG 2A04

SFWR ENG 2C03  DATA STRUCTURES AND ALGORITHMS
Data structures: queues, stacks, lists, heaps, trees, balanced trees, sorting, searching, graph algorithms; general techniques of design and analysis of algorithms.
Three lectures, one tutorial (one hour); second term
Prerequisite: SFWR ENG 2DM3, 2S03
Antirequisite: COMP ENG 2D14, COMP SCI 2MF3, 3DA3, ELEC ENG 2D14, SFWR ENG 2C04

SFWR ENG 2D03  DIGITAL SYSTEM PRINCIPLES AND LOGIC CO-DESIGN FOR SOFTWARE ENGINEERING
Systematic design procedures; combinational circuit design, design of sequential machines; redundancy, binary number representations and arithmetic, organization of large logic circuits. Introduction to logic simulators. Software/hardware co-design.
Three lectures, one tutorial (three hours every other week); first term
Prerequisite: Registration in a program in Software Engineering
Corequisite: SFWR ENG 2D03
Antirequisite: COMP ENG 2D14, COMP SCI 2MF3, ELEC ENG 2D14, SFWR ENG 2D03

SFWR ENG 2D3  DISCRETE MATHEMATICS AND LOGIC I
Syntax and semantics of formal languages; propositional logic; proof systems; sets, functions, relations, and algebras; graphs and trees; finite state machines; software engineering applications.
Three lectures, one tutorial (one hour); first term
Prerequisite: MATH 1H03
Antirequisite: COMP SCI 1FC3, 2E03, 2F03

SFWR ENG 2F03  DISCRETE MATHEMATICS AND LOGIC II
First-order logic; proof by induction; definition by recursion; models of computation; computational limits and complexity; higher-order logic; software engineering applications.
Three lectures, one tutorial (one hour); second term
Prerequisite: SFWR ENG 2D03
Antirequisite: SFWR ENG 2E03, 2F03

SFWR ENG 2M03  INTRODUCTION TO MATHEMATICAL MODELLING OF SYSTEMS
Linear systems, signals, filters; sampling theorem; state and frequency domain; simple input-output systems; the relation of discrete and continuous space; introduction to mathematical models of systems.
Three lectures, one tutorial (one hour); second term
Prerequisite: MATH 1H03, 1NN3; and registration in MATH 2M06 (or 2M03 and 2M33) or credit in MATH 2M04
SFWR ENG 2S03 PRINCIPLES OF PROGRAMMING
Fundamental concepts of imperative programming languages; (Assertion, Assignment, Control flow, iteration, recursion, exceptions); Data representations; Basic concepts of operating systems; Composing and analyzing small programs.
Three lectures, one tutorial (one hour); first term
Prerequisite: ENGINEER 1D04
Antirequisite: COMP ENG 2SH4, COMP SCI 2SC3

SFWR ENG 3A04 SOFTWARE DESIGN II - LARGE SYSTEM DESIGN
Software design process, design and architecture of large systems, design for change and expansion; Documentation, inspection, Incremental design; Classes and objects, structured and object oriented analysis and design; Revision and version control; Project organization.
Three lectures, one tutorial (two hours); first term
Prerequisite: SFWR ENG 2A44, 2C03
Antirequisite: COMP SCI 3E03

SFWR ENG 3B04 SOFTWARE DESIGN III - CONCURRENT SYSTEM DESIGN
Processes, threads, concurrency; Synchronization mechanisms, resource management and sharing; Objects and concurrency; Design, architecture and testing of concurrent systems.
Three lectures, one tutorial (two hours); second term
Prerequisite: SFWR ENG 3A04
Antirequisite: COMP SCI 3M03

SFWR ENG 3D03 DYNAMIC MODELS AND CONTROL OF PHYSICAL SYSTEMS
Modelling of dynamic continuous physical phenomena in both continuous and discrete time. Control theory, stability analysis and feedback controller design. Application of computer control to continuous processes. Data analysis, empirical modelling.
Three lectures, one tutorial (one hour); second term
Prerequisite: SFWR ENG 3X03
Antirequisite: ENGINEER 3L03

SFWR ENG 3F03 MACHINE-LEVEL COMPUTER PROGRAMMING
Three lectures, one tutorial (one hour); second term
Prerequisite: MECHTRON 3T44 or SFWR ENG 3GA3
Antirequisite: COMP ENG 3D4J, COMP SCI 3MF3

SFWR ENG 3G03 COMPUTER ARCHITECTURE AND GRAPHICS PROCESSORS
Measures of performance, instruction set architecture, computer arithmetic, datapath and control, pipelining, the memory hierarchy, I/O systems, basics of multiprocessor systems, multimedia extensions and graphic processors.
Three lectures, one tutorial (two hours every other week); first term
Prerequisite: SFWR ENG 2D03 or 2D3A
Antirequisite: COMP ENG 4D04, COMP SCI 2CA3, 3M03, SFWR ENG 3G03

SFWR ENG 3G03 4D MODELLING FOR VIRTUAL REALITY
Three lectures, one tutorial (two hours every other week); first term
Prerequisite: MMEDIA 2B03 and registration in Software Engineering (Game Design)

SFWR ENG 3G03 REAL-TIME ANIMATION FOR COMPUTER GAMES
Three lectures, one tutorial (two hours every other week); second term
Prerequisite: MMEDIA 2E03, SFWR ENG 3GB3 and registration in Software Engineering (Game Design)

SFWR ENG 3I03 COMMUNICATION SKILLS
Oral and written presentation skills; types and structure of technical documents; software documentation for the user; formulating and presenting proposals.
Three hours (lectures, discussion, group project, seminars); first term
Prerequisite: ENGINEER 1C03 or 1C04
Antirequisite: COMP SCI 2C03

SFWR ENG 3K04 SOFTWARE DEVELOPMENT
Software design process, Professional responsibility. Using specifications. Documentation. Modelling. Module interfaces. Module internal documentation. Coding styles, Portability, Software inspection, Software testing. Three lectures, one lab (three hours); first term
Prerequisite: One of COMP ENG 2S44, ELEC ENG 2S44, SFWR ENG 2S03
Antirequisite: COMP SCI 3E03, SFWR ENG 3M04

SFWR ENG 3RA3 SOFTWARE REQUIREMENTS AND SECURITY CONSIDERATIONS
Software requirements gathering. Critical systems requirements gathering, Security requirements, Traceability of requirements. Verification, validation, and documentation techniques. Software requirements quality attributes. Security policies. Measures for data confidentiality. Design principles that enhance security. Access control mechanisms. Three lectures, one tutorial (one hour); first term
Prerequisite: SFWR ENG 3R04 or 3K04
Antirequisite: COMP SCI 3R03, 4E03, SFWR ENG 3R03, 4G03

SFWR ENG 3S03 SOFTWARE TESTING AND MANAGEMENT
Measurement, unit testing, slicing and debugging, inspection, integration testing, regression testing, testing strategies, software metrics, software project management.
Three lectures, one tutorial (two hours every other week); second term
Prerequisite: SFWR ENG 3G04

SFWR ENG 3SH3 OPERATING SYSTEM CONCEPTS
Design principles of major components of an operating system: Management of processes, threads, memory, files, and I/O systems: network communication protocols, security and command interpreter systems.
Three lectures and small projects; second term
Prerequisite: One of SFWR ENG 2A44, 3K04, 3M04
Cross-list: COMP SCI 3H03
Antirequisite: COMP ENG 4SN4, COMP SCI 3M03, 4G03

SFWR ENG 3X03 SCIENTIFIC COMPUTATION AND MATHEMATICAL SIMULATION
Three lectures, one tutorial (one hour); first term
Prerequisite: SFWR ENG 3C04 and either MATH 2M06 (or 2M03 and 2M03) or both MATH 2P04 and 2P04
Antirequisite: COMP ENG 3K04, COMP SCI 3M03

SFWR ENG 4AA3 REAL-TIME SYSTEMS AND CONTROL APPLICATIONS
Hard and soft real-time systems. Safety classification. Fail-safe design, hazard analysis. Discrete event systems. Modes. Requirements and design specifications. Tasks and scheduling. Clock synchronization. Date acquisition. Application of real-time simulation. Three lectures, one lab (three hours every other week); first term
Prerequisite: SFWR ENG 3B04 or 3SH3 and SFWR ENG 3D03
Antirequisite: SFWR ENG 4A03, 4G03

SFWR ENG 4C03 COMPUTER NETWORKS AND COMPUTER SECURITY
Physical networks, internets, the TCP/IP protocol suite, common network services. Principles of information security, computer and network security threats, defense mechanisms, encryption.
Three lectures, one lab (three hours every other week); second term
Prerequisite: SFWR ENG 3B04
Antirequisite: COMP SCI 3C03

SFWR ENG 4D03 DESIGN OF HUMAN COMPUTER INTERFACES
Three lectures, one tutorial (one hour); first term
Prerequisite: SFWR ENG 3B04
Antirequisite: COMP SCI 4C03

SFWR ENG 4E03 PERFORMANCE ANALYSIS OF COMPUTER SYSTEMS
Use of queueing models and simulation to predict computer system performance and find bottlenecks in a system. Types of models, distributions. Markov models. Modelling storage and network behaviour, locks, critical sections, concurrency. Introduction to analytical system reliability.
Three lectures, one tutorial (one hour); first term
Prerequisite: One of STATS 2D03, 2M03, 3N03 or 3Y03
Cross-list: COMP SCI 4E03
SFWR ENG 4F03  
**DESIGN OF PARALLEL/DISTRIBUTED COMPUTER SYSTEMS AND COMPUTATIONS**

Design of multi-computer systems for computation-intensive applications and high-reliability applications, array processing systems. Application of multi-computer systems to finite element methods, simulators, optimization problems.

Three lectures, one tutorial (one hour); second term
Prerequisite: SFWR ENG 3G03 or 3G33; and SFWR ENG 3BB4

SFWR ENG 4G06  
**SOFTWARE DESIGN IV - CAPSTONE DESIGN PROJECT**

Student teams prepare the requirements, design, documentation, and implementation of a software system taking economic, health, safety, legal, marketing factors into account. Students must demonstrate a working system and convincing test results. Software-project management.

Three hours (lectures, discussion, group project, seminars); two terms
Prerequisite: Registration in final level of a Software Engineering program
Antirequisite: SFWR ENG 4G06, 4GP6, 4H03

SFWR ENG 4GA3  
**REAL-TIME SYSTEMS AND COMPUTER GAME APPLICATIONS**


Three lectures, one lab (three hours every other week); first term
Prerequisite: SFWR ENG 3BB4, 3GC3, 3DX3 and registration in Software Engineering (Game Design)
Antirequisite: SFWR ENG 4A03, 4AA3

SFWR ENG 4GC3  
**SENSORY PERCEPTION, COGNITION AND HUMAN/COMPUTER INTERFACES FOR GAME DESIGN**


Three lectures, one tutorial (three hours every other week); second term
Prerequisite: SFWR ENG 4D03 and registration in Software Engineering (Game Design)

SFWR ENG 4G00  
**COURSE WORK IN INTERFACES FOR GAME DESIGN**

Students complete an independent course project in the area of interface design for computer game applications.

One lab (three hours per week); second term
Prerequisite: Permission of the Department of Computing and Software Engineering (Game Design)

SFWR ENG 4G06  
**COURSE WORK IN REAL TIME SYSTEMS AND GAME APPLICATIONS**

Students complete an independent course project in the area of real time systems design with the focus on computer game applications.

One lab (three hours per week); first term
Prerequisite: Permission of the Department of Computing and Software Engineering (Game Design)

SFWR ENG 4GP6  
**SOFTWARE DESIGN IV - CAPSTONE COMPUTER GAME DESIGN PROJECT**

Student teams prepare the requirements, design, documentation and implementation of a computer game taking economic, health, safety, cultural, legal and marketing factors into account. Students must demonstrate a working system and convincing test results. Software project management.

Three hours (lectures, discussion, group project, seminars); two terms
Prerequisite: Registration in Level IV of Software Engineering (Game Design)
Antirequisite: SFWR ENG 4G06, 4GP6, 4H03

SFWR ENG 4J03  
**COMMUNICATIONS SYSTEMS**

Fundamental communications concepts: information, entropy, channel capacity, codes, data compression, adaptive channel equalizers, modulation/demodulation of signals, tracking, Kalman filtering, use of specialized signal processing hardware. Software in communication systems.

Three lectures one tutorial (one hour); second term
Prerequisite: SFWR ENG 2MX3, STATS 3N03 or 3Y03 is recommended

SFWR ENG 4M03  
**DATABASES**

Physical organization of data, file structures, need for database management systems, entity-relationship design, the relational data model, concurrent access, mechanisms for data recovery. Assorted applications.

Three lectures, one tutorial (one hour); second term
Prerequisite: SFWR ENG 2E03 or 2DM3
Antirequisite: COMP SCI 3DB3, 4EB3, SFWR ENG 3H03

SFWR ENG 4G03  
**OPERATIONS RESEARCH**

Linear programming; Integer programming, decision trees, network flow problems, graph algorithms, route planning, applications to engineering problems.

Three lectures, one tutorial (one hour); second term
Prerequisite: COMP SCI 3DA3 or SFWR ENG 2C03
Cross-list: COMP SCI 4G03

SFWR ENG 4TE3  
**CONTINUOUS OPTIMIZATION ALGORITHMS**

Fundamental algorithms and general duality concepts of continuous optimization. Special attention will be paid to the applicability of the algorithms, their information requirements and computational costs. Practical engineering problems will illustrate the power of continuous optimization techniques.

Three lectures, one tutorial (one hour); first term
Prerequisite: MATH 2M06 (or 2M03 and 2MM3) or 2Q04
Cross-list: COMP SCI 4TE3

CULTURAL STUDIES AND CRITICAL THEORY

Courses in Cultural Studies and Critical Theory are administered within the Department of English and Cultural Studies of the Faculty of Humanities. For information and counselling, please contact the Department of English and Cultural Studies in Chester New Hall, Room 321.

Department Notes:

1. The following are courses open as electives to students registered in Level II or above of any undergraduate program.
   - CSCT 2J03  Contemporary Popular Culture
   - CSCT 3D03  Science Fiction
   - CSCT 3EE3  African American Literature
   - CSCT 3RR3  African Literature and Film
   - CSCT 3W03  Contemporary Native Literature in Canada

   Please note that the Department is able to offer only a limited selection of elective courses each year.

2. Courses restricted to students registered in the Cultural Studies and Critical Theory program may be available to qualified students in other programs if space permits. Students interested in such courses should request permission from the departmental counsellor.

3. Level IV seminars are open only to Combined Honours Cultural Studies and Critical Theory students registered in Level IV. Enrolment will be limited and departmental permission is required. A list of seminars to be offered will be available prior to registration and balloting for seminars for the next academic year will take place in March.

Courses

**If no prerequisite is listed, the course is open.**

**CSCT 1B03  CULTURAL STUDIES AND VISUAL CULTURE**

An introduction to cultural studies focusing on the critical and conceptual tools for the analysis of various forms of visual culture (e.g. photography, film, television, advertising, new media technologies). Considerable emphasis is placed on the development of effective writing skills.

Two lectures, one tutorial; one term
Cross-list: ENGLISH 1B03

**CSCT 1BB3  CULTURAL STUDIES AND CONSUMER CULTURE**

An overview of the development of cultural studies as an interdisciplinary field of academic inquiry through an exploration of the history of mass and consumer culture. Considerable emphasis will be placed on the development of critical skills in reading and writing.

Two lectures, one tutorial; one term
Cross-list: ENGLISH 1BB3

**CSCT 2J03  CONTEMPORARY POPULAR CULTURE**

This course explores the concept of popular culture through an examination of specific cultural forms, with emphasis on analytic skills informed by cultural and critical theory.

Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 2J03
CSCT 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 covering an historical period or national literature. Relevant feminist theory will be a component of the course.
Three hours; two terms
Prerequisite: Registration in a program in Cultural Studies and Critical Theory or Women's Studies
Cross-list: ENGLISH 2K06, WOMEN ST 2K06

CSCT 2M03  CONCEPTS OF CULTURE
An analysis of the development of the concept of culture from the Enlightenment to the present. Theoretical readings combined with the analysis of specific cultural texts, objects, forms and practices will allow students to trace historical and contemporary debates concerning culture.
Three hours; one term
Prerequisite: Registration in a program in Communication Studies, Comparative Literature or Cultural Studies and Critical Theory
Cross-list: COMP LIT 2E03, ENGLISH 2M03
Antirequisite: CMST 2N03

CSCT 2M33  MODERN COUNTERCULTURES
An exploration of a variety of cultural forms (e.g., literature, art, photography, film, music) produced by avant-gardes and counter-cultural groups from the mid-19th century to the present. Areas of investigation may include surrealism, futurism, the beats, the sixties, situationism and punk.
Three hours; one term
Prerequisite: Registration in a program in Communication Studies, Comparative Literature or Cultural Studies and Critical Theory
Cross-list: COMP LIT 2E03, ENGLISH 2M33
Antirequisite: CMST 2N33

CSCT 2P03  MODERNITY/POSTMODERNITY/VISUALITY
This course will examine modernity and postmodernity through an exploration of a variety of theoretical discourses and representational practices, with specific reference to visual culture.
Three hours; one term
Prerequisite: Registration in a program in Cultural Studies and Critical Theory
Antirequisite: ENGLISH 2P03

CSCT 2S03  SPECTACULAR BODIES
This course examines the representations and constructions of the racialized, gendered, ethnic, or othered human body in and through contemporary cultural texts.
Three hours; one term
Prerequisite: Registration in a program in Cultural Studies and Critical Theory
Antirequisite: ENGLISH 2S03

CSCT 3A03  CRITICAL RACE STUDIES
This course examines contemporary debates in critical race theory in an attempt to decode the operations of race in literary and cultural texts.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory, Peace Studies or Women's Studies
Cross-list: COMP LIT 3R03, ENGLISH 3A03, PEACE ST 3A03, WOMEN ST 3H03

CSCT 3AA3  THEORIES OF GENDER AND SEXUALITY
This course explores a range of theories of gender and sexuality by working through readings from the intersecting fields of feminist, queer and masculinity studies.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory or Women's Studies
Cross-list: COMP LIT 3A03, ENGLISH 3AA3, WOMEN ST 3H03

CSCT 3CC3  READING FILM
A critical examination of selected films and film genres as cultural texts, using methods drawn from film theory and cultural studies.
Three hours, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above of a program in Art History, Communication Studies, Comparative Literature, Cultural Studies and Critical Theory, Multimedia or Theatre & Film Studies. It is recommended that students should already have completed THTR&FLM 2F03.
Cross-list: OMST 3CC3, COMP LIT 3C03, ENGLISH 3CC3, THTR&FLM 3R03

CSCT 3D03  SCIENCE FICTION
An examination of a number of standard science fiction tropes such as time travel, lost worlds, utopia/dystopia, totalitarian societies, alien races and post holocaust societies.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 3D03
Not open to students with credit in ENGLISH 3II3, TOPICS IN PROSE, if the topic was Science Fiction.

CSCT 3EE3  AFRICAN AMERICAN LITERATURE
A study of selected texts by African American writers published since 1900, considered in the context of African American history and literary tradition. Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 3EE3
Not open to students with credit in ENGLISH 3II3, TOPICS IN PROSE, if the topic was African American Fiction.

CSCT 3Q03  THE HISTORY OF CRITICAL THEORY
A survey of the main developments in critical theory from Plato to the end of the 19th century. Areas of investigation may include: art, aesthetics, civil society, representation, ethics and knowledge.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature or Cultural Studies and Critical Theory
Cross-list: COMP LIT 3Q03, ENGLISH 3Q03

CSCT 3QQ3  CONTEMPORARY CRITICAL THEORY
This course examines selected issues in contemporary critical theory. Areas of investigation may include: representation, power/knowledge, discourse, subjectivity and the body.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature or Cultural Studies and Critical Theory. COMP LIT 3Q03, CSCT 3QQ3 or ENGLISH 3Q03 is recommended.
Cross-list: COMP LIT 3QQ3, ENGLISH 3QQ3

CSCT 3R06  POSTCOLONIAL CULTURES: THEORY AND PRACTICE
A study of contemporary texts including literature, film, art and other forms of popular culture that engage the implications of living in a postcolonial world. Close consideration will be given to issues of imperialism, globalization, race, gender, ethnicity, nation, language and representation.
Three hours; two terms
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory or Peace Studies
Cross-list: COMP LIT 3R06, ENGLISH 3R06, PEACE ST 3E06

CSCT 3RR3  AFRICAN LITERATURE AND FILM
This course introduces students to a selection of literary texts and films from countries across the African continent.
Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 3RR3

CSCT 3W03  CONTEMPORARY NATIVE LITERATURE IN CANADA
A study of significant works by Native writers who give voice to their experience in Canada. Issues examined include appropriation of voice, native identity, women in indigenous societies and stereotyping.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor
Cross-list: ENGLISH 3W03, INDIG ST 3D03, PEACE ST 3W03
This course is administered by Indigenous Studies.

CSCT 3X03  CONTEMPORARY NATIVE LITERATURE IN THE UNITED STATES
A study of contemporary works by Native writers in the United States within the context of American society and Post-Modern and Post-Colonial Literary Theory.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor
Cross-list: ENGLISH 3X03, INDIG ST 3E03, PEACE ST 3X03
This course is administered by Indigenous Studies.

CSCT 3Y03  CHILDREN'S LITERATURE
A critical evaluation of literary works from approximately 1700 to the present, written primarily for children.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: ENGLISH 3Y03
Not open to students with credit in ENGLISH 3II3, TOPICS IN PROSE, if the topic was Children's Literature.
CSCT 3YY3  CONTEMPORARY YOUTH CULTURE
An examination of contemporary youth culture through dominant representations of identity. Themes include: violence, sex/sexuality, age, gender, technology, music and dance, countercultures, subcultures, private/public space.
Three hours; one term
Prerequisite: Registration in Level II or above
Antirequisite: ENGLISH 3YY3

CSCT 4X03  HONOURS ESSAY
In consultation with members of the Cultural Studies and Critical Theory program and the English and Cultural Studies 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 CSCT 4X03 should contact the faculty member chairing the CSCT 4X03 committee early in first term.
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Departmental permission required.

Note:
Level IV Seminars are open only to Honours students registered in Level IV of a Cultural Studies and Critical Theory or English program. Enrolment will be limited to 18 students per seminar when possible. The Department of English and Cultural Studies 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, which takes place through the Department in March.

CSCT 4AA3  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 a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4AA3
Departmental permission required.

CSCT 4AS3  THE AESTHETICS OF SEX IN THE 1890s
This course will focus on the ideologically related struggles of 1890s men and women to express radical forms of sexuality in literature and on the aesthetics and politics that enforced divisions along gender lines.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4AS3
Departmental permission required.

CSCT 4AW3  ASIAN AMERICAN WRITING
A study of selected texts by Americans and/or Canadians of Asian origin with a focus on race, ethnicity, gender, sexuality, class, immigration, multiculturalism, transnationalism and diaspora.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4AW3
Departmental permission required.

CSCT 4BB3  BLACK POPULAR CULTURE
This course focuses on the production and reception of black popular culture (particularly the entertainment industry and professional sports) in ways that problematize the racialization of cultural forms of expression.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4BB3
Departmental permission required.

CSCT 4CA3  CINEMAS OF AFRICA AND THE AFRICAN DIASPORA
This course examines a range of cinemas from Africa and the African diaspora alongside critical and film theories emanating from these contexts.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4CA3
Departmental permission required.

CSCT 4CB3  READING THE BESTSELLER: CONTEMPORARY BRITISH FICTION
An examination of possible critical vocabularies for the analysis of recent British fiction in light of how bestsellers list, prizes, publicity and media adaptability now shape the writing, marketing and reading of fiction.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4CB3
Departmental permission required.

CSCT 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 a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4CF3
Departmental permission required.

CSCT 4J03  CRUSADE AND JIHAD
The medieval battles over Jerusalem semantically haunt the present and recent past, the relationship of Muslim, Christian and Jewish life and politics.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03

CSCT 4J03  CROSSING BORDERS: GLOBAL FEMINISMS
This course examines how women's lives are being transformed in a changing global society and the implications of women's changing places in society for feminist theory and practice.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03, WOMEN'S STUDIES 4J03
Departmental permission required.

CSCT 4J03  DISLOCATION AND BELONGING: CANADIAN WRITINGS OF IMMIGRATION AND DIASPORA
This course examines works by and about people who have moved between cultural locations to consider questions of cultural and cross-cultural identity.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03

CSCT 4J03  THE HISTORY OF CULTURAL STUDIES
A study of the history of cultural studies from its origins in the Frankfurt School, through the Birmingham Centre for Contemporary Cultural Studies, to its dispersal into distinct modes of academic practice.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03

CSCT 4J03  THE HISTORIC ISMS BORDERS: GLOBAL FEMINISMS
This course examines how women's lives are being transformed in a changing global society and the implications of women's changing places in society for feminist theory and practice.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03, WOMEN'S STUDIES 4J03
Departmental permission required.

CSCT 4J03  THE OTHERS BORDERS: GLOBAL FEMINISMS
This course examines how women's lives are being transformed in a changing global society and the implications of women's changing places in society for feminist theory and practice.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03, WOMEN'S STUDIES 4J03
Departmental permission required.

CSCT 4J03  THE OTHERS BORDERS: GLOBAL FEMINISMS
This course examines how women's lives are being transformed in a changing global society and the implications of women's changing places in society for feminist theory and practice.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03, WOMEN'S STUDIES 4J03
Departmental permission required.

CSCT 4J03  THE OTHERS BORDERS: GLOBAL FEMINISMS
This course examines how women's lives are being transformed in a changing global society and the implications of women's changing places in society for feminist theory and practice.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4J03, WOMEN'S STUDIES 4J03
Departmental permission required.
CULTURAL STUDIES AND CRITICAL THEORY

CSCT 4LM3 EIGHTEENTH-CENTURY MACHINE LIFE
This seminar will explore how metaphors and constructions of the machine pushed the boundaries of what it meant to be human during the 18th century. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4LM3
Departmental permission required.

CSCT 4LT3 LITERATURE AND FILM
An exploration of films as texts by paying close attention to the notion of "looking" and "gazing". Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4LT3
Departmental permission required.

CSCT 4ON3 MICHAEL ONDAATJE
This course explores various approaches to Michael Ondaatje’s poetry and prose; gender, postcoloniality and interdisciplinarity. Ondaatje’s engagement with film, photography, painting and music are topics of particular interest. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4ON3
Departmental permission required.

CSCT 4OP3 THE "OPRAH EFFECT"
This seminar considers the influence of Oprah Winfrey at various sites of cultural contestation: television, magazine publication, women's body images, entrepreneurship, celebrity activism, race, "self-help." Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4OP3
Departmental permission required.

CSCT 4PA3 THE "OPTICAL UNCONSCIOUS": AESTHETICS IN THE AGE OF PHOTOGRAPHY
This seminar engages a series of contemporary debates in aesthetic theory, organized around the question of photography and the problems of visual representation. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4PA3
Departmental permission required.

CSCT 4RS3 READING, SPIRITUALITY AND CULTURAL POLITICS
Through a course of readings from a variety of historical and contemporary sources this class will investigate the relations between spirituality, reading and living in the public, social world. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4RS3
Departmental permission required.

CSCT 4SF3 SCIENCE FICTION TOMORROW OR THE DAY AFTER
This seminar will examine science fiction based in the present or near future in the context of artificial intelligence theory, economic possibilities and biology. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4SF3
Departmental permission required.

CSCT 4SS3 SHAKESPEARE AND SHAKESPEARE'S SISTERS
By examining works from different genres, this course explores the ways gender expectations shaped women's and men's contributions to popular and elite culture in early modern England. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4SS3
Departmental permission required.

CSCT 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 a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4UT3
Departmental permission required.

CSCT 4WA3 WOMEN AS PUBLIC INTELLECTUALS
A focus on the extensive social contributions of women whose intellectual audacity, originality and commitment have significantly impacted late 20th-century and contemporary thought. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4WA3
Departmental permission required.

CSCT 4WL3 GLOBALIZATION AND POSTCOLONIAL FICTION
This course examines fictional representations of the ideology and processes of globalization, while also considering how globalization shapes the production and consumption of postcolonial culture. Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Cross-list: ENGLISH 4WL3
Departmental permission required.

EARTH SCIENCES

(SEE GEOGRAPHY AND EARTH SCIENCES)

ECONOMICS

WEB ADDRESS: http://www.mcmaster.ca/economics/
Kenneth Taylor Hall, Room 426
Ext. 22765

Faculty as of January 15, 2008

Chair
Michael R. Veall

Associate Chair
Jerry Hurley

Professors
Martin Dooley/B.A. (Indiana), M.S., Ph.D. (Wisconsin-Madison)
Peter J. George/C.M., B.A., M.A., Ph.D. (Toronto), D.U. (Ottawa), D. Litt. (Toronto)
D. Hon. C. (Lviv), D Litt. (Nipissing), LL.D. (Toronto)
Stephan R.G. Jones/B.A. (Cambridge), Ph.D. (California-Berkeley)
Atif A. Kubursi/B.A. (American University, Beirut), M.S., Ph.D. (Purdue)
John E. Leach/B.A. (Alberta), M.A., Ph.D. (Queen’s)
Wayne Lewchuk/Labour Studies) M.A. (Toronto), Ph.D. (Cambridge)
Lonnie J. Magee/B.A. (Waterloo), M.A., Ph.D. (Western Ontario)
R. Andrew Muller/B.A. (McGill), M.A., Ph.D. (Toronto)
Kenneth H. Norrie/B.A. (Saskatchewan), M.Phil., Ph.D. (Yale)
Jeffrey S. Racine/B.A., M.A. (McMaster), Ph.D. (Western Ontario)\Senator
William McMaster Chair in Econometrics
Michael R. Veall/B.A. (McMaster), M.A. (Western Ontario), Ph.D. (M.I.T.)
ECONOMICS

Associate Professors
Paul Contoyannis/B.Sc., M.Sc., Ph.D. (University of York)
Thomas F. Crossley/B.Sc. (Queen's), M.A., Ph.D. (McMaster)
Katherine Cuffi/M.A. (York), B.A., Ph.D. (Queen's)
Alok Johri/B.A. (Delhi), M.A. (Delhi School of Economics), Ph.D. (Boston)
Marc-André Letendre/B.A.A. (HEC Montreal), M.A., Ph.D. (Queen's)
A. Abigail Payne/B.A. (Denison), J.D. (Cornell), Ph.D. (Princeton)/Canada Research Chair in Public Economics

Adjunct Associate Professor
Paul Grootendorst/Clinical Epidemiology and Biostatistics) B.A. (Victoria), M.A. (Queen's), Ph.D. (McMaster)

Assistant Professors
Phillip DeCicco/B.A. (Cornell), M.P.A. (Syracuse), Ph.D. (Michigan)
Michel Grignon/M.A. (ENSAS), Ph.D. (HESS)
Seungjin Han/B.Econ. (Korea University), M.A. (McGill University), Ph.D. (Toronto)
Hannah Holmes/M.A. (McMaster)
Peter J. McCabe/A.B. (Boston College), Ph.D. (Northwestern)
Bridget O'Shaughnessy/M.A. (York)
Shintaro Yamaguchi/Ph.D. (Wisconsin-Madison)

Adjunct Assistant Professor
Emile Tompa/B.A. (York), M.B.A. (British Columbia), M.A. (Toronto), Ph.D. (McMaster)

Associate Members
Dean C. Mountain/Business) B.A. (McMaster), M.A., Ph.D. (Western Ontario)
Gregory L. Stoddart/Clinical Epidemiology and Biostatistics) B.A. (Western Ontario), Ph.D. (British Columbia)
Jean-Eric Tarride/Health Economics), Ph.D. (Concordia)

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 credit in ECON 2X03 who transfer into Economics from other programs may substitute ECON 2X03 for ECON 2G03.
3. Students who complete ECON 2X03 are well placed to enrol in the Canadian Securities Course (a correspondence course operated by the Canadian Securities Institute which represents the licensing requirement for individuals training to become investment advisors).
4. Many graduate programs in Economics require ECON 3G03, 4T03 and 4TT3. Students interested in an M.A. in Economics are advised to consult a departmental advisor for more detailed information.

Courses

If no prerequisite is listed, the course is open.

ECON 1B03 INTRODUCTORY MICROECONOMICS
An introduction to the method and theory of microeconomics, and their application to the analyses of contemporary economic problems.
Three lectures; one term
Antirequisite: ECON 1A06

ECON 1B93 INTRODUCTORY MACROECONOMICS
An introduction to the method and theory of macroeconomics, and their application to the analysis of contemporary economic problems.
Three lectures; one term
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 lectures; one term
Prerequisite: ECON 1B03 and 1B93 (or 1A06)
Cross-list: LABR ST 3A03
Not open to students with credit or registration in ECON 3D03.

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 lectures; one term
Prerequisite: ECON 1B03, 1B93; and one of MATH 1F03, 1K03, Grade 12 Advanced Functions and Introductory Calculus U or Grade 12 Calculus and Vectors U, and STAT 1L03 or Grade 12 Mathematics of Data Management U.
Antirequisite: COMMERCE 2Q3A, ENVIR SC 2M3, GEOG 2Z03, SS03, GEOG 2M93, HTH SCI 1F03, SOC SCI 2J03, STATS 1A06, 1CC3
Not open to students with credit or registration in ARTS&SCI 2R06, CHEM ENG 4C03, HTH SCI 2A03, POL SCI 3N06, PSYCH 2R03, 2R93, 2R83, 2R93, SOCIOL 3H06, STATS 2D03, 2MB3, 3N03, 3Y03, or if COMMERCE 2Q3A is a program requirement.

ECON 2C23 HEALTH ECONOMICS AND ITS APPLICATION TO HEALTH POLICY
Economic analysis of health and health care, with a special emphasis on policy issues in the Canadian health care system.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: HEALTHST 2003
Not open to students registered in an Economics program or with credit or registration in ECON 2G03, 2X03 or 3203. Students excluded from ECON 2C23 or those wishing to do further work in Health Economics are referred to ECON 3203.
May not be used to satisfy Economics unit requirements by students in Economics programs or a minor in Economics

ECON 2D03 ECONOMIC ISSUES
Applications of economics to important public issues, from a general interest perspective. Since topics vary from year to year, interested students should consult the Economics Department for further details.
Three lectures; one term
Prerequisite: ECON 1B03 and 1B93 (or 1A06)

ECON 2F03 THE POLITICAL ECONOMY OF DEVELOPMENT
Topics include trade and economic protection, financial development and investment, income distribution, and the role of globalization and international political competition.
Three lectures; one term
Prerequisite: ECON 1B03 and 1B93 (or 1A06)

ECON 2G03 INTERMEDIATE MICROECONOMICS I
Elements of production and cost; price and output determination under competitive and non-competitive market structures; the role of taxes and subsidies.
Three lectures; one term
Prerequisite: 1B03 (or 1A06); and one of Grade 12 Advanced Functions and Introductory Calculus U, MATH 1K03 or equivalent; and credit or registration in MATH 1M03 or equivalent.
Antirequisite: ECON 2X03

ECON 2G93 INTERMEDIATE MICROECONOMICS II
Theory of consumer choice and applications to intertemporal choice and labour supply decisions; theory of exchange, welfare economics and general equilibrium analysis.
Three lectures; one term
Prerequisite: ECON 2G03 or 2X03; and MATH 1M03 or equivalent.

ECON 2H03 INTERMEDIATE INCOME AND EMPLOYMENT THEORY I
Determinants of national income, employment, the rate of interest and the price level; introduction to the open economy.
Three lectures; one term
Prerequisite: 1B93 (or 1A06); and one of Grade 12 Advanced Functions and Introductory Calculus U, MATH 1K03 or equivalent. Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2H03.

ECON 2H93 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 lectures; one term
Prerequisite: ECON 2H03
ECON 2003

FINANCIAL ECONOMICS

Detailed investigation of the financial sector. Topics include the role of capital markets in facilitating investment and growth, bond markets, stock markets, financial statements and taxation.

Three lectures; one term
Prerequisite: ECON 1B03 and 1B33 (or 1A06)
Not open to students with credit or registration in COMMERCE 2FA3.

ECON 2J03

ENVIRONMENTAL ECONOMICS

Allocation of environmental services: efficiency and market failure; measuring environmental benefits; environmental regulation in Canada and elsewhere: taxes, tradable permits and other instruments; further topics.

Three lectures; one term
Prerequisite: 1B03 (or 1A06)

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 lectures; one term
Prerequisite: ECON 1B03 and 1B33 (or 1A06)

ECON 2N03

PUBLIC POLICY TOWARD BUSINESS

The economic effects of federal competition policy and the regulation of business by all levels of government.

Three lectures; one term
Prerequisite: 1B03 (or 1A06)

ECON 2P03

ECONOMICS OF PROFESSIONAL SPORTS

The application of economic principles to team 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 lectures; one term
Prerequisite: 1B03 (or 1A06)

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 strike unions and the state.

Three lectures; one term
Prerequisite: ECON 1B03 and 1B33 (or 1A06)

ECON 2X03

APPLIED BUSINESS ECONOMICS

The economic analysis of the strategy of managerial decision-making. The role of technology, costs, government intervention and market structure on output and pricing decisions.

Three lectures; one term
Prerequisite: 1B03 (or 1A06); and one of Grade 12 Advanced Functions U, or MATH 1FO3 (or equivalent)

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 lectures; one term
Prerequisite: ECON 2G03 or 2X03

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 lectures; one term
Prerequisite: ECON 2G03 or 2X03

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 lectures; one term
Prerequisite: ECON 2G03 or 2X03

Not open to students with credit or registration in ECON 2A03.

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: ECON 2B03 and registration in Level III or Level IV of an Honours Economics program

ECON 3G03

INTRODUCTION TO ADVANCED ECONOMIC THEORY

An introduction to the application of mathematics in economic theory.

Three lectures; one term
Prerequisite: One of Grade 12 Mathematics of Data Management U, MATH 1B03 or STATS 1L03; and MATH 1M03 or equivalent; and a grade of at least C in each of ECON 2G03 (or 2X03), 2G33, 2H03, 2H33

ECON 3H03

INTERNATIONAL MONETARY ECONOMICS

Macroeconomic 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

ECON 3H3

INTERNATIONAL TRADE

Real theory of international trade; interregional and international specialization; effect of commercial and industrial policies.

Three lectures; one term
Prerequisite: ECON 2G03 or 2X03

ECON 3I03

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: ECON 2G03 or 2X03. ECON 2H03 is recommended

ECON 3K03

TOPICS IN MONETARY ECONOMICS

Analysis of monetary theory and policy. Topics include money demand and supply, money and inflation, rational expectations, monetary policy and asset market analysis.

Three lectures; one term
Prerequisite: ECON 2G03 or 2X03; and ECON 2H03

ECON 3LL3

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 lectures; one term
Prerequisite: ECON 2G03 or 2X03; and ECON 2H03

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 lectures; one term
Prerequisite: 1B03 (or 1A06); and MATH 1K03 (or equivalent)

Not open to students with credit in ECON 3Y03 if the topic was Introduction to Game Theory.

ECON 3Q03

THE ECONOMICS OF AGING

Topics include the macroeconomics of population aging and its impact on national pension and health plans and the microeconomics of retirement and income security.

Three lectures; one term
Prerequisite: 1B03 (or 1A06); and MATH 1K03 (or equivalent)

Not open to students with credit in ECON 3Y03 if the topic was Introduction to Game Theory.

ECON 3S03

INDUSTRIAL ORGANIZATION

A study of the structure, conduct and performance of industrial markets.

Three lectures; one term
Prerequisite: ECON 2G03 or 2X03

ECON 3T03

TOPICS IN ECONOMIC DEVELOPMENT

Topics may include the measurement of structural change, dual economies, agriculture and production, technical and institutional change, and health and nutrition.

Three lectures; one term
Prerequisite: ECON 2G03 or 2X03; and ECON 2H03

Antirequisite: ECON 3J06
ECON 3U03  ECONOMETRICS I  
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 lectures; one term
Prerequisite: ECON 2G03 or 2X03; and ECON 2H03; and ECON 2B03 or one of CHEM ENG 4C03, COMMERC 2A03, GEOG 2S03, GEOG 2L13, 2N03, POL SCI 2F06, 3N06, PSYCH 2G03, 2F03, 2RA3, 2FB3, 2RR3, SOC SCI 2I03, SOCIOL 2Y03, 3H06, STATS 1A03, 1CC3, 2D03, 2R06 or another course that is approved by a departmental counselor as equivalent to ECON 2B03. Not open to students with credit in ECON 3006, STATS 2MA3, 2MB3, 3D03, or 3DD3 or credit or registration in ECON 4G03.

ECON 3W03  NATURAL RESOURCES  
Competitive and socially optimal management of nonrenewable resources; market failure as illustrated by mineral cartels, fisheries and forestry, including analysis of bioeconomic models.
Three hours (lectures and seminars); one term
Prerequisite: MATH 1M03 and one of ECON 2G03, 2I03, 2X03; or permission of the instructor

ECON 3Y03  SELECTED TOPICS  
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: ECON 2G03 or 2X03; and ECON 2H03

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 lectures; one term
Prerequisite: One of ECON 2CC3, 2G03, 2X03, HEALTHST 2C03. ECON 2B03 or another course in statistics is recommended.

ECON 4A03  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 (seminars); one term
Prerequisite: Permission of the Department

ECON 4G03  ECONOMETRICS II  
Development of regression models appropriate to economics. Illustrations from applied micro- and macroeconomics.
Three lectures; one term
Prerequisite: ECON 2G03 or 2X03; and ECON 2H03; and at least C- in ECON 3006 or 3U03 or an average of 4.0 in both STATS 2D03 and 2MB3 (or 2M03)

ECON 4M06  DIRECTED RESEARCH I  
A reading and/or research program 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 4T03  ADVANCED ECONOMIC THEORY I  
Mathematically oriented approaches to the analysis of the behaviour of individual consumers, workers and firms.
Three lectures; one term
Prerequisite: A grade of at least C- in one of ECON 3G03, MATH 2Q04, 2X03 (or 2A03); and a grade of at least C in each of ECON 2G03 (or 2X03), 2GG3, 2H03, 2H-H3
Antirequisite: ECON 3A03

ECON 4T73  ADVANCED ECONOMIC THEORY II  
Analysis of dynamic macroeconomic models including models of endogenous growth and other selected topics.
Three lectures; one term
Prerequisite: A grade of at least C- in one of ECON 3G03, MATH 2Q04, 2X03 (or 2A03); and a grade of at least C in each of ECON 2G03 (or 2X03), 2GG3, 2H03, 2H-H3
Antirequisite: ECON 3AA3
COMP ENG 2D14 LOGIC DESIGN
Binary numbers and codes; Boolean algebra; combinational circuit design; electrical properties of logic circuits; sequential circuit design; computer arithmetic; programmable logic; CPU organization and design.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: Registration in a program in Computer Engineering, Electrical Engineering, Engineering Physics (Photonics Engineering Stream) or Physics
Antirequisite: COMP SCI 2M13, ELEC ENG 2C14, 2D14, 2D24

COMP ENG 2D24 MICROPROCESSOR SYSTEMS
Introduction to computer organizations; algorithmic state machine design; microprocessor-based system design including memory and peripheral interfaces; instruction set design; software development tools; microprocessor architectures and programming.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: COMP ENG 2D14 or ELEC ENG 2D14
Antirequisite: COMP ENG 3D24

COMP ENG 2SH4 PRINCIPLES OF PROGRAMMING
Fundamental concepts of programming languages: assertion, assignment, control flow, iteration, recursion, exceptions); data representations; basic concepts of operating systems; composing and analyzing small programs.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ENGINEER 1D04 and registration in a program in Electrical and Computer Engineering
Antirequisite: COMP SCI 2S03, ELEC ENG 2S03

COMP ENG 2S14 DATA STRUCTURES, ALGORITHMS AND DISCRETE MATHEMATICS
Data abstraction and object oriented principles, algorithm analysis, recursion and iteration, lists, stacks, queues, trees, searching, hashing, sorting, graphs and graph algorithms.
Three lectures, one tutorial (two hours); second term
Prerequisite: ENGINEER 1D04, COMP ENG 2S14
Antirequisite: COMP SCI 2M03, 3D03, ELEC ENG 2S14, SFWR ENG 2C03, 2C04

COMP ENG 3D04 DIGITAL SYSTEMS DESIGN
Advanced design methods of digital systems including modelling, simulation, synthesis and verification using hardware description languages, timing analysis and hardware debugging; implementation of computer peripherals in programmable devices.
Two lectures, one tutorial, one lab (three hours) every week; first term
Prerequisite: COMP ENG 2D14 or ELEC ENG 2D14; and COMP ENG 2D24 or 3D4
Enrollment may be limited for Electrical and Electrical & Biomedical engineers.

COMP ENG 3D34 COMPUTER ORGANIZATION
Instruction set design, computer arithmetic, assembly language, controller and datapath design, cache and memory systems, input-output systems, networks interrupts and exceptions, pipelining, performance and cost analysis, computer architecture history and survey of advanced architectures.
Three lectures, one tutorial; second term
Prerequisite: COMP ENG 3D04
Antirequisite: COMP SCI 2CA3

COMP ENG 3S53 COMPUTER-AIDED ENGINEERING
Numerical analysis; linear and nonlinear systems; least squares and QR factorization; optimization; numerical integration and differentiation; sensitivity analysis; finite differences and finite elements; engineering applications.
Three lectures, one tutorial; second term
Prerequisite: ELEC ENG 2CJ4 or 2CJ5; and MATH 2P04
Antirequisite: COMP ENG 3S54, SFWR ENG 3X03

COMP ENG 4D04 COMPUTER ARCHITECTURE
An overview of CISC/RISC microprocessors; performance metrics; instruction set design; processor and memory acceleration techniques; pipelining; scheduling; instruction level parallelism; memory hierarchies; multiprocessor structures; storage systems; interconnection networks.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: COMP ENG 3D04
Antirequisite: SFWR ENG 3G03, 3G3A

COMP ENG 4D14 ADVANCED INTERNET COMMUNICATIONS
Overview of CISP/RISP microprocessors; performance metrics; instruction set design; processor and memory acceleration techniques; pipelining; scheduling; instruction level parallelism; memory hierarchies; multiprocessor structures; storage systems; interconnection networks.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: COMP ENG 4D04
Antirequisite: SFWR ENG 3G03, 3G3A

COMP ENG 4D24 EMBEDDED SYSTEMS
Embedded processor architectures and SOC organization; EDA tools for hardware/software co-design; co-verification and testability; interfacing co-processors, soft processors and ASIP design; real-time systems; applications.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: COMP ENG 4D04
Antirequisite: COMP ENG 4D04, 4E04

COMP ENG 4E14 MICROELECTRONICS
CMOS and MOCIFET integrated circuit design; fabrication and layout; simulation; digital and analog circuit blocks; computer-aided design and analysis; testing and verification.
Two lectures, one tutorial (two hours), one lab every other week; first term
Prerequisite: ELEC ENG 3E14
Antirequisite: COMP ENG 4E03, ELEC ENG 4E03

COMP ENG 4O3 J RESEARCH PROJECT
A research-oriented project under the direct supervision of a faculty member to foster initiative and independent creativity while working on an advanced topic.
One term
Prerequisite: Prior arrangement with an Electrical and Computer Engineering faculty member, inclusion on the Dean's Honour List, registration in Level IV or V, or permission of the instructor
Antirequisite: ELEC ENG 4O3
Department Note:
All students in the Electrical Engineering program initially follow a common curriculum consisting of a combination of Electrical Engineering and Computer Engineering courses. In their senior year, students are given the opportunity to customize their program by selecting from a wide range of technical electives. All Electrical and Computer Engineering courses are open to students registered in any Electrical or Computer Engineering program or the Electrical and Biomedical Engineering program, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other Engineering departments or faculties.

Courses

**ELEC ENG 3C15**  INTRODUCTION TO ELECTRICAL ENGINEERING
Current, potential difference; Kirchhoff's laws; Ohm's Law; circuit elements; mesh/nodal analysis of electrical circuits; first and second order circuits; complex arithmetic; phasors, impedance and admittance; AC power; operational amplifiers. Three lectures, one tutorial; lab every other week; first term
Prerequisite: Registration in a Computer Engineering or Electrical Engineering program
Antirequisite: ELEC ENG 2C14

**ELEC ENG 2CJ4**  CIRCUITS AND SYSTEMS
Advanced circuit analysis including dependent sources; Laplace transforms with applications; frequency response; 2-port networks; coupled circuits; power relationships; magnetic circuits. Three lectures, one tutorial (two hours); second term
Prerequisite: ELEC ENG 2C14 or 2C15
Antirequisite: ELEC ENG 2C15

**ELEC ENG 3TP4**  ELECTRONIC DEVICES AND CIRCUITS I
Semiconductor devices and electronic circuits; electrical characteristics, principles of operation, circuit models of diodes, field-effect and bipolar transistors, and operational amplifiers; analysis and design of basic application circuits. Three lectures, one tutorial; lab every other week; second term
Prerequisite: ELEC ENG 2C14 or 2C15
Antirequisite: ELEC ENG 2C15

**ELEC ENG 2FH3**  ELECTROMAGNETICS I
Mathematical foundations of electromagnetics (selected topics of vector calculus); electrostastics, magnetostatics and conduction; introduction to time-varying fields through Faraday's law. Three lectures, one tutorial; lab every other week; second term
Prerequisite: ELEC ENG 2C14 or 2C15; and PHYSICS 1E03
Antirequisite: ELEC ENG 3FH4

**ELEC ENG 3TP4**  STRUCTURE OF BIOLOGICAL MATERIALS
Structure of natural and synthetic biomaterials, biocompatibility; biomechanics; physiological fluid mechanics; drug delivery and artificial organs; imaging of biological tissue structure. Three lectures, one tutorial; lab every other week; second term
Prerequisite: Registration in Level III Electrical and Biomedical Engineering

**ELEC ENG 3B83**  CELLULAR BIOELECTRICITY
Generation and transmission of bioelectricity in excitable cells; ionic transport in cellular membranes; propagation of electricity within and between cells; cardiac and neural physiology; measurement of extracellular fields; electrical stimulation of excitable cells. Three lectures, one tutorial; lab every other week
Prerequisite: Registration in Level III Electrical and Biomedical Engineering

**ELEC ENG 3CK3**  MATHEMATICS FOR LINEAR SYSTEMS
Complex variables and contour integration, the Laplace transform and its inversion, the Fourier transform and applications, discrete transforms. Three lectures, one tutorial; first term
Prerequisite: ELEC ENG 2CJ4, 2CJ5, MATH 2P04
Antirequisite: MATH 3D03, 3K03

**ELEC ENG 3EJ4**  ELECTRONIC DEVICES AND CIRCUITS II
Analog and digital electronics; operational amplifier circuits; multistage amplifiers; oscillators; analog and digital integrated circuits; data converters; amplifier frequency response; feedback and stability; computer aids to analysis and design. Three lectures, one tutorial; lab every other week; first term
Prerequisite: ELEC ENG 2CJ4 or 2CJ5; and ELEC ENG 2F14 or 2E15

**ELEC ENG 3F3K4**  ELECTROMAGNETICS II
Time-varying fields, uniform plane waves, reflection and transmission, dispersion, transmission lines and impedance matching, waveguides, elements of theory of radiation and antennas. Three lectures, one tutorial; lab every other week; second term
Prerequisite: ELEC ENG 2F3H3
Antirequisite: ELEC ENG 3F3H4

**ELEC ENG 3P14**  POWER DEVICES AND SYSTEMS
Power circuits; transformers; magnetic circuits; phase filter; single phase motors; polyphase machines; synchronous generators and motors, induction motors; dc motors; design of industrial systems. Three lectures, one tutorial; lab every other week; first term
Prerequisite: ELEC ENG 2C14 or 2C15; and ELEC ENG 2C41 or 2C45

**ELEC ENG 3TP4**  LINEAR SYSTEMS AND CONTROL
Review of time and frequency domain descriptions of continuous-time and discrete-time signals and linear systems, including convolution; impulse response and frequency response; introduction to control systems including PID controllers, stability, root-locus and Nyquist plots. Three lectures, one tutorial; lab every other week; second term
Prerequisite: ELEC ENG 3TP4
Antirequisite: COMMERCE 2QA3

**ELEC ENG 3F43**  COMMUNICATION SYSTEMS
Review of continuous-time and discrete-time signals and systems; analysis and implementation of amplitude modulation (DSB-SC, SSB), phase and frequency modulation schemes; digital modulation; noise performance. Three lectures, one tutorial; lab every other week; second term
Prerequisite: ELEC ENG 3CK3, 3TP4, 3TP4; or ELEC 3PHYS 2W04

**ELEC ENG 4BC3**  MODELLING OF BIOLOGICAL SYSTEMS
Introduction to mathematical and engineering methods for describing and predicting the behaviour of biological systems; including sensory receptors, neuromuscular and biomechanical systems; statistical models of biological function; kinetic models of biological thermodynamics. Three lectures, one tutorial; lab every other week; first term
Prerequisite: Registration in Level IV Electrical and Biomedical Engineering

**ELEC ENG 4BD4**  BIOMEDICAL INSTRUMENTATION
Generation and nature of bioelectric potentials; electrodes and other transducers; principles of instrumentation; electrical safety; neuromuscular and cardiovascular instrumentation; ultrasoicics and other medical imaging. Three lectures, one tutorial; lab every other week; first term
Prerequisite: One of ELEC 3EJ4, ENGINEER 3N03 or PHYSICS 3B06
Antirequisite: ELEC ENG 4EL3

**ELEC ENG 4BE4**  MEDICAL ROBOTICS
Fundamentals of robotics and telerobotics; feedback from the environment using sensors and machine vision; application of robotics to medicine and surgery. Three lectures, one tutorial; lab every other week; second term
Prerequisite: Registration in Level IV Electrical and Biomedical Engineering

**ELEC ENG 4BF3**  MEDICAL IMAGING
Physical principles of medical image acquisition and formation; post-processing for magnetic resonance imaging and spectroscopy; comparisons to other medical imaging modalities. Three lectures, one tutorial; lab every other week; second term
Prerequisite: ELEC ENG 3FH3, 3TP4
ELEC ENG 4B16 BIOMEDICAL DESIGN PROJECT
The design process; safety; a term project composed of small teams of students including an oral presentation and written report.
Three lectures, two tutorials, one capstone project; both terms
Prerequisite: Registration in Level IV Electrical and Biomedical Engineering.
Antirequisite: COMP ENG 40I4, 40I5, ELEC ENG 4B14, 4B15, 40I4, 40I5

ELEC ENG 4CL4 CONTROL SYSTEM DESIGN
Design of linear control systems using classical and state-space techniques; performance limitation; sampled-data control; nonlinear systems; multi-input multi-output control systems.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 3T7

ELEC ENG 4EM3 PHOTONIC DEVICES AND SYSTEMS
Two lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 3EJ4

ELEC ENG 4FJ4 MICROWAVE ENGINEERING
Principles of transmission lines, impedance matching and Smith charts; scattering parameters; waveguides and resonant cavities; stripline and microstrip; antenna radiation; radio-wave propagation.
Three lectures, one tutorial; one lab every other week; second term
Prerequisite: ELEC ENG 3F14 or 3F4

ELEC ENG 40I6 ENGINEERING DESIGN
The design process; safety; a term project composed of small teams of students including an oral presentation and written report.
Lectures, tutorials, one capstone project; both terms
Prerequisite: Registration in Level IV or V of any Electrical or Computer Engineering program
Antirequisite: COMP ENG 40I4, 40I5, ELEC ENG 4B14, 4B15, 40I4, 40I5

ELEC ENG 40J3 RESEARCH PROJECT
A research-oriented project under the direct supervision of a faculty member to foster initiative and independent creativity while working on an advanced topic.
One term
Prerequisite: Prior arrangement with an Electrical and Computer Engineering faculty member, inclusion on the Dean’s Honour List, registration in Level IV or V or permission of the instructor
Antirequisite: COMP ENG 40J3

ELEC ENG 4PK4 POWER ELECTRONICS
Power circuits with switches; basic rectifier circuits; commutation; converters; inverters; harmonic suppression techniques; generation and control of rotating fields; variable speed drives; system design.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 3EJ4, 3TP4

ELEC ENG 4PL4 ENERGY SYSTEMS AND MANAGEMENT
Elements of generation, transmission, and distribution systems; system-wide energy flow and control; modelling and simulation; economics and management; fault prediction and management.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 3P14

ELEC ENG 4TK4 DIGITAL COMMUNICATIONS SYSTEMS
Digital modulation systems, intersymbol interference, equalization, synchronization; ASK, FSK, PSK, MSK, optimal receiver, noncoherent detection; introduction to information theory; entropy, source coding, mutual information, channel capacity.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 3TR4

ENERGY ENGINEERING TECHNOLOGIES
(SEETECHNOLOGY, ENERGY ENGINEERING TECHNOLOGIES)

ENGINEERING (GENERAL)

WEB ADDRESS: http://www.eng.mcmaster.ca/

Note:
Enrolment in these courses is limited to students registered in an Engineering program.
ENGINEER 2C03 ELECTRICITY, THERMOPHYSICS AND ENERGY
An introduction to the study of electricity, thermodynamics, and energy. Topics include: electrostatics, electric circuits, thermodynamics, and energy efficiency.

Prerequisite: PHYSICS 1E03 and MATH 2M06 (or M2M3)

ENGINEER 2G3 THE DIGITAL IMAGE FOR SOFTWARE ENGINEERING
A study of digital media where students will create and critique digital audio and video. Readings will explore the evolution of digital media and the technical and social aspects of digital audio and video.

Prerequisite: ENGINEER 2GA3

ENGINEER 2H03 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.

Prerequisite: Registration in Level II or above of any Engineering program except Engineering Physics or Photonics Engineering

ENGINEER 2M3 ELECTRICAL CIRCUITS AND POWER
Fundamentals of electromechanical energy conversion. Motors and generators, transformers, single and polyphase power circuits, synchronous and induction machines, power measurements.

Prerequisite: PHYSICS 1E03 and registration in either MATH 2M06 (or 2M03 and 2M3) or both MATH 2P04 and 2Q04

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.

Prerequisite: PHYSICS 1D03

ENGINEER 2Z03 MATHEMATICS III FOR ENGINEERS
Ordinary differential equations, systems of linear differential equations, Laplace transforms, eigenvalues and eigenvectors, engineering applications. Offered overseas as part of the Study Abroad Program.

Prerequisite: MATH 1Z25 and permission of the Associate Dean (Academic) of Engineering

ENGINEER 2ZZ3 MATHEMATICS IV FOR ENGINEERS
Fourier series, vector calculus, line and surface integrals, integral theorems, partial differential equations, engineering applications. Offered overseas as part of the Study Abroad Program.

Prerequisite: MATH 2A03, 2M06, 2M3, 2P04, 2Z03

ENGINEER 3GA3 INTRODUCTION TO ANIMATION FOR SOFTWARE ENGINEERING
An introduction to the study of digital media where students will create and critique digital audio and video. Readings will explore the evolution of digital media and the technical and social aspects of digital audio and video.

Prerequisite: ENGINEER 2GB3 or MMEDIA 2BE3

ENGINEER 3JR4 PROBABILITY AND STATISTICS FOR ENGINEERS
Introduction to probability, data analysis, statistical inference, regression, correlation and analysis of variance, applications to engineering.

Prerequisite: Registration in Level II or above of any Engineering program except Engineering and Society

ENGINEER 3M03 ELECTRONICS AND INSTRUMENTATION

Prerequisite: One of ENGINEER 2M04, 2M3 or 3M03

ENGINEER 3P03 INTERNATIONAL PROJECT MANAGEMENT
Emphasis is on challenges and solutions of international project management. Topics include cultural difference and the role of information and communication technologies.

Prerequisite: Registration in an Engineering and International Studies program

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.

Prerequisite: Registration in Level III or above of any Engineering program except Engineering and Society

ENGINEER 4B03 ENGINEERING ECONOMICS

Prerequisite: Registration in Level IV or V of an Engineering program

ENGINEER 4F00 M.ENG. MANUFACTURING ACCELERATED OPTION
Requirements for the accelerated option of the M.Eng. (Manufacturing) Program, including: industrial work-term placement report and completion of two approved 600 level courses. Report to be submitted by end of September. Assessed on Pass/Fail basis.

Prerequisite: Permission of Program Director

ENGINEER 4GA3 INTERACTIVE DIGITAL CULTURE FOR SOFTWARE ENGINEERING
Covers works, forms, theories of digitally interactive culture. Works may include hypertext fiction, computer games, interactive digital art, video, music, theories may cover hypertext, interactivity, immersion, simulation, reception, participatory culture.

Prerequisite: MATH 2A03, 2M06, 2M3, 2P04, 2Z03

ENGINEER 4GA3 INTERACTIVE DIGITAL CULTURE FOR SOFTWARE ENGINEERING
Covers works, forms, theories of digitally interactive culture. Works may include hypertext fiction, computer games, interactive digital art, video, music, theories may cover hypertext, interactivity, immersion, simulation, reception, participatory culture.

Prerequisite: MATH 2A03, 2M06, 2M3, 2P04, 2Z03

Prerequisite: ENGINEER 3GA3 or MMEDIA 2BE3

Antirequisite: MMEDIA 3E03, 3EE3
The Engineering and Management Programs are described in the Faculty of Engineering section in this Calendar. These programs lead to the B.Eng., Society degree.

Program Director
B. Baetz (Civil Engineering) B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Duke), P.Eng., F.C.S.C.E.

Courses
If no prerequisite is listed, the course is open.

ENGSOCTY 2X03 INQUIRY IN AN ENGINEERING CONTEXT I
Inquiry is a non-disciplinary 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 course involves teaching how to use the university and community resources in research, how to write a research paper, and how to express ideas orally. The theme for 2009 is sustainable society.

Three hours (lectures, discussion, group work); second term
Prerequisite: Registration in any Engineering and Society program

ENGSOCTY 2Y03 CASE STUDIES IN HISTORY AND 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.

Three hours (lectures, discussion, group work); first term
Prerequisite: Registration in any Engineering and Society program

ENGSOCTY 3X03 INQUIRY IN AN ENGINEERING CONTEXT II
This inquiry course builds on the skills developed in previous courses, focusing on a specific issue related to the role of engineering and technology in society. The course is 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.

Three hours (lectures, discussion, group presentations); 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.

Three hours (lectures, discussion, group work, seminars); first term
Prerequisite: ENGSOCTY 2Y03
The basic concepts of preventive engineering are studied and applied to specific case studies. The focus is on sustainability and the natural environment.

Three hours (lectures, discussion, group projects); first term
Prerequisite: Registration in Level III or IV of an Engineering and Society program or the Honours Environmental Science (B.Sc.) Program

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 technology to society and have implications for the practising engineer.
Prerequisite: ENGSOCTY 3X03

ENGSOCTY 4Z03 THE SOCIAL CONTROL OF TECHNOLOGY
The dominant mechanisms of the social control of technology are 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.
Three hours (lectures, discussion, group projects, seminars); second term
Prerequisite: Registration in Level V of an Engineering and Society program

Joseph E. Hayward (Radiology) B.Eng., M.Eng., Ph.D. (McMaster)
Fred M. Hoppel (Mathematics and Statistics) B.Sc. (Toronto), M.Sc. (Weizmann Institute of Science), M.A., Ph.D. (Princeton)
Jan Dirk Hulstings (Medicine) B.Sc., M.Sc., Ph.D. (Groningen)
Peter Kruse (Chemistry) Dipl. Chem. (FSU-Jena), Ph.D. (California-San Diego)
Marilyn F. Lightstone (Mechanical Engineering) B.Sc. (Queen's), M.A.Sc., Ph.D. (Waterloo), P.Eng.
Rafik O. Loutfy (Chemical Engineering) B.Sc., M.Sc. (Ain Shams), Ph.D. (Western Ontario), M.B.A. (Toronto)
Skipper Poehlman (Computing and Software) B.Sc. (Niagara), B.Sc., (Brock), M.Sc., Ph.D. (McMaster), P.Eng.
Kaisitcheli Saravanamuttu (Chemistry) B.Sc., Ph.D. (McGill)

Department Note:
All Engineering Physics courses are open to students registered in Engineering Physics unless otherwise stated. Prior permission of the Department is necessary for students from other engineering departments and other faculties.

Courses

If no prerequisite is listed, the course is open.

ENG PHYS 2A04 ELECTRICITY AND MAGNETISM
Development of electromagnetic theory - electrostatics, charge, Gauss’s Law, electric energy, DC circuits, magnetic fields, Ampère’s law, AC circuits. Development of Maxwell’s equations via vector calculus.
Three lectures, one tutorial, one lab (three hours), every other week; first term
Prerequisite: PHYSICS 1E03 and credit or registration in MATH 2M03 or 2P04

ENG PHYS 2E04 ANALOG AND DIGITAL CIRCUITS
Design and analysis of analog and digital electrical circuits - component analysis, circuit analysis and theorems, binary numbers, Boolean algebra and digital circuit design.
Three lectures, one lab (three hours); second term
Prerequisite: ENG PHYS 2A03 or 2A04

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; one lab every other week; second term
Prerequisite: Registration in Level II Engineering Physics
Cross-list: PHYSICS 2H04

ENG PHYS 2X03 ENGINEERING PHYSICS AND EMERGING TECHNOLOGIES
An inquiry-based course on the societal impact of emerging technologies associated with Engineering Physics. Topics include alternative energy sources, nuclear power, new information technologies, and new developments in biomedical engineering.
Two lectures; first term, one lecture second term; both terms
Prerequisite: Registration in an Engineering Physics program
Antirequisite: ENGINEER 4A03, 4H03

ENG PHYS 3A03 APPLICATIONS OF PHOTONICS
This course will provide an introduction to industrial, commercial and other applications of photonics. Will include lecture-based instruction and design projects.
Two lectures, one lab; first term
Prerequisite: Credit or registration in ENG PHYS 3E03

ENG PHYS 3P03 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, two labs (three hours each); second term
Prerequisite: Registration in Level III or above of any program 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 or 2A04; and ENG PHYS 2E04

**ENG PHYS 3ES3 **INTRODUCTION TO ENERGY SYSTEMS
A survey course on energy systems with emphasis on the analytic tools needed to evaluate them in terms of performance, resources and environmental sustainability, costs, and other relevant factors over their life cycles.
Three lectures; first term
Prerequisite: Registration in an Engineering Physics program

**ENG PHYS 3F03 **ADVANCED APPLICATIONS OF QUANTUM MECHANICS
Application of quantum mechanics to the electronic, optical and mechanical behaviour of materials.
Three lectures; first term
Prerequisite: ENG PHYS 2Q03 or PHYSICS 3M03
Antirequisite: ENG PHYS 3F04

**ENG PHYS 3G03 **OPTICAL INSTRUMENTATION
Design of optical equipment (including reflective and refractive optical systems, interferometers and spectrometers). Optical sources and power measurements. Detectors (photographic, photoelectric, etc.), including use in the infrared and ultraviolet, and at low intensity levels.
Three lectures; second term
Prerequisite: ENG PHYS 3E03 or PHYSICS 3N03
Antirequisite: ENG PHYS 4G03

**ENG PHYS 3MD3 **INTRODUCTION TO MICROSYSTEM DEVICES
Three lectures; first term
Prerequisite: Registration in an Engineering Physics program

**ENG PHYS 3O04 **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.
Three lectures, one lab (three hours every other week); first term
Prerequisite: Credit or registration in MATH 2M06 (or 2M03 and 2M04); or MATH 2P04 and 2Q04
Antirequisite: ENG PHYS 3O03

**ENG PHYS 3P04 **SEMI CONDUCTOR JUNCTION DEVICES
Electronic properties of semiconductors: non-equilibrium carrier conditions; steady state and non-steady state; p-n junctions; Schottky diodes; bipolar junction transistors. Detailed coverage of a range of diodes including photodiodes, solar cells, light emitting diodes, zener diodes, and avalanche diodes.
Three lectures, four labs (three hours each); second term
Prerequisite: ENG PHYS 3F04 or credit or registration in ENG PHYS 3F03
Antirequisite: ENG PHYS 3PN3, 3PN4

**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, modelling and simulation is undertaken.
Two lectures; both terms
Prerequisite: Registration in Level III or above of any Engineering or Science program
Antirequisite: COMMERCE 2Q3

**ENG PHYS 2X03 **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 Engineering program
Antirequisite: BIOLOGY 2A03, 3U03, 3U06, 3U13, 4G06

**ENG PHYS 4A06 **DESIGN AND SYNTHESIS PROJECT
Design and synthesis projects supervised by a faculty member in the Department of Engineering Physics.
Two labs (three hours); both terms
Prerequisite: Registration in the final level of an Engineering Physics program
Antirequisite: ENG PHYS 4A04

**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 design.
Three lectures (including field trip); first term
Prerequisite: ENG PHYS 3D03

**ENG PHYS 4ES3 **SPECIAL TOPICS IN ENERGY SYSTEMS
Various topics will be examined and critically evaluated to consolidate the student’s knowledge and analytical skills in the area of energy systems.
Three lectures; first term
Prerequisite: ENG PHYS 3ES3

**ENG PHYS 4F03 **ADVANCED SOLID STATE DEVICES
Electronic properties of field effect devices; electronic and optical properties of advanced devices and integrated circuits. Student projects will allow supplemental coverage of devices of particular interest to the class.
Three lectures; first term
Prerequisite: Credit or registration in one of ENG PHYS 3PN3, 3PN4 or 4E03

**ENG PHYS 4H04 **SPECIAL STUDIES IN ENGINEERING PHYSICS
A special program of studies to be arranged by mutual consent of a professor and the student with approval of the department chair, to carry out experiments and/or theoretical investigations. A written report and oral defence are required.
Two tutorials, one lab (three hours); both terms
Prerequisite: Registration in final level of an Engineering Physics program and a CA of at least 9.5

**ENG PHYS 4I03 **INTRODUCTION TO BIOPHOTONICS
This is a survey course on basic principles of light interaction with biological systems and specific biomedical applications of photonics.
Three lectures; second term
Prerequisite: ENG PHYS 3E03 or PHYSICS 3N03
Cross-list: MED PHYS 4I03

**ENG PHYS 4K03 **OPTICAL COMMUNICATIONS SYSTEMS
Three lectures; first term
Prerequisite: Registration in Level IV or V of any Engineering or Physics program
Antirequisite: PHOTONIC 4K03

**ENG PHYS 4L04 **INDUSTRIAL MONITORING AND DETECTION TECHNIQUES
Single and two-phase flow diagnostics and monitoring techniques for industrial and power plant operations; radiation monitoring; pollutant monitoring and analyses; nuclear instrumentation for industrial processes.
Two lectures, four labs; both terms
Prerequisite: Registration in Level IV or V of any Engineering Physics program or permission of the instructor
Antirequisite: ENG PHYS 4L03

**ENG PHYS 4M04 **ADVANCED MATERIALS AND NEXT-GENERATION DEVICES
This course explores the relationship between material properties and device performance. In particular, the design challenges associated with employing properties such as magneto-resistance, superconductivity, and piezoelectricity in devices will be studied.
Two lectures; both terms
Prerequisite: ENG PHYS 3P03, 3F04; and credit or registration in one of ENG PHYS 3PN3, 3PN4, 4E03

**ENG PHYS 4N06 **ADVANCED NUCLEAR ENGINEERING
Three lectures; second term
Prerequisite: ENG PHYS 3D03
Systems and overall unit operations relevant to nuclear power plants; includes all major reactor and process systems; nuclear power plant simulator; self-study using interactive CD-ROM.

Two lectures; both terms

**Antirequisite:** PHOTONIC 604 ENGLISH 2C03 Contemporary Canadian Fiction

Chandrima Chakraborty
B.A. (Calcutta), M.A., M.Phil. (Jawaharlal Nehru), Ph.D. (York)

Julie Park
B.A. (Bryn Mawr), M.A., Ph.D. (Princeton)

Helene Strauss
B.A., M.A. (University of the Free State), Ph.D. (Western Ontario)

**Department Notes:**

1. The following are courses open as electives to students registered in Level II or above of any undergraduate program.

   - **ENGLISH 2C03** Contemporary Canadian Fiction
   - **ENGLISH 2E03** Twentieth-Century British Literature
   - **ENGLISH 2F03** Studies in American Literature
   - **ENGLISH 2I03** Contemporary Popular Culture
   - **ENGLISH 2L03** Shakespeare: Selected Plays
   - **ENGLISH 2N03** Feminist Utopias
   - **ENGLISH 2R03** Monsters and Magic
   - **ENGLISH 3D03** Science Fiction
   - **ENGLISH 3H03** Contemporary Canadian Drama
   - **ENGLISH 3I03** African American Literature
   - **ENGLISH 3P03** African Literature and Film
   - **ENGLISH 3R03** Biblical Traditions in Literature
   - **ENGLISH 3W03** Contemporary Native Literature in Canada

   (note prerequisite for this course)

   - **ENGLISH 3X03** Contemporary Native Literature in the United States

   (note prerequisite for this course)

   - **ENGLISH 3Y03** Children’s Literature

   Please note that the Department is able to offer only a limited selection of elective courses each year.

2. Courses restricted to students registered in programs in English may be available to qualified students in other programs 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 program. Enrolment will be limited to 18 students per seminar unless possible. A list of seminars to be offered will be available before registration andballoting for seminars for the next academic year will take place in March.

**Courses**

- **ENGLISH 1A03** LITERATURE IN ENGLISH: SHORTER GENRES
- **ENGLISH 1AA3** LITERATURE IN ENGLISH: LONGER GENRES

- **ENGLISH 1B03** CULTURAL STUDIES AND VISUAL CULTURE
- **ENGLISH 1BB3** CULTURAL STUDIES AND CONSUMER CULTURE

An overview of the development of cultural studies as an interdisciplinary field of academic inquiry through an exploration of the history of mass and consumer culture. Considerable emphasis will be placed on the development of critical skills in reading and writing.

Two lectures, one tutorial; one term

Cross-list: CSCT 1BB3
ENGLISH 1C06  A HISTORY OF ENGLISH LITERATURE
A survey centering on the history of English literature from its origins to the present providing a grounding in literary historical periods, genres and critical approaches to works by canonical and non-canonical authors. Emphasis will be placed on critical skills in reading and writing. Two lectures, one tutorial; two terms

ENGLISH 2A03  CONTEMPORARY CRITICAL APPROACHES TO LITERATURE
This course will offer a grounding in reading literary texts from a range of contemporary critical approaches. Three hours; one term
Prerequisite: Registration in a program in English or Comparative Literature
Cross-list: COMP LIT 2F03

ENGLISH 2B05  THE DEVELOPMENT OF ENGLISH DRAMA
English drama from the medieval period to the close of the 18th century (excluding Shakespeare). Three hours; two terms
Prerequisite: Registration in a program in English. Students registered in a program in Theatre & Film may apply to the Department for permission to take this course.

ENGLISH 2C03  CONTEMPORARY CANADIAN FICTION
A study of the themes and structure of the contemporary Canadian novel, usually with emphasis on the relationship between Canada’s cultural patterns and its literature. Three hours; one term
Prerequisite: Registration in Level II or above

ENGLISH 2D03  CREATIVE WRITING INQUIRY
A creative writing seminar and workshop based on the Inquiry model of self-directed research and collaboration. Students will exercise their creative talents in a variety of genres and work independently and in groups to develop critical skills and problem solving techniques. Three hours; one term
Prerequisite: Registration in a program in English

ENGLISH 2E03  TWENTIETH-CENTURY BRITISH LITERATURE
A study of selected works of 20th-century British Literature with an emphasis on the historical, intellectual, ideological and aesthetic contexts. Three hours; one term
Prerequisite: Registration in Level II or above
Not open to students with credit or registration in ENGLISH 2106.

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 hours; one term
Prerequisite: Registration in Level II or above
Not open to students with credit or registration in ENGLISH 2106.

ENGLISH 2H06  AMERICAN LITERATURE: POSTBELLUM, MODERN AND CONTEMPORARY
A survey of significant American texts from the origins of the tradition to the late 19th century. Three hours; two terms
Prerequisite: Registration in a program in English
Antirequisite: ENGLISH 2G06

ENGLISH 2J03  CONTEMPORARY POPULAR CULTURE
This course explores the concept of popular culture through an examination of specific cultural forms, with emphasis on analytic skills informed by cultural and critical theory. Three hours; one term
Prerequisite: Registration in a program in English
Cross-list: CSCT 2J03

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 hours; two terms
Prerequisite: Registration in a program in English or Women's Studies
Cross-list: CSCT 2K06, WOMEN ST 2K06

ENGLISH 2L03  SHAKESPEARE: SELECTED PLAYS
A study of a representative selection of plays. Three hours; one term
Prerequisite: Registration in Level II or above
Not open to students with credit or registration in ENGLISH 3K06.

ENGLISH 2M03  CONCEPTS OF CULTURE
An analysis of the development of the concept of culture from the Enlightenment to the present. Theoretical readings combined with the analysis of specific cultural texts, objects, forms and practices will allow students to trace historical and contemporary debates concerning culture. Three hours; one term
Prerequisite: Registration in a program in Communication Studies, Comparative Literature or English
Cross-list: COMP LIT 2F03, CSCT 2M03
Antirequisite: CMST 2M03

ENGLISH 2M03  MODERN COUNTERCULTURES
An exploration of a variety of cultural forms (e.g. literature, art, photography, film, music) produced by avant-gardes and counter-cultural groups from the mid-19th century to the present. Areas of investigation may include surrealism, futurism, the beats, the sixties, skepticism and punk. Three hours; one term
Prerequisite: Registration in a program in Communication Studies, Comparative Literature or English
Cross-list: COMP LIT 2E03, CSCT 2M03
Antirequisite: CMST 2M03

ENGLISH 2N03  FEMINIST UTOPIAS
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: Registration in Level II or above
Not open to students with credit or registration in ENGLISH 2H06.

ENGLISH 2O06  AMERICAN LITERATURE: COLONIZATION, REVOLUTION AND SLAVERY
A survey of significant American texts from the origins of the tradition to the late 19th century. Three hours; two terms
Prerequisite: Registration in a program in English
Antirequisite: ENGLISH 2H06

ENGLISH 2P06  AMERICAN LITERATURE: POSTBELLUM, MODERN AND CONTEMPORARY
A survey of significant American texts from roughly 1865 to the present. Three hours; two terms
Prerequisite: Registration in a program in English
Antirequisite: ENGLISH 2H06

ENGLISH 3A03  CRITICAL RACE STUDIES
This course examines contemporary debates in critical race theory in an attempt to critically decode the operations of race in literary and cultural texts. Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, English, Peace Studies or Women's Studies
Cross-list: COMP LIT 3R03, CSCT 3A03, PEACE ST 3A03, WOMEN ST 3H03

ENGLISH 3A03  THEORIES OF GENDER AND SEXUALITY
This course explores a range of theories of gender and sexuality by working through readings from the intersecting fields of feminist, queer and masculinity studies. Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, English or Women's Studies
Cross-list: COMP LIT 3AA3, CSCT 3AA3, WOMEN ST 3HH3

ENGLISH 3C06  MEDIEVAL LITERATURE IN ENGLAND
Middle English literature in a range of genres, such as romance, lyric and chronicle, will be studied in the context of medieval English culture. Three hours; two terms
Prerequisite: Registration in a program in English
ENGLISH 3CC3 READING FILM
A critical examination of selected films and film genres as cultural texts, using methods drawn from film theory and cultural studies. Three hours, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above of a program in Film Studies, Communication Studies, Comparative Literature, English, Multimedia or Theatre & Film Studies. It is recommended that students should already have completed THTR&FLM 2F03.
Cross-list: CMST 3C03, COMP LIT 3L03, CSCT 3CC3, THTR&FLM 3R03

ENGLISH 3D03 SCIENCE FICTION
An examination of a number of standard science fiction tropes such as time travel, lost worlds, utopia/dystopia, totalitarian societies, alien races and post-holocaust societies.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CSCT 3D03
Not open to students with credit in ENGLISH 3II3, TOPICS IN PROSE, if the topic was Science Fiction.

ENGLISH 3D03 CONTEMPORARY CANADIAN DRAMA
A course on current Canadian drama focusing on Canadian dilemmas, readings of international politics, philosophical questions, innovation in staging and performance histories.
Three lectures; one term
Prerequisite: Registration in Level II or above
Not open to students with credit in ENGLISH 3XX3, TOPICS IN DRAMA, if the topic was Contemporary Canadian Drama.

ENGLISH 3EE3 AFRICAN AMERICAN LITERATURE
A study of selected texts by African American writers published since 1900, considered in the context of African American history and literary tradition.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CSCT 3EE3
Not open to students with credit in ENGLISH 3II3: TOPICS IN PROSE, if the topic was African American Fiction.

ENGLISH 3G06 STUDIES IN 18TH-CENTURY BRITISH LITERATURE AND CULTURE
A study of English literature during the period 1660-1800, with special attention to works by Dryden, Swift, Pope and Johnson.
Three hours; two terms
Prerequisite: Registration in a program in English

ENGLISH 3H03 JANE AUSTEN
A critical evaluation of a selection of Jane Austen's work with a focus on exploring late 18th- and early 19th-century British culture.
Three lectures; one term
Prerequisite: Registration in Level II or above
Not open to students with credit in ENGLISH 3II3, TOPICS IN PROSE, if the topic was Jane Austen.

ENGLISH 3I06 THE AGE OF ELIZABETH I
A consideration of this tumultuous age, galvanized by revolutions in exploration, religion and selfhood, and ruled by a female monarch. Authors include Spenser, Sidney and women writers.
Three hours; two terms
Prerequisite: Registration in a program in English

ENGLISH 3J03 THE HISTORY OF ENGLISH
This course covers the emergence of English from the Indo-European language group and the major changes which mark its evolution into a global language of the present.
Three hours; one term
Prerequisite: Registration in a program in English
Antirequisite: ENGLISH 3J06

ENGLISH 3J03 THEORIES OF LANGUAGE
This course will introduce language theories of origin and nature in their cultural contexts, including those which are now being invented.
Three hours; one term
Prerequisite: Registration in a program in English
Antirequisite: ENGLISH 3J06

ENGLISH 3K06 SHAKESPEARE
An extensive critical reading and discussion of selected plays.
Three hours; two terms
Prerequisite: Registration in a program in English. Students registered in a program in Theatre & Film Studies may apply to the Department for permission to take this course.

ENGLISH 3L06 THE EARLIEST ENGLISH LANGUAGE AND LITERATURE
Old English language and literature will be studied in the context of Anglo-Saxon culture, translation theory and practice.
Three hours; two terms
Prerequisite: Registration in a program in English

ENGLISH 3M06 STUDIES IN 19TH-CENTURY BRITISH LITERATURE AND CULTURE
A study of selected texts, genres and issues of 19th-century British Literature, including reference to relevant social and political contexts.
Three hours; two terms
Prerequisite: Registration in a program in English

ENGLISH 3N06 THE BRITISH NOVEL
This course will trace the history of English fiction to the 20th century and will focus on the varieties of narrative forms, while also exploring the intellectual, cultural and psychological contexts of fiction.
Three hours; two terms
Prerequisite: Registration in a program in English

ENGLISH 3Q03 THE HISTORY OF CRITICAL THEORY
A survey of the main developments in critical theory from Plato to the end of the 19th century. Areas of investigation may include: art, aesthetics, civil society, representation, ethics and knowledge.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature or English
Cross-list: COMP LIT 3Q03, CSCT 3Q03

ENGLISH 3Q03 CONTEMPORARY CRITICAL THEORY
This course examines selected issues in contemporary critical theory. Areas of investigation may include: representation, power/knowledge, discourse, subjectivity and the body.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature or English
COMP LIT 3Q03, CSCT 3Q03 or ENGLISH 3Q03 is recommended.
Cross-list: COMP LIT 3Q03, CSCT 3Q03

ENGLISH 3R06 POSTCOLONIAL CULTURES: THEORY AND PRACTICE
A study of contemporary texts including literature, film, art and other forms of popular culture that engage the implications of living in a postcolonial world. Close consideration will be given to issues of imperialism, globalization, race, gender, ethnicity, nation, language and representation.
Three hours; two terms
Prerequisite: Registration in a program in Comparative Literature, English or Peace Studies
Cross-list: COMP LIT 3R06, CSCT 3R06, PEACE ST 3E06

ENGLISH 3R3 AFRICAN LITERATURE AND FILM
This course introduces students to a selection of literary texts and films from countries across the African continent.
Three hours; one term
Prerequisite: Registration in a program in Comparative Literature or English
Cross-list: CSCT 3R3

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 hours; one term
Prerequisite: Registration in Level II or above
Cross-list: CSCT 3S03

ENGLISH 3T06 STUDIES IN 17TH-CENTURY LITERATURE
A detailed examination of poems and prose-writers of the period, with emphasis on the poetry of Donne, the "metaphysical school", Jonson and Milton.
Three hours; two terms
Prerequisite: Registration in a program in English
ENGLISH 3W03  CONTEMPORARY NATIVE LITERATURE IN CANADA

A study of significant works by Native writers who give voice to their experience in Canada. Issues examined include appropriation of voice, Native identity, women in Indigenous societies and stereotyping. Three hours (lectures and seminars); one term.
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor.
Cross-list: CSCT 3W03, INDIG ST 3D03, PEACE ST 3W03
This course is administered by Indigenous Studies.

ENGLISH 3X03  CONTEMPORARY NATIVE LITERATURE IN THE UNITED STATES

A study of contemporary works by Native writers in the United States within the context of American society and Post-Modern and Post-Colonial Literary Theory. Three hours (lectures and seminars); one term.
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor.
Cross-list: CSCT 3X03, INDIG ST 3E03, PEACE ST 3X03
This course is administered by Indigenous Studies.

ENGLISH 3Y03  CHILDREN'S LITERATURE

A critical evaluation of literary works from approximately 1700 to the present written primarily for children. Three lectures; one term.
Prerequisite: Registration in Level II or above.
Cross-list: CSCT 3Y03
Not open to students with credit in ENGLISH 3I13, TOPICS IN PROSE, if the topic was Children's Literature.

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 program in English.
Departmental permission required.

ENGLISH 4AA3  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 program in English.
Cross-list: CSCT 4AA3
Departmental permission required.

ENGLISH 4AS3  THE AESTHETICS OF SEX IN THE 1890s

This course will focus on the ideologically related struggles of 1890s men and women to express radical forms of sexuality in literature and on the aesthetics and politics that enforced divisions along gender lines. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4AS3
Departmental permission required.

ENGLISH 4AW3  ASIAN AMERICAN WRITING

A study of selected texts by Americans and/or Canadians of Asian origin with a focus on race, ethnicity, gender, sexuality, class, immigration, multiculturalism, transnationalism and diaspora. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4AW3
Departmental permission required.

ENGLISH 4BB3  BLACK POPULAR CULTURE

This course focuses on the production and reception of black popular culture (particularly the entertainment industry and professional sports) in ways that problematize the racialization of cultural forms of expression. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4BB3
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 program in English.
Departmental permission required.

ENGLISH 4CA3  CINEMAS OF AFRICA AND THE AFRICAN DIASPORA

This course examines a range of cinemas from Africa and the African diaspora alongside critical and film theories emanating from these contexts. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4CA3
Departmental permission required.

ENGLISH 4CB3  READING THE BESTSELLER: CONTEMPORARY BRITISH FICTION

An exploration of possible critical vocabularies for the analysis of recent British fiction in light of how bestseller lists, prizes, publicity and media adaptability now shape the writing, marketing and reading of fiction. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4CB3
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 program in English.
Cross-list: CSCT 4CF3
Departmental permission required.

ENGLISH 4CJ3  CRUSADE AND JIHAD

The medieval battles over Jerusalem semantically haunt the present and recent past, the relationship of Muslim, Christian and Jewish life and politics. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4CJ3
Departmental permission required.

ENGLISH 4CS3  CANADIAN SHORT STORIES

Canadian short stories from the early 20th century to the present, including French-Canadian (in translation) and aboriginal. Gender, race, class and power issues will be discussed. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4CS3
Departmental permission required.

ENGLISH 4FR3  FANTASIES OF THE ORIENT IN 18TH-CENTURY BRITAIN

This course explores how 18th-century England registered and imagined the "other" through "the Orient", as well as how the Orient shaped emerging literary genres and modes. Seminar (two hours); one term.
Prerequisite: Registration in Level IV of an Honours program in English.
Cross-list: CSCT 4FR3
Antirequisite: ENGLISH 4F03
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 program in English.
Cross-list: CSCT 4FT3
Departmental permission required.
ENGLISH 4FW3 FORMS OF CREATIVE WRITING
This seminar will combine a hands-on study of form with an opportunity for students to exercise and focus their own creative energies. In any given year, the course will concentrate on either verse or fictional form. Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4GE3 GEORGE ELIOT
This seminar will examine selected works of George Eliot, with special attention to the structural and psychological aspects of her writings. Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4GW3 GOOD WOMEN, BAD GIRLS
This seminar explores representations of feminine virtue and vice with examples drawn from early sagas, epics, tales, hagiography, drama, miracle stories and romance
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4HC3 THE HISTORY OF CULTURAL STUDIES
A study of the history of cultural studies from its origins in the Frankfurt School, through the Birmingham Centre for Contemporary Cultural Studies, to its dispersal into distinct modes of academic practice. Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4HL3 CANADIAN HOLOCAUST NOVELS
An examination of selected Canadian novels that respond to the Holocaust. Aesthetic and ethical issues involved in such responses will also be discussed. Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4ID3 DISLOCATION AND BELONGING: CANADIAN WRITINGS OF IMMIGRATION AND DIASPORA
This course examines works by and about people who have moved between cultural locations to consider questions of cultural and cross-cultural identity. Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4IJ3 CROSSING BORDERS: GLOBAL FEMINISMS
Examines how women's lives are being transformed in a changing global society and the implications of women's changing places in society for feminist theory and practice
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4IJ3
Departmental permission required.

ENGLISH 4LM3 EIGHTEENTH-CENTURY MACHINE LIFE
This seminar will explore how metaphors and constructions of the machine pushed the boundaries of what it meant to be human during the 18th century.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4LM3
Departmental permission required.

ENGLISH 4LT3 LITERATURE AND FILM
An exploration of films as texts by paying close attention to the notion of “looking” and “gazing”.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4LT3
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 program in English
Departmental permission required.

ENGLISH 4ON3 MICHAEL ONDAATJE
This course explores various approaches to Michael Ondaatje's poetry and prose; gender, postcoloniality and interdisciplinarity (Ondaatje's engagement with film, photography, painting and music) are topics of particular interest.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4ON3
Departmental permission required.

ENGLISH 4OP3 THE “OPRAH EFFECT”
This seminar considers the influence of Oprah Winfrey at various sites of cultural contestation: television, magazine publication, women's body images, entrepreneurship, celebrity activism, race, “self-help.”
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4OP3
Departmental permission required.

ENGLISH 4PA3 THE “OPTICAL UNCONSCIOUS”: AESTHETICS IN THE AGE OF PHOTOGRAPHY
This seminar engages a series of contemporary debates in aesthetic theory, organized around the question of photography and the problems of visual representation.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4RS3 READING, SPIRITUALITY AND CULTURAL POLITICS
Through a course of readings from a variety of historical and contemporary sources this class will investigate the relations between spirituality, reading and living in the public, social world.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4RS3
Departmental permission required.

ENGLISH 4SC3 WOMEN WRITERS OF THE 16TH AND 17TH CENTURIES
This seminar explores a variety of works written by women in 16th- and 17th-century England, with a consideration of their literary and cultural contexts and the construction of female identity.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4SC3
Departmental permission required.

ENGLISH 4TF3 SCIENCE FICTION TOMORROW OR THE DAY AFTER
This seminar will examine science fiction based in the present or near future in the context of artificial intelligence theory, economic possibilities and biology.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4TF3
Departmental permission required.

ENGLISH 4SS3 SHAKESPEARE AND SHAKESPEARE’S SISTERS
By examining works from different genres, this course explores the ways gender expectations shaped women's and men's contributions to popular and elite culture in early modern England.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4SS3
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 program in English
Cross-list: CSCT 4UT3
Departmental permission required.

ENGLISH 4WA3 WOMEN AS PUBLIC INTELLECTUALS
A focus on the extensive social contributions of women whose intellectual audacity, originality and commitment have significantly impacted late 20th-century and contemporary thought.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Cross-list: CSCT 4WA3
Departmental permission required.
### Entry into Level I Courses and French Programs

| Course          | Prerequisite          | Grade of
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<tbody>
<tr>
<td>No French or Gr 9 French; or non-arts students with Gr 10 or 11 French</td>
<td>Humanities, Social Sciences and Arts &amp; Science students with Gr 10 or 11 French</td>
<td>Gr 12 French</td>
</tr>
<tr>
<td>FRENCH 1K06</td>
<td>Grade of at least C- &amp; CA of 3.5</td>
<td>Grade of at least B- &amp; CA of 6.0</td>
</tr>
<tr>
<td>FRENCH 2M06</td>
<td>Grade of at least C- &amp; CA of 3.5</td>
<td>CA of 6.0</td>
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**B.A. French, Hons French**

**FRENCH 1A06**

**Introduction to French Studies: Advanced Level**

Equivalent to FRENCH 2M06

Review of grammar, oral and written practice, and introduction to literary analysis.

Four hours (including one oral French tutorial); two terms

Prerequisite: Grade 12 French U (core, immersion or français). The Department reserves the right to place students in the course most appropriate to their abilities. Immersion students should register in this course.

Antirequisite: FRENCH 1K06, 1N06, 1Z06, 2M06

FRENCH 1K06

**Intermediate French**

Intensive review of basic structures and vocabulary to develop proficiency in oral and written French. The sequel to this course is FRENCH 2M06. (See Notes 1 and 2 above.)

Five hours (including two tutorials); two terms

Prerequisite: This course is designed for students without Grade 12 French who are registered in a program in the Faculty of Humanities or Social Sciences or the Arts & Science program. The Department reserves the right to place students in the course most appropriate to their abilities. Immersion students and Francophones may not register in this course.

Antirequisite: FRENCH 1A06, 1N06, 1Z06, 2M06

FRENCH 1Z06

**Beginner's Intensive French**

An intensive course for developing basic skills in both written and spoken French. The normal sequel to this course is FRENCH 2206.

Five hours (two hours lectures, three hours independent personal computer lab assignments); two terms

Prerequisite: This course is designed for students without Grade 12 French who are registered in Faculties other than Humanities or Social Sciences or the Arts & Science program.

Antirequisite: Grade 12 French U, FRENCH 1A06, 1K06. Not open to Francophones.

Students with prior knowledge of the language, as determined by a placement test, may be required to enrol in an appropriate alternative.

### Departmental Notes:

1. FRENCH 1K06 is intended for students who have not completed Grade 12 French U, but wish to take upper-level French courses. FRENCH 1K06 prepares students for FRENCH 2M06 which is the prerequisite for upper-level French courses.

2. Students who complete FRENCH 1K06 and wish to enter a program in French will be eligible to take FRENCH 2M06 (equivalent to FRENCH 1A06) in the Spring/Summer session. Completion of FRENCH 2M06, with the appropriate grade and Cumulative Average, will enable students to enter Level II of a program in French in the Fall/Winter session immediately following.

### Courses

If no prerequisite is listed, the course is open.

**FRENCH 1A06**

**Introduction to French Studies: Advanced Level**

Equivalent to FRENCH 2M06

Review of grammar, oral and written practice, and introduction to literary analysis.

Four hours (including one oral French tutorial); two terms

Prerequisite: Grade 12 French U (core, immersion or français). The Department reserves the right to place students in the course most appropriate to their abilities. Immersion students should register in this course.

Antirequisite: FRENCH 1K06, 1N06, 1Z06, 2M06

FRENCH 1K06

**Intermediate French**

Intensive review of basic structures and vocabulary to develop proficiency in oral and written French. The sequel to this course is FRENCH 2M06. (See Notes 1 and 2 above.)

Five hours (including two tutorials); two terms

Prerequisite: This course is designed for students without Grade 12 French who are registered in a program in the Faculty of Humanities or Social Sciences or the Arts & Science program. The Department reserves the right to place students in the course most appropriate to their abilities. Immersion students and Francophones may not register in this course.

Antirequisite: FRENCH 1A06, 1N06, 1Z06, 2M06

FRENCH 1Z06

**Beginner's Intensive French**

An intensive course for developing basic skills in both written and spoken French. The normal sequel to this course is FRENCH 2206.

Five hours (two hours lectures, three hours independent personal computer lab assignments); two terms

Prerequisite: This course is designed for students without Grade 12 French who are registered in Faculties other than Humanities or Social Sciences or the Arts & Science program.

Antirequisite: Grade 12 French U, FRENCH 1A06, 1K06. Not open to Francophones.

Students with prior knowledge of the language, as determined by a placement test, may be required to enrol in an appropriate alternative.
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.
Four hours (including one oral French tutorial); one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06
Antirequisite: FRENCH 4R06

FRENCH 2BB3 FRENCH LANGUAGE PRACTICE II
Continuation of FRENCH 2B03.
Four hours (including one oral French tutorial); one term.
Prerequisite: FRENCH 2B03 with a grade of at least C-
Antirequisite: FRENCH 4R06

FRENCH 2E03 SURVEY OF QUEBEC LITERATURE
Selected novels, plays and poems representative of the main currents of Quebec Literature.
Three hours; one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06

FRENCH 2F03 SURVEY OF FRENCH LITERATURE
Examination of a representative sampling of texts from various periods and genres.
Three hours; one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06

FRENCH 2G03 FRENCH LANGUAGE PRACTICE: ELEMENTARY TRANSLATION
An introduction to translation and comparative stylistics. The translation of texts from French to English will also serve as an exercise in applied grammar.
Three hours; one term
Prerequisite: A grade of at least B- in FRENCH 1A06 or 2M06 or B+ in FRENCH 1N06

FRENCH 2H03 INTRODUCTION TO FRENCH LINGUISTICS
A view of language as 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 hours; one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06

FRENCH 2J03 NINETEENTH-CENTURY FRENCH LITERATURE I
Aspects of the development of 19th-century French literature up to 1848.
Three hours; one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06

FRENCH 2J3 J NINETEENTH-CENTURY FRENCH LITERATURE II
Aspects of the development of 19th-century French literature after 1848.
Three hours; one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06

FRENCH 2M06 INTRODUCTION TO FRENCH STUDIES: ADVANCED LEVEL
Equivalent to FRENCH 1A06
Review of grammar, oral and written practice and introduction to literary analysis.
Four hours (including one oral French tutorial); two terms
Prerequisite: One of FRENCH 1K06, 1N06 or 2206
Antirequisite: FRENCH 1A06
Not open to students with credit or registration in FRENCH 2B03.

FRENCH 2N03 INTRODUCTION TO THE CIVILIZATION OF FRANCE
The study of contemporary France through a selection of texts and audiovisual materials.
Three hours; one term
Prerequisite: One of FRENCH 1A06, 1N06 or 2M06

FRENCH 2206 BEGINNER'S INTENSIVE FRENCH II
A sequel to FRENCH 1206. Review of grammatical structures. Expansion of vocabulary. Conversation practice. Study of texts with class discussions. The normal sequel to this course is FRENCH 2M06. This course cannot be applied toward a Minor in French.
Five hours (two hours lectures, three hours independent personal computer lab assignments); two terms
Prerequisite: FRENCH 1206
Antirequisite: FRENCH 1K06, 1N06
Not open to students with credit or registration in FRENCH 1A06, 1B06, 2B03, 2M06.

FRENCH 3C03 FRENCH LANGUAGE PRACTICE: WRITTEN
Advanced grammar and composition; introduction to stylistics.
Three hours; one term
Prerequisite: A grade of at least C- in FRENCH 2BB3
Antirequisite: FRENCH 4R06

FRENCH 3CC3 FRENCH LANGUAGE PRACTICE: INTERMEDIATE TRANSLATION
A follow-up to elementary translation and comparative stylistics. The emphasis will be on the translation into French of complex sentence structures, as well as texts of general interest.
Three hours; one term
Prerequisite: A grade of at least B- in each of FRENCH 2BB3 and 2G03

FRENCH 3F03 FRENCH LANGUAGE PRACTICE: FRENCH CIVILIZATION AND CULTURE
An introduction to contemporary French society through oral discussions and presentations.
Three hours; one term
Prerequisite: FRENCH 2B03. Not available to Francophone students with native fluency.

FRENCH 3GG3 FRENCH LANGUAGE PRACTICE: TRANSLATION FROM FRENCH TO ENGLISH
The emphasis will be on comparing 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 hours; 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 hours; one term
Prerequisite: FRENCH 2B03, FRENCH 2H03 and/or LINGUIST 1A03 and 1AA3 (or 1A06) are recommended.

FRENCH 3K03 PASSION(S) IN THE AGE OF REASON
From gambling to lovemaking, a study of early 18th-century foibles with emphasis on the works of Lesage, Marivaux, Prévost and Mme de Graffigny.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206.

FRENCH 3K3 FRENCH LANGUAGE PRACTICE: REVOLUTIONARY LITERATURE BEFORE THE REVOLUTION: VOLTAIRE, ROUSSEAU AND BEAUMARCHAIS
Texts representing the main aspects of Enlightenment thought and literature from Candide to the Revolution.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206.

FRENCH 3Q03 SEVENTEENTH-CENTURY FRENCH LITERATURE I
A study of selected plays by Corneille, Molière and Racine.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206.

FRENCH 3Q3 SEVENTEENTH-CENTURY FRENCH LITERATURE II
A consideration of selected themes as they appear in the works of major French writers of the 17th century.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206.

FRENCH 3W03 TWENTIETH-CENTURY FRENCH LITERATURE I
Aspects of the development of 20th-century literature to the end of the Second World War.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206.
Antirequisite: FRENCH 2W03.

FRENCH 3W3 TWENTIETH-CENTURY FRENCH LITERATURE II
Aspects of the development of 20th-century literature since the Second World War.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206.
Antirequisite: FRENCH 2WW3, 4WW3.
FRENCH 3Y03  TWENTY FIRST-CENTURY FRENCH LITERATURE
Study of a selection of French literary texts published in the 21st century and an introduction to the problems associated with studying contemporary literature.

Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 3Z03  AFRICAN AND CARIBBEAN FRENCH LITERATURES

Three hours; one term
Prerequisite: One of FRENCH 1A06, 2M06 or registration in a French program

FRENCH 4A03  FRENCH LANGUAGE PRACTICE
Advanced stylistics and composition.

Three hours; one term
Prerequisite: A grade of at least B- in FRENCH 3C03 and registration in an Honours program in French

FRENCH 4BB3  FRENCH LANGUAGE PRACTICE: ADVANCED/SPECIALIZED TRANSLATION
Translation into French of texts of a specialized nature (e.g., administration, business, politics, health).

Three hours; one term
Prerequisite: FRENCH 3C03, 3C3; or registration in Level III or IV of the Honours Linguistic Cognitive Science program. Students not registered in a program in French should have communicative competence in French.

FRENCH 4D03  SCIENCE AND LITERATURE
Study of a selection of French literary texts that integrate scientific discourse as a way of questioning representations of the other, self, history and reality.

Seminar (two hours); one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4F03  SEXUAL GAMES: THE ART OF SEDUCTION DURING THE ANCIENT REGIME
A study of seduction as theme as well as rhetorical device in major works of the Ancien Régime (e.g., Diderot, Marivaux, Abbé Prévost, Isabelle de Charrière, Rousseau).

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4H03  TOPICS IN LINGUISTICS
Topics may include: Lexicology, Syntax, Pragmatics, Content Analysis of Francophone Media. Consult the Department concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: FRENCH 2H03 or registration in Level III or IV of the Honours Linguistic Cognitive Science program. Students not registered in a program in French should have communicative competence in French.

FRENCH 4I03  FRENCH POETRY FROM THE RENAISSANCE TO THE PRESENT
An introduction to major thematic, historical and linguistic concerns of French poetry from the Renaissance to the present (e.g., Poets and Humour, Love Poetry, Women Poets, Poèmes maudits).

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4J03  FRENCH LITERATURE OF THE RENAISSANCE
Characteristic themes of Renaissance humanism as they appear in the works of Rabelais, Montaigne and selected poets.

Three hours; one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4M03  SEX, VIOLENCE AND ELEGANCE: THE 18TH-CENTURY NOVEL
A study of the genesis and themes of representative 18th-century novels.

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4N03  THE FRENCH HISTORICAL NOVEL 1800-1850
A study of the evolution of the novel in France in the first half of the 19th century: the invention of the modern European novel.

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4R06  FRENCH READING COURSE (TAUGHT IN ENGLISH)
Students intending to enter graduate programs will be provided with reading skills and techniques which will enable them to comprehend academic texts. Reading materials are selected to practice textual analysis, study grammatical usage and aid in vocabulary development. Credit obtained in this course may be accepted in fulfillment of the second language reading requirement for graduate programs.

Five hours, three days per week; one term
Offered during the first term of summer session only.
Prerequisite: FRENCH 1Z06 and registration in at least Level IV Honours Program or permission of the French Department
Antirequisite: FRENCH 2B03, 2BB3, 3C03
Not open to students registered in a program in French.

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.

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4V03  TOPICS IN CROSS-PERIOD THEMES
Topics may include: Erotic Literature, Novel and Cinema, Paris Across Times, Literary Influences Underlying Psychoanalysis, Literary Translation Across the Centuries. Consult the Department concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4V03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4X03  LINGUISTICS AND LITERATURE
General linguistics applied to literary analysis. Includes narrative structures, pragmatics and sign theory.

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4Y03  TOPICS IN 20TH-CENTURY FRENCH LITERATURE
Previous topics include: Women's Writing, The Essay, Gay and Lesbian Novel in France. Consult the Department concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2206

FRENCH 4Y03 may be repeated, if on a different topic, to a total of six units.

GENERAL TECHNOLOGY

SEE TECHNOLOGY, GENERAL TECHNOLOGY

GEOGRAPHY AND EARTH SCIENCES

WEB ADDRESS: http://www.science.mcmaster.ca/geo/
General Science Building, Room 206
Ext. 24535

Faculty as of January 15, 2008
Director
Pavlos S. Kanaroglou
Associate Director
Richard S. Harris
Distinguished University Professor
**Professors**

- Vera Chouinard/B.A. (Western Ontario), M.A. (Toronto), Ph.D. (McMaster)
- Alan P. Dickin/M.A. (Cambridge), D.Phil. (Oxford)
- Susan J. Elliott/M.A., Ph.D. (McMaster)
- Carolyn H. Eyles/B.Sc., M.Sc., Ph.D. (East Anglia), M.Sc., Ph.D. (Toronto)
- Richard S. Harris/B.A., (Cambridge), M.A. (Ohio), Ph.D. (Queen's)
- Pavlos S. Kanaroglou/B.Sc., M.A., M.Sc., Ph.D. (McMaster)

**Senior Canada Research Chair**

Kao-Lee Liaw/B.S. (National Taiwan), M.A. (Kansas State), Ph.D. (Clark)

**Associate Professors**

- W. Jack Rink/B.Sc., Ph.D. (Florida State)

**Assistant Professor**

- William A. Morris/B.S., Ph.D. (Leeds, M.Sc., Ph.D. (Open University)

**Associate Members**

- Walter Peace/B.A., M.A., Ph.D. (McMaster)
- J. Michael Waddington/M.Sc., Ph.D. (Yokohama)
- Joe Boyce/B.S., M.Sc., Ph.D. (Toronto)
- Antonio Paez/B.S., M.Sc., Ph.D. (Tohoku)
- Altaf Arain/B.E. (Pakistan), M.S., Ph.D. (Arizona)
- Susan J. Elliott/M.A., Ph.D. (McMaster)
- Bruce Newbold/B.A., Ph.D. (McMaster)
- Pavlos S. Kanaroglou/B.Sc., M.A., M.Sc., Ph.D. (McMaster)
- Paulin Coulibaly/B.Sc., M.A.Sc., M.Sc., Ph.D. (Laval)
- Joe Boyce/M.Sc., Ph.D. (Toronto)

**EARTH SCIENCES Geography**

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**School Notes:**

1. The Honours Earth and Environmental Sciences programs allow students to select a specialist stream in geochemistry (formerly biogeochemistry), geosciences or hydrosiences at the end of Level II. Specialist streams aim to fulfill the academic requirements for professional registration of Geoscientists in Ontario. Students should seek academic advice from the School during March counselling in Level I to ensure that their course choices are appropriate.
2. Course that are exclusively GEOG are considered non-science.
3. Students are advised that not all courses will be offered in every year.

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**Courses**

**If no prerequisite is listed, the course is open.**

**EARTH SC 1G03 EARTH AND THE ENVIRONMENT**

An introduction to environmental geology and geomorphology through study of the processes that form the earth and its surface features. A mandatory one day field trip will be held.

Two lectures, one tutorial, one lab (two hours); one term

Cross-list: ENVIR SC 1G03
EARTH SC 2B03  
**SOILS AND THE ENVIRONMENT**

An introduction to the physical, chemical and biological properties of soil. Application to environmental and land use impacts.

Two lectures, one lab (three hours); one term
Prerequisite: One of ENVR SC 1A03, 1B03, 1G03, ISCI 1A24
Cross-list: ENVIR SC 2B03
Antirequisite: GEO 2B03

EARTH SC 2C03  
**SURFACE CLIMATE PROCESSES AND ENVIRONMENTAL INTERACTION**

The surface heat and water balance of natural and human-modified landscapes. Emphasis on interactions of people and the biosphere with climate.

Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24
Cross-list: ENVIR SC 2C03
Antirequisite: GEO 2C03

EARTH SC 2E03  
**EARTH HISTORY**

Geological evolution of the Earth and palaeontological evidence for the evolution of marine life, with emphasis on the geological history of North America.

Two lectures, one lab (three hours); one term
Prerequisite: ENVIR SC 1G03 or ISCI 1A24
Cross-list: ENVIR SC 2E03
Antirequisite: GEO 2E03

EARTH SC 2E13  
**INTRODUCTION TO ENVIRONMENTAL ISSUES**

An introduction to issues, perspectives and models in environmental studies at local, regional, national and international scales.

Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 1A03, 1B03, 1G03, GEO 1H3, 1H3, GEOG 1HA3, 1H3, ISCI 1A24
Cross-list: GEOG 2E13
Antirequisite: GEO 2A03

EARTH SC 2G03  
**EARTH SURFACE PROCESSES**

An examination of the many dynamic processes that shape the face of the earth, including fluvial, eolian, coastal; mass wasting, karst and weathering processes.

Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 1A03, 1G03, ISCI 1A24
Cross-list: ENVIR SC 2G03
Antirequisite: GEO 2G03

EARTH SC 2G13  
**INTRODUCTION TO GIS**

Introduction to the principles and techniques underlying the use of Geographic information systems (GIS) for capturing and visualizing geographically referenced information. Databases, models and cartographic principles are also introduced emphasizing the production of effective thematic maps using GIS software.

Two lectures, one lab (two hours); one term
Prerequisite: One of MATH 1AA3, 1B03, 1D03, SOC SCI 2J03, STATS 1CC3; and one of ENVIR SC 1A03, 1B03, 1G03
Prerequisite (Beginning 2009-2010): One of ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1D03, ISCI 1A24
Cross-list: GEOG 2G13
Antirequisite: GEO 2I03

EARTH SC 2G3  
**NATURAL DISASTERS**

A study of natural processes including plate tectonics, earthquakes, volcanoes, landslides, river erosion and climate change and their impacts on human populations.

Three lectures; one term
Prerequisite: Registration in Level II or above
Antirequisite: GEO 2G3

EARTH SC 2K03  
**OPTICAL CRYSTALLOGRAPHY AND MINERALOGY**

Introduction to crystallography, optical theory, and the polarizing microscope. Identification of minerals in igneous and sedimentary rocks and discussion of their structure and chemistry.

Two lectures, one lab (three hours); one term
Prerequisite: ENVIR SC 1G03 or ISCI 1A24
Antirequisite: GEO 2K03

EARTH SC 2M3  
**GEMSTONES: ORIGINS AND CHARACTERISTICS**

An examination of gemstones focusing on their geologic origin, mineralogy, colour, chemistry, economic value and historical significance.

Three lectures; one term
Prerequisite: Registration in Level II or above
Antirequisite: GEO 2M3

EARTH SC 2Q03  
**PHYSICAL HYDROLOGY: SURFACE**

Hydrological processes including precipitation, snowmelt, slope runoff, streamflow and hydrological data analysis.

Two lectures, one lab (two hours); one term
Prerequisite: One of MATH 1AA3, 1B03, 1D03, SOC SCI 2J03, STATS 1CC3; and one of ENVIR SC 1A03, 1B03, 1G03
Prerequisite (Beginning 2009-2010): One of ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1D03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03; and one of ENVIR SC 1A03, 1B03, 1G03
Cross-list: ENVIR SC 2Q03
Antirequisite: GEO 2Q03

EARTH SC 2W03  
**WATER AND THE ENVIRONMENT**

Selected environmental issues related to water, including floods and droughts, irrigation, effects of water management projects and pollution. Examples from Canada and the world.

Three lectures; one term
Prerequisite: Registration in Level II or above
Antirequisite: GEO 2W03

EARTH SC 3A03  
**GEOSCIENCE EXPLORERS AND ADVENTURERS**

An examination of the discoveries made by geoscience explorers of modern times including those made on the moon and mars, in the deep and shallow seas, and in the landscapes inhabited by the earliest life forms, dinosaurs and the first humans.

Three lectures; one term
Prerequisite: Registration in Level III or above
Antirequisite: GEO 3A03

EARTH SC 3C03  
**EARTH'S CHANGING CLIMATE**

The earth’s climatic history including natural causes of past climate change and human influences on climate will be explored.

Three lectures; one term
Prerequisite: Registration in Level III or above
Antirequisite: GEO 3D03

EARTH SC 3D03  
**GEOARCHAEOLOGY OF THE UNDERWATER REALM**

Methods in underwater exploration; geochronological record of human interaction with the marine environment and the effects of climate and sea level changes.

Three lectures; one term
Prerequisite: Registration in Level III or above
Antirequisite: GEO 3D03

EARTH SC 3E03  
**SEDIMENTARY ENVIRONMENTS**

Sedimentary processes, stratigraphy and depositional environments of clastic and carbonate systems.

Two lectures; one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03
Cross-list: ENVIR SC 3E03
Antirequisite: GEO 3E03

EARTH SC 3F03  
**FIELD CAMP**

A field camp to introduce students to field equipment and methodologies used by earth and environmental scientists. Most of this course occurs outside the regular academic term, usually the two weeks preceding the start of term in September; details and applications are available in March.

Students enrolling in this course must pay both the incidental fees as prescribed by the School and the regular tuition fees.

Prerequisite: One of MATH 1AA3, 1B03, 1D03, SOC SCI 2J03, STATS 1CC3; and one of ENVIR SC 1A03, 1B03, 1G03
Prerequisite (Beginning 2009-2010): One of ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1D03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03; and registration in Level III or above
Cross-list: ENVIR SC 3F03
Antirequisite: GEO 3F03

EARTH SC 3G13  
**ADVANCED RASTER GIS**

Advanced treatment of geographic information systems (GIS) focusing on raster data models and techniques. Real-world problem solving emphasizing site selection and environmental applications. Topics include multi-criteria evaluation, terrain mapping and analysis, 3D visualization, spatial interpolation and watershed analysis.

Two lectures, one lab (two hours); one term
Prerequisite: A minimum grade of C+ in one of EARTH SC 2G13, ENVIR SC 2G13
Cross-list: ENVIR SC 3G13, GEOG 3G13
Antirequisite: GEO 4I03
EARTH SC 3IN3 INTERNSHIP IN EARTH AND ENVIRONMENTAL SCIENCES
The integration of academic learning with an employment or a volunteer experience, providing students the opportunity to explore careers and develop linkages between classroom knowledge and professional practice. Students are responsible to arrange a suitable internship and agreement of the supervisor.

This course is evaluated on a Pass/Fail basis.

Normally, students complete 130 hours of academic work through the duration of the employment or volunteer experience.

Prerequisite: SCIENCE 2C06, and registration in Level III or above of an Honours Earth and Environmental Sciences program; and permission of the internship coordinator

Antirequisite: GEO 3IN3

Note: Students participating in this course must be authorized to work in Canada (International students must provide proof of work authorization permit). Students intending to enrol in this course must submit an application to the internship coordinator two months prior to registration. Application forms are available from the School of Geography and Earth Sciences main office.

EARTH SC 3J03 CLIMATE CHANGE AND ECOSYSTEM IMPACTS
Past, present and future climate change is examined in terms of the underlying physical and global biogeochemical processes. The Kyoto Protocol and impacts of climate change on ecosystems are examined.

Three lectures; one term

Prerequisite: One of BIOLOGY 2FC3, EARTH SC 2B03, 2C03, ENVIR SC 2B03, 2C03, GEO 2B03, 2C03

Cross-list: ENVIR SC 3J03

Antirequisite: GEO 3J03

EARTH SC 3K03 PETROLOGY
Introduction to igneous and metamorphic petrology, including thin section examination of rock suites, use of phase diagrams in petrology, and discussion of petrogenesis.

Two lectures, one lab (three hours); one term

Prerequisite: EARTH SC 2K03 or GEO 2K03

Antirequisite: GEO 3K03

EARTH SC 3L03 PHYSICAL AND CHEMICAL PROCESSES IN FRESHWATER ENVIRONMENTS
A multidisciplinary course emphasizing the interactions of chemical, physical, geological and biological factors in controlling the chemical distribution, composition and structure of freshwater systems. A mandatory weekend field trip will be held in September. Students enrolling in this course must pay both the incidental fees as prescribed by the School and regular tuition fees.

Two lectures, one lab (four hours); one term

Prerequisite: One of EARTH SC 2Q03, ENVIR SC 2Q03, GEO 2Q03; and one of EARTH SC 2E03, 2G03, 2W03, ENVIR SC 2E03, 2G03, 2W03, GEO 2E03, 2G03, 2W03; and permission of the School of Geography and Earth Sciences. Application must be received by March 31st of the academic year prior to registration.

Cross-list: ENVIR SC 3L03

Antirequisite: GEO 3L03, 4L03

Enrolment is limited.

EARTH SC 3Q03 ORGANIC CONTAMINANTS IN THE ENVIRONMENT
Primary factors controlling the distribution, transport and fate of organic compounds in the environment. Topics include sources, partitioning processes (sorption, volatilization, dissolution), transport, degradation (biotic, abiotic) and analytical techniques.

Two lectures, one lab (three hours); one term

Prerequisite: One of CHEM BIO 2P03, EARTH SC 2Q03, ENVIR SC 3Q03, GEO 2Q03; or registration in an Honours Chemistry program

Cross-list: ENVIR SC 3Q03

Antirequisite: GEO 3Q03

EARTH SC 3P03 ENVIRONMENTAL PALEONTOLOGY
Paleontology as a paleoenvironmental indicator; important fossil groups, paleoecology and taphonomy will be emphasized.

Two lectures, one lab (three hours); one term

Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03

Antirequisite: GEO 3P03

EARTH SC 3Q03 ENVIRONMENTAL RECONSTRUCTION USING STABLE ISOTOPES
Principles of stable isotopic geochemistry and its application to modern and fossil environmental reconstructions. Topics include isotope stratigraphy and its application to palaeoclimatology, palaeoceanography and palaeoecology.

Two lectures, one lab (three hours); one term

Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03; and one of EARTH SC 2Q03, ENVIR SC 2Q03, GEO 2Q03

Cross-list: ENVIR SC 3Q03

Antirequisite: GEO 3Q03


EARTH SC 3RD3 RESEARCH DESIGN AND DISSEMINATION IN EARTH AND ENVIRONMENTAL SCIENCES
Review of approaches to the formulation of research questions, and to the gathering and interpretation of evidence, using a variety of environmental and earth sciences-based topics. The course includes the formulation of a research proposal and development skills in the communication of research results.

Two lectures, one lab (two hours); one term

Prerequisite: Registration in Level III or above of an Honours B.Sc. program in the School of Geography and Earth Sciences

Antirequisite: GEO 3RD3, GEOG 3MR3

EARTH SC 3SR3 REMOTE SENSING
Aerial photography, passive and active satellite direction systems. Image processing and interpretation procedures. Application to resource exploration and environmental management.

Two lectures, one lab (two hours); one term

Prerequisite: One of EARTH SC 2G13, ENVIR SC 2G13, GEO 203, GEOG 2G13

Cross-list: ENVIR SC 3SR3, GEOG 3SR3

Antirequisite: GEO 3Y03

EARTH SC 3U03 ENVIRONMENTAL SYSTEMS
Use of simple numerical models applied to solving environmental problems related to anthropogenic perturbations. Introduction to STELLA numerical simulator, statement of the problem and "what if" scenarios.

One lecture (three hours); one term

Prerequisite: One of ISCI 1A24, MATH 1A03, 1LS3; and registration in Level II or above of an Environmental and Earth Sciences program, Level III or above of an Honours program in the Faculty of Science or Level III or above of an Engineering program

Cross-list: ENVIR SC 3U03

Antirequisite: CIV ENG 2J04, GEO 3U03

EARTH SC 3V03 ENVIRONMENTAL GEOPHYSICS
Introduction to principles and applications of geophysics in groundwater and environmental investigations. Practical demonstrations in magnetics, gravity, shallow seismic, radar, borehole logging, surface EM and electrical methods.

Two lectures, one lab (three hours); one term

Prerequisite: ISCI 1A24, ENVIR SC 1G03; and PHYSICS 1B03 or 1L03

Antirequisite: GEO 3V03

EARTH SC 3W03 PHYSICAL HYDROGEOLOGY
Mechanisms and processes of water movement in the subsurface including the saturated zone (groundwater) and the unsaturated zone (soil water).

Two lectures, one lab (three hours); one term

Prerequisite: One of EARTH SC 2B03, 2G03, 2W03, ENVIR SC 2B03, 2G03, 2W03, GEO 2B03, 2G03, 2W03; and one of MATH 1A03, 1B03, 1D03, 1K03, 1M03, 1N03

Prerequisite (Beginning 2009-2010): One of EARTH SC 2B03, 2G03, 2W03, ENVIR SC 2B03, 2G03, 2W03, GEO 2B03, 2G03, 2W03; and one of ISCI 1A24, MATH 1A03, 1B03, 1D03, 1K03, 1L03, 1M03, 1N03

Cross-list: ENVIR SC 3W03

Antirequisite: GEO 3W03

EARTH SC 3Z03 STRUCTURAL GEOLOGY
Introduction to mapping and geometric description of geologic structures and analysis of stress and strain in the subsurface.

Two lectures, one lab (three hours); one term

Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03

Antirequisite: GEO 3Z03

EARTH SC 4B03 WATERSHED ECOHYDROLOGY
A course that emphasizes a watershed ecosystems approach to interactions of hydrological, ecological and bioecological processes in the study of the natural ecohydrological function and response to disturbance of stream, riparian and wetland ecosystems. A mandatory field trip will occur. One lecture (two hours), one lab (three hours); one term

Prerequisite: One of EARTH SC 2W03, 3J03, ENVIR SC 2W03, 3J03, GEO 2W03, 3B03, 3J03

Cross-list: ENVIR SC 4B03

Antirequisite: GEO 4B03

GEOGRAPHY AND EARTH SCIENCES 243
EARTH SC 4C03 ADVANCED PHYSICAL CLIMATOLOGY
This course develops energy and mass exchange processes in the near surface layer, the lower atmosphere and at the earth-atmosphere interface. Sensitivities of these processes to environmental change and feedback mechanisms are examined. Seminars and individual presentations are emphasized.
One lecture (two hours), one lab (two hours); one term
Prerequisite: One of EARTH SC 2C03, 2W03, ENVIR SC 2C03, 2W03, GEO 2C03, 2W03
Cross-list: ENVIR SC 4C03
Antirequisite: GEO 4C03

EARTH SC 4E03 COASTAL ENVIRONMENTS
Coastal systems and their response to sea level change with an emphasis on the Holocene. A mandatory local field trip to collect data followed by laboratory analysis will be included.
Three lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3E03, ENVIR SC 3E03, GEO 3E03
Antirequisite: GEO 4E03

EARTH SC 4E13 ENVIRONMENTAL ASSESSMENT
Technical and policy issues involved in the production and the appraisal of environmental impact assessments.
Two lectures, one lab; one term
Prerequisite: One of EARTH SC 2E13, GEO 2A03, GEOG 2E13; or registration in Honours Biology, a Civil Engineering program, an Engineering and Society program, an Honoured Integrated Science program or an Honours program in the School of Geography and Earth Sciences
Cross-list: ENVIR SC 4E13, GEOG 4E13
Antirequisite: GEO 4A03

EARTH SC 4F03 FIELD COURSE
Detailed study of a particular aspect of physical geography, earth sciences or environmental science in the field. Held immediately after the end of Level III or prior to Fall registration in Level IV; 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 institutional fees, as prescribed by the School, and the regular tuition fees.
Prerequisite: Registration in Level III or above of an Honours B.Sc. program in the School of Geography and Earth Sciences
Antirequisite: GEO 4F03

EARTH SC 4F03 TOPICS OF FIELD RESEARCH
Selected topics in field research in the Earth Sciences. Topics may vary from year to year, and the timing of the course will depend on the offerings. Details will be posted in the School. Students enrolling in this course must pay both the incidental fees, as prescribed by the School, and the regular tuition fees.
Prerequisite: Registration in Level III or above of an Honours B.Sc. program and permission of the instructor
Antirequisite: GEO 4F03
Note: EARTH SC 4F03 may be repeated, if on a different topic, with the permission of the School of Geography and Earth Sciences.

EARTH SC 4G03 GLACIAL SEDIMENTS AND ENVIRONMENTS
The development and movement of glaciers, glacial depositional processes and sedimentary successions in terrestrial, lacustrine and marine environments.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, 2G03, ENVIR SC 2E03, 2G03, GEO 2E03, 2G03
Cross-list: ENVIR SC 4G03
Antirequisite: GEO 4G03

EARTH SC 4G13 ADVANCED VECTOR GIS
Advanced treatment of GIS focusing on vector data models and techniques. Real-world problem solving emphasizes business and transportation applications. Global positioning system data collection and processing are addressed, along with basic programming using Visual Basic for Applications.
Two lectures, one lab (two hours); one term
Prerequisite: A minimum grade of C+ in one of EARTH SC 2G13, ENVIR SC 2G13, GEO 2G03, GEOG 2G13
Cross-list: ENVIR SC 4G13, GEOG 4G13
Antirequisite: GEO 3I03

EARTH SC 4IN3 THESS INTERNSHIP
The integration of academic learning allowing the student to explore careers and the development of linkages between classroom knowledge and professional practice. Students are responsible to arrange a suitable internship and agreement of the supervisor. Normally, completed prior to EARTH SC 4MT6.
This course is evaluated on a Pass/Fail basis. Normally, students complete 130 hours of academic work through the duration of the employment or volunteer experience.
Prerequisite: SCIENCE 2000; and registration in Level III or above of an Honours Earth and Environmental Sciences program; and permission of the internship coordinator
Antirequisite: GEO 4IN3
Note: Students participating in this course must be authorized to work in Canada (International students must provide proof of work authorization permit). Students intending to enrol in this course must submit an application to the internship coordinator by March 1 of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office.

EARTH SC 4J03 BASIN ANALYSIS
Focus on the evolution of sedimentary basins in a global context, based upon their structural and stratigraphic styles. Factors that affect basin evolution such as sea-level change, sediment supply and climate will be discussed. A review of the principles of sequence stratigraphy and its application to geologists, mining and petroleum exploration will be explored.
Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3E03, ENVIR SC 3E03, GEO 3E03; and EARTH SC 3Z03 or GEO 3Z03
Antirequisite: GEO 4J03

EARTH SC 4L03 ENVIRONMENTAL MICROBIOLOGY
Bacteria are found in almost every environment and are often profoundly important for key geochemical processes. The geomicrobiology of ancient and modern environments, the roles of bacteria in important elemental cycles and the emerging tools to characterize such interactions will be examined.
Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3L03, 3O03, ENVIR SC 3L03, 3O03, GEO 3L03, 3O03 or registration in an Honours Biology program; and permission of the School of Geography and Earth Sciences
Cross-list: ENVIR SC 4L03

EARTH SC 4M03 REVIEW PAPER
The student will conduct a comprehensive review of a selected topic. The review paper is due before the final examination period.
One seminar (two hours); one term
Prerequisite: One of EARTH SC 3D03, GEO 3R03, GEOG 3MR3; and registration in Level IV of an Honours program in the School of Geography and Earth Sciences
Cross-list: GEOG 4M03
Antirequisite: EARTH SC 4MT6, GEO 4CC3, 4R06

EARTH SC 4MT6 SENIOR THESIS
Students will select research topics and prepare a thesis either individually or in teams.
One seminar (two hours); two terms
Prerequisite: Registration in Level IV or above in an Honours program in the School of Geography and Earth Sciences; and a CA of 7.5 or higher; and permission of the Instructor. Students intending to enrol in this course must submit an application to the Instructor by the end of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office after February 1. Students will be informed of acceptance of their application on March 15 subject to fulfillment of the CA requirement.
Cross-list: GEOG 4MT6
Antirequisite: EARTH SC 4MR3, GEO 4CC3, 4R06, GEOG 4MR3
Enrollment is limited.

EARTH SC 4Q03 ENVIRONMENTAL ISOTOPE GEOCHEMISTRY
Application of isotopic analysis to answer current questions in earth sciences, geochemistry, hydrogeology and microbiology. Topics include analytical techniques, principles of isotopic fractionation and applications of light and transition metal isotopes to environmental systems.
Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3Q03, ENVIR SC 3Q03, GEO 3Q03
Cross-list: ENVIR SC 4Q03
Antirequisite: GEO 4Q03

EARTH SC 4Q03 SEDIMENTARY GEOCHRONOLOGY
Geological age determination techniques for the near-surface sedimentary record focusing on the last five million years of earth history. Geochemical perspectives on the fundamentals of radioactive decay and radiation effects in datable minerals.
Two lectures, one tutorial; one term
Prerequisite: One of EARTH SC 3Q03, ENVIR SC 3Q03, GEO 3Q03
Antirequisite: GEO 4Q03
EARTH SC 4T03 PLATE TECTONICS AND ORE DEPOSITS
Synthesis of plate tectonics, with application to crustal evolution and genesis of ore deposits.
Two lectures, one lab (two hours); one term
Prerequisite: EARTH SC 2E03 or ENVIR SC 2E03, and credit or registration in EARTH SC 3K03, or GEO 2E03, 3K03
Antirequisite: GEO 4T03

EARTH SC 4W03 HYDROLOGIC MODELLING
Principles of numerical modelling and examination of selected hydrologic models including deterministic, conceptual and statistical models.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2W03, 3W03, ENVIR SC 2W03, 3W03, GEO 2W03, 3W03
Cross-list: ENVIR SC 4W03
Antirequisite: GEO 4W03

EARTH SC 4WV3 CONTAMINANT HYDROGEOLOGY
Physical and chemical aspects of the fate and transport of contaminants in soils and groundwater, including multiphase flow.
Two lectures, one lab (two hours); one term
Prerequisite: Credit or registration in EARTH SC 3W03 or ENVIR SC 3W03; or GEOC 3W03
Cross-list: ENVIR SC 4WV3
Antirequisite: GEO 4WV3

ENVIRONMENTAL SCIENCE...
Courses If no prerequisite is listed, the course is open.

ENVIR SC 1A03 ATMOSPHERE AND HYDROSPHERE
An introduction to the processes involved in weather, climate and surface and subsurface waters with a focus on the human impacts on these processes.
Two lectures, one tutorial, one lab (one hour); second term

ENVIR SC 1B03 THE LIVING ENVIRONMENT
Characteristics of the biosphere and introduction to major environmental processes and issues.
Two lectures, one tutorial, one lab (two hours); second term
Prerequisite: Credit or registration in SCIENCE 1A00

ENVIR SC 1G03 EARTH AND THE ENVIRONMENT
An introduction to environmental geology and geomorphology through study of the processes that form the earth and its surface features. A mandatory one day field trip will be held.
Two lectures, one tutorial, one lab (two hours); first term

ENVIR SC 2B03 SOILS AND THE ENVIRONMENT
An introduction to the physical, chemical and biological properties of soil. Application to environmental and land use impacts.
Two lectures, one lab (three hours); one term
Prerequisite: One of ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24
Cross-list: EARTH SC 2B03
Antirequisite: GEO 2B03

ENVIR SC 2C03 SURFACE CLIMATE PROCESSES AND ENVIRONMENTAL INTERACTION
The surface heat and water balance of natural and human-modified landscapes. Emphasis on interactions of people and the biosphere with climate.
Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24
Cross-list: EARTH SC 2C03
Antirequisite: GEO 2C03

ENVIR SC 2E03 EARTH HISTORY
Geological evolution of the Earth and paleontological evidence for the evolution of marine life, with emphasis on the geological history of North America.
Two lectures, one lab (three hours); one term
Prerequisite: ENVIR SC 1G03 or ISCI 1A24
Cross-list: EARTH SC 2E03
Antirequisite: GEO 2E03

ENVIR SC 2G03 EARTH SURFACE PROCESSES
An examination of the many dynamic processes that shape the face of the earth, including fluvial, eolian, coastal, mass wasting, karst and weathering processes.
Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 1A03, 1G03, ISCI 1A24
Cross-list: EARTH SC 2G03
Antirequisite: GEO 2G03

ENVIR SC 2G13 INTRODUCTION TO GIS
Introduction to the principles and techniques underlying the use of Geographic information systems (GIS) for capturing and visualizing geographically referenced information. Databases, models and cartographic principles are also introduced emphasizing the production of effective thematic maps using GIS software.
Two lectures, one lab (two hours); one term
Prerequisite: One of MATH 1A03, 1B03, 1G03, SOC SCI 2J03, STATS 1CC3
Prerequisite (Beginning 2009-2010): One of ISCI 1A24, MATH 1A03, 1A33, 1BS3, SOC SCI 2J03, STATS 1CC3, 2B03
Cross-list: EARTH SC 2G13, GEOG 2G13
Antirequisite: GEO 2I03

ENVIR SC 2MB3 STATISTICAL ANALYSIS
An introduction to the nature of geographic data and organization, descriptive spatial statistics and inferential statistics.
Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 1A03, 1B03, 1G03, GEO 1HS3, 1H33, GEOG 1HA3, 1HB3, ISCI 1A24
Cross-list: GEOG 2MB3
Antirequisite: CMST 2A03, ECON 2B03, GEO 3S03
Not open to students with credit or registration in PSYCH 2RA3.

ENVIR SC 2Q03 INTRODUCTION TO ENVIRONMENTAL GEOCHEMISTRY
Chemical principles applied to the understanding of processes in aquatic and environmental systems.
Two lectures, one lab (three hours); one term
Prerequisite: CHEM 1A03 or ISCI 1A24
Cross-list: EARTH SC 2Q03
Antirequisite: CHEM BIO 2P03; CHEM 2PA3, 2PB3, 2PD3, 2R03, GEO 2Q03

ENVIR SC 2W03 PHYSICAL HYDROLOGY: SURFACE
Hydrological processes including precipitation, snowmelt, slope runoff, streamflow and hydrological data analysis.
Two lectures, one lab (two hours); one term
Prerequisite: One of MATH 1A03, 1B03, 1G03, SOC SCI 2J03, STATS 1CC3; and one of ENVIR SC 1A03, 1B03, 1G03
Prerequisite (Beginning 2009-2010): One of MATH 1A03, 1A33, 1BS3, SOC SCI 2J03, STATS 1CC3, 2B03, and one of ENVIR SC 1A03, 1B03, 1G03; or ISCI 1A24
Cross-list: EARTH SC 2W03
Antirequisite: GEO 2W03

ENVIR SC 3C03 EARTH'S CHANGING CLIMATE
The earth's climatic history including natural causes of past climate change and human influences on climate will be explored.
Three lectures; one term
Prerequisite: One of GEO 1HS3, 1H33, GEOG 1HA3, 1HB3, ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24, and registration in Level III or above
Cross-list: EARTH SC 3C03
Antirequisite: GEO 3C03

ENVIR SC 3E03 SEDIMENTARY ENVIRONMENTS
Sedimentary processes, stratigraphy and depositional environments of clastic and carbonate systems.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03
Cross-list: EARTH SC 3E03
Antirequisite: GEO 3E03

ENVIR SC 3EP3 ENVIRONMENTAL POLICY AND PLANNING
A theoretical and practical exploration of environmental policy, planning and decision-making, as well as the relationships between science, society, and policy design.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, GEO 2A03, GEOG 2E03; or registration in an Honours Biology, an Engineering and Society program or an Honours Integrated Science program or an Honours program in the School of Geography and Earth Sciences
Cross-list: GEOG 3EP3
Antirequisite: GEO 3A03
ENVR SC 3G13  ADVANCED RASTER GIS
Advanced treatment of geographic information systems (GIS) focusing on raster data models and techniques. Real-world problem solving emphasizes site selection and environmental applications. Topics include multi-criteria evaluation, terrain mapping and analysis, 3D visualization, spatial interpolation and watershed analysis.
Two lectures, one lab (two hours); one term
Prerequisite: A minimum grade of C+ in one of EARTH SC 2G13, ENVIR SC 2G13, GEO 2G03, GEOG 2G13
Cross-list: EARTH SC 3G13, GEOG 3G13
Antirequisite: GEO 4G03

ENVR SC 3J03  CLIMATE CHANGE AND ECOSYSTEM IMPACTS
Past, present and future climate change is examined in terms of the underlying physical and global biogeochemical processes. The Kyoto Protocol and impacts of climate change on ecosystems are examined.
Three lectures; one term
Prerequisite: One of BIOLOGY 2F03, EARTH SC 2B03, 2C03, ENVIR SC 2B03, 2C03, GEO 2B03, 2C03
Cross-list: EARTH SC 3J03
Antirequisite: GEO 3J03

ENVR SC 3L03  PHYSICAL AND CHEMICAL PROCESSES IN FRESHWATER ENVIRONMENTS
A multidisciplinary course emphasizing the interactions of chemical, physical, geological and biological factors in controlling the chemical distribution, composition and structure of freshwater systems. A mandatory weekend field trip will be held in September. Students enrolling in this course must pay both the incidental fees as prescribed by the School and regular tuition fees.
Two lectures, one lab (four hours); one term
Prerequisite: One of EARTH SC 2B03, ENVIR SC 2Q03, GEO 2B03; and one of EARTH SC 2E03, 2G03, 2W03, ENVIR SC 2E03, 2G03, 2W03; and permission of the School of Geography and Earth Sciences. Application must be received by March 31st of the academic year prior to registration.
Cross-list: EARTH SC 3L03
Antirequisite: GEO 3L03, 4L03
Enrolment is limited.

ENVR SC 3003  ORGANIC CONTAMINANTS IN THE ENVIRONMENT
Primary factors controlling the distribution, transport and fate of organic compounds in the environment. Topics include sources, partitioning processes (sorption, volatilization, dissolution), transport, degradation (biotic, abiotic), and analytical techniques.
Two lectures, one lab (three hours); one term
Prerequisite: One of CHEM BIO 2P03, EARTH SC 2Q03, ENVIR SC 2Q03, GEO 2Q03 or registration in an Honours Chemistry program
Cross-list: EARTH SC 3003
Antirequisite: GEO 3003

ENVR SC 3Q03  ENVIRONMENTAL RECONSTRUCTION USING STABLE ISOTOPES
Principles of stable isotope geochemistry and its application to modern and fossil environmental reconstructions. Topics include isotope stratigraphy and its application to palaeoclimatology, palaeoceanography and palaeoecology.
Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03; and one of EARTH SC 2G03, ENVIR SC 2G03, GEO 2G03
Cross-list: EARTH SC 3Q03
Antirequisite: GEO 3Q03

ENVR SC 3SA3  APPLIED SPATIAL STATISTICS
Advanced treatment of geographic data and organization, descriptive spatial statistics and inferential statistics.
Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 2MB3, GEO 3S03, GEOG 2MA3, STATS 1CC3, 2B03, SOC SCI 2J03
Cross-list: GEOG 3SA3
Antirequisite: GEO 4S03

ENVR SC 3SR3  REMOTE SENSING
Aerial photography, Passive and active satellite direction systems. Image processing and interpretation procedures. Application to resource exploration and environmental management.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2G13, ENVIR SC 2G13, GEO 2I03, GEOG 2G13
Cross-list: EARTH SC 3SR3, GEOG 3SR3
Antirequisite: GEO 3Y03

ENVR SC 3003  ENVIRONMENTAL SYSTEMS
Use of simple numerical models applied to solving environmental problems related to anthropogenic perturbations. Introduction to STELLA numerical simulator, statement of the problem and "what if" scenarios. One lecture (three hours); one term
Prerequisite: One of ISCI 1A24, MATH 1A03, 1L3; and registration in Level II or above of an Environmental and Earth Sciences program, Level III or above of an Honours program in the Faculty of Science or Level III or above of an Engineering program
Cross-list: EARTH SC 3003
Antirequisite: CIV ENG 2J04, GEO 3J03

ENVR SC 3W03  PHYSICAL HYDROGEOLOGY
Mechanisms and processes of water movement in the subsurface including the saturated zone (groundwater) and the unsaturated zone (soil water).
Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 2B03, 2G03, 2W03, ENVIR SC 2B03, 2G03, 2W03, GEO 2B03, 2G03, 2W03; and one of MATH 1A03, 1B03, 1D03, 1K03, 1M03, 1N03
Prerequisite (Beginning 2009-2010): One of EARTH SC 2B03, 2G03, 2W03, ENVIR SC 2B03, 2G03, 2W03, GEO 2B03, 2G03, 2W03; and one of ISCI 1A24, MATH 1A03, 1B03, 1K03, 1L3, 1M03, 1N03
Cross-list: EARTH SC 3W03
Antirequisite: GEO 3W03

ENVR SC 4B03  WATERSHED ECOHYDROLOGY
A course that emphasizes a watershed ecosystems approach to interactions of hydrological, ecological and biogeochemical processes in the study of the natural ecohydrological function and response to disturbance of stream, riparian and wetland ecosystems. A mandatory field trip will occur.
One lecture (two hours), one lab (three hours); one term
Prerequisite: One of EARTH SC 2W03, 3J03, ENVIR SC 2W03, 3J03, GEO 2W03, 3J03
Cross-list: EARTH SC 4B03
Antirequisite: GEO 4B03

ENVR SC 4C03  ADVANCED PHYSICAL CLIMATOLOGY
This course develops energy and mass exchange processes in the near surface layer, the lower atmosphere and at the earth-atmosphere interface. Sensitivities of these processes to environmental change and feedback mechanisms are examined. Seminars and individual presentations are emphasized.
One lecture (two hours), one lab (two hours); one term
Prerequisite: One of EARTH SC 2C03, 2W03, ENVIR SC 2C03, 2W03, GEO 2C03, 2W03
Cross-list: EARTH SC 4C03
Antirequisite: GEO 4C03

ENVR SC 4EA3  ENVIRONMENTAL ASSESSMENT
Technical and policy issues involved in the production and the appraisal of environmental impact assessments.
Two lectures, one lab; one term
Prerequisite: One of EARTH SC 2E13, GEO 2A03, GEOG 2E13; or registration in Honours Biology, a Civil Engineering program, an Engineering and Society program, an Honours Integrated Science program or an Honours program in the School of Geography and Earth Sciences
Cross-list: EARTH SC 4EA3, GEOG 4EA3
Antirequisite: GEO 4A03

ENVR SC 4G03  GLACIAL SEDIMENTS AND ENVIRONMENTS
The development and movement of glaciers, glacial depositional processes and sedimentary successions in terrestrial, lacustrine and marine environments.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, 2G03, ENVIR SC 2E03, 2G03, GEO 2E03, 2G03
Cross-list: EARTH SC 4G03
Antirequisite: GEO 3G03, 4G03
ENVR SC 4G13 ADVANCED VECTOR GIS
Advanced treatment of GIS focusing on vector data models and techniques. Real-world problem solving emphasizes business and transportation applications. Global positioning system data collection and processing are addressed, along with basic programming using Visual Basic for Applications. Two lectures, one lab (two hours); one term
Prerequisite: A minimum grade of C+ in one of ENVR SC 2G13, EARTH SC 2G13, GEO 2I03, GEOG 2I03
Cross-list: EARTH SC 4G13, GEOG 4G13
Antirequisite: GEO 3I03

ENVR SC 4H33 ENVIRONMENT AND HEALTH
Models and methods for research and policy on environment and health. One lecture/seminar (three hours); one term
Prerequisite: One of ENVR SC 3E3, GEO 3A03, 3HH3, GEOG 3E3, 3HH3 or permission of the instructor
Cross-list: GEOG 4H33, HEALTHST 4E03
Antirequisite: GEO 4H33

ENVR SC 4L03 ENVIRONMENTAL MICROBIOLOGY AND GEOCHEMISTRY
Bacteria are found in almost every environment and are often profoundly important for key geochemical processes. The geomicrobiology of ancient and modern environments, the roles of bacteria in important elemental cycles and the emerging tools to characterize such interactions will be examined. Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3L03, 3003, ENVR SC 3L03, 3003, GEO 3L03, 3003 or registration in an Honours Biology program; and permission of the instructor
Cross-list: GEOG 4L03, HEALTHST 4E03
Antirequisite: GEO 4L03

ENVR SC 4Q03 ENVIRONMENTAL ISOTOPE GEOCHEMISTRY
Application of isotopic analysis to answer current questions in earth sciences, geochemistry, hydrogeology and microbiology. Topics include analytical techniques, principles of isotopic fractionation and applications of light and transition metal isotopes to environmental systems. Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3Q03, 3003, ENVR SC 3Q03, 3003, GEO 3Q03, 3003 or permission of the instructor
Cross-list: EARTH SC 4Q03
Antirequisite: GEO 4Q03

ENVR SC 4W03 HYDROLOGIC MODELLING
Principles of numerical modelling and examination of selected hydrologic models including deterministic, conceptual and statistical models. Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2W03, 3W03, ENVR SC 2W03, 3W03, GEO 2W03, 3W03
Cross-list: EARTH SC 4W03
Antirequisite: GEO 4W03

ENVR SC 4WW3 CONTAMINANT HYDROGEOLOGY
Physical and chemical aspects of the fate and transport of contaminants in soils and groundwater, including multiphase flow. Two lectures, one lab (two hours); one term
Prerequisite: Credit or registration in EARTH SC 3W03, ENVR SC 3W03; or GEO 3W03
Cross-list: EARTH SC 4WW3
Antirequisite: GEO 4WW3

Courses If no prerequisite is listed, the course is open.

GEOG 1H3 HUMAN GEOGRAPHIES: SOCIETY & CULTURE
Introduction to human-environment relations and spatial analysis with special emphasis on urban, social, health and cultural environments. Two lectures, one lab (one hour); one term
Antirequisite: GEO 1H3

GEOG 1HB3 HUMAN GEOGRAPHIES: CITY & ECONOMY
Basic principles in spatial analysis and location theory applied to the changing urban, economic and environmental patterns of development and urbanization at the local, national and international scale. Two lectures, one lab (one hour); one term
Antirequisite: GEO 1H3

GEOG 2E13 INTRODUCTION TO ENVIRONMENTAL ISSUES
An introduction to issues, perspectives and models in environmental studies at local, regional, national and international scales. Two lectures, one lab (two hours); one term
Prerequisite: One of ENVR SC 1A03, 1B03, 1G03, GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24
Cross-list: EARTH SC 2E13
Antirequisite: GEO 2A03

GEOG 2G13 INTRODUCTION TO GIS
Introduction to the principles and techniques underlying the use of Geographic information systems (GIS) for capturing and visualizing geographically referenced information. Databases, models and cartographic principles are also introduced emphasizing the production of effective thematic maps using GIS software. Two lectures, one lab (two hours); one term
Prerequisite: One of MATH 1A03, 1B03, 1D03, SOC SCI 2J03, STATS 1CC3
Prerequisites (Beginning 2009-2010): One of ISCI 1A24, MATH 1A03, 1A3, 1B03, 1D03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03
Cross-list: ENVR SC 2G13, EARTH SC 2G13
Antirequisite: GEO 2I03

GEOG 2HH3 GEOGRAPHIES OF DEATH: INTRODUCING POPULATION AND MEDICAL GEOGRAPHY
Historical and contemporary trends and patterns of mortality and morbidity will be examined using ideas from demography, medicine, ecology and cultural studies, with examples from different parts of the world. Two lectures, one lab (one hour); one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3

GEOG 2L13 INTRODUCTION TO TRANSPORT AND ECONOMIC ACTIVITY
Introduction to the main geographical theories of location, with an emphasis on the role of transportation in shaping the economic landscape. Topics include land use analysis, industrial and service economies, urban systems, and the use of simple models to describe and understand patterns of location. Two lectures, one lab (two hours); one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3
Antirequisite: GEO 2H3

GEOG 2MA3 RESEARCH METHODS IN HUMAN GEOGRAPHY
An introduction to research methods in human geography. Emphasis is placed on the application of various methods to understanding human spatial behaviour. Two lectures, one lab (one hour); one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3
Antirequisite: CMST 2B03, GEO 2HR3, GERONTOL 2C03, HEALTHST 2B03, HLTH AGE 2A06, SOCIOL 2Z03

GEOG 2MB3 STATISTICAL ANALYSIS
An introduction to the nature of geographic data and organization, descriptive spatial statistics and inferential statistics. Two lectures, one lab (two hours); one term
Prerequisite: One of ENVR SC 1A03, 1B03, 1G03, GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24
Cross-list: ENVR SC 2MB3
Antirequisite: CMST 2A03, ECON 2B03 GEO 3S03
Not open to students with credit or registration in PSYCH 2RA3.

GEOG 2RC3 CANADA
The geography of Canada emphasizing the economic and social geography of regions and current development issues. Three lectures; one term
Prerequisite: Registration in Level II or above
Antirequisite: GEO 2HC3

GEOG 2RU3 THE UNITED STATES OF AMERICA
The physical and economic geography of the United States. Three lectures; one term
Prerequisite: Registration in Level II or above
Antirequisite: GEO 2H3

GEOG 2UI3 INTRODUCTION TO URBAN GEOGRAPHY
An introduction to key concepts and perspectives in the study of urbanization, urban systems and city life. Emphasis is placed on North American and European urban geographies. Two lectures, one lab (one hour); one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3
Antirequisite: GEO 2HB3, 2HY3
GEOG 3EE3
ENERGY AND SOCIETY
An introduction to both traditional and alternative sources of energy as they are used in Canada and other contexts. The social, political and economic costs and benefits of different sources of energy will be highlighted.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E13, GEO 2A03, GEOG 2E13
Antirequisite: GEO 3RR3

GEOG 3EP3
ENVIRONMENTAL POLICY AND PLANNING
A theoretical and practical exploration of environmental policy, planning and decision-making, as well as the relationships between science, society, and policy design.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E13, GEO 2A03, GEOG 2E13; or registration in an Honours program in the School of Geography and Earth Sciences
Antirequisite: GEO 3RR3

GEOG 3ER3
ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT
An introduction to the methods and tools of resource management and economics, focusing on the development of resource systems and the environmental implications.
Three lectures; one term
Prerequisite: GEO 1HU3 or GEOG 1HB3
Antirequisite: GEO 3HE3

GEOG 3G13
ADVANCED RASTER GIS
Advanced treatment of geographic information systems (GIS) focusing on raster data models and techniques. Real-world problem solving emphasizes site selection and environmental applications. Topics include multi-criteria evaluation, terrain mapping and analysis, 3D visualization, spatial interpolation and watershed analysis.
Two lectures, one lab (two hours); one term
Prerequisite: A minimum grade of C+ in one of EARTH SC 2G13, ENVIR SC 2G13, GEO 2103, GEOG 2G13
Cross-list: EARTH SC 3RD3, ENVIR SC 3G13
Antirequisite: GEO 4103

GEOG 3HH3
GEOGRAPHY OF HEALTH AND HEALTH CARE
An understanding of traditions in health geography and an exploration of the determinants of health including the social environment, the physical environment and health care services.
Three lectures; one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3
Antirequisite: GEO 3HH3

GEOG 3HP3
POPULATION GROWTH AND AGING
Differential growth of human populations and their changing age and sex structures with an emphasis on birth and death processes. The connections between population structures and processes and various aspects of environments and societies including aging are emphasized.
Three lectures; one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3
Prerequisite (Beginning 2009-2010): GEOG 2H13
Antirequisite: GEO 3HH3

GEOG 3LT3
TRANSPORTATION GEOGRAPHY
Principles and techniques applied to understanding, predicting and optimizing movement for transportation systems at various geographical scales. Problems arising from movement are also discussed.
Two lectures, one lab (two hours); one term
Prerequisite: One of ECON 1A06, 1B03, GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3
Antirequisite: GEO 3HD3

GEOG 3MF3
FIELD STUDY IN HUMAN GEOGRAPHY
Introduction to field research in Human Geography, usually in the Hamilton area.
Two lectures (two hours); one term
Prerequisite: GEO 2HR3 or GEOG 2MB3; and registration in Level III or above of an Honours program in the School of Geography and Earth Sciences
Antirequisite: GEO 3HF3

GEOG 3MR3
RESEARCH DESIGN AND DISSEMINATION IN HUMAN GEOGRAPHY
Review of approaches to research commonly employed by human geographers; formulation of a research proposal; communication of research results.
Two lectures, one lab (two hours); one term
Prerequisite: Registration in Level III or above of an Honours program in the School of Geography and Earth Sciences
Antirequisite: EARTH SC 3RD3, GEO 3R03

GEOG 3R03
GEOGRAPHY OF JAPAN
Human and physical geography of Japan with emphasis on historical, international, demographic and economic aspects.
One lecture (three hours); one term
Prerequisite: Registration in Level III or above
Antirequisite: GEO 3HJ3

GEOG 3RR3
GEOGRAPHY OF A SELECTED WORLD REGION
The study of an area outside of North America which will include topics in physical and human geography.
Three lectures; one term
Antirequisite: GEO 3HR3

GEOG 3SA3
APPLIED SPATIAL STATISTICS
Advanced treatment of geographic data and organization, descriptive spatial statistics and inferential statistics.
Two lectures, one lab (two hours); one term
Prerequisite: One of ENVIR SC 2MB3, GEO 3S03, GEOG 2MA3, STATS 1C3, 2B03, SOC SCI 2J03
Cross-list: ENVIR SC 3SA3
Antirequisite: GEO 4S03

GEOG 3RR3
REMOTE SENSING
Aerial photography. Passive and active satellite direction systems. Image processing and interpretation procedures. Application to resource exploration and environmental management.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2G13, ENVIR SC 2G13, GEO 2103, GEOG 2G13
Cross-list: EARTH SC 3RR3, ENVIR SC 3RR3
Antirequisite: GEO 3Y03

GEOG 3U3
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
Prerequisite: One of GEO 1HU3, 1HS3, GEOG 1HA3, 1HB3
Prerequisite (Beginning 2009-2010): One of GEO 2HB3, 2HY3, GEOG 2UI3
Antirequisite: GEO 2HD3

GEOG 3UP3
GEOGRAPHY OF PLANNING
A review of historical and contemporary approaches to city and regional planning problems.
One lecture (three hours); one term
Prerequisite: One of GEO 2HA3, 2HB3, 2HY3, GEOG 2L13, 2UI3
Antirequisite: GEO 3HT3

GEOG 3UR3
URBAN RESIDENTIAL GEOGRAPHY
The social geography of North American cities. Topics include commuting, segregation, inner-city gentrification, suburban development. Lectures and seminars (two hours, twice weekly); one term
Prerequisite: GEO 2HD3 or GEOG 2UI3, GEO 2HR3 or GEOG 2MB3 is recommended
Antirequisite: GEO 3HZ3

GEOG 4EA3
ENVIRONMENTAL ASSESSMENT
Technical and policy issues involved in the production and the appraisal of environmental impact assessments.
Two lectures, one lab; one term
Prerequisite: One of EARTH SC 2E13, GEO 2A03, GEOG 2E13; or registration in Honours Biology, an Engineering and Society program, an Honours Integrated Science program or an Honours program in the School of Geography and Earth Sciences
Cross-list: EARTH SC 4EA3, ENVIR SC 4EA3
Antirequisite: GEO 4A03

GEOG 4G13
ADVANCED VECTOR GIS
Advanced treatment of GIS focusing on vector data models and techniques. Real-world problem solving emphasizes business and transportation applications. Global positioning system data collection and processing are addressed, along with basic programming using Visual Basic for Applications.
Two lectures, one lab (two hours); one term
Prerequisite: A minimum grade of C+ in one of EARTH SC 2G13, ENVIR SC 2G13, GEO 2103, GEOG 2G13
Cross-list: EARTH SC 4G13, ENVIR SC 4G13
Antirequisite: GEO 3G13
GEOG 4HC3 PUBLIC AND COMMUNITY HEALTH
Changing types of care provided in the community to groups including the physically and mentally challenged, the elderly, the dying and those with chronic conditions. Emphasis is placed on the geographies of care, spatial location, and access and quality differences across jurisdictions. One lecture (three hours); one term
Prerequisite: GEO 3HH3 or GEOG 3HH3

GEOG 4HD3 GEOGRAPHIES OF DISABILITY
Competing theories on the social and spatial marginalization of persons with disabilities in western countries; contemporary and historical case studies are used to illustrate the medical, social, political and cultural determinants of disability. One lecture (three hours); one term
Prerequisite: One of GEO 2HB3, 2HY3, GEOG 2U13; and one of GEO 3HH3, GEOG 2H13, 3HH3

GEOG 4HH3 ENVIRONMENT AND HEALTH
Models and methods for research and policy on environment and health. One lecture/seminar (three hours); one term
Prerequisite: One of ENVR SC 3EP3, GEO 3A03, 3HH3, GEOG 3EP3, 3HH3; or permission of the instructor
Cross-list: ENVR SC 4HH3, HEALTHST 4M03
Antirequisite: GEO 4HH3, HEALTHST 4E03

GEOG 4HP3 POPULATION DISTRIBUTION AND MIGRATION
Introduction of important theories, models and facts in the fields of population distribution and internal and international migration processes. One lecture (three hours); one term
Prerequisite: One of GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3; and one of COMMERCE 2QA3, ENVR SC 2MB3, GEO 3S03, GEOG 2MA3, HTH SCI 1F03, 2A03, ISCI 1A24, KINESIOL 3C03, MATH 1AA3, 1B03, 1D03, SOC SCI 2J03, STATS 1A03, 1CC3, 2B03; and registration in Level III or above
Prerequisite (Beginning 2009-2010): GEOG 2H13; and one of COMMERCE 2QA3, ENVR SC 2MB3, GEO 3S03, GEOG 2MA3, HTH SCI 1F03, 2A03, ISCI 1A24, KINESIOL 3C03, MATH 1AA3, 1B03, 1D03, SOC SCI 2J03, STATS 1A03, 1CC3, 2B03; and registration in Level III or above
Antirequisite: GEO 3HH3

GEOG 4L33 TRANSPORT POLICY
Policy development at the local, provincial and federal level in Canada and its manifestation in passenger transportation and the movement of goods; emphasis will be placed on the development of transport policy in the ERA of globalization and the rise of multi-modal transportation. One lecture (three hours); one term
Prerequisite: GEO 2HA3 or GEOG 2L13

GEOG 4LT3 TRANSPORTATION SYSTEMS ANALYSIS
An introduction to the use of models in transportation planning. Topics include data issues, the four-stage approach to modelling transportation systems, discrete choice models and contextual factors such as land use.
Three lectures, one lab (two hours); one term
Prerequisite: GEO 3MD3 or GEOG 3LT3
Cross-list: CIV ENG 4HH3
Antirequisite: CIV ENG 4H03, GEO 4D03

GEOG 4MF3 FIELD RESEARCH IN THE HUMAN ENVIRONMENT
Selected topics in field research in human geography and environmental studies. Topics may vary from year to year, and the timing of the course will depend on the offerings. Students enrolling in this course must pay the incidental fees, as prescribed by the School, and the regular tuition fees.
Prerequisite: Registration in Level III or above of an Honours program in the School of Geography and Earth Sciences and permission of the instructor
Antirequisite: GEOG 4HF3

GEOG 4MR3 REVIEW PAPER
The student will conduct a comprehensive review of a selected topic. The review paper is due before the final examination period.
One seminar (two hours); one term
Prerequisite: One of EARTH SC 3RD3, GEO 3R03, GEOG 3MR3; and registration in Level IV of an Honours program in the School of Geography and Earth Sciences
Cross-list: EARTH SC 4MR3
Antirequisite: EARTH SC 4MT6, GEO 4CC3, 4R06, GEOG 4MT6

GEOG 4MT6 SENIOR THESIS
Students will select research topics and prepare a thesis either individually or in teams.
One seminar (two hours); two terms
Prerequisite: Registration in Level IV or above in an Honours program in the School of Geography and Earth Sciences; and a CA of 7.5 or higher; and permission of the instructor. Students intending to enrol in this course must submit an application to the instructor by March 1 of the academic year prior to registration. Application forms are available from the School of Geography and Earth Sciences main office after February 1. Students will be informed of acceptance of their application on March 15 subject to fulfillment of the CA requirement.

Cross-list: EARTH SC 4MT6
Antirequisite: EARTH SC 4MR3, GEO 4CC3, 4R06, GEOG 4MR3
Enrollment is limited.

GEOG 4UH3 URBAN HOUSING
The geography of housing, including the effects of land development, construction, municipal planning and public policy on the urban landscape of housing and homelessness. One lecture/seminar; one term
Prerequisite: One of GEO 3H23, GEOG 3U3, 3UR3
Antirequisite: GEO 4H23

GEOG 4UT3 SPECIAL TOPICS IN URBAN GEOGRAPHY
Advanced treatment of selected topics in urban geography; specific topics will vary from year to year, with emphasis placed on the economic, political and social complexity of contemporary cities.
One lecture (three hours); one term
Prerequisite: One of GEO 2HB3, 2HY3, GEOG 2U13

GERMAN

[SEE LINGUISTICS AND LANGUAGES, GERMAN]

GERONTOLOGY

[SEE HEALTH, AGING AND SOCIETY]

GREEK

[SEE CLASSICS, GREEK]

HEALTH, AGING AND SOCIETY

WEB ADDRESS: http://www.socsci.mcmaster.ca/has-dept

Kenneth Taylor Hall, Room 226
Ext. 24449

Faculty as of January 15, 2008

Chair
Gavin Andrews

Scholar in Residence
Stephen Lewis (Professor in Global Health)

Professors
Gavin Andrews/B.A. (Wales), Ph.D. (Nottingham)
Margaret A. Denton/Sociology) B.A., M.A., Ph.D. (McMaster)

Associate Professors
Ivy Bourgeault(Sociology) B.Sc. (Alberta) M.Sc., Ph.D. (Toronto)
Lori Campbell(Sociology) B.A., M.A. (Western Ontario), Ph.D. (Guelph)
James Gillett(Sociology) B.A. (Calgary), M.A., Ph.D. (McMaster)
Anju Joshi/B.A., M.A. (Dalhousie)
Fiona Miller/B.I.S. (Waterloo), M.A. (Victoria), Ph.D. (York)
Celia Rothenberg/(Religious Studies) B.A. (Wellesley), M.A. (Oxford), Ph.D. (Toronto)

Adjunct Associate Professors
Sherry Dupuis/(Waterloo) B.Mus. (Queen’s), M.A. (Waterloo), Ph.D. (Guelph)
Catherine Ward-Griffin/(Western Ontario) B.Sc.N., M.Sc.N. (Western Ontario), Ph.D. (Toronto)

Assistant Professors
Alina Gildiner/(Political Science) B.Sc., M.Sc., Ph.D. (Toronto)
Michel Grignon/(Economics) M.A. (ENSAE), Ph.D. (EHESS)
Courses

If no prerequisite is listed, the course is open.

HLTH AGE 2A06 RESEARCH METHODS IN HEALTH, AGING AND SOCIETY I
A systematic investigation of research methods in Health, Aging and Society. This course will examine quantitative and qualitative methods. 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 health and aging.
Three hours (lectures and discussion); two terms
Prerequisite: Registration in Level II or above of a Gerontology or Health Studies program
Antirequisite: ANTHROPOLOGICAL 2203, CMST 2A00, GEO 2HR3, GEOR 2M3, GERONTOL 2A03, HEALTHST 2B03, SOCIOL 2203

HLTH AGE 2E03 HEALTH, AGING AND THE BODY
This course draws on a range of theoretical perspectives to consider the social construction, regulation, control and experience of the body as it relates to health, illness and aging.
Three hours (lectures and discussion); one term
Prerequisite: GERONTOL 1A03 or HEALTHST 1A03; and registration in Level II or above
Antirequisite: HEALTHST 2E03

HLTH AGE 3A03 RESEARCH METHODS IN HEALTH, AGING AND SOCIETY II
An advanced systematic investigation of research methods in Health, Aging and Society. This course will consider program evaluation, community-needs assessments and community-based research. Topics will include research design, measurement, data collection and analysis.
Three hours (lectures and discussion); one term
Prerequisite: One of GERONTOL 2B03, HEALTHST 2B03 or HLTH AGE 2A06; and registration in Level III or above of a Gerontology or Health Studies program
Antirequisite: GERONTOL 3R03, HEALTHST 3G03, SOCIOL 3003

HLTH AGE 3H03 HEALTH CONSUMERISM ACROSS THE LIFE COURSE
This course examines the meaning of consumerism, consumer health groups and the impact of consumerism on: people across the life course; health care and support services; and health and public policy.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above
Antirequisite: HEALTHST 3H03

HLTH AGE 4C03 REPRESENTATIONS OF HEALTH AND ILLNESS ACROSS THE LIFE COURSE
An exploration of representations of health and illness across the life course in the humanities. The focus may vary from year to year, but will examine how health and illness, as it occurs at various stages in the life course, have been represented in literature, art, drama or music.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of a Gerontology or Health Studies program
Antirequisite: HEALTHST 4C03

Not all Gerontology, Health, Aging and Society and Health Studies courses may be offered every year. Students are advised to contact the Department of Health, Aging and Society after May 1 to determine which courses will be offered in the following academic year.

Notes:

1. Gerontology students are strongly recommended to complete GERONTOL 2E03 prior to GERONTOL 3B03.
2. GERONTOL 2E03, 2F03, 2G03, 3F03, 3H03, 3J03, 3K03, 3L03, 3M03, and 3S03 are available for students enrolled in a non-Gerontology program. Space for non-Gerontology students is limited and priority sequence for registration will be:
a) students completing the minor in gerontology
b) students registered in a health studies program
c) all other students
3. Students completing a Minor in Gerontology must contact the Department of Health, Aging and Society to request permission for their Fall/Winter Gerontology courses by May 31.
GERONTOL 2HG3  POPULATION, SOCIETIES, AGING AND THE ENVIRONMENT

Differential growth of human populations and their changing age and sex structures with an emphasis on birth and death processes. The connections between population structures and processes and various aspects of environments and societies including aging, are emphasized. Three lectures; one term.
Prerequisite: Registration in Level II or above.
Cross-list: GEOG 3H3P, HEALTHST 2HG3
This course is administered by the School of Geography and Earth Sciences

GERONTOL 3B03  GERONTOLOGY FIELD OBSERVATION

Directed observation of 40 hours in an approved field setting and a weekly seminar focusing on integration of theoretical knowledge and field experience. Approximately four hours field observation per week, and two hours weekly seminar; one term.
Prerequisite: Registration in Level III or IV of any Gerontology program.
(See Note 2 above.)

GERONTOL 3D03  THE AGING MIND

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: Registration in any Gerontology program; or one of GERONTOL 1A03, 1A06 and registration in any Health Studies program; or admission to the Minor in Gerontology and permission of the Director.
(See Note 4 above.)
Not open to students with credit in PSYCH 3D03.

GERONTOL 3E03  INDEPENDENT STUDY IN GERONTOLOGY I

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: Registration in Level III or IV of any Gerontology program and permission of the Chair of the Department.
GERONTOL 3E03 may be repeated, if on a different topic, to a total of six units.

GERONTOL 3H03  DIVERSITY AND AGING

Examines issues in gerontology related to the diversity of contemporary western societies. Aspects of diversity such as ethnicity, race, culture, disability, gender, sexual orientation, rural and urban life, and social class will be addressed.
Three hours (lectures and discussions, includes experiential components); one term.
Prerequisite: GERONTOL 1A03 or 1A06
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.

GERONTOL 3I03  SPECIAL TOPICS IN GERONTOLOGY

Topics may vary from year to year. Students should consult the Department of Health, Aging and Society prior to registration, concerning topics to be examined.
Three hours (lectures and discussion); one term.
Prerequisite: Registration in any Gerontology program.
GERONTOL 3I03 may be repeated, if on a different topic, to a total of six units.

GERONTOL 3J03  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 discussion); one term.
Prerequisite: Registration in Level III or IV of any Gerontology program; or with permission of the instructor. registration in a Labour Studies program or GERONTOL 1A03 or 1A06 and registration in Level II or above of any program.
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.

GERONTOL 3K03  IMAGES OF AGING

Explores themes in aging through critical analysis of representations in English literature, selected works of art, music, photography and film, but with emphasis on English literature. Themes may include institutionalization, loss of autonomy, loneliness, intergenerational and other relations.
Three hours (lectures and discussion); one term.

Prerequisite: GERONTOL 1A03 or 1A06
Not open to students with credit in GERONTOL 3I03, if the topic was Images of Aging.
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.

GERONTOL 3L03  LONG-TERM CARE HOMES: ISSUES AND CHALLENGES

Examines issues and challenges of humanizing care for older adults living in long-term care homes. Topics include structure and organization of long-term care homes, current trends, policies, programs and gaps. Concepts and approaches to enhance quality of care and quality of life will also be discussed.
Three hours (lectures and discussion); one term.
Prerequisite: GERONTOL 1A03 or 1A06
This course may be taken by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.
Priority will be given to students completing a Minor in Gerontology or registered in a Health Studies program.
Not open to students with credit in GERONTOL 3I03, if the topic was Long-term Care Facilities: Issues and Challenges.

GERONTOL 3M03  AGING IN A FAMILY CONTEXT

Examines a diversity of topics related to family relationships and life transitions of older adults from a life course parental perspective. Topics may include diversity in families, marital status and parent status, adult child, parent relationships, sibling ties, and grandparent/grandchild relationships.
Three hours (lectures and discussions, includes experiential components); one term.
Prerequisite: GERONTOL 1A03 or 1A06
Antirequisite: SOCIO1 3C03
Not open to students with credit in GERONTOL 4C03, if the topic was Aging in a Family Context.
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.

GERONTOL 3N03  AGING AND MENTAL HEALTH

This course will examine the topic of mental health from a variety of perspectives. Terms, definitions, theories, assessment protocols and interventions related to mental health in older adults will be explored.
Three hours (lectures and discussion); one term.
Prerequisite: GERONTOL 1A03 or 1A06
Not open to students with credit in GERONTOL 4C03, if the topic was Aging and Mental Health.
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.

GERONTOL 3P03  APPLIED TOPICS IN GERONTOLOGY

Topics may vary from year to year. Possible topics include care management, ethical issues in aging, interventions for dementia, living environments, or program evaluation.
Three hours (lectures and discussion); one term.
Prerequisite: GERONTOL 1A03 or 1A06
GERONTOL 3P03 may be repeated, if on a different topic, to a total of six units.
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrollment for such students is limited.

GERONTOL 4A06  GERONTOLOGY THESIS

Provides opportunity for students to integrate knowledge, practice, and research in a project related to their area of interest. Students may work with individual faculty members or community-based supervisors.
Prerequisite: GERONTOL 2C03 (or 3C03), 3R03 (or 3G03 or another approved statistics course) and registration in Level IV of any Honours Gerontology program; or GERONTOL 2C03 (or 3C03), 3R03 (or 3G03 or another approved statistics course) and registration in Level III of any B. A. Gerontology program and permission of the Chair of the Department.

GERONTOL 4G03  INDEPENDENT STUDY IN GERONTOLOGY II

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 Level III or IV of any Gerontology program and permission of the supervising instructor.
HEALTHST 2C03 HEALTH ECONOMICS AND ITS APPLICATION TO HEALTH POLICY
Economic analyses of health and health care, with a special emphasis on policy issues in the Canadian health care system.
Three hours (lectures and discussion); one term
Cross-list: ECON 2CC3
Not open to students registered in an Economics program or with credit or registration in ECON 2G03, 2K03 or 3G03.

This course is administered by the Department of Economics.

HEALTHST 2D03 MENTAL HEALTH
An examination of mental health and illnesses from different social, cultural and historical perspectives, including consideration of changing notions of diagnosis, treatment and prevention.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 3V03.

HEALTHST 2H03 SOCIAL ASPECTS OF REPRODUCTION
An interdisciplinary course exploring birth and reproduction. Topics may include: social determinants of reproductive health, fertility and birthing rituals, reproductive ethics, policy and technologies.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: HTH SCI 2103, WOMEN ST 2H03

HEALTHST 2H03 POPULATION, SOCIETIES, AGING AND THE ENVIRONMENT
Differential growth of human populations and their changing age and sex structures with an emphasis on birth and death processes. The connections between population structures and processes and various aspects of environments and societies including aging, are emphasized.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: GEOG 3H03, GERONTOL 2H03

This course is administered by the School of Geography and Earth Sciences.

HEALTHST 3A03 STATE, CIVIL SOCIETY AND HEALTH
This course explores how states, citizens, and civil society interact in the definition and pursuit of health.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above of a Health Studies or Gerontology program
Antirequisite: HEALTHST 3A03

This course may be taken by students enrolled in a Gerontology program. However, enrolment for such students is limited.

HEALTHST 3C03 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.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above of a Health Studies or Labour Studies program
Cross-list: LABR ST 3D03

This course is administered by Labour Studies.

HEALTHST 3CC3 HEALTH AND ENVIRONMENT: ANTHROPOLOGICAL APPROACHES
Examination of the ways in which humans alter and cope with their environment. Topics include: health inequalities, nutrition, population, urbanization, resource utilization, and industrial pollution.
Three hours (lectures and discussion); one term
Prerequisite: Three units of Level I Anthropology or HEALTHST 1A03, and registration in Level III or IV of any program. ANTHROP 2E03 is strongly recommended.
Cross-list: ANTHROP 3C03

This course is administered by the Department of Anthropology.

HEALTHST 3D03 DISABILITIES AND CHRONIC ILLNESS
An examination of issues relating to disabilities and chronic illness.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above

HEALTHST 3E03 ETHICAL ISSUES
Ethical issues of current relevance to debates in health and health care, Topics will vary from year to year.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above
Antirequisite: HTH SCI 3L03
Priority will be given to students registered in a Health Studies program.
HEALTHST 3F03  SELECTED TOPICS IN HEALTH STUDIES I
Topics may vary from year to year.
Three hours (lectures and discussion); one term
Prerequisite: One of HEALTHST 1A03, 1E03, 1S03; and registration in Level III or above
Priority will be given to students registered in a Health Studies program.
HEALTHST 3F03 may be repeated, if on a different topic, to a total of six units.

HEALTHST 3H03  GEOGRAPHY OF HEALTH AND HEALTH CARE
An understanding of traditions in health geography and an exploration of the determinants of health including the social environment, the physical environment and health care services.
Three lectures; one term
Prerequisite: GEOG 1H43 or 1H53
Cross-list: GEOG 3H03
This course is administered by the School of Geography and Earth Sciences.

HEALTHST 3I03  INDEPENDENT STUDY
Independent research supervised by a faculty member.
One term
Prerequisite: Registration in Level III or above of a Health Studies program and permission of the Chair of Health, Aging and Society

HEALTHST 3K03  THE NEW PUBLIC HEALTH: HEALTH PROMOTION AND POPULATION HEALTH IN CANADA
Introduce students to the diverse theoretical, policy, and practical dimensions of health promotion and population health approaches in Canada.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above of a Health Studies program.

HEALTHST 3M03  HEALTH POLICY IN A CHANGING WORLD
This course examines major models of health care and policy systems, and the key ideas and instruments that underlie health policy in selected countries such as Canada.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above of any Health Studies or Political Science program
Cross-list: POL SCI 3M03
This course is administered by the Department of Political Science.

HEALTHST 3Y03  DEATH, DISEASE AND DEGENERATION: A HISTORY OF HEALTH AND HEALTH CARE IN CANADA
Explores the history of health and health care in Canada, from the first Western European settlements to the present day.
Two lectures one small group session (one hour); one term
Prerequisite: Registration in Level II or above
Cross-list: HTH SCI 3Y03, HISTORY 3Y03
This course is administered by the Bachelor of Health Sciences (Honours) program.

HEALTHST 3Y03  ABORIGINAL COMMUNITY HEALTH AND WELL-BEING
A critical examination of the determinants of health in Aboriginal communities, processes of community revitalization, and recent government policy initiatives.
Three hours (lectures and discussion); one term
Cross-list: ANTHROP 3Y03
This course is administered by the Department of Anthropology.

HEALTHST 4A03  RESEARCH SEMINAR
Systematic inquiry of a selected topic in a problem-based seminar. Students will identify a health issue, formulate questions, conduct research and present findings.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of any Honours Health Studies program

HEALTHST 4D03  HEALTH IN CROSS CULTURAL AND INTERNATIONAL PERSPECTIVES
Examination of contemporary issues in health and illness from cross cultural and international perspectives.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of any Honours Health Studies program

HEALTHST 4F03  SELECTED TOPICS IN HEALTH STUDIES II
An examination of selected topics in health studies. Topics may vary from year to year.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of any Honours Health Studies program
HEALTHST 4F03 may be repeated, if on a different topic, to a total of six units.

HEALTHST 4G06  INDEPENDENT STUDY
Independent research supervised by a faculty member.
Two terms
Prerequisite: Credit or registration in HEALTHST 4A03 and permission of the Chair of Health, Aging and Society

HEALTHST 4H03  DIRECTED RESEARCH IN HEALTH STUDIES
Directed study of a research question in Health Studies under the supervision of a faculty member. A report is submitted to the supervisor upon completion of the project.
Three hours (seminar); one term
Prerequisite: HEALTHST 4A03 and registration in Level IV of a Health Studies program; or permission of the Chair of Health, Aging and Society

HEALTHST 4J03  NARRATIVES OF ILLNESS
This seminar explores the role that narratives of illness play in describing, shaping and interrogating the experiences of those who are "unwell."
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Health Studies or Level IV Honours Cultural Studies and Critical Theory

HEALTHST 4K03  HEALTH IMPACT OF GLOBAL CLIMATE CHANGE
This course will explore aspects of climate change and related consequences for global health in both the developed and developing worlds.
Three hours (seminar); one term
Prerequisite: HEALTHST 3M03 or POL SCI 3M03 and registration in Level IV of an Honours Health Studies program
Cross-list: POL SCI 4L03
This course is administered by the Department of Political Science.

HEALTHST 4L03  THE POLITICS OF CHANGE IN SOCIAL WELFARE
An examination of how social welfare policy establishes the boundary between public and private roles, and how the boundary changes.
Three hours (seminar); one term
Prerequisite: HEALTHST 3M03 or POL SCI 3M03 and registration in Level IV of an Honours Health Studies program
Cross-list: POL SCI 4L03
This course is administered by the Department of Political Science.

HEALTHST 4M03  ENVIRONMENT AND HEALTH
Models and methods for research and policy on environment and health.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of any Honours Health Studies program
Cross-list: GEOG 4H3, ENV IR SC 4H3
Antirequisite: GEO 4H3, HEALTHST 4E03
This course is administered by the School of Geography and Earth Sciences.

HEALTH SCIENCES

Faculty Note:
This course listing is divided into two parts:
1. Bachelor of Health Sciences (Honours) program courses and the Biomedical Science Specialization courses.
2. Health Sciences courses normally available only to students registered in Engineering (Chemical Engineering and Bioengineering or Electrical and Biomedical Engineering), Nursing (A), (B), (D), (E) or (F) Streams or Midwifery, as applicable.

BACHELOR OF HEALTH SCIENCES (HONOURS) ...

WEB ADDRESS: http://www.fhs.mcmaster.ca/bhsc
Michael G. DeGroote Centre for Learning and Discovery, Room 3308
Ext. 22815
Assistant Dean, Bachelor of Health Sciences (Honours)
Delsworth G. Harnish/B.Sc., M.Sc. (Queen's), Ph.D. (McMaster), 3M Teaching Fellow

Note:
Detailed course descriptions are available on the program web site at http://www.fhs.mcmaster.ca/bhsc
Courses

HTH SCI 1E06  INQUIRY
This course will initiate the development of a skill set required for life-long learning, in the context of the study of one or two health care issues. A problem based course applying principles of scientific inquiry to selected health issues.

Three hours; two terms
Prerequisite: Registration in the B.H.Sc. (Honours) program
Antirequisite: HTH SCI 1E03, 1EE3, INQUIRY 15C3
Note: Students entering the B.H.Sc. (Honours) program after completion of Level I in another program may be required to complete HTH SCI 2D06 at the discretion of the Assistant Dean of the program.

HTH SCI 1G03  PSYCHOLOGY
This course introduces essential components of the central and peripheral nervous systems as well as key regulatory systems. Concepts such as plasticity, homeostasis, compensation and adaptation and ways in which failure of these regulatory systems can lead to illness states are examined.

Two lectures, one tutorial; one term
Prerequisite: Credit or co-registration in BIOLOGY 1A03 or HTH SCI 1106
Antirequisite: PSYCH 1A03
Not open to students with credit or registration in PSYCH 1XX3.

HTH SCI 1106  CELLULAR AND MOLECULAR SYSTEMS AND PRACTICUM IN HEALTH SCIENCES
A critical examination of essential concepts in biological systems with specific reference to cellular and molecular investigations. An opportunity to investigate various elements of core health science courses in a laboratory setting.

Two practicums per week (two hours each), one tutorial; two terms
Prerequisite: Grade 12 U Biology and registration in Health Sciences I Corequisite: SCIENCE 1A00. Students registering in HTH SCI 1106 must also register in SCIENCE 1A00 when completing their registration.
Not open to students with credit or registration in BIOLOGY 1A03.

HTH SCI 1500  PREPARATORY STUDIES FOR BACHELOR OF HEALTH SCIENCES
Students will explore inquiry and small group learning in the context of language proficiency.

Three hours, two terms
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program

HTH SCI 2A03  STATISTICS
Basic statistical methods and their application to the analysis of biological and psychosocial data. Manual calculations will be discouraged; use of the computer to do statistical analysis is an explicit goal of this course.

Three lectures, one tutorial; one term
Prerequisite: Registration in Level II of the B.H.Sc. (Honours) program; or Grade 12 Advanced Functions U; or Grade 12 Mathematics of Data Management U
Antirequisite: COMMERCE 2Q3, HTH SCI 1F03, STATS 1CC3

HTH SCI 2B06  INQUIRY II
This course will initiate the development of a skill set required for life-long learning, in the context of the study of one or two health care issues and will use a problem-based format to introduce major illness categories.

Three hours; two terms
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) Program
Note: This course is restricted to Level II B.H.Sc. (Honours) transfer students only.

HTH SCI 2E03  INQUIRY II
This course will use an inquiry based format to introduce key concepts in biochemistry, molecular biology and biomedical sciences to understand illnesses such as infectious diseases, metabolic disorders, genetic diseases and cancer.

One term
Prerequisite: HTH SCI 1E03 and 1EE3; or HTH SCI 1E06

HTH SCI 2F03  HUMAN PHYSIOLOGY AND ANATOMY I
An introduction to the principal organ systems including the endocrine, skin, CNS and locomotion.

Two lectures, one tutorial, one lab; one term
Prerequisite: Registration in Level II of the B.H.Sc. (Honours) program; or permission of the Assistant Dean, B.H.Sc. (Honours) Program
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 2L3, KINESIOL 1A03, 1A06, 1AA3, 1X06, 1Y03, 1YY3, MED PHYS 4XX3, SCIENCE 4XX3

HTH SCI 2G03  EPIDEMIOLOGY
This course will introduce students to measures of health, standard epidemiologic study designs and measures of association. Students will also examine crucial issues in the design and analysis of epidemiologic studies. The course will conclude with specialized topics.

Two lectures, one tutorial; one term
Prerequisite: STAT 1C03 or registration in Level II of the B.H.Sc. (Honours) program

HTH SCI 2J03  HEALTH PSYCHOLOGY
This course will provide an overview of psychological factors as they influence or result from medical conditions. Topics will include stress, coping, health promoting or compromising behaviours, patient-physician communication, adherence/compliance, pain, heart disease and cancer.

Two lectures, one tutorial; one term
Prerequisite: HTH SCI 1E06 or 2D06
Antirequisite: KINESIOL 2G03

HTH SCI 2K03  CELL BIOLOGY
An inquiry based examination of the relationship between cell structure and function. Students will be required to apply key concepts of cell biology to facilitate their understanding of timely problems in biomedicine. Tutorials (three hours); Problem Based Learning and Computer Laboratories (three hours); one term
Prerequisite: CHEM 1A03, HTH SCI 1106; and HTH SCI 2D06 or 2E03
Antirequisite: BIOLOGY 2503, MOL BIOL 2503

HTH SCI 2N03  INQUIRY IN BIOCHEMICAL TECHNIQUES
An inquiry approach to learning about current techniques in biochemistry research. Students will work in small groups in labs and workshops. One tutorial (one hour) every other week; one lab (four hours) every other week; two terms
Prerequisite: Registration in Level II of the B.H.Sc. (Honours) Biomedical Sciences Specialization
Antirequisite: BIOCHEM 2L06
First offered in 2009-2010.

HTH SCI 2P01  PHYSICAL CHEMISTRY
An independent Study Module that will study the thermodynamics of life; chemical and physical equilibria and enzyme kinetics.

Computer-based independent study module to be completed in Level II. Prerequisite: CHEM 1A03 and registration in Level II of the B.H.Sc. (Honours) Biomedical Sciences Specialization
Antirequisite: CHEM 2P03, 2PD3, 2R03
First offered in 2009-2010.

HTH SCI 3D03  GENETICS IN HEALTH SCIENCES
This course examines basic genetic issues including cytogenetics, genetic traits and inheritance as they relate to health care issues.

Two lectures, one tutorial; one term
Prerequisite: HTH SCI 2G03, 2FF3, 2K03

HTH SCI 3E03  INQUIRY III
This course will cover health issues that are prevalent at certain times in the developmental cycle. Topics will include reproduction, global health, health of children and adolescents, adulthood, and health care issues in the elderly.

One term
Prerequisite: HTH SCI 2D06 or 2E03; and registration in Level III of the B.H.Sc (Honours) program

HTH SCI 3G03  CRITICAL APPRAISAL OF THE MEDICAL LITERATURE
Students learn methods to determine internal validity of various research designs to judge the strength of evidence for the effectiveness of an intervention, a diagnostic test, a screening program, a prognostic or risk factor and of systematic reviews.

Two lectures, one tutorial; one term
Prerequisite: HTH SCI 2A03, 2G03
This course reviews how health care is different from other goods and services, how governments have responded to these differences, and how governments make decisions about health care.

Two lectures, one tutorial; one term
Prerequisite: HTH SCI 3G03

Inquiry Project
An opportunity to explore one or more specialized areas of Health Sciences in preparation for HTH SCI 4A09 (or 4B06).

One tutorial/seminar session (three hours); one term
Prerequisite: Registration in the B.H.Sc. (Honours) program
Antirequisite: BIOLOGY 4FF3, 4GG9, 4I03, MOL BIOL 4R09, PHARMAC 4F09, PSYCH 4E09
Not open to students with credit in registration in BIOCHEM 4P03.

Introductory Immunology
An introduction to humoral and cellular immunity. The molecular and cellular basis of immunity, and an introduction to immunological techniques.

Two lectures, one tutorial; one term
Prerequisite: One of BIOLOGY 2B03, HTH SCI 2K03 or MOL BIOL 2B03
Antirequisite: BIOLOGY 3X03

Health, Injury and Pathology
An introduction to human pathology with emphasis on the mechanisms of pathogenesis and the morphologic changes induced to occur in cells and tissues.

Two lectures, one tutorial (three hours); one term
Prerequisite: HTH SCI 2K03

Introductory Virology
An introduction to the basics of virology. Topics include the structure and composition of viruses, virus replication strategies, virus-host interactions, and uses of viruses for medical research.

Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03 or HTH SCI 2K03; and registration in Level III

INTRODUCTION TO BIOETHICS
This course will cover ethical issues that are relevant to biological sciences. Topics will include genetic engineering and cloning, genetic screening, reproductive technology and the use of behavioural strategies to alter societal behaviours.

Two lectures, one tutorial; one term
Prerequisite: HTH SCI 2K03
Antirequisite: HEALTHST 3E03

Written Communication in Health Sciences
This course will explore various genres of written communication. Students will develop their editing and writing skills in a small group.

Three hours; one term
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program

Therapeutic Drugs: Molecules in the Marketplace
A perspective-based approach will be used to explore the interactions between discoveries, industry, regulators and prescribers that lead to the emergence of new therapeutic drugs as solutions to specific clinical problems.

Three lectures, one tutorial; two terms
Prerequisite: HTH SCI 2FF3

Communication Skills
This course offers students a variety of learning experiences that will enable them to better understand the relationship between effective communication and desired health care outcomes. Students will be exposed to evidence-based research, role playing, standardized simulations and audio-visual reviews.

Three hours; one term
Prerequisite: HTH SCI 2D06 or 2EO3; and registration in Level III or above of the B.H.Sc. (Honours) program

Inquiry Into Work, The Self and Purpose
This course will explore the history of ideas about work, education and personal purpose. Students will undertake group projects and personal reflection with a view to integrating a critical appreciation of course content into their personal decision making.

Three hours; one term
Prerequisite: HTH SCI 2D06 or 2EO3

Medical Genetics
This course will cover a broad spectrum of genetic disorders; with particular emphasis on inheritance patterns, molecular mechanisms, treatment and prevention.

Two lectures, one tutorial; one term
Prerequisite: HTH SCI 2K03 and registration in Level III or above

Research and Experimental Design
Analytical review of fundamental experiments with a focus on experimental design, employing sample data sets to solve experimental problems with an emphasis on how to approach the problem. This course will be a precursor to the BIOCHEM 4F09 senior thesis.

Two lectures, one tutorial (two hours); one term
Prerequisite: HTH SCI 2N03
First offered in 2010-2011.

Systems Biology
A systems-based approach to studying the cell and integration of cellular processes with a critical appraisal of scientific literature. Working in small groups, students will develop an internet site to examine various topics in cellular biology.

Three lectures/tutorials; one term
Prerequisite: HTH SCI 2N03
First offered in 2010-2011.

Genomic Information
Use of computers, graphics,.tif files, Pymol, NCBl databases and ExPASy.

Each class is a combination of lecture and hands-on tutorial in a computer laboratory.

Three lectures/tutorials in a computer lab; second term.
Prerequisite: HTH SCI 2N03
First offered in 2010-2011.

DEATH, DISEASE AND DEGENERATION: A HISTORY OF HEALTH AND HEALTH CARE IN CANADA
This course explores the history of health and health care in Canada, from the first European settlements to the present day.

Two lectures, one small group discussion (one hour); one term
Prerequisite: Registration in Level II or above
Cross-list: HEALTHST 3Y03, HISTORY 3Y03

Research Seminars
Students attend six research seminars from a designated list in Biochemistry, Immunology and Neurology and write a one to two page report on each. Two of the six seminars may be graduate student seminars from Medical Sciences or Biochemistry and Biomedical Sciences.

Six seminars; two terms
Prerequisite: HTH SCI 2N03
First offered in 2010-2011.

Thesis
A thesis-based research project conducted under the direction and supervision of a member of the Faculty. Arrangements to enrol in HTH SCI 4A09, including agreement of the supervisor, must be made before the end of March in Level III.

Prerequisite: Registration in B.H.Sc. (Honours) program and permission of B.H.Sc. Program Office
Antirequisite: BIOLOGY 4FF3, 4GG9, 4I03, HTH SCI 4B06, MOL BIOL 4R09, PHARMAC 4F09, PSYCH 4E09
Not open to students with credit or registration in BIOCHEM 4P03.

Group Dynamics and Processes
This course will offer both a theoretical and experiential introduction to group dynamics and processes. Learning will be facilitated in large and small groups.

One term
Prerequisite: Registration in Level IV of the B.H.Sc. (Honours) program

Senior Projects
A selection of information-based research projects conducted under the supervision of one or more members of the Faculty. Arrangements to register in HTH SCI 4B06 including agreement of supervisor must be made before the end of March in Level III.

Prerequisite: Registration in B.H.Sc. (Honours) program and permission of B.H.Sc. (Honours) Program Office
Antirequisite: BIOLOGY 4FF3, 4GG9, 4I03, HTH SCI 4A09, MOL BIOL 4R09, PHARMAC 4F09, PSYCH 4D06, 4D09, 4E09
Not open to students with credit or registration in BIOCHEM 4P03.
HTH SCI 14B3 NEUROIMMUNOLOGY
This course will examine immune-brain communication, immune molecules and their signalling pathways, and the role of the immune system in normal brain function and CNS disease. It is recommended that students have an understanding of Immunology.
Two lectures, one tutorial; one term
Prerequisite: One of BIOLOGY 2B03, HTH SCI 2K03 or MOL BIOL 2B03

HHT SCI 14D03 SPECIAL TOPICS IN HEALTH SCIENCES
This course provides an opportunity for individual or small groups to integrate concepts from their undergraduate courses.
Sessions arranged individually or in small groups; one term
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program
HTH SCI 4E3 may be repeated, if on a different topic, to a total of six units.

HHT SCI 14E3 EDUCATION PRACTICUM
This course is designed to allow participants to think and solve problems in the area of physiology, pathophysiology and anatomy.
One lecture, one tutorial, one lab; one term
Prerequisite: HTH SCI 2F03 or permission of the instructor

HHT SCI 14G03 PATHOANATOMY
Students will research the anatomy, surgical approach and etiology of a pathology assigned from an anatomical system of their choosing, depending on availability of cadavers. The goal is to give students an opportunity to prepare an educational surgical specimen from human materials.
Two lectures, one lab; one term
Prerequisite: HTH SCI 2F03 and registration in the B.H.Sc. (Honours) program
Antirequisite: BIOLOGY 4G06

HHT SCI 14G3 COMPLEX ADAPTIVE SYSTEMS
This course is an opportunity to think about how people learn and change in all sorts of environments. The course itself will be an experiment in applying CAS theory to issues such as assessment, learning objectives, evidence, feedback and group process.
Three hours; one term
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program

HHT SCI 14I3 ADVANCED TOPICS IN IMMUNOLOGY
This course will build on knowledge of the immune system and focus on the immune system in disease: allergy, inflammation, autoimmunity, immune deficiency, malignancy and cancer immunotherapy.
Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 3X03 or HTH SCI 3I03
Antirequisite: BIOLOGY 4I13

HHT SCI 14J03 BIOCHEMICAL IMMUNOLOGY
This advanced course applies problem-based learning to immunological problems. Topics concern development of immunoassays, resistance to infection and immunity in health and disease.
One session (three hours), one tutorial; one term
Prerequisite: HTH SCI 3I03, 4I13; or permission of the instructor
Cross-list: BIOCHEM 4J03, MOL BIOL 4J03

HHT SCI 14J3 UNDERGRADUATE RESEARCH CAPACITY
This is a practical course for learning about how clinical professionals and researchers conduct their day-to-day research. Special topics may include research ethics, grant and proposal writing, managing multiple projects, the writing process.
Three hours; one term
Prerequisite: Permission of the instructor

HHT SCI 14K3 HUMAN PATHOPHYSIOLOGY
This course is designed to allow participants to think and solve problems in the area of physiology, pathophysiology and anatomy.
One lecture, one tutorial, one lab; one term
Prerequisite: HTH SCI 2F03 or permission of the instructor

HHT SCI 14K3 HUMAN PATHOPHYSIOLOGY II
This course is designed to take a more in depth look at the principles underlying the pathophysiology of the various body systems.
One lecture, one tutorial, one lab; one term
Prerequisite: HHT SCI 4K03

HHT SCI 14L3 MODEL SYSTEMS
Examining the use of human, animal and cell model systems in research through investigation of primary research.
One lecture or workshop (three hours); one term
Prerequisite: HHT SCI 3W03
First offered in 2011-2012.

HHT SCI 14M3 ADVANCED TOPICS IN HEALTH PSYCHOLOGY
This course will explore the role of psychological factors in health and disease. Topics include stress, coping, health promoting/compromising behaviours, patient-physician communication, adherence, pain, heart disease and cancer.
Three hours; one term
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program

HHT SCI 14N3 MULTI-CULTURAL PEER TUTORING AND COMMUNICATION
This course will provide an opportunity through peer tutoring and small group inquiry based learning to increase awareness and develop skills in multi-cultural communication.
Three hours; one term
Prerequisite: Permission of the instructor

HHT SCI 14Q3 COMMUNICATION SKILLS PRACTICUM
This course will provide an opportunity to explore pedagogy as it relates to best practice in education.
Sessions arranged individually or in small groups; two terms
Prerequisite: HHT SCI 3H03 and permission of the Assistant Dean, B.H.Sc. (Honours) program
HTH SCI 4F03 may be repeated, if on a different topic, to a total of six units.

HHT SCI 14R3 ADVANCED TOPICS IN HEALTH SCIENCES II
This course will be an advanced course in written communication, building on knowledge gained in Written Communication I. Students will explore and hone their writing skills in various forms.
Three hours; one term
Prerequisite: HHT SCI 3N03

HHT SCI 14S3 COMMUNICATION SKILLS PRATICUM II
This course will build on knowledge gained in Written Communication I. Students will explore and hone their writing skills in various forms.
One lecture, one tutorial, one lab; one term
Prerequisite: HHT SCI 4Q03

HHT SCI 14T03 CURRENT RESEARCH INITIATIVES
An opportunity to explore current research initiatives within the McMaster community on a variety of topics. Both alumni from the B.H.Sc. (Honours) program and graduate students at McMaster will offer sessions to explain and discuss their current research and academic experiences.
This course is evaluated on a complete or incomplete basis.
Three hours; one term
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program or permission of the instructor
HTH SCI 4T03 and HHT SCI 4U06 may be repeated to a total of 12 units for both courses.

HHT SCI 14U06 CURRENT RESEARCH INITIATIVES II
An opportunity to explore current research initiatives within the McMaster community on a variety of topics. Both alumni from the B.H.Sc. (Honours) program and graduate students at McMaster will offer sessions to explain and discuss their current research and academic experiences.
This course is evaluated on a complete or incomplete basis.
Three hours; two terms
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program or permission of the instructor
HTH SCI 4U06 and HHT SCI 4T03 may be repeated to a total of 12 units for both courses.
THE TOPICS IN THIS COURSE WILL INCLUDE BASIC NEUROPHYSIOLOGY AND CONTROL OF
SENSATION, PROPRIORCEPTION, REFLEX AND VOLUNTARY MOVEMENT. THROUGH-OUT THE COURSE, THEORIES UNDERLYING MOTOR CONTROL OF VOLUNTARY MOVEMENT WILL BE STUDIED IN HEALTHY AND NEUROLOGICALLY IMPAIRED POPULATIONS.

Two lectures; one lab; one term
Prerequisite: HTH SCI 2F03, 2FF3

SPECIAL TOPICS IN HEALTH SCIENCES II
This course provides an opportunity for individual or small groups to integrate concepts from their undergraduate courses. Sessions are arranged individually or in small groups; one term
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program
HTH SCI 4W03 may be repeated, if on a different topic, to a total of six units.

COLLABORATION AND PEER TUTORING
An important part of our responsibility in the program is to develop a learning community that incorporates the concepts of collaboration, peer tutoring and lifelong learning. This course will consist of three units to be taken over four years and will encourage these activities, both formally and informally.
Prerequisite: Registration in Level IV of the B.H.Sc. (Honours) program
Antirequisite: BIOLOGY 3003, 3QQ3, INQUIRY 3S03, SCIENCE 2L03, 3S03, SOC SCI 2L03

SCIENCE, CULTURE AND IDENTITY
Through selected readings and discussion, this course will explore some critiques of science and will appraise the challenge they present to scientific authority. The course will culminate in the presentation of a research project on a question developed by students individually or in groups.
Three hours; one term
Prerequisite: Registration in Level II or above of the B.H.Sc. (Honours) program

Note:
The following Health Sciences courses are normally available only to students registered in Engineering (Chemical Engineering and Bioengineering or Electrical and Biomedical Engineering), B.Sc.N. (A), (B), (D), (E) or (F) Streams or Midwifery, as applicable.

Courses

HTH SCI 1A03
HUMAN BIOCHEMISTRY I
Introduction to proteins, DNA, RNA, chromosomes and their building blocks; gene expression; proteins, carbohydrates and fats as fuels in the production of energy for living, including nutritional aspects.
Lectures and problem-based tutorial (three hours); one term
Prerequisite: Registration in Level I of the B.Sc.N. (A) or (D) Stream; or permission of the instructor
Antirequisite: HTH SCI 1A06, 1CC7

HTH SCI 1C06
SOCIAL AND CULTURAL DIMENSIONS OF HEALTH CARE
This course will increase the students’ understanding of individuals, social and cultural groups in relation to health and health care. Special emphasis will be placed on understanding the social and cultural meanings of pregnancy and birth to women and their families, in particular cultural communities within Ontario.
Lectures/tutorials; two terms
Prerequisite: Registration in the Midwifery Education program

HTH SCI 1CC7
INTEGRATED BIOLOGICAL BASES OF NURSING PRACTICE I
Through a small group, self-directed problem-based learning format, students will apply principles of cellular biology, biochemistry and human anatomy and physiology essential to the assessment and understanding of health care problems.
Lecture (two hours), one problem-based tutorial (two hours), one online tutorial, self-study; one term
Prerequisite: Registration in Level II of the B.Sc.N. (E) Stream or Level III of the B.Sc.N. (B) Stream
Antirequisite: HTH SCI 1A06, 1A03, 1BB3, 1Z24, 3BB3

HTH SCI 1D06
ANATOMY AND PHYSIOLOGY
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 program
Antirequisite: BIOLOGY 1J03, 3U03, 3UJ3, HTH SCI 2F03, 2FF3, KINESIOL 1A03, 1A06, 1A07, 1AX3, 1X06, 1Y03, 1YY3, MED PHYS 4XX3, SCIENCE 4XX3

HTH SCI 1H06
HUMAN PHYSIOLOGY AND ANATOMY I
A study of anatomy and physiology of the communication and locomotion systems and the systems maintaining homeostasis.
Lecture (two hours), lab or tutorial (three hours); two terms
Prerequisite: Registration in Level I of the B.Sc.N. (A) or (D) Stream or permission of the instructor
Antirequisite: BIOLOGY 1J03, 2A03, HTH SCI 1B07, 1HH3, 2H03, 2F03, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1X06, 1Y03, 1YY3, MED PHYS 4XX3, SCIENCE 4XX3

HTH SCI 1J03
LIFE SCIENCES FOR CLINICAL PRACTICE
This course provides an overview of basic concepts relating to chemistry, biochemistry and microbiology. Content areas will include practical applications of clinical chemistry, specimen collection, related disease entities and pathologies, and the significance of laboratory values.
One lecture (three hours) one lab (two hours); one term
Prerequisite: Registration in the Midwifery Education program
Corequisite: HTH SCI 1D06
Antirequisite: MIDWIF 1C03

HTH SCI 2B03
HEALTH SCIENCE AND SOCIETY
This course is concerned with the biological, environmental, behavioural, social and economic factors that determine health needs of the population. The major components to the course are: measuring health status, the determinants of health, and the provision of health care services. Offered by Web CT/Print Management Based. The Program reserves the right to cancel the course due to low enrolment.
Prerequisite: Registration in Level II of the Midwifery Education program

HTH SCI 2C07
INTEGRATED BIOLOGICAL BASES OF NURSING PRACTICE II
Students will integrate concepts of pathophysiology and will include principles of microbiology and pharmacology essential to the assessment and understanding of health care problems.
Lecture (two hours), one problem-based tutorial (two hours), one journal club (two hours), one on-line tutorial; one term
Prerequisite: HTH SCI 1CC7
Antirequisite: HTH SCI 2AA2, 2B08, 2BB2, 2CC2, 2DD2, 2HH3, 2H03

HTH SCI 2H03
INTRODUCTORY PHARMACOLOGY
An examination of the administration, distribution, action, metabolism and elimination of drugs generally and as related to specific systems.
Lecture (two hours), tutorial or clinical problem (three hours); one term
Prerequisite: HTH SCI 1A03, 1BB3 (or 1A06), 1HH3, 1H03 (or 1H06) and registration in Level II of the B.Sc.N. (A), (D) or Level III of the B.Sc.N. (F) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C07, 2DD2

HTH SCI 2H04
INTRODUCTORY MICROBIOLOGY
An examination of the interactions of microbes in the human body including action, responses, treatment and prevention.
Lecture (two hours), tutorial or lab or clinical problem (three hours); one term
Prerequisite: HTH SCI 1A03, 1BB3 (or 1A06), 1HH3, 1H03 (or 1H06) and registration in Level II of the B.Sc.N. (A), (D) or Level III of the B.Sc.N. (F) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C07, 2CC2

HTH SCI 2I03
SOCIAL ASPECTS OF REPRODUCTION
An interdisciplinary course exploring birth and reproduction. Topics may include: social determinants of reproductive health, fertility and birthing rituals, reproductive ethics, policy and technologies.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: HEALTHST 2H03, WOMEN ST 2H03
This course is administered by Women’s Studies.
HTH SCI 2L03  ANATOMY AND PHYSIOLOGY I: COMMUNICATION
An examination of structure-function relationships in the human body systems that communicate with each other or the environment. The systems covered include: cardiovascular, respiratory, immunology, gastro-intestinal, nutrition, oculo-genital, and renal.
Two lectures (one hour), clinical problem presentation (one hour), one lab (two hours); one term
Prerequisite: Registration in Chemical Engineering and Bioengineering or Electrical and Biomedical Engineering.
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 1H06, 2F03, KINESIOL 1A03, 1A06, 1A33, 1X06, 1Y03, 1YY3, MED PHYS 4XX3

HTH SCI 2LL3  ANATOMY AND PHYSIOLOGY II: HOMEOSTASIS
An examination of structure-function relationships in the human body systems that are responsible for maintaining normal internal physiological conditions despite a changing environment. The systems covered include: cardiovascular, respiratory, immunology, gastro-intestinal, nutrition, uro-genital, and renal.
Two lectures (one hour), clinical problem presentation (one hour), one lab (two hours); one term
Prerequisite: Registration in Chemical Engineering and Bioengineering or Electrical and Biomedical Engineering.
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 1H06, 2F03, KINESIOL 1A03, 1A06, 1A33, 1X06, 1Y03, 1YY3, MED PHYS 4XX3

HTH SCI 2RR3  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 lectures/seminars (three hours each) guided self-study (two hours); one term
Prerequisite: Registration in Level II of the B.Sc.N. (A), (B), (D) or (F) Stream; or registration in Level II of the B.Sc.N. (E) Stream; or registration in Level II of the Midwifery Education program; or permission of the instructor. Students entering in 2008 should register for this course.
Antirequisite: HTH SCI 3B03

HTH SCI 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 lectures/problem-based tutorials (three hours each), guided self-study (two hours); one term
Prerequisite: Registration in Level III of the B.Sc.N. (A), (D), (E) or (F) Stream; or registration in Level III of the B.Sc.N. (B) Stream; or registration in Level II of the Midwifery Education program; or permission of the instructor. Students who entered in 2007 or prior should register for this course.
Antirequisite: HTH SCI 2RR3

HTH SCI 3BB3  HUMAN BIOCHEMISTRY II
DNA replication, transcription and translation; recombinant DNA technology; and the molecular biology of inherited and acquired diseases. Lectures/problem-based tutorials (three hours each); one term
Prerequisite: HTH SCI 1A03 and registration in Level III of the B.Sc.N. (A) or (D) Stream; or permission of the instructor. Students entering in 2008 should register for this course.
Antirequisite: HTH SCI 1A06, 1B03, 1C07

HTH SCI 3C04  INTRODUCTION TO RESEARCH METHODS AND CRITICAL APPRAISAL
Introduction to the principles of clinical research and statistical inference, with particular emphasis on critical assessment of research evidence (both qualitative and quantitative) as presented in the health sciences literature related to health care.
Problem based tutorial (three hours), guided self-study (one and one half hours) per week; one term
Prerequisite: Registration in Level III of the B.Sc.N. (A), (B), (D), (E) Stream or Level IV (F) Stream; or registration in the Midwifery Education program; or permission of the instructor.
Antirequisite: HTH SCI 3A03, 3L02, 3M03

HTH SCI 3R03  INDEPENDENT STUDY IN A HEALTH SCIENCES TOPIC
A non-clinical course in which special topics will be considered in depth. Under the supervision of a faculty member. The plan of study must be negotiated with the faculty member.
Lecture or equivalent (three hours); one term
Prerequisite: Registration in Level II or above of any stream of the B.Sc.N. program; and 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. program.

HTH SCI 4DD6  ADVANCED LEADERSHIP/MANAGEMENT IN HEALTH CARE ORGANIZATIONS
This advanced course builds upon HTH SCI 4E06 content. It integrates theories and research in leadership and management to enhance health care provider's knowledge of key issues in today's workplace. Offered in tutorial distance format.
Tutorial or equivalent (four hours), independent study in an organization (six hours); one term
Prerequisite: HTH SCI 4E06
Antirequisite: NURSING 4DD6

HTH SCI 4E06  LEADERSHIP/MANAGEMENT IN HEALTH CARE ORGANIZATIONS
Theories and principles of leadership and management are applied to the health care disciplines. Both given in problem based tutorial format and through distance education. Enrollment 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

HTH SCI 4F03  INTEGRATIVE LEADERSHIP PROJECT
Students integrate learning and demonstrate a leadership role in addressing a real health care issue. Students work with both a tutor and a health care leader to address a mutually agreed upon leadership issue in the workplace.
Three hours (seminar and clinical lab); one term
Prerequisite: HTH SCI 4B06, 4D06, 4F03, 4H03, 4Z03
Antirequisite: NURSING 4F03

HTH SCI 4H03  ISSUES IN INTERNATIONAL AND INTERCULTURAL HEALTH
An introduction to health issues in a rural Canadian and international context including theories of: development; political economy; medical and social anthropology; and intercultural health care practice.
Lecture/problem-based tutorials (three hours); one term
Prerequisite: HTH SCI 3B03; and registration in Level III or IV of any stream of the B.Sc.N. program; and permission of the instructor.
Antirequisite: COLLAB 4H03, NURSING 4H03

HTH SCI 4H13  QUALITY MANAGEMENT IN HEALTH CARE ORGANIZATIONS
This course focuses on the role of leadership in quality management in health care organizations. Theories, concepts and best practices are utilized to examine issues in the health care work environment. Concepts include patient safety, safety culture, benchmarks and scorecards, program evaluation and risk/utilization management.
Three hours (lecture/seminar); one term
Prerequisite: Registered Nurse and permission of the instructor.
Antirequisite: NURSING 4H13

HTH SCI 4I03  LEADING EFFECTIVE TEAMS IN HEALTH CARE ORGANIZATIONS
This course introduces health care providers to the concepts and dynamics of teams within health care organizations. Theories and concepts related to leadership, communication and health systems are applied in the current work environment. Distance education and tutorial formats.
Problem-based tutorial or equivalent (three hours); one term
Prerequisite: Health care professional and permission of the instructor.
Antirequisite: NURSING 4I03

HTH SCI 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 and registration in Level IV of any stream of the B.Sc.N. program; or permission of the instructor.
Antirequisite: HTH SCI 4L04
HEALTH SCI 4203: POVERTY AND HOMELESSNESS
This course investigates poverty and homelessness and the disproportionate number of health and social issues facing marginalized groups. It explores the issues of poverty in Canada and places specific emphasis on poverty in our local community of Hamilton Wentworth. Tutor groups, independent reading (three hours), individual or group service learning projects (three hours); one term
Prerequisite: HTH SCI 3803 and registration in Level III or IV of any stream of the B.Sc.N. program; or permission of the instructor
Not open to students with credit in NURSING 4203 if the topic was Poverty and Homelessness.

HEALTH SCI 4203: HEALTH SCIENCE CONFLICT MANAGEMENT IN HEALTH CARE ORGANIZATIONS
An introduction to the types and processes of conflict in health care organizations. Exploration and application of theories and principles of conflict and negotiations to situations in the health care environment. Offered in both tutorial and distance format.
Tutorial (three hours); one term
Prerequisite: A minimum of one year clinical work experience in a health care profession or permission of the instructor
Antirequisite: NURSING 4203

HEALTH STUDIES

(SEE HEALTH, AGING AND SOCIETY)

HEBREW

(SEE RELIGIOUS STUDIES, HEBREW)

HISPANIC STUDIES

(SEE LINGUISTICS AND LANGUAGES, HISPANIC STUDIES)

HISTORY

WEB ADDRESS: http://www.units.mcmaster.ca/~history/

Chester New Hall, Room 619
Ext. 24270

Faculty as of January 15, 2008

Chair
Kenneth Cruikshank

Distinguished University Professor
John C. Weaver/B.A. (Queen’s), M.A., Ph.D. (Duke)

Professors
J. Michael Gauvreau/B.A. (Laurentian), M.A., Ph.D. (Toronto)
Bernice M. Kaczynski/B.A. (Pittsburgh), M.Phil., Ph.D. (Yale)
H. V. Nelles/B.A., M.A., Ph.D. (Toronto)/L. R. Wilson Professor in Canadian History

Adjunct Professor
John A. Sainsbury/B.A. (Brock), B.A. (Cambridge), Ph.D. (McGill)

Assistant Professors
Karen Balcom/B.A. (Carleton), M.A. (Dalhousie), Ph.D. (Rutgers)
Michael Egan/B.A., M.A. (Simon Fraser), Ph.D. (Washington State)
Bonny Ibyaw/B.A. (Bendel), M.A. (Ibadan), Ph.D. (Dalhousie)
Tracy McDonald/B.A., M.A., Ph.D. (Toronto)

Adjunct Assistant Professors
Andrew Bone/Bertrand Russell Editorial Project), B.A. (Birmingham), M.A., Ph.D. (McMaster)
Kathleen E. Garay/Archivist, Mills Library), B.A. (East Anglia), M.A. (McMaster), Ph.D. (Toronto)

Associate Members
Nancy B. Bouchier/Kinesiology B.A., M.A., Ph.D. (Western Ontario)
Richard S. Harris/Geography and Earth Sciences) B.A., M.A. (Ohio State), Ph.D. (Queen’s)
Kenneth H. Norriel/History of Exercise and Sports Medicine B.A. (Saskatchewan), M.Phil., Ph.D. (Yale)

Department Notes:
1. The Department of History offers five Level I courses, each of which is designed to introduce the student to the study of History at the university level. Six units of Level I History are required for those students who anticipate entering B.A. or Honours programs in History. However, students will be admitted to programs in History if they have completed CLASSICS 1M03, (cross-listed as HISTORY 1M03) as part of the six units required for admission into the programs. Students may take only 12 units of these Level I History courses.
2. Not every History course listed in this Calendar is offered every year. Students should consult the Department of History web site (http://www.history.mcmaster.ca/~history) in March for a list of courses that will be offered in the following academic year.
3. Enrollment in any Level IV History seminar will be limited to approximately 15 students. Students must be registered in an Honours History program to enroll in any Level IV History seminar. Preference will be given 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 III B.A. History and others (with special permission of the Department).

4. Students interested in Ancient History are advised to examine the courses in Classics offered by the Department of Classics. The following courses may be applied towards any Honours B.A. degree requirements in History at Levels II and III:
   KINESIO1 3A03 History of Exercise and Sports Medicine
   KINESIO 4A03 Canadian Sport and Physical Activity History

The following course may be applied towards the B.A. degree requirements in History at Levels II and III:
   KINESIO 3A03 History of Exercise and Sports Medicine

Courses

If no prerequisite is listed, the course is open.

HISTORY 1A03: EUROPE FROM THE RENAISSANCE TO THE FRENCH REVOLUTION
An examination of the principal themes and issues of European history from the Renaissance to the French Revolution.
Three hours (lectures and tutorials); one term

HISTORY 1A03: EUROPE FROM THE FRENCH REVOLUTION TO THE END OF THE SECOND WORLD WAR
An examination of the principal themes and issues of European history from the French Revolution to the end of the Second World War.
Three hours (lectures and tutorials); one term

HISTORY 1B03: THE AMERICAS AND THE WORLD
An examination of the Americas from European contact into the 19th century.
Three hours (lectures and tutorials); one term

HISTORY 1B03: GLOBAL HISTORY IN THE 20TH CENTURY
An examination of global interactions of peoples and nations since 1900.
Three hours (lectures and tutorials); one term

HISTORY 1M03: HISTORY OF GREECE AND ROME
The history of Greece and Rome from the bronze age to the fall of Rome based on literary, documentary and archaeological evidence.
Two lectures, one tutorial; one term
Cross-list: CLASSICS 1M03
Antirequisite: CLASSICS 1L03, 1L13, HISTORY 1L03, 1L13
This course is administered by the Department of Classics.
HISTORY 2AA3  THE MODERN CARIBBEAN
An examination of the 19th- and 20th-century Caribbean, focusing on the end of slavery, the arrival of indentured Asian immigrants, pan-Africanism, anti-colonial movements and revolution. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 2AA3

HISTORY 2CC3  THE MEDIEVAL WORLD 400-1050
The Early Middle Ages: The barbarian kingdoms to the feudal monarchies. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 2106

HISTORY 2DD3  THE MEDIEVAL WORLD 1050-1400
The High and Late Middle Ages: Themes in European history, society and culture. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 2106

HISTORY 2EE3  SCIENCE AND TECHNOLOGY IN WORLD HISTORY
An introduction to the manner in which science and technology influence society and how they influence science and technology, paying particular attention to the transfer of knowledge and machines over time and between cultures. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 2FO3  WOMEN IN EUROPE TO 1650
An exploration of the history of European women and gender during the medieval and early modern periods, focusing on the political, social, spiritual, intellectual and economic realms. Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: WOMEN ST 2FO3

HISTORY 2G03  MODERN LATIN AMERICA SINCE 1820
Liberalism, nationalism, militarism and the various revolutions will be covered, as well as the U.S. role in Latin America and the Caribbean. Three hours; one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 3YY3, PEACE ST 2G03, 3J03

HISTORY 2HH3  MEDITERRANEAN ENCOUNTERS 1500-1800
This course examines the Mediterranean region as a zone of intense cultural interaction. Particular emphasis will be given to the interaction between Christian, Jewish and Islamic societies. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 2FF3

HISTORY 2I13  MODERN GERMANY
This course examines the complexities of German social and political history since 1890, including World War One, Third Reich, cold war division, questions of national identity and the peaceful revolution of 1989. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 2I13
Antirequisite: HISTORY 3Q03, PEACE ST 3G03

HISTORY 2J03  AFRICA TO 1900
Survey of the political, social and economic history of Africa including the evolution of early human cultures, the rise and fall of civilizations and the contact between Africans and Europeans. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 2JJ3  AFRICA SINCE 1900
Survey of the political, social and economic history of Africa including the partitioning of the continent, the practices of European imperialism, independence and the process of national building. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 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, war and the warrior, slavery, marriage and family and the role of women. Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CLASSICS 2K03
This course is administered by the Department of Classics.

HISTORY 2LA3  HISTORY OF ANCIENT GREECE I
Greece from the rise of the city-state to the Peloponnesian War, 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 or above
Cross-list: CLASSICS 2LA3
Antirequisite: CLASSICS 2L03, HISTORY 2L03
Alternate with HISTORY 2LC3.
This course is administered by the Department of Classics.

HISTORY 2LB3  HISTORY OF ANCIENT GREECE II
Greece from the Peloponnesian War to the coming of Rome, 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 or above
Cross-list: CLASSICS 2LB3
Antirequisite: CLASSICS 2L03, 3LL3, HISTORY 2L03, 3LL3
Alternate with HISTORY 2LD3.
This course is administered by the Department of Classics.

HISTORY 2LC3  HISTORY OF ANCIENT ROME I
Rome from its early development to the dictatorship of Caesar, 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 or above
Cross-list: CLASSICS 2LC3
Antirequisite: CLASSICS 2L03, HISTORY 2LL3
Alternate with HISTORY 2LA3.

HISTORY 2LD3  HISTORY OF ANCIENT ROME II
Rome from the dictatorship of Caesar to Late Antiquity, 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 or above
Cross-list: CLASSICS 2LD3
Antirequisite: CLASSICS 2L03, HISTORY 2LL3
Alternate with HISTORY 2LB3.
This course is administered by the Department of Classics.

HISTORY 2M03  EARLY MODERN BRITAIN, 1500-1800
A thematic study of British culture, society and governance between 1500 and 1800 A.D. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 2MM3  BRITAIN IN THE MODERN ERA, 1800-2000
The political, social, economic and cultural history of Britain over the last two centuries, with particular attention to the domestic impact of the British imperial experience. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 2P03  HISTORICAL INQUIRY
An introduction to the systematic investigation of historical issues and problems in a small class setting. Topics will vary, representative of the interests of the department's teaching staff. Three hours (seminar); one term
Prerequisite: Registration in Level II or above

HISTORY 2Q03  IMPERIAL RUSSIA
A survey of Russian history from Peter the Great to the Revolutions of 1917. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 3H06

HISTORY 2QQ3  THE SOVIET UNION
A history of the Soviet Union from 1917 to the present with an emphasis on social history, culture and identity. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 3H06
HISTORY 2R03  U.S. HISTORY TO THE CIVIL WAR
A survey of the political, cultural, social and economic development of the United States to 1877, from the colonial and revolutionary eras to the Civil War and Reconstruction.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 2RR3  U.S. HISTORY SINCE THE CIVIL WAR
A survey of the political, cultural, social and economic development of the United States from Reconstruction to the present.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 2S03  WAR IN THE WEST, 1850-1945
A survey of the development of warfare in the Western World from 1850 to 1945. Particular attention is paid to the two World Wars in the 20th century.
Three hours; one term
Prerequisite: Registration in Level II or above

HISTORY 2T03  SURVEY OF CANADIAN HISTORY, BEGINNINGS TO 1885
A survey of the political, cultural, social and economic development of Canada to 1885, from first nations and colonial origins to Confederation and the North West Rebellion.
Three hours (two lectures, one tutorial); one term
Prerequisite: Registration in Level II or above

HISTORY 2TT3  SURVEY OF CANADIAN HISTORY, 1885 TO THE PRESENT
A survey of the political, cultural, social and economic development of modern Canada, from the North West Rebellion and nation-building era to the present.
Three hours (two lectures, one tutorial); one term
Prerequisite: Registration in Level II or above

HISTORY 2U03  HISTORICAL ORIGINS OF GLOBALIZATION, 1200-1700
An introduction to interpretations of globalization, the appearance and expansion of cross-cultural trade systems, colonization and population diasporas.
Three hours (two lectures, one tutorial); one term
Prerequisite: Registration in Level II or above

HISTORY 2U23  HISTORICAL ORIGINS OF GLOBALIZATION, 1700-1950
The emergence of global economies, settlement colonies, the dispersal of flora and fauna, the spread of ideas about property and economic development, innovations in finance and communications.
Three hours (two lectures, one tutorial); one term
Prerequisite: Registration in Level II or above

HISTORY 2X03  JUDAISM, THE JEWISH PEOPLE AND THE BIRTH OF THE MODERN WORLD
On the lures and threats of the modern world from the early 18th to the early 20th 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: Registration in Level II or above
Cross-list: RELIG ST 2X03
Antirequisite: HISTORY 3203, RELIG ST 3203
This course is administered by the Department of Religious Studies.

HISTORY 3A03  THE OTTOMANS AND THE WORLD AROUND THEM
This course places the Ottoman Empire (1300-1918) in the context of its neighbours in Europe and Asia. It will address themes such as the confrontation of a pre-modern empire with capitalism and modernity in the age of nationalism.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3A33  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 or above
Cross-list: PEACE ST 3A03

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 or above
Cross-list: JAPAN ST 3B03

HISTORY 3D03  FRANCE IN ENLIGHTENMENT AND REVOLUTION
A study of change in 18th-century France, with emphasis on the origins, nature and impact of the Enlightenment and the French Revolution.
Three hours (lectures and discussion); one term
Prerequisite: Six units of History and registration in Level II or above

HISTORY 3DD3  THE JEWISH WORLD IN NEW TESTAMENT TIMES
A study of Judaism in the Greco-Roman World. The course will explore selected questions in political history, the development of sects and parties, the role of the temple, apocalypticism and the Dead Sea Scrolls.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 3DD3
This course is administered by the Department of Religious Studies.

HISTORY 3EE3  THE GREEK HISTORIANS
The study in translation of Herodotus, Thucydides and other Greek historical writers, with consideration of the evolution of their genre and their contributions to the development of historiography.
Three lectures; one term
Prerequisite: Six units from HISTORY 2K03, 2L03, 2LA3, 2LB3 or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3EE3
This course is administered by the Department of Classics.

HISTORY 3FF3  NAZI GERMANY
This course examines the origins and growth of National Socialism, its twelve years in power and the war that led to its demise. Themes under consideration will also include daily life in Germany in the 1930s and the Holocaust.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3GG3  MODERN CHINA
A survey of China from 1840 to the present, with emphasis on political developments, revolutionary movements, social change, and China's relations with East Asia and the West.
Three lectures; one term
Prerequisite: Registration in Level II or above

HISTORY 3HH3  ROMAN SLAVERY
An examination of Roman slavery using a variety of sources (historical and juridical texts, funerary inscriptions, archaeological evidence) in order to determine its place in Roman social structure and its importance to the ancient economy and culture.
Three lectures; one term
Prerequisite: Six units from HISTORY 2K03, 2LC3, 2LD3, 2LL3; or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3HH3
Not open to students with credit in CLASSICS 3MM3 or HISTORY 3MM3 if the topic was Roman Slavery.
This course is administered by the Department of Classics.

HISTORY 3I03  THE INTERNATIONAL RELATIONS OF THE EUROPEAN POWERS, 1870-1945
An examination of the origins and course of the First World War; the failure of post-war stabilization; and the origins and course of the Second World War.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3I03

HISTORY 3I13  AMERICAN FOREIGN RELATIONS SINCE 1898
Survey of major events and turning points of U.S. diplomatic history since the late 19th century. Emphasis on cultural dimensions of the American empire and selected historiographical controversies.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: PEACE ST 3I13
HISTORY 3J03  THE UNITED STATES IN THE 1960s
An examination of the political, social and cultural changes that occurred in the United States during the 1960s. Topics include the civil rights struggle, Black Power movement, New Left, opposition to the Vietnam War, counterculture, feminism and the conservative backlash. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3J33  CRIME, CRIMINAL JUSTICE AND PUNISHMENT IN MODERN HISTORY
A study of the changing face of the institutions of criminal justice and of criminal behaviour, as revealed in statistical and conventional historical works. The focus will be on North America, Great Britain and France.
Three lectures; one term
Prerequisite: Registration in Level II or above, with a minimum of six units of History

HISTORY 3K33  THE VIETNAM WAR
The history of the First and Second Indochina Wars (1945-1973) is examined from multiple perspectives. Explores how and why the war was fought, as well as its global legacy.
Prerequisite: Registration in Level II or above
Antirequisite: PEACE ST 3KK3

HISTORY 3L03  SOCIAL ACTIVISM, 1500-2000
A thematic study of community activism in Europe and North America. Students will be exposed to the religious, socio-economic and political contexts of social activism and the historical theory and practice of community-based actions.
Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3L03

HISTORY 3M03  GREEK INTELLECTUAL REVOLUTION
A study of the birth of rationalist and naturalistic thought in Greece, placing this intellectual revolution in its social, political and cultural context.
Three lectures; one term
Prerequisite: Six units from HISTORY 1L03, 1M03, 2K03, 2L03, 2LA3, 2LB3, CLASSICS 2P06 or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3M03
Offered in alternate years.
This course is administered by the Department of Classics.

HISTORY 3M33  TOPICS IN GREEK HISTORY
Studies of Greek history and institutions. Consult the department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units from HISTORY 2K03, 2L03, 2LA3, 2LB3; or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3M33
HISTORY 3M33 may be repeated, if on a different topic, to a total of six units. Offered on an irregular rotation basis.
This course is administered by the Department of Classics.

HISTORY 3M93  TOPICS IN ROMAN HISTORY
Studies of Roman history and institutions. Consult the department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units from HISTORY 2K03, 2LC3, 2LD3, 2LL3; or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3M93
HISTORY 3M93 may be repeated, if on a different topic, to a total of six units. Offered on an irregular rotation basis.
This course is administered by the Department of Classics.

HISTORY 3N03  THE HISTORY OF THE CANADIAN WORKING CLASS
An examination of social, political and economic issues shaping the development of the Canadian working class. This includes investigation of the ideological divisions, ethnic relations and gender roles within the working class and within the labour movement.
Three lectures; one term
Prerequisite: Registration in Level II or above

HISTORY 3N33  CANADA'S REVOLUTIONS: 1939-1982
An intensive treatment, through the lenses of society, ideology and politics, of the revolutionary experience of the post war decades. The course will examine the country's transition from a prevailing conservative liberalism premised on community solidarity to a liberal democracy which exalts individual rights.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3O03  SLAVERY IN THE ATLANTIC WORLD
An examination of slavery in the Americas, from the fifteenth to the nineteenth centuries. Topics to be examined include plantations and labour regimes; gender, slave health; slave resistance; Afro-Creole cultures; emancipation.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3O03

HISTORY 3P03  RELIGION AND SOCIETY IN CANADA
This course will examine the origin, nature and development of the major Canadian religious denominations from the 17th to the mid-20th Century.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Offered in alternate years.

HISTORY 3Q03  THE SOVIET UNION THROUGH FILM
Soviet history through the prism of Soviet film as a primary source from 1924 to the present.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3R03  EUROPE BETWEEN THE WARS, 1918-1938
This course explores the political radicalism, social transformation and cultural experimentation which defined Europe in the roaring 1920s and the crisis-ridden 1930s.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3T03  EARLY MODERN FRANCE, 1450-1789
France was without question one of the most powerful polities in early modern Europe and serves as a useful focal point for understanding the emergence of absolutism, colonization, imperialism, urbanization and changing gender and social roles.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3T33  LEISURE AND ENTERTAINMENT IN GREECE AND ROME
Social life, leisure and festivals in the Greek and/or Roman world. Topics may include banqueting, bathing, theatre and spectacle and religious holidays. Literature, art and archaeological evidence will be considered.
Three lectures; one term
Prerequisite: Six units of Level II or III Classics or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3T33
Antirequisite: CLASSICS 3T03
This course is administered by the Department of Classics.
Offered in alternate years.

HISTORY 3U03  THE SOCIAL HISTORY OF TRUTH
An examination of the history of modern science, putting special emphasis on the production and consumption of knowledge.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3U33  HISTORY OF THE FUTURE
A study of the history of how human technological capacity in interaction with social ethics has driven imagination of the future and helped shape the future imagined.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3V3  WAR AND SOCIETY IN EARLY MODERN BRITAIN 1485-1815
A thematic study of the nature of British warfare and its relationship to society during the period when Britain developed as a major military and naval power.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3V3

HISTORY 3W3  WOMEN IN CANADA AND THE U.S. TO 1920
This course examines key areas of women's history, such as indigenous cultures, slavery, immigration, religion, witchcraft, the family, sexuality, paid and unpaid labour and the first wave of the women's movement.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: WOMEN ST 3W3
Antirequisite: HISTORY 3X03
HISTORY 3WW3 WOMEN IN CANADA AND THE U.S. FROM 1920
This course examines key areas of women's history, such as the impact of the Great Depression and the Second World War, the civil rights movement, the sexual revolution and the second wave of the women's movement.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: WOMEN ST 3GG3
Antirequisite: HISTORY 3X03

HISTORY 3X03 ROMAN RELIGION
A study of the role of religion in Roman public and private life using literary, documentary and archaeological evidence.
Three lectures; one term
Prerequisite: Six units from HISTORY 2K03, 2LC3, 2LD3, 2LL3 or registration in Level III or above of a program in Classics
Cross-list: CLASSICS 3X03
This course is administered by the Department of Classics.
Offered in alternate years.

HISTORY 3XX3 HUMAN RIGHTS IN HISTORY
A thematic examination of the global historical evolution of the notion of human rights from antiquity up to the Universal Declaration of Human Rights in the 20th century.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3XX3

HISTORY 3Y03 DEATH, DISEASE AND DEGENERATION: A HISTORY OF HEALTH AND HEALTH CARE IN CANADA
Explores the history of health and health care in Canada, from the first Western European settlements to the present day.
Two lectures one small group session (one hour); one term
Prerequisite: Registration in Level II or above
Cross-list: HEALTHST 3Y03, HTH SCI 3Y03
This course is administered by the Bachelor of Health Sciences (Honours) program.

HISTORY 3Y33 BRITAIN AND THE FIRST WORLD WAR
This course is designed to be an in-depth thematic exploration of the British experience of the First World War. Military, political, social, economic, technological and cultural issues and concerns will be considered.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: PEACE ST 3Y33

HISTORY 3ZZ3 JUDAISM AND THE JEWISH PEOPLE IN THE 20TH 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: Registration in Level II or above
Cross-list: RELIG ST 3ZZ3
Antirequisite: RELIG ST 2XX3
This course is administered by the Department of Religious Studies.

Note:
Level IV seminars are open only to students registered in Levels III and IV of an Honours History program. Enrolment will be limited to approximately 15 students per seminar. The Department is able to offer only a selection of the seminars listed below every year. Information on courses may be obtained from the Department. Seminar places will be allotted each March for the succeeding session; early application to the Department is essential.

HISTORY 4A06 RACISM AND HUMAN RIGHTS IN POST-CONFEDERATION CANADA
This course examines ethnic and racist prejudices and discrimination in Canada including attitudes towards immigrants from Asia and Europe, African Canadian and Indigenous peoples. It will also explore the efforts of human rights advocates.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2J06, 2TT3 or 2UU3; and registration in Level III or IV of an Honours program in History
Departmental permission required.

HISTORY 4A06 EARLY MODERN BRITAIN, 1500-1800
Selected topics in the political, religious, intellectual and social life of the British peoples, 1500-1800.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2M03 or SSS3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4B06 MODERN CANADA, 1896-1968: AN INTELLECTUAL AND CULTURAL HISTORY
An intensive study of the shaping of the 20th-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: One of HISTORY 2T03, 2TT3 or 3NN3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4B06 MODERN JAPAN
Japan from the Meiji Restoration to the post-war resurgence, with emphasis on political developments and social change.
Semina (two hours); two terms
Prerequisite: HISTORY 3B03 and registration in Level III or IV of any Honours program in History; or JAPAN ST 3B03 (HISTORY 3B03) with a grade of at least B- and registration in Level III or IV of the Japanese Studies program
Departmental permission required.

HISTORY 4C06 MODERN EUROPEAN CULTURE IN CRISIS
An examination of European intellectual and cultural history from the late 19th to the mid-20th centuries. Themes include the encounter with modernity; the intersection of culture and politics; the impact of two world wars; and the response of intellectuals, artists and scientists to ideological polarization.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2C06, 2FF3, 2J13, 2QQ3, 2S03, 3H06, 3H43, 3J03, 3Q03, 3QQ3, 3R03; and registration in Level III or IV of any honours program in History
Departmental permission required.

HISTORY 4D06 HUMAN RIGHTS IN AFRICA: HISTORICAL PERSPECTIVES
An exploration of the history of human rights in Africa in the colonial and post-colonial periods.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2J03, 2J33, 3BB3 or 3003; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4E06 THE LEGACY OF THE FIRST WORLD WAR ON BRITISH SOCIETY
This course examines the social, political and cultural consequences of the First World War on Britain, both at the time of its fighting and long after the fighting had ended.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2M3, 3P3 or HISTORY 3RR3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4F06 HEALTH AND MEDICINE IN THE MODERN WESTERN WORLD
An examination of public health and medicine in the Modern Western World, with particular emphasis on Britain and North America, c.1760-1945. Topics will include: the impact of infectious diseases on First Nations' society; urban sanitary reform; the emergence of the medical profession; and the rise of universal health insurance.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2TT3, 3V03 or 3Y03; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4G06 MODERN CHINA
Aspects of the political, social and cultural history of 19th- and 20th-century China.
Seminar (two hours); two terms
Prerequisite: HISTORY 2G3 or 3GG3; and registration in Level III or IV of any Honours program in History
Departmental permission required.
HISTORY 4GG6  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 2EA3, 2EB3, 2HH3, 3A03, 3AA3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4I06  WOMEN AND SOCIAL MOVEMENTS IN THE 19TH- AND 20TH-CENTURY UNITED STATES
Women's involvement in social movements such as anti-lynching, unionization, feminism and civil rights is used to discuss power, social change, race, femininity, masculinity and class in U.S. history.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2FF3, 2R03, 2FR3 or 3WW3; and registration in Level III or IV of an Honours program in History
Departmental permission required.

HISTORY 4J06  U.S. FOREIGN RELATIONS
Topics in the history of the United States Foreign relations in the modern era.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2RR3, 2FF3, 3I13 or 3KK3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4K06  ENVIRONMENT AND ENVIRONMENTALISM IN MODERN NORTH AMERICA, 1890-1990
Explores how different social groups in the United States and Canada confronted the sometimes adverse impact of urban and industrial growth on the physical environment of their communities.
Seminar (two hours); two terms
Prerequisite: Registration in Level III or IV of any Honours program in History
Departmental permission is required.

HISTORY 4N06  SOCIETY AND CULTURE IN THE ATLANTIC WORLD
An examination of selected themes in the history of the Atlantic world from the sixteenth to the nineteenth centuries. Topics may include race, gender and class; slavery and emancipation; revolution and the transfer of revolutionary ideas.
Prerequisite: One of HISTORY 2AA3, 2D03, 2M03, 2R03, 2U03, 3003; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4P06  RUSSIA AND REVOLUTION
The Soviet experience from 1917 to the death of Stalin and beyond with special emphasis on the issue of identity.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2I13, 2Q03, 2QQ3, 2S03, 3H06, 3QQ3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4Q06  CONTEMPORARY EUROPE
Topics in the history of Europe during the 20th Century.
Seminar (two hours); two terms
Prerequisite: Six units from HISTORY 2C06, 2FF3, 2I13, 2QQ3, 2S03, 3H06, 3H33, 3I03, 3QQ3, 3QQ3 or 3FR3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4R06  RELIGION AND SOCIETY IN LATE ANTIQUITY
Selected themes in late Roman and early Christian history.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2C03, 2D03, 2F03, 2I06, 2K03, 2L03, 2L33, 2L53, 2LC3, 2LD3, 2LL3, 3C03, 3C03, 3F03, 3H03, 3H33, 3LL3, 3MM3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4R06  REVOLUTIONS IN THE HISTORY OF SCIENCE AND TECHNOLOGY
An examination of the historiographies of science and technology, with special focus on science and technology's social functions and interactions.
Seminar (two hours); two terms
Prerequisite: HISTORY 2EE3 or 3U03; and registration in Level III or IV of any Honours program in History
Antirequisite: HISTORY 4M06
Departmental permission required.

HISTORY 4S06  EUROPEAN REFORMATIONS
This seminar course examines religion as a powerful cultural influence in Europe during the sixteenth century. Students will study the major Catholic and Protestant religious reform movements as well as the interaction of Christian and non-Christian traditions.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2CC3, 2DD3, 2F03, 2HH3, 2I06, 3F03, 3T03; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4U06  THE NORTH AMERICAN CITY, 1700 TO THE PRESENT
An examination of: founders' designs; practices and influence of business communities; the impact of technologies and architecture; spatial organization of class and ethnicity; shelter and urban services; differences between Canadian and American cities.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2R03, 2FR3, 2T03 or 2TT3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4V06  THE SECOND WORLD WAR
Emphasis will be placed on the military and diplomatic aspects of the subject.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2F06, 2S03 3I03, 3Q03 or 3R03; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HUMANITIES (GENERAL)

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 or above
Antirequisite: ARTS & SCI 1B00, CMST 2W03, PHILOS 2R03

HUMAN 3W03  APPLIED HUMANITIES I
Students gain applied experience in a field related to a Humanities discipline by applying skills and knowledge acquired in undergraduate studies in practical areas such as research projects, pedagogy and work placements. Students participate in designing learning goals and experiences.
Prerequisite: Registration in Level III or IV of any Honours program offered by the Faculty of Humanities. Students must contact the Dean's Office, CHN 112, for information on opportunities that are available for the coming year. Permission of the Associate Dean of the Faculty of Humanities is required.

HUMAN 4W03  APPLIED HUMANITIES II
Students gain applied experience in a field related to a Humanities discipline by applying skills and knowledge acquired in undergraduate studies in practical areas such as research projects, pedagogy and work placements. Students participate in designing learning goals and experiences.
Prerequisite: Registration in Level III or IV of any Honours program offered by the Faculty of Humanities. Students must contact the Dean's Office, CHN 112, for information on opportunities that are available for the coming year. Permission of the Associate Dean of the Faculty of Humanities is required.

INDIGENOUS STUDIES

WEB ADDRESS: http://www.mcmaster.ca/indigenous/default.htm

Director
D.J. Martin-Hill/B.A., M.A., Ph.D. (McMaster)

Ext. 27426
Courses If no prerequisite is listed, the course is open.

INDIG ST 1A03 INTRODUCTION TO INDIGENOUS STUDIES
An introduction to Indigenous peoples' world views from pre-contact to the Indian Act of 1876. Indigenous history and philosophy will be examined along with the issues of representation and colonialism. Three hours (lectures and seminars); one term
Prerequisite: INDIG ST 1A06

INDIG ST 1AA3 INTRODUCTION TO CONTEMPORARY INDIGENOUS STUDIES
This course will explore the relationship between Indigenous peoples and mainstream society in the 20th century with regard to governmental policy, land claims, economic development, and self-determination. Three hours (lectures and seminars); one term
Prerequisite: INDIG ST 1A06

INDIG ST 2A03 INDIGENOUS PEOPLES' SPIRITUALITY
This course will examine the spirituality based knowledge of Aboriginal peoples across North America. The philosophies, world view, sacred ways of knowing and relationship to the natural world will be explored. Three hours (lectures and seminars); one term
Prerequisite: INDIG ST 1A03, 1AA3; or one of CAYUGA 1203, MOHAWK 1203, OJIBWE 1203; or permission of the instructor
Antirequisite: INDIG ST 2A06

INDIG ST 2A03 INDIGENOUS KNOWLEDGE AND METHODOLOGY
This course will explore the basis of Indigenous knowledge and how that translates into theory and methodology. It explores a range of inter-disciplinary approaches based on current work of Indigenous scholars redefining the field of Indigenous research.
Three hours (lectures and seminars); one term
Prerequisite: INDIG ST 1A03, 1AA3; or one of CAYUGA 1203, MOHAWK 1203, OJIBWE 1203; or permission of the instructor
Antirequisite: INDIG ST 2A06

INDIG ST 2B03 HISTORY OF INDIGENOUS PEOPLES' SOVEREIGNTY
An examination of North America Indigenous People's political and economic history in the pre-contact, early contact, and colonial eras within a post-colonial context. Topics will include: self-determination, resource management, land claims, and economic development.
Three hours (lectures and seminars); one term
Prerequisite: INDIG ST 1A03, 1AA3; or one of CAYUGA 1203, MOHAWK 1203, OJIBWE 1203; or permission of the instructor
Antirequisite: INDIG ST 2B06

INDIG ST 2C03 CONTEMPORARY INDIGENOUS SOCIETIES AND ISSUES: SELECTED TOPICS

2008-2009 Topic: TBA
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 (lectures and seminars); one term
Prerequisite: INDIG ST 1A03, 1AA3; or one of CAYUGA 1203, MOHAWK 1203, OJIBWE 1203; or permission of the instructor
Antirequisite: INDIG ST 2C03 may be repeated, if on a different topic, to a total of six units.

INDIG ST 2D03 CONTEMPORARY NATIVE LITERATURE IN CANADA
A study of significant works by Native writers who give voice to their experience in Canada. Issues to be examined include appropriation of voice, Native identity, women in Indigenous societies, and stereotyping.
Three hours (lectures and seminars); one term
Prerequisite: Six units Level II Indigenous Studies or six units of Level II English or permission of the instructor
Antirequisite: INDIG ST 2D03 may be repeated, if on a different topic, to a total of six units.

INDIG ST 2E03 CONTEMPORARY NATIVE LITERATURE IN THE UNITED STATES
A study of contemporary works by Native writers in the United States. Native representations of voice, identity, gender, and popular culture will be examined.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor
Antirequisite: INDIG ST 2E03 may be repeated, if on a different topic, to a total of six units.

INDIG ST 2F03 STUDY OF IROQUOIS FIRST NATIONS IN CONTEMPORARY TIMES
An intensive examination of the Iroquois Confederacy and its attempts to maintain its culture, socio-political systems and economic independence.
Three hours (lectures and seminars); one term
Prerequisite: Six units Level I Indigenous Studies or permission of the instructor
Antirequisite: INDIG ST 2F03 may be repeated, if on a different topic, to a total of six units.

INDIG ST 2G03 INDIGENOUS CREATIVE ARTS AND DRAMA: SELECTED TOPICS

2008-2009 Topic: TBA
The creative processes of Indigenous cultures are studied through the examination of selected forms of artistic expression, which may include art, music, dance and/or drama.
Three hours (lectures and seminars); one term
Prerequisite: Six units Level II Indigenous Studies or six units of Level II English or permission of the instructor
Antirequisite: INDIG ST 2G03 may be repeated, if on a different topic, to a total of nine units.

INDIG ST 2H03 INDIGENOUS MEDICINE I - PHILOSOPHY
This course will examine the Aboriginal concepts of health and wellness. The holistic traditional approach will be used in the classroom as well as in visits by elders, medicine people and class trips to places of health, wellness and healing.
Three hours (lectures and seminars); one term
Prerequisite: Six units Level II Indigenous Studies or permission of the instructor
Antirequisite: INDIG ST 2H03 may be repeated, if on a different topic, to a total of six units.

INDIG ST 2I03 INDIGENOUS MEDICINE II - PRACTICAL
This course will examine the concept of traditional medicines, their histories and their connection to Aboriginal philosophies of wellness (studied in Part I); procedures for procurement and use of the medicines will be addressed and emphasis will be placed on the reasons for efficacy.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or permission of the instructor
Antirequisite: INDIG ST 2I03 may be repeated, if on a different topic, to a total of six units.
INQUIRY

Courses If no prerequisite is listed, the course is open.

INQUIRY 1H03 INQUIRY IN THE HUMANITIES
This introduction to the systematic investigation of an issue develops skills that will serve students well in their university careers. Students learn how to formulate questions, gather and interpret evidence and reach well-considered conclusions, using, as content, a topic central to research in the Faculty of Humanities.
Three hours; one term
Prerequisite: Registration in Humanities I or Music I

INQUIRY 1SC3 INQUIRY IN SCIENCE
This introduction to the systematic investigation of an issue develops skills that will serve students well in their university careers. Students learn how to formulate questions, gather and interpret evidence, and reach well-considered conclusions, using, as content, a variety of science-based topics. The choice of topics is guided by the students' interest.
One hour, term one; two hours, term two
Prerequisite: Registration in a Level I program in the Faculty of Science
Antirequisite: HTH SCI 1E06
Enrolment is limited.

INQUIRY 1SS3 INQUIRY IN THE SOCIAL SCIENCES
The systematic investigation of any subject requires a set of widely applicable and transferable skills. Students learn how to formulate questions, gather and interpret evidence, and reach well-considered conclusions. The content theme will be drawn from social sciences issues and will vary depending upon the subject expertise of the instructor.
Three hours; one term
Prerequisite: Registration in Social Sciences I
Not open to students with credit in INQUIRY 1HU3, 1SC3.

INQUIRY 2HS3 CONTROVERSIAL ISSUES IN HEALTH
Students will explore the themes of Collaborations for Health from an interdisciplinary perspective with different viewpoints and debate offered in one of three thematic areas.
Three hours; one term
Prerequisite: Registration in Level I or II of any program or permission of the course coordinator

INQUIRY 3HS3 HEALTH RESEARCH SELECTIVE
Students will work singly or in small groups with a faculty member in an area of McMaster University's Collaborations for Health Initiative. Students will present a final poster in a public forum.
Three hours; one term
Prerequisite: INQUIRY 2HS3. Students will be selected after submission of a letter of interest to the course coordinator.

INTEGRATED SCIENCE

Notes:

1. Within Integrated Science courses, there is a strong emphasis on inquiry-based learning and students will be involved in individual and team research projects in field and laboratory settings. Students will also develop scientific literacy skills through study of scientific writing and through writing practice.

2. ISCI 1A24 serves as a prerequisite for all upper level Astronomy, Biology, Chemistry, Computer Science, Environmental Science, Mathematics, Physics, Psychology and Statistics courses for which any of the following are prerequisites: ASTRON 1F03, BIOLOGY 1A03, 1M03, 1M30, CHEM 1A03, 1A33, COMP SCI 1B3A, 1M3A, 1M3D, 1S3A, 2C3S, ENVIR SC 1G03, MATH 1A03, 1A3A, 1L3S, PHYSICS 1B03, 1B3A, 1BB3, 1F03, 1L03, PSYCH 1X03, 1XX3.
Courses

If no prerequisite is listed, the course is open.

ISCI 1A24 INTEGRATED SCIENCE I
Integrates learning of essential knowledge and skills from the fundamental scientific disciplines (biology, chemistry, mathematics, physics, computer science, earth science and psychology) in the context of pertinent topics and projects. Interdisciplinary teams of instructors will teach and linkages between discipline areas will be emphasized partly through study of "thematic modules".
Two terms
Prerequisite: Registration in Honours Integrated Science I and credit or registration in SCIENCE 1A00
First offered in 2009-2010.

ISCI 2A18 INTEGRATED SCIENCE II
Integrates learning of physics, math, biochemistry, chemistry, neuroscience, biology, biochemistry, psychology, computer science and earth science. Students will be involved in individual and team research projects in field and laboratory settings and will develop skills in the areas of research methodology, ethics, scientific instrumentation and scientific literacy.
Two terms
Prerequisite: Registration in Level II of an Integrated Science program First offered in 2010-2011.

ISCI 3A12 INTEGRATED SCIENCE III
Interdisciplinary research project and development of scientific and literacy skills (including data analysis, inquiry/scientific communication and leadership).
Two terms
Prerequisite: Registration in Level III of an Integrated Science program First offered in 2011-2012.

ISCI 4A12 INTEGRATED SCIENCE IV
Thesis/interdisciplinary team research project.
Two terms
Prerequisite: Registration in Level IV of an Integrated Science program First offered in 2012-2013.

ITALIAN

(SEE LINGUISTICS AND LANGUAGES, ITALIAN)

JAPANESE AND JAPANESE STUDIES

(SEE LINGUISTICS AND LANGUAGES, JAPANESE)

JEWISH STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

KINESIOLOGY

WEB ADDRESS: http://mcmaster.ca/kinesiology/
Ivor Wynne Centre, Room 19C
Ext. 24462

Faculty as of January 15, 2008

Chair
Neil McCartney

Associate Chair (Undergraduate Program)
Nick Cipriano

Professors
Cameron J. Blimkie/B.A., B.P.E. (McMaster), M.A., Ph.D. (Western Ontario)
Audrey Hicks/B.P.E., M.Sc., Ph.D. (McMaster)
Timothy D. Lee/B.H.K., M.A. (Windsor), Ph.D. (Louisiana State)
Neil McCartney/B.Ed. (Exeter), Ph.D. (McMaster)

Associate Professor
Nancy B. Bouchier/B.A., M.A., Ph.D. (Western Ontario)
Steven Bray/B.A., M.A. (Western Ontario), Ph.D. (Waterloo)
Nick Cipriano/B.P.H.E., M.Sc. (Lakehead)
James J. Dowling/B.H.K., M.H.K. (Windsor), Ph.D. (Waterloo)

Martin J. Gibala/B.H.K., M.Sc. (McMaster), Ph.D. (Guelph)
Robert J. Henderson/B.P.E. (McMaster), M.A., Ph.D. (Alberta)
James Lyons/B.A., M.Sc., M.Ed. (McMaster), Ph.D. (Simon Fraser)
Maureen J. MacDonald/B.Sc. (Acadia), M.Sc., Ph.D. (Waterloo)
Kathleen A. Martin Ginis/B.Sc. (Toronto), M.A. (Western Ontario), Ph.D. (Waterloo)
Stuart M. Phillips/B.Sc., M.Sc. (McMaster), Ph.D. (Waterloo)
David C. Wilson/Cert.Ed. (St. Paul's College), B.Ed. (Bristol), M.A. (York)

Assistant Professors
Peter J. Keir/B.Sc. (Waterloo), Ph.D. (Waterloo)
Gianni Parise/B.Kin., M.Sc., Ph.D. (McMaster)
James R. Potvin/B.H.K. (Windsor), Ph.D. (Waterloo)

Associate Members
Vicki Galea/(Rehabilitation Science) B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)
Mark V. Kamathi/(Medicine) B. Eng. (Mysore), M.S., Ph.D. (Indian Inst. of Tech., Madras), Ph.D. (McMaster)
Robert S. McKelvie/(Medicine) B.Sc., M.Sc., M.D. (Western Ontario), Ph.D. (McMaster)
Michael Pierrynouwski/(Rehabilitation Science) B.Sc., M.Sc. (Waterloo), Ph.D. (Simon Fraser)
Mark A. Tapoisky/(Medicine) B.P.E., M.D., Ph.D., F.R.C.P. (C, McMaster)
Jean Wessell/(Rehabilitation Science) B.Sc. (McGill) M.HSc. (McMaster)
Ph.D. (Alberta)
Laurie Wishart/(Rehabilitation Science) Dip.P&OT, B.Sc. (Toronto), M.Sc., Ph.D. (McMaster)

Department Notes:
1. Kinesiology students may not register in Level III or IV Kinesiology courses until all required Level I and II Kinesiology courses have been successfully completed.
2. Not all Level III and IV Kinesiology courses are offered each year.
3. KINESIOL 1Y03 and 1Y13 are available to non-Kinesiology students.
4. The following courses are available for elective credit for students enrolled in Level III or above of a non-Kinesiology program: KINESIOL 3D03, 3I03, 3M03, 3P03, 3S03, 3SS3, 3T03, 3Y03, 4D03, 4M03 and 4T03. Space for such students is limited and places are assigned on a first come basis.
5. Students pursuing a Minor in Psychology may use KINESIOL 4P03 towards completion of the requirements for the Minor.
6. KINESIOL 2G03 and 3SS3 may be used to satisfy Health Studies requirements for Kinesiology students pursuing a Minor in Health Studies.
7. KINESIOL 4SS3 may be used to satisfy Gerontology requirements for Kinesiology students pursuing a Minor in Gerontology.
8. Some Level III and IV Kinesiology courses may require current CPR/First Aid certification. Students are responsible for checking course outlines and ensuring this requirement is met.

Courses

All courses are open only to Kinesiology students unless otherwise specified. (See Notes 3 and 4 above.)

KINESIOL 1A03 HUMAN ANATOMY AND PHYSIOLOGY I
An introduction to the basic embryology and tissue development and examination of the anatomy and physiology of the skeletal, nervous, cardiovascular, lymphatic and respiratory systems.
Three hours (lecture), two hours (lab/tutorial); one term
Prerequisite: Registration in Kinesiology I and credit or registration in SCIENCE 1A00
Antirequisite: HTH SCI 1D06, 1H03, 1H06, 1H83, 2F03, 2FF3, 2L03, 2L33, KINESIOL 1A06, 1Y03, 1Y13, MED PHYS 4XX3, SCIENCE 4X39
Not open to students with credit or registration in BIOLOGY 4G06.

KINESIOL 1A3A HUMAN ANATOMY AND PHYSIOLOGY II
An examination of the anatomy and physiology of the articular, muscular, gastrointestinal, endocrine, renal and reproductive systems.
Three hours (lecture), two hours (lab/tutorial); one term
Prerequisite: Registration in Kinesiology I and credit or registration in SCIENCE 1A00
Antirequisite: HTH SCI 1D06, 1H03, 1H06, 1H83, 2F03, 2FF3, 2L03, 2L33, KINESIOL 1A06, 1Y03, 1Y13, MED PHYS 4XX3, SCIENCE 4X39
Not open to students with credit or registration in BIOLOGY 4G06.

KINESIOL 1C03 PHYSICAL ACTIVITY
An introduction to the study of physical activity epidemiology and examines the relationship between physical activity and health.
Three hours (lecture), one hour (lab/tutorial); one term
Prerequisite: Registration in Kinesiology I
KINESIOL 1E03 | PSYCHOMOTOR BEHAVIOUR
Examination of the behavioral and psychological principles of motor control and motor learning. Topics include classification and measurement of motor performance, sensory processes, perception, memory, attention and feedback.
Three hours (lectures), one hour (lab/tutorials); one term
Prerequisite: Registration in Kinesiology I

KINESIOL 1F03 | INTRODUCTION TO HUMAN NUTRITION AND HEALTH
Introduction to the study of human nutrition and examines the role of nutritional practice and physical activity in the prevention and treatment of cardiovascular disease, including obesity and diabetes.
Three hours (lectures), one hour (lab/tutorials); one term
Prerequisite: Registration in Kinesiology I

KINESIOL 1G03 | RESEARCH METHODOLOGIES AND DATA ANALYSES
Introduction to the ways in which independent research initiatives are conducted in the discipline of kinesiology based on the generation of pertinent research questions and the testing of specific hypothesis.
Three hours (lectures), one hour (lab/tutorials); one term
Prerequisite: Registration in Kinesiology I

KINESIOL 1Y03 | HUMAN ANATOMY AND PHYSIOLOGY I
An introduction to the basic embryology and tissue development and examination of the anatomy and physiology of the skeletal, nervous, cardiovascular, lymphatic and respiratory systems.
Three hours (lectures), two hours (labs/tutorials); one term
Prerequisite: Credit or registration in SCIENCE 1A00. Completion of Biology I is strongly recommended.
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 1H13, 2F03, 2F3, 2L03, 3L3, KINESIOL 1A03, 1A06, 1A03, 1X06, MED PHYS 4X03, SCIENCE 4X03
Not open to students registered in a Kinesiology program, the Bachelor of Health Sciences (Honours) program or to students with credit or registration in BIOLOGY 4G06.

KINESIOL 1YY3 | HUMAN ANATOMY AND PHYSIOLOGY II
An examination of the anatomy and physiology of the articular, muscular, gastrointestinal, endocrine, renal and reproductive systems.
Three hours (lectures), two hours (labs/tutorials); one term
Prerequisite: KINESIOL 1Y03 and credit or registration in SCIENCE 1A00.
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 1H13, 2F03, 2F3, 2L03, 3L3, KINESIOL 1A03, 1A06, 1A03, 1X06, MED PHYS 4X03, SCIENCE 4X03
Not open to students registered in a Kinesiology program, the Bachelor of Health Sciences (Honours) program or to students with credit or registration in BIOLOGY 4G06.

KINESIOL 2A03 | BIOMECHANICS
An introduction to mechanical principles and concepts as applied to human physical activity and the musculoskeletal system.
Three hours (lectures, lab); one term
Prerequisite: KINESIOL 1A03 and 1AA3 (or 1A06); KINESIOL 1C03, 1E03, 1F03, 1G03 and registration in Level II of an Honours Kinesiology program

KINESIOL 2C03 | NEUROMUSCULAR EXERCISE PHYSIOLOGY
Examination of neuromuscular function during exercise, with an emphasis on factors limiting strength, speed and power performance. Adaptations to training will also be considered, as well as training methods used to induce adaptations.
Three hours (lectures), two hours (labs/tutorials); one term
Prerequisite: KINESIOL 1A03 and 1AA3 (or 1A06); KINESIOL 1C03, 1E03, 1F03, 1G03 and registration in Level II of an Honours Kinesiology program; or KINESIOL 1Y03, 1Y13 and registration in Honours Biology (Physiology Specialization)
Antirequisite: KINESIOL 2C06

KINESIOL 2CC3 | CARDIORESPIRATORY AND METABOLIC EXERCISE PHYSIOLOGY
Examination of cardiorespiratory function during exercise, with emphasis on factors limiting endurance performance. Adaptations to training will also be considered, as well as training methods used to induce adaptations.
Three hours (lectures), two hours (labs/tutorials); one term
Prerequisite: KINESIOL 1A03, 1AA3 (or 1A06) 1C03, 1E03, 1F03, 1G03 and registration in Level II of an Honours Kinesiology program; or KINESIOL 1Y03, 1Y13 and registration in Honours Biology (Physiology Specialization)
Antirequisite: KINESIOL 2C06

KINESIOL 2E03 | MUSCULOSKELETAL ANATOMY
Examination of functional anatomy from a hands on, experiential perspective with a focus on palpating the structures of the osseous, articu- lar, muscular and supportive systems.
Four hours (labs/tutorials); one term
Prerequisite: KINESIOL 1A03, 1AA3 (or 1A06), 1C03, 1E03, 1F03, 1G03 and registration in Level II of an Honours Kinesiology program

KINESIOL 2F03 | HUMAN GROWTH AND MOTOR DEVELOPMENT ACROSS THE LIFESPAN
Growth, developmental and aging changes underlying morphological and functional development of selected physiological systems which influence human exercise capacity throughout the life span.
Three hours (lectures), one hour (labs/tutorials); one term
Prerequisite: KINESIOL 1A03, 1AA3 (or 1A06), 1C03, 1E03, 1F03, 1G03 and registration in Level II of an Honours Kinesiology program

KINESIOL 2G03 | HEALTH PSYCHOLOGY
An introduction to health psychology issues including stress, exercise, weight control and diet, health promotion, addictions and coping with illness.
Three hours (lectures); one term
Prerequisite: Registration in Level II of a Kinesiology program
Prerequisite: (Beginning in 2008-2009): KINESIOL 1A03 and 1AA3 (or 1A06); and KINESIOL 1C03, 1E03, 1F03, 1G03; and registration in Level II of an Honours Kinesiology program
Antirequisite: HTH SCI 2J03

KINESIOL 3A03 | HISTORY OF EXERCISE AND SPORTS MEDICINE
Selected topics in the social and cultural history of exercise and sports medicine in the Western World, with an emphasis on 19th- and 20th-century developments in North America.
Three hours (lectures/seminar); one term
Prerequisite: Registration in Level III or above of any Kinesiology, Health Studies or History program

KINESIOL 3A3 | BIOMECHANICS II
Study of kineinetics and kinetics of human movement, including electromyography, fluid and tissue mechanics with applications.
Three hours (lectures, lab); one term
Prerequisite: KINESIOL 1A06, 2A03 and registration in Level III or above of a Kinesiology program
Antirequisite: KINESIOL 3A06

KINESIOL 3B03 | PHYSICAL ACTIVITY FOR CHALLENGED POPULATIONS
An introduction to special populations, together with an examination of issues related to integration, design, and objectives of special physical activity programming.
Three hours (lectures); one term
Prerequisite: KINESIOL 1A06, 2G03
Corequisite: KINESIOL 3B0P

KINESIOL 3B0P | SPECIAL POPULATIONS PLACEMENT
This placement is designed to supplement the student’s classroom learning of the issues involving physical activity for special populations. Students design and/or implement physical activity programs in a variety of community settings.
Prerequisite: Registration in Level III or above of a Kinesiology program
Corequisite: KINESIOL 3B03
This placement must be completed in conjunction with KINESIOL 3B03. Students who do not successfully complete this placement will forfeit credit in KINESIOL 3B03.

KINESIOL 3C03 | STATISTICS AND RESEARCH DESIGN
Research design and descriptive and inferential statistics in Kinesiology.
Three hours (lectures, labs); one term
Prerequisite: Registration in Level III or above of a Kinesiology program

KINESIOL 3D03 | GROWTH, MATURATION AND PHYSICAL ACTIVITY
Growth, development and maturational changes underlying morphologic and functional development of selected physiological systems which influence human exercise capacity during childhood.
Three lectures, debates and applied case study assignment; one term
Prerequisite: KINESIOL 1A06, 2C06; or BIOLOGY 2A03, KINESIOL 2C06 and registration in Honours Biology (Physiology Specialization)

KINESIOL 3D03 | FOUNDATIONS OF OUTDOOR EXPERIENTIAL EDUCATION
An analysis of curricular programs in O.E.E. including environmental, earth, and eco-political education; expeditionary and adventure based learning; eco-psychotherapy and eco-tourism.
Prerequisite: Registration in Level III or above
Antirequisite: KINESIOL 4D03
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.
KINESIOL 3E03 NEURAL CONTROL OF HUMAN MOVEMENT
Neuromuscular control underlying human movement. Topics include basic neuromuscular physiology, mechanisms of sensation, reflexes, voluntary movement, and theories of motor control.
Three hours (lectures); one term
Prerequisite: KINESIOL 1A06, 1E03 and registration in Level III or above of a Kinesiology program; or PSYCH 2F03 and registration in Level III or above of an Honours Psychology program and permission of the instructor.

KINESIOL 3I03 ETHICS IN KINESIOLOGY: RESEARCH AND PRACTICE
An examination of ethical issues in health, research, and allied professional practices.
Two hours (lecture), one hour (tutorial); one term
Prerequisite: Registration in Level III or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.

KINESIOL 3J03 SKELETAL MUSCLE CELL AND MOLECULAR PHYSIOLOGY
This course will explore current and emerging topics in exercise physiology from a molecular and cellular perspective. Skeletal muscle development will be explored with an emphasis on muscle stem cells.
Two hours (lecture); one hour (tutorial); one term
Prerequisite: Registration in Level III or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.

KINESIOL 3K03 SPORTS INJURIES
Common injuries suffered in sport and physical activity will be discussed under the following headings: mechanism of injury, prevention, recognition and care, tissue healing, basic taping techniques, basic support techniques and emergency care.
Two lectures, one lab; one term
Prerequisite: KINESIOL 1A06, 2C06
(Approximately $40.00 will be charged for supplies used in labs.)

KINESIOL 3K03 SPORTS INJURIES PLACEMENT
This placement is designed to provide practical experience in sports injuries in a variety of clinical settings.
Prerequisite: Registration in Level III or above of a Kinesiology program; and a grade of at least B- in KINESIOL 3K03; and valid CPR/First Aid certification; and permission of the instructor

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, ethics in coaching, team development and psychological considerations for youth in sport.
Three hours (lectures); one term
Prerequisite: Registration in Level III or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.

KINESIOL 3M03 COMMUNITY LEADERSHIP IN SPORT AND PHYSICAL ACTIVITY
This placement course provides the essential links between classroom knowledge and professional practice. Working with special needs populations, children, adolescents, adults and the elderly, students will experience the challenges faced by community agencies that deliver sport and physical activity programs.
Placement experience equivalent to one day per week (60 hrs.); seminars; one term
Prerequisite: Credit or registration in KINESIOL 3M03 and registration in Level III or above
Antirequisite: SOC SCI 3M03
Not open to students with credit or registration in KINESIOL 4E03 if the placement is in the area of coaching or leadership.

KINESIOL 3N03 ERGONOMICS I: WORKPLACE INJURY RISK ASSESSMENT
Analysis and quantification of musculoskeletal injury risks in the workplace, with an emphasis on reducing work-related low back and upper extremity disorders.
Three hours (lecture), one hour (lab); one term
Prerequisite: KINESIOL 2A03, 2C06

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
Prerequisite: One of KINESIOL 1H03, 2B03, SOCIOL 1A06; and registration in Level III or above
Antirequisite: SOCIOL 2T03
Not open to students with credit or registration in SOCIOL 3J03 if the topic was Sociology of Sport.
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.

KINESIOL 3S03 SOMATICS AND HOLISTIC HEALTH
An examination of the philosophies and practice of holistic health medicine through the writings of somatic pioneers including Rudolf Laban, Irmgard Bartenieff, and others. Experimental workshops are used to connect physical and mental health.
Three hours (lectures, practical); one term
Prerequisite: Registration in Level II or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program.

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.
Three hours (lectures and seminars); one term
Prerequisite: Registration in Level III or above

KINESIOL 3T03 DANCE PERFORMANCE
An in-depth practical experience in performing, choreographing and teaching aimed at experienced dancers. The course will have a focus on creative modern dance and dance composition but will also include an introduction to other styles such as jazz and ballet.
Four hours (seminars and labs); one term
Prerequisite: Registration in Level III or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program.
(Approximate cost of field component is $30.00.)

KINESIOL 3Y03 HUMAN NUTRITION AND METABOLISM
An in-depth analysis of human nutrition and metabolism, with an emphasis on the impact of diet on human physical performance in both healthy and disease states.
Three hours (lectures and labs); one term
Prerequisite: Either KINESIOL 1A06 or 1X06, or both KINESIOL 1Y03 and 1YY3; and registration in Level III or above
Antirequisite: KINESIOL 4Y03
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.
Offered in alternate years.

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: KINESIOL 2A03, 3A03

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
Prerequisite: KINESIOL 1A06, 2C06
Offered in alternate years.

KINESIOL 4B03 ERGONOMICS II: MECHANISM OF INJURY AND PREVENTION
An investigation of injury mechanisms, injury epidemiology, job design consideration, WSIB, Ministry of Labour laws, job placement and functional abilities assessments. Students work in small groups to resolve ergonomic problems in the workplace.
Two lectures, one lab; one term
Prerequisite: KINESIOL 3N03
KINESIOL 4C03 INTEGRATIVE PHYSIOLOGY OF HUMAN PERFORMANCE
A detailed analysis of the physiological factors that regulate human physiological performance. Emphasis is placed on the body's integrative response to exercise, including the control of energy demand and supply.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 2C06; or BIOLOGY 2A03, KINESIOL 2C06 and registration in Honours Biology (Physiology Specialization)

KINESIOL 4C33 NEUROMUSCULAR EXERCISE PHYSIOLOGY
Neuromuscular physiology of strength, power, and speed performance, including adaptations to training and training methods.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 2C06; or BIOLOGY 2A03, KINESIOL 2C06 and registration in Honours Biology (Physiology Specialization)

KINESIOL 4D03 OUTDOOR EDUCATION
An examination of skills, pedagogy and perspectives of outdoor (expediteritary) education. This course involves a nine day field component before the class begins.
Three hours (lectures, tutorials, field experiences); one term
Prerequisite: Registration in Level III or above of a Kinesiology program; or registration in Level III or above of a non-Kinesiology program and permission of the instructor
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program.
(Approximate cost of field component is $425.00)

KINESIOL 4E03 ADVANCED PLACEMENT
Students take part in a supervised practical experience that links classroom knowledge to professional practice. Placements are offered in aging, cardiac rehabilitation, sports injuries, dance, management, outdoor education, special needs populations and teaching and coaching. Placement experiences equivalent to one day per week (90 hrs.), seminars; one term
Prerequisite: One of KINESIOL 3B03, 3F03, 3JJ3, 3K03, 3M03, 4B03, 4D03, 4J03, 4JJ3, 4SS3; and registration in Level IV of a Kinesiology program; and permission of the supervising instructor
Antirequisite: KINESIOL 4X06

KINESIOL 4F03 SELECTED TOPICS IN KINESIOLOGY I
Each year the Department of Kinesiology offers a number of different courses under this category reflecting topics of current 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); one term
Prerequisite: Registration in Level III or above of a Kinesiology program

KINESIOL 4FF3 SELECTED TOPICS IN KINESIOLOGY II
As per KINESIOL 4F03
Three hours (lectures); one term
Prerequisite: Registration in Level III or above of a Kinesiology program

KINESIOL 4GG3 CLINICAL BIOMECHANICS
This course examines current research in clinical biomechanics relating to injury and rehabilitation mechanisms, properties of material implants and application, and normal and clinical gait analysis.
Two lectures, one lab; one term
Prerequisite: KINESIOL 3AA3

KINESIOL 4J03 EXERCISE PSYCHOLOGY
This course examines the interaction of psychological factors and participation in physical activity with a focus on research, promotion and maintenance of exercise participation and health outcomes.
Three hours (lectures/tutorials); one term
Prerequisite: KINESIOL 2G03 and registration in Level III or above of a Kinesiology program

KINESIOL 4J13 CANADIAN SPORT AND PHYSICAL ACTIVITY HISTORY
An examination of selected topics and themes in the history of sport and physical activity in Canada, emphasizing the nineteenth and twentieth centuries.
Three hours (discussion, seminars)
Prerequisite: One of KINESIOL 3A03, 3I03 or registration in Level III or above of an Honours History program

KINESIOL 4J93 FUNCTIONAL ANATOMY
A hands-on applied study of functional anatomy for independent learners. The focus is on palpating the structures of the osseus, articular, muscular, and supportive systems and testing their functions.
Four hours (labs, located in WIC224); one term
Prerequisite: KINESIOL 2C06, 3K03 and registration in Level III or above of a Kinesiology program
(Approximately $35.00 will be charged for supplies used in lab.)
Not open to students with credit in KINESIOL 4FF3 if the topic was Functional Anatomy

KINESIOL 4K03 ADVENTURES IN PERCEPTION AND ACTION
The examination of perception and action of everyday skills is discussed using a problem-based approach. The emphasis is on the discovery of principles through the generation of research methods and hypothesis testing.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 1E03 and registration in Level III or above of a Kinesiology program

KINESIOL 4KK3 FUNDAMENTALS OF REHABILITATION
This course will outline the basic principles of rehabilitation and explore the more common techniques and modalities. Application of principles will be explored in a number of impairments including acquired brain injury, amputee, spinal cord injury, neuromuscular disease, stroke, etc.
Three hours (lectures, lab); one term
Prerequisite: KINESIOL 1A06, 2C06 and registration in Level III or above of a Kinesiology program
(Approximately $25.00 will be charged for supplies used in labs.)

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
Prerequisite: Registration in Level III or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program.

KINESIOL 4MM3 EXERCISE TESTING AND PRESCRIPTION
The emphasis of this course will be on exercise testing and prescription for the healthy adult population and exercise related clinical knowledge for independent functioning individuals with disabilities or chronic diseases for whom physical activity is advocated as a form of therapy.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 2C06 and registration in Level III or above of a Kinesiology program

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, environmental factors, optimal arousal and scouting.
Three hours (lectures); one term
Prerequisite: KINESIOL 3M03 and registration in Level III or above of a Kinesiology program

KINESIOL 4P03 THE BRAIN AND HUMAN MOVEMENT
A study of the role of the brain in movement control in normal and special populations.
Three hours (lectures, neuroanatomy labs); one term
Prerequisite: KINESIOL 3E03 and registration in Level III or above of a Kinesiology or Honours Psychology program. (See Note 5 above.)

KINESIOL 4Q03 PAEDIATRIC EXERCISE PHYSIOLOGY
Physiologic aspects of physical activity in children and adolescents in health and disease.
Two lectures, one lab; one term
Prerequisite: KINESIOL 2C06, 3D03; or BIOLOGY 2A03, KINESIOL 2C06, 3D03 and registration in Honours Biology (Physiology Specialization)

KINESIOL 4R03 INDEPENDENT RESEARCH
Investigation of a selected theoretical or applied problem mutually acceptable to instructor and student.
Prerequisite: Registration in Level IV of a Kinesiology program with a minimum C.A. of 8.5 and permission of the instructor
Antirequisite: KINESIOL 4RR6, 4RR9
KINESIOL 4RR6  THESS
Independent project involving a research topic under the supervision of a faculty member. The project involves a literature review, design of methodology, data collection, analysis and a research report or equivalent appropriate to the sub-discipline.
Prerequisite: Registration in Level IV of a Kinesiology program with a minimum C.A. of 8.5; and permission of the instructor
Antirequisite: KINESIOL 4R03, 4RR9

KINESIOL 4RR9  THESS
Independent project involving a research topic under the supervision of a faculty member in the Department of Kinesiology. The project involves a literature review, design of methodology, data collection, analysis and a research report or equivalent appropriate to the sub-discipline.
Prerequisite: Registration in Level IV of a Kinesiology program with a minimum C.A. of 8.5; and permission of the instructor.
Antirequisite: KINESIOL 4R03, 4RR6

KINESIOL 4S03  PHYSICAL ACTIVITY IN CHRONIC HEALTH IMPAIRMENTS
Focus on specific health impairments prevalent in our society and the various benefits/risks of physical activity in these populations.
Three hours (two lectures, one seminar); one term
Prerequisite: KINESIOL 3B03, 3BPO

KINESIOL 4S33  HUMAN AGING: BIOLOGICAL AND LIFESTYLE INFLUENCES
The interrelationship between biological processes of aging and associated lifestyle factors (e.g. exercise/inactivity) will be explored in various human systems.
Three hours (lectures); one term
Prerequisite: KINESIOL 1H03, 2B03, 2G03

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
Prerequisite: One of KINESIOL 1H03, 2B03, SOCIOL 2Q06; and registration in Level III or above
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program. However, enrolment for such students is limited.

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
Prerequisite: KINESIOL 1A06, 1E03, 2A03

KINESIOL 4X06  THEORY AND PRACTICE IN EXERCISE REHABILITATION
Provides students with in-depth experiences working in health promotion and rehabilitation settings with a variety of special populations. Students explore exercise and lifestyle issues through an experiential component, seminars and research.
Three hours (seminars, lab); two terms
Prerequisite: Registration in Level IV of a Kinesiology program with a minimum C.A. of 7.0; and credit or registration in two of KINESIOL 3B03, 4B03, 4I03, 4S03, 4S3
Antirequisite: KINESIOL 4EE3

LABOUR STUDIES
WEB ADDRESS:  http://socserv.mcmaster.ca/labourskudies/
Kenneth Taylor Hall, Room 717
Ext. 24692

Faculty as of January 15, 2008
Director
Charlotte Yates

Professors
Wayne Lewchuk(Economics) B.A., M.A. (Toronto), Ph.D. (Cambridge)
Charlotte A. B. Yates(Political Science) B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)

Associate Professors
Donna Baines(Social Work) B.S.W. (Calgary), M.S.W. (Carleton), Ph.D. (Toronto)

Robert H. Storey(Political Science) B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)
Donald M. Wells(Political Science) B.A. (Western Ontario), M.A. (British Columbia), Ph.D. (Toronto)

Assistant Professors
David Goutor(History) B.A., M.A., Ph.D. (Toronto)
Greg McElligott(Political Science) B.A., M.A. (Carleton), Ph.D. (York)

Associate Members
Graham Knight(Communications Studies and Multimedia) B.A. (Kent), M.A., Ph.D. (Carleton)
Robert J. O'Brien(Political Science) B.A. (Carleton), M.Sc. (London), Ph.D. (York)
Robert D. Wilson(Geography and Earth Sciences) B.A. (Hull), M.A., Ph.D. (Southern California)
Isik U. Zeytinoglu(Commerce) B.A., M.A. (Bogazici), M.S., Ph.D. (Pennsylvania)/Management and Industrial Relations

Note:
The following courses may be taken for elective credit by qualified students registered in any program, however, space for such students is limited and permission of the instructor is required.
LABR ST 2A03  Unions
LABR ST 2C03  Theoretical Foundations of the Labour Movement
LABR ST 2E03  Working in the 21st Century: Challenges and Possibilities
LABR ST 2G03  Labour and Globalization
LABR ST 2A03  Economics of Labour Market Issues
LABR ST 3B03  Economics of Trade Unionism and Labour
LABR ST 3C03  Labour Law and Policy
LABR ST 3D03  Occupational Health and Safety
LABR ST 3E03  Women, Work and Unionism
LABR ST 3F03  Selected Topics in Labour Studies
LABR ST 3G03  Economic Restructuring and Work Organization
LABR ST 3J03  Independent Study
LABR ST 3W03  Technologies at Work: Past, Present, Future
The Honours B.A. Program and the B.A. Program in Labour Studies are supervised and coordinated by an interdisciplinary Labour Studies Committee.

Labour Studies Committee
Chair
Charlotte Yates(Labour Studies/Political Science)
Donna Baines (Labour Studies/Social Work)
David Goutor(Labour Studies)
Wayne Lewchuk(Economics/Labour Studies)
Greg McElligott (Labour Studies/Political Science)
Robert Storey (Labour Studies/Sociology)
Donald Wells (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

LABR ST 1C03  VOICES OF WORK, RESISTANCE AND CHANGE
An examination of how work is shaped by gender, race, class and culture in a global world; how workplace cultures of community and resistance are built; and their effect on our experience of work.
Lectures and discussion; one term
Antirequisite: LABR ST 2B03

LABR ST 2A03  UNIONS
Examines unions' structure, internal decision making and economic, political and social environment. Students explore collective bargaining, political action, union democracy, diversity and renewal by simulating internal union life and participating in a union convention.
Lecture and group work/simulation; one term
Prerequisite: Registration in a Labour Studies program or permission of the instructor
LABR ST 2B03 SOCIAL WELFARE: ANTI-OPPRESSIVE POLICIES AND PRACTICES IN SOCIAL WORK
Exploration and analysis of systematic patterns of oppression, their relationships to social policies and practice and the implications for social work through a variety of instruction including experiential exercises. Topics could include: race, gender, disability; sexual orientation. Exercises, lectures and discussion; one term
Prerequisite: Registration in a Labour Studies program
Cross-list: SOC WORK 2BB3
Students in a Labour Studies program must register for this course as LABR ST 2BB3.
This course is administered by the School of Social Work.

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 program or permission of the instructor

LABR ST 2E03 WORKING IN THE 21ST CENTURY: CHALLENGES AND POSSIBILITIES
An examination of how technology, government regulation and social and political activism influence how work is organized in the 21st century. Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies program or permission of the instructor

LABR ST 2G03 LABOUR AND GLOBALIZATION
An examination of key themes in the political economy of contemporary globalization with particular emphasis on implications for worklife, working class politics and democracy. An introduction to major international economic institutions and processes associated with globalization and emerging forms of labour internationalism that contest globalization. Lectures and discussion; one term
Prerequisite: LABR ST 1C03
Priority is given to students registered in a Labour Studies program.

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 both ECON 1B03 and 1BB3 and registration in a Labour Studies program; or permission of the instructor
Cross-list: ECON 2A03
Not open to students with credit or registration in ECON 3D03.
This course is administered by the Department of Economics.

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 1B03, 1BB3 and registration in a Labour Studies program; or permission of the instructor
Cross-list: ECON 2T03
This course is administered by the Department of Economics.

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 2A03, and registration in a Labour Studies program; or permission of the instructor
Cross-list: COMMERCE 4B93
Generally offered in alternate years.

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 Level III or above of a Health Studies or Labour Studies program; or permission of the instructor
Cross-list: HEALTHST 3C03
Generally offered in alternate years.

LABR ST 3E03 WOMEN, WORK AND UNIONISM
An examination of the historical and contemporary relations between women and work, and women and 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: LABR ST 2A03 and registration in a Labour Studies program; 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, and registration in a Labour Studies program; or permission of the instructor
LABR ST 3F03 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, and registration in a Labour Studies program; or permission of the instructor
Antirequisite: LABR ST 3AA3

LABR ST 3H03 FIELD PLACEMENT METHODS
An inquiry course that exposes students to research ethics and strategies in preparation for Level IV thesis or field work. Emphasizes working with data in a real world context. Students will learn on-line research skills and how to use PowerPoint and other presentation strategies. Lectures and discussion; one term
Prerequisite: Registration in Level III or IV of an Honours Labour Studies program
Antirequisite: LABR ST 4A09

LABR ST 3J03 INDEPENDENT STUDY
Independent study of a research problem to be arranged between student and instructor. It is incumbent on the student to secure arrangements with the supervising instructor and present a written proposal to the Director for approval prior to registration. One term
Prerequisite: Registration in Level III or IV of an Honours Labour Studies program and permission of the Director

LABR ST 3W03 TECHNOLOGIES AT WORK: PAST, PRESENT, FUTURE
An inquiry based course exploring the evolution of work, how workplaces are organized in relation to technologies today, and the possible impact of technology on work in the future. It will explore the nature of work in manufacturing, the service sector and the public sector. Lectures, discussion and inquiry report; one term
Prerequisite: Registration in Level III or IV of a Labour Studies program
Antirequisite: ENGSOCTY 3X03
Offered in alternate years.
LABR ST 4A06 RESEARCH AND FIELD EXPERIENCE
Students will either write an honours thesis or participate in a field experience (a placement in a labour union, government agency or other appropriate organization). Enrolment in the field experience option is limited; students must apply to the Labour Studies Office by March 1.
Two terms
Prerequisite: Registration in Level IV of an Honours Labour Studies program
Antirequisite: LABR ST 4A09
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: COMMERC 4BC3 and registration in Level III or IV of a Labour Studies program
Cross-list: COMMERC 4B03
This course is administered by the School of Business.

LABR ST 4E03 COMPARATIVE LABOUR SYSTEMS
A discussion of labour policies, politics, unionization and industrial relations in several selected countries in Europe, Latin America and possibly including Japan. Topics will include government labour market policy, labour law, union objectives and strategies and the impact that unions have on the respective national political-economic environments.
Lectures and seminar discussion; one term
Prerequisite: Registration in Level III or IV of a Labour Studies program or permission of the instructor
Antirequisite: COMMERC 4B03, LABR ST 4D03

LATIN
(SEE CLASSICS, LATIN)

LINGUISTICS
(SEE LINGUISTICS AND LANGUAGES, LINGUISTICS)

LINGUISTICS AND LANGUAGES
WEB ADDRESS: http://www.humanities.mcmaster.ca/~linguistics/
Togo Salmon Hall, Room 613
Ext. 24388

Faculty as of January 15, 2008

Acting Chair
Virginia Aksan

Professors
Nina Kolesniokoff/M.A. (Moscow State), Ph.D. (Alberta)
Magda Stroinski/M.A. (Warsaw), Ph.D. (Edinburgh)

Associate Professors
Iris Bruce/M.A., Ph.D. (Toronto)
Maria del C. Cerezo/B.A. (Puerto Rico), M.A. (McGill), Ph.D. (Toronto)
Fiorigio Minelli/B.A., M.A. (Western Ontario), Ph.D. (Brown)
Anna L. Moro/B.A., M.A., Ph.D. (Toronto)
Jean Wilson/B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto)

Assistant Professors
Catherine Anderson/B.A. (McMaster), Ph.D. (Northwestern)
Vittorina Cecchetto/B.A., M.A., Ph.D. (Toronto)
Paolo Chiurumolo/B.A., M.A., Ph.D. (Toronto)
Franco Gallippi/B.A. (York), M.A., Ph.D. (Toronto)
Tsuneko Iwai/B.A., M.Ed., Ph.D. (Toronto)
Jakub Kazek/M.A. (Dalhousie), Ph.D. (British Columbia)
Steffi Retzlaff/M.A. (Oldenburg), Ph.D. (Potsdam)
Antonio Velasquez/B.A. (Waterloo), M.A., Ph.D. (Toronto)
Marzena Walkowiak/M.A., Ph.D. (Toronto)

Instructional Assistant
William Heikoop/B.A. (McMaster)

Department Notes:
1. The Department of Linguistics and Languages administers all courses in German, Hispanic Studies, Italian, Japanese, Linguistics, Polish, and Russian. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 613.
2. All language courses are taught and assessed in the original language, except GERMAN 4G03, 4J03 and ITALIAN 2B03.
3. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.

GERMAN ...

Courses in German are administered within the Department of Linguistics and Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 613.

Notes:
1. Students should note that the Department has classified its German language courses under the following categories:

   Introductory Level Language Course
   GERMAN 1Z06

   Intermediate Level Language Courses
   GERMAN 1B03, 1BB3, 2Z03, 2ZZ3

   Advanced Level Language Courses
   GERMAN 3Z03, 4Z03, 4CC3, 4CC3

2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.
3. Courses cross-listed with other programs (GERMAN 4G03, 4J03) will use English as the language of classroom instruction. Students taking these courses for credit in German will be required to do all their reading, writing and film viewing in German.
4. Students may be required to take a placement test in the Department of Linguistics and Languages to assess their proficiency in the language.

Courses
If no prerequisite is listed, the course is open.

GERMAN 1B03 INTERMEDIATE GERMAN I
A course designed to expand German linguistic skills through practice in reading, writing, listening and speaking, promoting intercultural learning and international awareness. Course uses Web CT and multimedia technology.
Three hours; one term
Prerequisite: Grade 12 U or M equivalent
Antirequisite: GERMAN 2B03, 2ZZ3
Not open to students with credit or registration in GERMAN 1BB3. The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 1BB3 INTERMEDIATE GERMAN II
Through integrated and interactive practice in reading, writing, listening and speaking, this course is intended to serve as a foundation for the advanced study of German language and culture. The sequels to this course are GERMAN 3Z03 and 3ZZ3.
Four hours; one term
Prerequisite: GERMAN 1B03
Antirequisite: GERMAN 2ZZ3

GERMAN 1Z06 BEGINNER'S INTENSIVE GERMAN
This course enables students to communicate effectively and accurately in German. Using multimedia resources, students acquire the basics of German grammar and develop language skills in order to master everyday situations. The course is enhanced by the use of Web CT and multimedia technology. The sequel to this course is GERMAN 2Z03.
Four hours; two terms
Prerequisite: Grade 12 U or M equivalent, GERMAN 1Z03
Students who have credit in GERMAN 1Z03, but not in GERMAN 1ZZ3, will be permitted to take GERMAN 1Z06; however, they must relinquish credit in GERMAN 1Z03 to do so.
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 2A3 INTRODUCTION TO GERMAN STUDIES
This course provides the foundation for work in German literature and in the broader field of German Studies. Theoretical approaches combined with the analysis of specific cultural texts, forms and practices will allow students to experience the 'pleasure of the text' and help them to develop analytical and research tools.
Three hours; one term
Prerequisite: GERMAN 1BB3 or 2ZZ3, (or concurrent registration in GERMAN 2203 or 2ZZ3)
GERMAN 2CC3  
GERMANY THROUGH THE AGES: CULTURE AND SOCIETY
An interdisciplinary look at the historical events, cultural phenomena, and personalities which have shaped German culture and society until World War II. Topics include: Medieval and Romantic Heritage, the Golden Twenties, Nationalism and National Socialism, the Holocaust.
Three hours; one term
Prerequisite: GERMAN 1BB3 or 2Z23 (or concurrent registration in GERMAN 2Z23 or 2Z23)

GERMAN 2Z03  
INTERMEDIATE GERMAN I
The course is designed to further expand German linguistic skills through integrated and interactive practice in reading, writing, listening, and speaking. The course is enhanced by the use of WebCT and multimedia technology. The sequel to this course is GERMAN 2Z23.
Three hours; one term
Prerequisite: GERMAN 1206
Antirequisite: GERMAN 1BB3
Not open to students with credit or registration in GERMAN 2Z23.
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 3Z03  
ADVANCED GERMAN I
The course offers a communicative approach to language, culture and literature. Students read various texts and explore their deeper meanings using various techniques. The sequel to this course are GERMAN 3Z23 and 4Z03.
Three hours; one term
Prerequisite: GERMAN 2A3 or 2CC3
Offered in alternate years.

GERMAN 3Z23  
ADVANCED GERMAN II
This course offers a communicative approach to language, culture and literature through integrated and interactive practice in reading, writing, listening and speaking. The sequel to the course is GERMAN 4Z03.
Three hours; one term
Prerequisite: GERMAN 3Z03
Antirequisite: GERMAN 3E03

The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 4BB3  
GERMAN READING COURSE (TAUGHT IN ENGLISH)
Designed for graduate students or students intending to enter graduate programs, this course provides an intensive introduction to reading comprehension skills and techniques. Reading materials will be selected to reflect students' specialized interests and will be used to practice textual analysis, study relevant grammar points and aid in vocabulary development. The sequel for this course is GERMAN 4CC3. Credits obtained in both of these courses may be accepted in fulfillment of the second language reading requirement for graduate programs.
Offered during the Spring session only.
Prerequisite: GERMAN 1206 and permission of the Department of Linguistics and Languages.
Not open to students registered in a program in German.

GERMAN 4CC3  
TRANSLATION: TECHNIQUES AND PRACTICE
This course offers practice in the translation of literary and non-literary texts. (English to German and German to English). The practical component will be complemented by an overview of electronic and on-line translation aids, as well as different theories and techniques of translation in Western Culture.
Three hours; one term
Prerequisite: One of GERMAN 3E03, 3Z23 or 4Z23

GERMAN 4FF3  
GERMAN FOLKLORE AND FAIRY TALES
This course will examine oral and written elements of folklore and the supernatural in literature from various periods, tales from German Romanticism, and modern 20th-century (parodic) rewritings of the tradition. The boundaries between oral folk literature and literature, as well as between children's and adult literature will also be examined.
Three lectures; one term
Prerequisite: GERMAN 2A3 or 2CC3
Alternates with GERMAN 4HH3.

GERMAN 4GG3  
BERLIN/Vienna: THE CULTURAL LIFE OF A CITY
Students will embark on an interdisciplinary journey into the cultural history of a city from the 19th century to the present. Through literary texts, songs, films, works of art and architecture we will examine varied representations of the city in high and popular culture. (See Note 3 above.)
Three hours; one term
Prerequisite: Registration in Level III or IV
Cross-list: COMP LIT 4G03
Offered on an irregular rotation basis.

GERMAN 4H03  
THE HOLOCAUST IN GERMAN FILM AND FICTION
This course will examine the moral, philosophical and cultural legacy of the holocaust as represented through the artistic imagination. Literary texts and films will involve key issues: truthfulness, politicization, marginalization, universalization, trivialization, abstraction, aestheticization, Holokistsch, etc.
Three hours; one term
Prerequisite: GERMAN 2A3 or 2CC3
Offered on an irregular rotation basis.

GERMAN 4HH3  
GERMAN LANGUAGE THROUGH THE AGES
The course follows the development of the German language from its Indo-European origins to the present situation in three German speaking countries. Selected texts from different epochs, as well as visual materials on the linguistic and social history of the German language will be studied.
Three lectures; one term
Prerequisite: GERMAN 2A3 or 2CC3

GERMAN 4I3  
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: 12 units of German above Level I

GERMAN 4J03  
THE SPLIT-SCREEN - RECONSTRUCTING NATIONAL IDENTITIES IN WEST AND EAST GERMAN CINEMA
This course examines German film texts of the post-war period and their representation of West and East German identities. Films will be discussed within the context of important political, social, and cultural developments at the time of the films' production. (See Note 3 above.)
Two hours, plus one film screening per week; one term
Prerequisite: Six units of German above Level I
Cross-list: COMP LIT 4J03; THTR&FLM 4J03
Offered on an irregular rotation basis.
HISPANIC STU~IES

Courses in Hispanic Studies are administered within the Department of Linguistics and Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 813.

Notes:
1. Students should note that the Department has classified its Hispanic language courses under the following categories:
   - Introductory Level Language Course
   - Intermediate Level Language Courses
   - Advanced Level Language Courses

2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.
3. Students may be required to take a placement test in the Department of Linguistics and Languages to assess their proficiency in the language.
4. Students are advised to pay particular attention to prerequisites for upper-level literature courses.

Courses: If no prerequisite listed, the course is open.

HISPANIC 1A03 INTERMEDIATE SPANISH I
First part of an intensive review of grammatical structures in Spanish. Emphasis will be on composition, expansion of vocabulary and oral practice. Written works in the original will be studied. The sequel to this course is HISPANIC 1AA3.
Three hours; one term
Prerequisite: Grade 12 U or M equivalent
Antirequisite: HISPANIC 2D03, 2DD3, 2203, 2ZZ3
Not open to students with credit or registration in HISPANIC 1AA3.
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

HISPANIC 1AA3 INTERMEDIATE SPANISH II
Second part of an intensive review of grammatical structures in Spanish. Emphasis will be on composition, expansion of vocabulary and oral practice. Written works in the original will be studied. The sequel to this course is HISPANIC 3X03.
Three hours; one term
Prerequisite: HISPANIC 1A03
Antirequisite: HISPANIC 2D03, 2DD3, 2203, 2ZZ3
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

HISPANIC 1206 BEGINNER'S INTENSIVE SPANISH
This course gives students the ability to express themselves reasonably well in Spanish and acquire the basics of Spanish grammar and transferable reading skill. Small tutorial groups will ensure maximum participation by each student. This course is enhanced by a Computer Assisted Language Learning (CALL) module. The sequel to this course is HISPANIC 2Z03.
Four hours; one term
Antirequisite: Grade 12 U or M equivalent, HISPANIC 2D03, 2DD3
Not open to native speakers of Spanish.

HISPANIC 2D03 INTENSIVE SPANISH FOR NATIVE SPEAKERS I
First part of a course designed to meet the needs of native Spanish-speaking students who have little or no formal training in Spanish. Emphasis on grammar and composition. The sequel to this course is HISPANIC 2DD3.
Three hours; one term
Antirequisite: HISPANIC 1A03, 1AA3, 2D03, 2ZZ3

HISPANIC 2203 INTERMEDIATE SPANISH I
Second part of an intensive review of grammatical structures in Spanish. Emphasis will be on composition, expansion of vocabulary and oral practice. Written works in the original will be studied. The sequel to this course is HISPANIC 2223.
Four hours; one term
Antirequisite: HISPANIC 1A03, 1AA3, 2D03, 2DD3
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

HISPANIC 2223 INTERMEDIATE SPANISH II
Second part of an intensive review of grammatical structures of Spanish. Emphasis will be on composition, expansion of vocabulary and oral practice. Written works in the original will be studied. The sequel to this course is HISPANIC 2X03.
Four hours; one term
Antirequisite: HISPANIC 1A03, 1AA3, 2D03, 2DD3
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

HISPANIC 2XX3 SPAIN IN THE WESTERN TRADITION
Drawing on literature, history, philosophy and the visual arts, this course will explore some of Spain's unique and enduring contributions to the Western tradition.
Three lectures; one term
Prerequisite: HISPANIC 1A03 or 2D03

HISPANIC 2203 CONTEMPORARY SPAIN
Drawing on art, film, literature and mass media, the course will explore the cultural, political and social context in which they flourished.
Three lectures; one term
Antirequisite: One of HISPANIC 1A03, 1AA3, 2D03, 2ZZ3

HISPANIC 2X03 CONTEMPORARY SPAIN
Using a multidisciplinary approach involving fiction, cinema, music, art, and other cultural expressions, this course explores some of the issues that shape and define Spanish-America today.
Three hours; one term
Antirequisite: Grade 12 U or M equivalent, HISPANIC 2D03, 2DD3

HISPANIC 2ZZ3 INTERMEDIATE SPANISH II
Second part of an intensive review of grammatical structures of Spanish. Emphasis will be on composition, expansion of vocabulary and oral practice. Written works in the original will be studied. The sequel to this course is HISPANIC 3X03.
Four hours; one term
Prerequisite: HISPANIC 1A03
Antirequisite: HISPANIC 1AA3, 2D03, 2DD3
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.
HISPANIC 3X03 LANGUAGE PRACTICE I
In this course different styles of writing and communication will be examined and practiced: literary, journalistic, academic, etc.
Three hours; one term
Prerequisite: One of HISPANIC 1AA3, 2DD3 or 2XX3

HISPANIC 3Y03 SPANISH TRANSLATION
A course designed to introduce the student to the basic principles of translation from Spanish to English and from English to Spanish. Practice will be given in comprehension and précis writing.
Three hours; one term
Prerequisite: One of HISPANIC 1AA3, 2DD3 or 2XX3

HISPANIC 4A03 THE SPANISH AMERICAN NOVEL (BEFORE 1954)
A study of the Spanish American Novel up to the middle of the 20th century (Azuela, Gallegos, Alegria, etc.).
Three lectures; one term
Prerequisite: HISPANIC 203 and six units of Hispanic Studies above Level I

HISPANIC 4D03 HUMOUR IN LATIN AMERICAN LITERATURE
This course will study different theories of humour and its techniques and functions in representative literary texts from Latin America.
Three hours; one term
Prerequisite: HISPANIC 203 and nine units of Hispanic Studies above Level I

HISPANIC 4L03 SPAIN'S GREAT MYTHS: DON QUIJOTE AND DON JUAN
An examination of the original texts and of the subsequent interpretations and adaptations of two of Spain's most enduring creations: one presents all the dramatic paradigms of life, the other embodies eternal conflicts that centre on the purpose of life itself.
Three hours; one term
Prerequisite: HISPANIC 203 or 2XX3; and 12 units of Hispanic Studies above Level I

HISPANIC 4M03 HEROES AND ANTI-HEROES IN SPANISH LITERATURE
The course will examine these two concepts in works ranging from Poema de Mi Cid - the quintessential Spanish hero- to Celestina - the bawd- and the picarosque from Don Quijote to the tragedy of the ignoble.
Three hours; one term
Prerequisite: HISPANIC 203 or 2XX3; and 12 units of Hispanic Studies above Level I

HISPANIC 4N03 THE SPANISH AMERICAN SHORT STORY (BEFORE 1954)
This course will study the Spanish American Short Story from the 19th century to the present, its development, themes and formal aspects.
Three lectures; one term
Prerequisite: HISPANIC 203 or 2XX3; and nine units of Hispanic Studies above Level I

HISPANIC 4P03 THE BOOM GENERATION AND THEIR SHORT STORIES
This course will study the concept "Boom" and the short stories of four of its members: Donoso, Cortazar, Vargas Llosa and Garcia Márquez. It will also examine the relations between the short stories and the novels of these authors.
Three hours; one term
Prerequisite: HISPANIC 203 and nine units of Hispanic Studies above Level I
Not open to students with credit in HISPANIC 4S03, TOPICS IN SPANISH-AMERICAN LITERATURE, if the topic was The Spanish American Short Story.
Offered on an irregular rotation basis.

HISPANIC 4Q03 SPANISH AND LATIN AMERICAN CULTURE THROUGH CINEMA
This course is designed to provide students with the background necessary to analyse and interpret Spanish and Latin American culture through cinema. Films will be studied within their social and political context.
Three hours; one term
Prerequisite: HISPANIC 2C03 or 2L03; and nine units of Hispanic Studies above Level I

HISPANIC 4R03 WOMEN WRITERS OF LATIN AMERICA AND SPAIN
Emphasis will be on women writers of the 19th and 20th centuries. Selected readings will be analysed to explore how women have employed literary strategies to represent themselves and others within their oppressive socio-cultural milieu.
Three hours; one term
Prerequisite: One of HISPANIC 2C03, 2L03, 2X03 or 2XX3; and nine units of Hispanic Studies above Level I
Offered on an irregular rotation basis.

HISPANIC 4V03 REPRESENTATIVE DRAMATISTS OF 20TH-CENTURY SPAIN
Recurrent themes such as exile, political oppression, issues of gender identity, race and feminism will be examined in major important works written by men and women from Spain.
Three hours; one term
Prerequisite: HISPANIC 2X03 or 2XX3; and nine units of Hispanic Studies above Level I

HISPANIC 4W03 LANGUAGE PRACTICE II
With emphasis on precision, conciseness and other pertinent aspects of written communication, students will write compositions in a variety of styles while developing appropriate stylistic awareness and learning practical writing techniques.
Three hours; one term
Prerequisite: HISPANIC 3X03

ITALIAN ...

Courses in Italian are administered within the Department of Linguistics and Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 613.

Notes:
1. Students should note that the Department has classified its Italian language courses under the following categories:
   - Introductory Level Language Courses
     ITALIAN 1206, 1226
   - Intermediate Level Language Courses
     ITALIAN 1A03, 1AA3, 2203, 2223
   - Advanced Level Language Courses
     ITALIAN 3A03, 3D03, 4A03, 4B03
2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.
3. ITALIAN 2B03 will use English as the language of classroom instruction. Students taking this course for credit in Italian will be required to do all their reading, writing and film viewing in Italian.
4. Students may be required to take a placement test in the Department of Linguistics and Languages to assess their proficiency in the language.

Courses If no prerequisite is listed, the course is open.

ITALIAN 1A03 INTERMEDIATE ITALIAN I
An intensive review of certain grammatical structures of Italian and an introduction to composition, together with oral practice. The sequel to this course is ITALIAN 1A03.
Three hours; one term
Prerequisite: Grade 12 U or M equivalent or other equivalent or permission of the Department
Antirequisite: ITALIAN 2203
Not open to students with credit or registration in ITALIAN 1A03.
The Department reserves the right to place students in the course most appropriate to their abilities.
ITALIAN 1AA3  INTERMEDIATE ITALIAN II
An intensive review of those grammatical structures not studied previously, together with oral practice. Selected written works in the original will also be studied. The sequel to this course is ITALIAN 3A03.
Three hours; one term
Prerequisite: ITALIAN 1A03.
Antirequisite: ITALIAN 2Z23.
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 1206  BEGINNER'S INTENSIVE ITALIAN
This course gives students the ability to express themselves reasonably well in Italian and acquire the basics of Italian 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. The sequel to this course is ITALIAN 2203.
Four hours; two terms
Antirequisite: Grade 12 U or M equivalent, ITALIAN 1CC3, 1DD3, 1Z23.
Students who have credit in ITALIAN 1C03, but not in ITALIAN 1CC3, will be permitted to take ITALIAN 1Z06; however, they must relinquish credit in ITALIAN 1C03 to do so.
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 1Z26  BEGINNER'S ACCELERATED ITALIAN
An accelerated preparatory course leading to intermediate Italian, designed for students who may have some background knowledge of the Italian language.
Four hours; two terms
Antirequisite: ITALIAN 1Z06 or Grade 12 U or M equivalent.
Students who have credit in ITALIAN 1C03, but not in ITALIAN 1CC3, will be permitted to take ITALIAN 1Z26; however, they must relinquish credit in ITALIAN 1C03 to do so.
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 2B03  ITALY THROUGH THE CAMERA LENS
This course takes the student on a journey through fifty years of Italian cinematic history using nine movies (in Italian, with subtitles) that represent some of the most critical moments related to Italian culture in post WWII period. (See Note 3 above.)
Three hours; one term
Prerequisite: Registration in Level II or above.
Cross-list: THTR&FLM 2103.

ITALIAN 2F03  INTRODUCTION TO THE STUDY OF LITERATURE: IL NEOREALISMO
An introduction to the study of literature in Italian, focusing on the neorealist movement in literature and also in cinema. The course explores principal themes in connection to the socio-historical and political context.
Three lectures; one term
Prerequisite: ITALIAN 1AA3 or 2Z03 (or concurrent registration in ITALIAN 2203).

ITALIAN 2103  ITALY THROUGH THE AGES I: THE ORIGINS TO THE RENAISSANCE
A survey of representative works in Italian literature and culture from its origins to the Renaissance.
Three hours; one term
Prerequisite: ITALIAN 1AA3 or 2Z03 (or concurrent registration in ITALIAN 2203).

ITALIAN 2203  INTERMEDIATE ITALIAN I
An intensive review of certain grammatical structures of Italian and an introduction to composition, together with oral practice. The sequel to this course is ITALIAN 2Z23.
Three hours; one term
Prerequisite: ITALIAN 1Z06.
Antirequisite: ITALIAN 1AA3, 2Z23.
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 22Z3  INTERMEDIATE ITALIAN II
An intensive review of those grammatical structures not studied previously, together with oral practice. Selected written works in the original will also be studied. The sequel to this course is ITALIAN 3A03.
Three hours; one term
Prerequisite: ITALIAN 2Z03.
Antirequisite: ITALIAN 1AA3.
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 3A03  ADVANCED GRAMMAR PRACTICE
This course is designed to improve the student's written and oral proficiency through exercises, compositions, and analysis of texts. The sequel to this course is ITALIAN 3D03.
Three hours; one term
Prerequisite: One of ITALIAN 1AA3, 2Z23.

ITALIAN 3D03  COMPOSITION AND STYLISTICS I
An introduction to the study of Italian stylistics through an intensive and systematic analysis of Italian clause, sentence and discourse structure in the written and spoken language. The sequel to this course is ITALIAN 4A03.
Three hours; one term
Prerequisite: ITALIAN 3A03.

ITALIAN 3I03  ITALY THROUGH THE AGES II: FROM THE BAROQUE TO THE 20TH CENTURY
A continuation of Italian 2103. Along with a study of representative literary texts from the Baroque to the 20th century, the course will also consider fundamental aspects of Italian culture (history, figurative arts, music).
Three hours; one term
Prerequisite: ITALIAN 2103.
Antirequisite: ITALIAN 4Y03.

ITALIAN 3X03  CONTEMPORARY ITALY: THE IMAGE OF ITALY TODAY
A study of current trends, literature, new directions, and art in Italy today, in the framework of the European consciousness and market.
Three lectures; one term
Prerequisite: ITALIAN 2F03 or 2103.
Offered in alternate years.

ITALIAN 3Y03  CULTURE AND SOCIETY IN RENAISSANCE ITALY
An exploration of Italian culture in the Renaissance and its impact on the development of modern European thought. Students will be introduced to Renaissance ideas on politics, history, society, the artist and the scientist through the study of representative works.
Three lectures; one term
Prerequisite: ITALIAN 2F03 or 2103.
Offered in alternate years.

ITALIAN 4A03  COMPOSITION AND STYLISTICS II
An advanced course in composition and stylistics designed to develop the student's skills in critical writing and oral expression. The sequel to this course is ITALIAN 4B03.
Three hours; one term
Prerequisite: ITALIAN 3D03.
Antirequisite: ITALIAN 4M03.

ITALIAN 4B03  INTRODUCTION TO TRANSLATION
A course designed to introduce the students to the basic techniques of translation from English to Italian and from Italian to English, including comparative stylistics. Translation materials will be selected from contemporary literary and journalistic sources.
Three hours; one term
Prerequisite: ITALIAN 4A03.

ITALIAN 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.
Prerequisite: 12 units of Italian above Level 1 and permission of the Department.

ITALIAN 4X03  LOVE AND LIFE IN THE MIDDLE AGES
An exploration of Italian life and culture in the Middle Ages through the study of the dolce stile nuovo and selected works by Dante, Petrarch and Boccaccio.
Three lectures; one term
Prerequisite: ITALIAN 2F03 or 2103.
Offered in alternate years.

ITALIAN 4XX3  DANTE'S WORLD
An exploration of Dante's 'Commedia' in the context of medieval culture, politics and philosophy. The course will also consider the impact of the 'Commedia' on Western thought.
Three lectures; one term
Prerequisite: ITALIAN 2F03 or 2103.
Offered in alternate years.
Japanese language courses are administered within the Department of Linguistics and Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 613.

Courses

If no prerequisite is listed, the course is open.

JAPANESE 1Z06 BEGINNER'S INTENSIVE JAPANESE
Formerly: JAPANESE 1Z03 and 1Z23
An introduction to spoken and written Japanese focusing on developing proficiency in the skills of listening, speaking, reading and writing. Acquisition of basic grammar, hiragana and katakana scripts, and oral communication skills will be emphasized. Basic kanji (Chinese characters) will also be introduced. Open to students with no prior background in Japanese. The sequel to this course is JAPANESE 2Z23.
Three hours; one term
Two lectures, one tutorial; one term
Prerequisite: JAPANESE 1203

JAPANESE 2Z23 INTERMEDIATE INTENSIVE JAPANESE I
This course develops students' communicative skills in Japanese through conversational exercises, creative writing and other practices. Emphasis will be placed upon refining the knowledge of grammar and expanding vocabulary. The sequel to this course is JAPANESE 3A03.
Three hours; one term
Two lectures, one tutorial; one term
Prerequisite: A grade of at least B- in JAPANESE 1Z06. Not open to students with credit in JAPANESE 1Z23. Students who have credit in JAPANESE 1Z06, but not in JAPANESE 1Z23, will be permitted to take JAPANESE 1Z06; however, they must relinquish credit in JAPANESE 1Z03 to do so.
The Department reserves the right to place students in the course most appropriate to their abilities.

JAPANESE 2Z23 INTERMEDIATE INTENSIVE JAPANESE II
This course further develops and consolidates the students' communicative skills in Japanese through conversational exercises, creative writing and other exercises. The sequel to this course is JAPANESE 3A03.
Three hours; one term
Prerequisite: JAPANESE 2Z23

JAPANESE 3A03 ADVANCED INTENSIVE JAPANESE I
This course continues the study of written and spoken Japanese with particular attention devoted to the development of the following language skills: conversational practice based on situational drills; reading skills based on selected literary materials; writing short essays; and continued study of Kanji. The sequel to this course is JAPANESE 3A03.
Three hours; one term
Prerequisite: JAPANESE 2Z23

JAPANESE 3A03 ADVANCED INTENSIVE JAPANESE II
Emphasis is given to the development of situational conversational skills, advanced reading skills and essay writing skills. The sequel to this course is JAPANESE 4Z23.
Three hours; one term
Prerequisite: JAPANESE 3A03

JAPANESE 3A03 ADVANCED INTENSIVE JAPANESE III
Emphasis is given to the development of situational conversational skills, advanced reading skills and essay writing skills. The sequel to this course is JAPANESE 4Z23.
Three hours; one term
Prerequisite: JAPANESE 3A03

JAPANESE 4Z23 ADVANCED ORAL PRACTICE IN JAPANESE
This course will further develop students' communicative skills in Japanese through readings of a variety of topics on current affairs. Readings of magazines will be combined with discussions on videos.
Three hours; one term
Prerequisite: JAPANESE 3A03

JAPANESE 4203 ADVANCED READINGS IN CURRENT AFFAIRS IN JAPANESE
This course will further develop students' comprehensive skills in Japanese through readings of a variety of topics on current affairs. Readings of magazines will be combined with discussions on videos.
Three hours; one term
Prerequisite: JAPANESE 3A03

JAPANESE 4203 ADVANCED ORAL PRACTICE IN JAPANESE
This course will further develop students' spoken discourse skills through viewing of videos, group discussions and cooperative group activities. Emphasis will be on overall communicative competence in oral Japanese.
Three hours; one term
Prerequisite: JAPANESE 3A03

JAPANESE STUDIES

Courses

If no prerequisite is listed, the course is open.

JAPAN ST 2P06 JAPANESE CIVILIZATION
Introduction to Japanese history, society, and culture through a study of religious traditions, literature, and art of Japan.
Two lectures, one tutorial; two terms
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 2P06

JAPAN ST 2TT3 RELIGION AND POPULAR CULTURE IN CONTEMPORARY JAPAN
An introduction to the study of Japanese popular culture in the contemporary period and the religious traditions and world-views that inform it through textual, visual and other multimedia sources, including manga and anime.
Two lectures, one tutorial; one term
Cross-list: RELIG ST 2TT3

JAPAN ST 3E03 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 or above
Cross-list: HISTORY 3E03

JAPAN ST 3Z03 THE RELIGIOUS AND CULTURAL REPRESENTATIONS OF JAPAN
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. One of RELIG ST 1B06, 2M06 or JAPAN ST 2P06 is recommended.
Cross-list: RELIG ST 3E03

JAPAN ST 3H03 STORYTELLING IN EAST ASIAN RELIGIONS
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 2F03

JAPAN ST 3T03 THE MODERN JAPANESE RELIGIONS
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 2F03

JAPAN ST 3S03 THE EAST ASIAN RELIGIOUS TRADITION
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 or above
Cross-list: ARTS&SCI 3S03, RELIG ST 3S03

JAPAN ST 3U03 BUDDHISM IN EAST ASIA
An examination of myth, history, doctrine, monastic culture, and ritual practice in East Asian Buddhism.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 3U03

JAPAN ST 3U03 BUDDHISM IN EAST ASIA
An examination of myth, history, doctrine, monastic culture, and ritual practice in East Asian Buddhism.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Cross-list: RELIG ST 3U03

This course is administered by the Department of Religious Studies.
Linguistics courses and programs are administered within the Department of Linguistics and Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 613.

Note:
Not all courses are offered on an annual basis. Students should consult the timetable for available courses.

Courses

If no prerequisite is listed, the course is open.

LINGUIST 1A03 INTRODUCTION TO LINGUISTICS I
This course provides an introduction to the field of linguistics, the scientific study of language. The focus will be on language structure, specifically the core areas of phonetics, phonology and morphology. Topics covered will be exemplified not only through English, but through a wide variety of languages.
Three hours (two lectures, one tutorial); one term

LINGUIST 1AA3 INTRODUCTION TO LINGUISTICS II
This course is a continuation of LINGUIST 1A03, and completes the introduction to linguistics. Emphasis will be placed on syntax, semantics, typology, historical linguistics and applied linguistics.
Three hours (two lectures, one tutorial); one term
Prerequisite: LINGUIST 1A03

LINGUIST 2AA3 HISTORICAL LINGUISTICS: THE DEVELOPMENT OF INDO-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 the Indo-European-based languages of Europe.
Three hours; one term
Prerequisite: LINGUIST 1A03

LINGUIST 2E03 THE NATURE OF TEXTS: FROM SLANG TO FORMAL DISCOURSE
This course introduces students to the field of discourse analysis and investigates a variety of styles and registers from the conversational to the literary and from the journalistic to the academic.
Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: CMST 2E03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 2L03 PHONETICS
A study of the sounds of language and human articulatory capabilities.
Three hours; one term
Prerequisite: LINGUIST 1A03
Cross-list: ANTHROP 2L03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 2LL3 INTRODUCTION TO LINGUISTIC TYPOLOGY
The study of diversity in the languages of the world, language universals and the parameters of cross-linguistic analysis of grammatical systems.
Three hours (lectures and discussion); one term
Prerequisite: LINGUIST 1A03, 1AA3
Cross-list: ANTHROP 2L03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3A03 PHONOLOGY
A study of the patterns of distinctive sounds in the world's languages.
Three hours; one term
Prerequisite: LINGUIST 2L03
Cross-list: ANTHROP 3A03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3B03 PSYCHOLINGUISTICS
The study of perception, production and acquisition of language. Special attention is paid to methods of psycho- and neurolinguistic research and to their connection with theoretical linguistics.
Three hours; one term
Prerequisite: LINGUIST 1A03 and 1AA3 (or 1A06); or PSYCH 2H03
Cross-list: PSYCH 3BB3
Alternates with LINGUIST 3C03.
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3C03 CHILD LANGUAGE ACQUISITION
Language behaviour and development in children, from birth to school age. The course examines how data from children's language acquisition can inform linguistic theory.
Three hours; one term
Prerequisite: LINGUIST 1A03; and LINGUIST 1AA3 or PSYCH 2H03
Cross-list: PSYCH 3C03
Alternates with LINGUIST 3B03.

LINGUIST 3I03 SYNTAX
The study of sentence structure in many languages. The emphasis is on using empirical data to test theoretical proposals.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3
Cross-list: ANTHROP 3I03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3M03 MORPHOLOGY
The study of word formation in the languages of the world; a critical survey of current theories and issues.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3
Cross-list: ANTHROP 3M03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3P03 PRAGMATICS
A discussion of the problems confronting the linguist in the study of text and discourse at the level beyond the sentence. The course will deal with the interaction between grammar and situational factors.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3; or FRENCH 2H03
Cross-list: CMST 3P03
Antirequisite: ANTHROP 3P03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3X03 INTRODUCTION TO SOCIOLINGUISTICS
An introduction to sociolinguistics covering such topics as linguistic variation (regional, social, situational), language and gender, language and disadvantage/power, language choice, language change, pidgin and creole languages.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3 or six units of Linguistics above Level I
Cross-list: CMST 3X03
Antirequisite: ANTHROP 3X03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 4B03 SECOND LANGUAGE ACQUISITION
The course examines empirical evidence and theoretical perspectives on language learning by adults.
Two hours; one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I
Cross-list: CMST 4G03
Antirequisite: ANTHROP 4B03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 4D03 COMPUTERS AND LINGUISTIC ANALYSIS
This course studies the linguistic applications of computer technology in general, and language processing in particular, including parsers and machine translation.
Two hours (lecture and lab); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I
Cross-list: CMST 4D03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.
LINGUIST 4E03 TESL (TEACHING ENGLISH AS A SECOND LANGUAGE): METHODOLOGICAL CONSIDERATIONS

This course will look at the phenomenon of TESL not only in the Canadian context but also worldwide. There will also be a detailed investigation of the dominant teaching methodologies associated with TESL.
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I
Offered on an irregular rotation basis.

LINGUIST 4I03 IMMIGRANT CONTACT LANGUAGES AND THE CREATION OF A NEW IDENTITY

This course will look at the genesis, characteristics and usage patterns of "immigrant contact languages" and the characteristics of the resultant "hyphenated" identity (i.e. Spanglish - Latino; Italo-Italiano - Italo-Canadian).
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I
Offered on an irregular rotation basis.

LINGUIST 4II3 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 Linguistics above Level I and permission of the Department

LINGUIST 4L33 ADVANCED PHONETICS AND PHONOLOGY

This course examines advanced issues in phonetics and phonology, seeking to evaluate current theory and to address data that fall beyond the explanatory capacities of those paradigms. The course is data oriented, with material taken from several languages of the Caucasus.
Three hours; one term
Prerequisite: LINGUIST 2L03, 3A03
Cross-list: ANTHROP 4L33
Antirequisite: ANTHROP 4L33, LINGUIST 4L33
This course is administered by the Department of Linguistics and Languages.

LINGUIST 4L3C ADVANCED MORPHOLOGY AND SYNTAX

This course examines advanced issues in morphology and syntax, seeking to evaluate current theory and to address data that fall beyond the explanatory capacities of those paradigms. The course is data oriented, with material taken from several languages of the Caucasus.
Three hours; one term
Prerequisite: LINGUIST 3L03, 3M03
Cross-list: ANTHROP 4L3C
Antirequisite: ANTHROP 4L3A, LINGUIST 4L3A
This course is administered by the Department of Linguistics and Languages.

LINGUIST 4M03 PIDGINS AND CREOLES

A survey of the structure (grammar and vocabulary), genesis, evolution and social history of the languages that developed as a result of European expansion to Africa, the Americas, Asia and the Pacific. Emphasis will be placed on the Atlantic (Caribbean and West African) creoles.
Seminar (two hours); one term
Prerequisite: LINGUIST 3X03
Offered on an irregular rotation basis.

LINGUIST 4N03 ENGLISH AS A GLOBAL LANGUAGE

This course explores issues arising from the status of English as a language of international communication, including: the rise of English as a global language, world Englishes, linguistic power, consequences for multilingual societies, especially minority languages.
Seminar (two hours); one term
Prerequisite: LINGUIST 3X03
Offered on an irregular rotation basis.

LINGUIST 4P03 ADVANCED PRAGMATICS

This course is a continuation of LINGUIST 3P03 and will provide an opportunity for in-depth study of major areas of pragmatics.
Seminar (two hours); one term
Prerequisite: LINGUIST 3P03
Offered on an irregular rotation basis.

LINGUIST 4R03 CROSS-CULTURAL COMMUNICATION

Students will explore the links between language and culture and learn skills necessary to be intermediaries between cultures. Topics include: communication between genders, the cognitive role of metaphor, language and perception, emotions across cultures, culture and advertising, body language and cultural stereotyping.
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I; or permission of the Department
Cross-list: CMST 4R03
Not open to students with credit in LINGUIST 4BB3, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Cross-Cultural Communication. Offered on an irregular rotation basis.

LINGUIST 4S03 INTERPERSONAL COMMUNICATION

This course offers an introduction to contemporary interpersonal communication theories and research. Topics include: small group communication, persuasive communication, argumentation strategies, conflict resolution and computer mediated, intercultural, international and political communication.
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I; or permission of the Department
Cross-list: CMST 4S03
Not open to students with credit in LINGUIST 4BB3, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Interpersonal Communication. Offered on an irregular rotation basis.

LINGUIST 4SL3 SLP PRACTICUM

Observation in a professional speech pathology environment or involvement in a relevant research project, and completion of a paper related to experience. Experience must be approved by the Department prior to the commencement of the course.
One term
Prerequisite: Registration in Level IV of the Honours Linguistic Cognitive Science program and permission of the Department

LINGUIST 4T03 FORENSIC LINGUISTICS

This course examines issues arising from the language-law interface, including: speaker/author identification; interpretation and transcription of police interrogations, witness statements, trial discourse; written legal language.
Seminar (two hours); one term
Prerequisite: LINGUIST 3X03
Cross-list: CMST 4T03
Not open to students with credit in LINGUIST 4BB3, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Forensic Linguistics. Offered on an irregular rotation basis.

LINGUIST 4TE3 TESL PRACTICUM

Observation and instruction in a TESL classroom and completion of a paper based on experience. Experience must be approved by the Department prior to the commencement of the course.
One term
Prerequisite: Registration in Level IV of the Honours Linguistic Cognitive Science program and permission of the Department

LINGUIST 4XX3 TOPICS IN LINGUISTIC THEORY

Issues in different aspects of Linguistic Theory and Advanced Philology. Consult the Department for the topic to be offered.
Seminar (two hours); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics above Level I
Cross-list: ANTHROP 4XX3
LINGUIST 4XX3 may be repeated, if on a different topic, to a total of six units. Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

LINGUIST 4Z03 PSYCHOLINGUISTICS LAB

Students collaborate to conduct an experiment investigating a psycholinguistic question.
Seminar (two hours); one term
Prerequisite: One of LINGUIST 3B03, 3C03, PSYCH 3U03 or 3U03
Cross-list: PSYCH 4Z03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

POLISH ...

Courses in Polish are administered within the Department of Linguistics and Languages of the Faculty of Humanities. For information and counseling, please contact the departmental office, Togo Salmon Hall, Room 613.

Notes:
1. Students should note that the Department has classified its Polish language courses under the following categories:
Introductory Level Language Courses
POLISH 2A03, 2AA3

Intermediate Level Language Courses
POLISH 3A03, 3AA3

2. POLISH 2A03 and 2AA3 are open only to students with no prior knowledge of Polish. Students with some knowledge of written and oral Polish are advised to enrol in POLISH 3A03 or 3AA3.

Courses

If no prerequisite is listed, the course is open.

**POLISH 2A03**
**BEGINNER'S POLISH I**
An introduction to basic conversational and written Polish, teaching the skills of listening, speaking, and writing. The sequel to this course is POLISH 2AA3.
Four hours; one term
Antirequisite: POLISH 1Z03
Not open to students with a prior knowledge of Polish.
The Department reserves the right to place students in the course most appropriate to their abilities.

**POLISH 2AA3**
**BEGINNER'S POLISH II**
A course designed to further the student's command of oral and written Polish. The sequel to this course is POLISH 3A03.
Four hours; one term
Prerequisite: One of POLISH 1Z03, 2A03 or permission of the Department
Antirequisite: POLISH 1Z03
The Department reserves the right to place students in the course most appropriate to their abilities.

**POLISH 3A03**
**INTERMEDIATE POLISH I**
This course concentrates on the study of Polish grammar and develops skills for conversation, reading and writing. The sequel to this course is POLISH 3AA3.
Three hours; one term
Prerequisite: One of POLISH 1Z03, 2A03 or 2AA3
Antirequisite: POLISH 2Z06
The Department reserves the right to place students in the course most appropriate to their abilities.

**POLISH 3AA3**
**INTERMEDIATE POLISH II**
This course concentrates on the study of grammatical structures and rules of composition. It develops written and oral skills.
Three hours; one term
Prerequisite: POLISH 3A03
Antirequisite: POLISH 2Z06
The Department reserves the right to place students in the course most appropriate to their abilities.

**RUSSIAN 2AA3**
**INTENSIVE BEGINNER'S RUSSIAN II**
This course consists of an intensive study of Russian vocabulary and grammar, with further emphasis on spoken Russian and enhancement by CALL (Computer-Assisted Language Learning) module. The sequel to this course is RUSSIAN 3A03.
Four hours; one term
Prerequisite: RUSSIAN 1203 or 2A03
Antirequisite: Grade 12 U or M equivalent, RUSSIAN 1ZZ3
The Department reserves the right to place students in the course most appropriate to their abilities.

**RUSSIAN 3A03**
**INTERMEDIATE RUSSIAN I**
This course continues the study of Russian grammar with emphasis on extending skills for conversation, reading and writing. Video film and interactive computer software will be used to supplement traditional printed materials. The sequel to this course is RUSSIAN 3AA3.
Three hours; one term
Prerequisite: RUSSIAN 1ZZ3 or 2AA3
Antirequisite: RUSSIAN 2C06, 2Z03
Not open to students with credit or registration in RUSSIAN 3AA3 or credit in RUSSIAN 2Z03.
The Department reserves the right to place students in the course most appropriate to their abilities.

**RUSSIAN 3AA3**
**INTERMEDIATE RUSSIAN II**
Emphasis will be on extending skills for conversation, reading and writing. Video film and interactive computer software will be used to supplement traditional printed materials.
Three hours; one term
Prerequisite: RUSSIAN 2Z03 or 3A03
Antirequisite: RUSSIAN 2C06, 2Z03
The Department reserves the right to place students in the course most appropriate to their abilities.

**RUSSIAN 2A03**
**INTENSIVE BEGINNER'S RUSSIAN I**
Designed for students with no prior knowledge of Russian, the course covers basic Russian vocabulary and grammatical structures, while emphasizing spoken Russian. This course is enhanced by CALL (Computer-Assisted Language Learning) module. The sequel to this course is RUSSIAN 2AA3.
Four hours; one term
Antirequisite: Grade 12 U or M equivalent, RUSSIAN 1203
Not open to students with credit or registration in RUSSIAN 2AA3 or credit in RUSSIAN 1ZZ3.
The Department reserves the right to place students in the course most appropriate to their abilities.

MATERIALS SCIENCE AND ENGINEERING

WEB ADDRESS: http://mse.mcmaster.ca/
John Hodgins Engineering Building, Room 357
Ext. 24295

Faculty as of January 15, 2008
Chair
Kenneth S. Coley
Professors
Kenneth S. Coley/B.Sc. (Strathclyde), Ph.D., D.I.C. (Imperial College, London)
Dofasco Chair in Ferrous Metallurgy
Adrian Kitai/B.Sc. (McMaster), Ph.D. (Cornell), P.Eng.
David S. Wilkinson/B.A.Sc. (Toronto), Ph.D. (Cambridge), F.C.I.M.,
Gu Xu/M.Sc., Ph.D. (Pittsburgh), D.E.S. (Columbia)
Adjunct Professors
Hany Azz/B.Sc. (Cairo), M.Eng., Ph.D. (McMaster)
Olivier Bouaziz/M.Sc., Ph.D. (McGill)
Yves Brechet/D.E.A. (Ecole Polytechnique), Ph.D. (Grenoble)
Colin Cooper/B.Me., Ph.D. (Shelfield)
Michael J. Graham/B.Sc., Ph.D. (.Liverpool)
Zygmunt J. Jakubek/M.Sc. (Cracow), Ph.D. (M.I.T.)
David J. Lloyd/B.Sc., Ph.D. (Wales)
Raja K. Mishra/B.Sc. (Utkal), M.Sc. (ITT Kanpur), Ph.D. (California-Berkeley)
Beng S. Ong/B.Sc. (Nanyang), Ph.D. (McGill)
Zoran D. Popovic/Dipl.Erg., M.Sc. (Belgrade), Ph.D. (McMaster)
S.V. Subramanian/B.Sc. (Banaras), M.Met., Ph.D. (Shefild)

MANUFACTURING TECHNOLOGY

(SEE TECHNOLOGY, MANUFACTURING TECHNOLOGY)
Three lectures; one tutorial; second term

Three lectures; second term Offered on an irregular rotation basis.

Three lectures; one tutorial; first term

Three lectures; second term

Three lectures; one tutorial; second term

MATLS 3C04 THERMODYNAMICS OF MULTICOMPONENT SYSTEMS
Reaction equilibria in solution; stability diagrams; ternary phase diagrams; two-phase and high temperature electrochemistry; use of computerized thermodynamic databases.
Three lectures, one lab (three hours), one tutorial; first term
Prerequisite: MATLS 2D03
Antirequisite: MATLS 3C03, 3D03

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; second term
Prerequisite: One of ENGINEER 2003, MATLS 1A03 or 1M03; and MATH 2M06 (or 2M03 and 2M03) or both MATH 2A03 and 2C03

MATLS 3F03 HIGH-TEMPERATURE MATERIALS PRODUCTION
Fundamentals of processing, building on a knowledge of heat and mass transfer. High temperature processing of materials, focusing on heat sources, solid state processing of powders and liquid state processing, high temperature production routes for most important metals.
Three lectures, one tutorial (one hour); second term
Prerequisite: MATLS 2D03
Antirequisite: MATLS 4B04

MATLS 3M03 MECHANICAL BEHAVIOUR OF MATERIALS
How materials are made strong, tough, ductile, formable. How to prevent failures. Materials selection using computer databases.
Two lectures, one tutorial and/or laboratory; first term
Prerequisite: One of ENGINEER 2E04 and one of ENGINEER 2003, MATLS 1A03, 1M03, 2003; or permission of the department Antirequisite: ENGINEER 3P03, MATLS 3P03

MATLS 3Q03 MATERIALS FOR ELECTRONIC APPLICATIONS
Fundamental properties of materials used in electronic applications, operation of devices and fabrication methods of electronic circuits and packaging. Includes description of dielectric, magnetic and optoelectronic properties.
Three lectures; second term
Prerequisite: One of ENGINEER 2E03, 2003 or MATLS 1M03

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; one tutorial; one lab (three hours); first term
Prerequisite: One of ENGINEER 2E03, 2003 or MATLS 1M03

MATLS 4A03 COMPUTATIONAL THERMODYNAMICS
Two lectures, one tutorial during the first half of the term, one lecture, two tutorials during the second half of the term; second term
Prerequisite: One of MATLS 3C03, 3C04 or registration in a program administered by the Department of Materials Science and Engineering Antirequisite: MATLS 3A03
Offered on an irregular rotation basis. Offered in 2008-2009.
Not offered in 2009-2010.

MATLS 4C03 MODERN IRON AND STEELMAKING
Three lectures; second term
Prerequisite: Registration in final or penultimate year of any Materials Engineering program or permission of instructor Corequisite: MATLS 3C03 or 4B04
Offered on an irregular rotation basis. Offered in 2008-2009.
Not offered in 2009-2010.

MATLS 4D03 MATERIALS AND THE ENVIRONMENT
The environments experienced by engineering materials in service, and economic methods for ensuring their survival. The basic science of high temperature oxidation and aqueous corrosion leads to an appreciation of methods for corrosion control.
Three lectures; second term
Prerequisite: MATLS 3C04, 3T04
Offered on an irregular rotation basis. Offered in 2008-2009.
Not offered in 2009-2010.
MATLS 4F03 SYNTHESIS AND APPLICATIONS OF NANOMATERIALS
Introduction to synthesis routes for nanomaterials, bottom-up and top-down approaches, specific properties of materials at the nanoscale including carbon nanotubes, nanoparticles and quantum dots.
Three lectures; second term
Prerequisite: Registration in Level IV or V of a program in Honours Chemistry, Engineering Physics, Materials Engineering or Honours Materials Science
Antirequisite: MATLS 4F04

MATLS 4G03 CHARACTERIZATION OF NANOMATERIALS
Interfacial electron and photonics with matter. Imaging methods with electron microscopy, scanning probe techniques, X-ray photoelectron spectroscopy and X-ray absorption analysis with high spatial resolution.
Three lectures; first term
Prerequisite: Registration in Level III or IV of a program in Chemical Engineering, Honours Chemistry, Engineering Physics, Materials Engineering or Honours Materials Science
Antirequisite: MATLS 4G02
Offered on an irregular rotation basis.
Not offered in 2009-2010.

MATLS 4H03 THIN FILM SCIENCE AND ENGINEERING
Deposition and fabrication techniques, surfaces, growth mechanisms, epitaxy, kinetic effects in thin films, defects and properties of thin films.
Materials for packaging.
Two lectures, one tutorial (one hour); second term
Prerequisite: Registration in Level IV of Materials Science or Materials Engineering
Offered on an irregular rotation basis.
Offered in 2009-2010.

MATLS 4I03 SUSTAINABLE MANUFACTURING PROCESSES
Sustainability of development, materials cycles, methods for measuring environmental impact, life cycle analysis, waste treatment and recycling technologies.
Three lectures, one tutorial (one hour); first term
Prerequisite: Registration in final or penultimate Level of any Materials Engineering program or permission of instructor
Offered on an irregular rotation basis.
Offered in 2009-2010.

MATLS 4J04 MATERIALS SELECTION IN DESIGN AND MANUFACTURING
Materials selection charts, materials selection with mechanical constraints, coupled materials and processing/fabrication routes, effect of shape on materials selection, design of hybrid materials, eco-selection.
Three lectures, one tutorial (one hour); first term
Prerequisite: ENGINEER 2P04 or MECH ENG 2P04; and CHEM ENG 2A04 or MECH ENG 3R03

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 8.0; and registration in the final level of a Materials Engineering program or Level IV of Honours Materials Science.

MATLS 4L04 MATERIALS MANUFACTURING
A sequence of experiments based on processing methods used in industry. Plant visits with oral and written reports. Seminars and discussions by personnel from industry on manufacturing.
One lecture, one lab (three hours); both terms
Prerequisite: Registration in the final Level of a Materials Engineering program
Antirequisite: MATLS 4A02, 4L02

MATLS 4N3 COMPUTATIONAL MODELLING IN MATERIALS ENGINEERING
Introduction to numerical modeling of heat and mass transfer processes, microstructure development in alloys, interface properties and simple atomic and molecular modeling.
Three lectures; second term
Prerequisite: MATLS 1M03, 3T04; or registration in a program administered by the Department of Materials Science and Engineering
Antirequisite: MATLS 3N03, 4E04
Offered on an irregular rotation basis.
Offered in 2009-2010.
Mathematics and Statistics

Gregory H. Moore, B.A. (California-Berkeley), M.A., M.Sc., Ph.D. (Toronto)
Eric T. Sawyer, B.Sc., Ph.D. (McGill), McKay Professor of Mathematics
Matthew A. Valerio, B.Math., Ph.D. (Waterloo), Ph.D. (California-Berkeley)
Roman Vivieros-Aguilera, B.A. (Veracruzana, Mexico), M.A. (National Polytechnic Inst., Mexico), Ph.D. (Waterloo)/Graduate Advisor, Statistics
Mckenzie Y., K. Wang, A.B. (Princeton), Ph.D. (Stanford)
Gail S.K. Wolowicz, B.Sc., M.Sc. (McGill), Ph.D. (Alberta)

Adjoint Professor
Abdel H. El-Shaarawi, B.Sc., M.Sc. (Cairo), Ph.D. (Waterloo)

Associate Professors
Angelo Canton, B.Sc. (University College, Cork), M.Sc., Ph.D. (Toronto)
Aaron Childs, B.Sc., M.Sc., Ph.D. (McMaster)
Nicholas Klevahan, B.Sc. (British Columbia), Ph.D. (Cambridge)
Zdislaw K. Kowalik, M.Sc. (Charles, Prague), Ph.D. (Toronto)
Mircea-Liviu Lovric, B.S. (Zagreb), M.Sc., Ph.D. (Ohio State), 3M Teaching Fellow
Ernest R. Maed, B.A., M.A., Ph.D. (Western Ontario), A.S.A.
Dmitry E. Pelinovsky, M.S. (Nizhny Novgorod State, Russia), Ph.D. (Moscow)
Romyar Sharifi, B.A. (California-Berkeley), Ph.D. (Chicago)/Canada Research Chair
Patrick Speissegger, M.Sc. (Swiss Federal Institute of Technology), Ph.D. (Illinois-Urbana)/Canada Research Chair

Adjunct Associate Professor
Kevin N. Vander Meulen, B.Sc. (Calvin College), Ph.D. (Queen's)

Assistant Professors
Craig Gordon, B.Sc., M.Sc. (McGill), Ph.D. (Stony Brook)
Mathew Grasselli, B.Sc. (Sao Paolo), Ph.D. (King's College, London)
Megumi Harada, A.B. (Harvard), Ph.D. (California-Berkeley)
David Lozinski, B.Math. (Waterloo), M.Sc., Ph.D. (Northwestern)
Bartosz Protas, M.Sc. (Warsaw University of Technology), Ph.D. (Warsaw University of Technology and Université de Paris)
Ron Zhiv, B.Sc., M.Sc. (University of Science and Technology of China), Ph.D. (British Columbia)

Associate Members
Antoine Deza, Computing and Software, M.Sc. (Ecole Nationale des Ponts et Chaussées), Ph.D. (Tokyo Institute of Technology)
Nedilko Nedilkov, Computing and Software, M.Sc. (Sophia, Bulgaria), M.Sc., Ph.D. (Toronto)
Jiming Peng, Computing and Software, M.Sc. (Xian, Tian), M.Sc. (Chinese Academy of Sciences), Ph.D. (Delft University of Technology)
Tamas Terlaky, Computing and Software, M.Sc., Ph.D. (Loránd Eötvös)
Stephen Walter, Health Sciences, B.Sc., Ph.D. (Imperial College, London), A.R.C.S.

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).

Mathematics Courses

If no prerequisite is listed, the course is open.

Math 1A03 Calculus for Science I
For students in science: geared towards applications, with attention to underlying concepts. Functions: limits, continuity, derivatives, optimization, curve sketching. Antiderivative, definite integral, techniques of integration. Three lectures, one tutorial; one term.
Prerequisite: One of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1F03 or 1F03
Antirequisite: ARTS & SCI 1D06, MATH 1N03, 1X03, 1ZZ5
Not open to students who have achieved a grade of at least 10 in MATH 1LS3 or 1M03.

Math 1AA3 Calculus for Science II
Three lectures, one tutorial; one term.

Math 1B03 Linear Algebra I
Vector spaces given by solutions to linear systems. Linear independence, dimension, determinants. Eigenvalues, eigenvectors and diagonalization. Complex numbers.
Three lectures, one tutorial; one term.
Prerequisite: One of Grade 12 Calculus and Vectors U, Grade 12 Geometry and Discrete U, MATH 1D03, 1F03
Antirequisite: MATH 1H03, 1H05, 1H13
Not open to students registered in an Engineering program.

Math 1C03 Introduction to Mathematical Reasoning
Inquiry into the ideas and methods of advanced mathematics. Material will include topics selected from algebra, calculus, discrete math, geometry and number theory.
Three hours; one term.
Prerequisite: One of Grade 12 Calculus and Vectors U, Grade 12 Geometry and Discrete U, MATH 1D03 or 1F03; and credit or registration in MATH 1B03.

Math 1F03 Introduction to Calculus and Analytic Geometry
A first course in the techniques of the differential calculus including exponential, logarithmic and trigonometric functions. An introduction to vector geometry.
Three lectures, one tutorial; one term.
Prerequisite: One of Grade 12 Advanced Functions U, Grade 12 Advanced Functions and Introductory Calculus U.
Not open to students with credit in Grade 12 Calculus and Vectors U.

Math 1K03 Introductory Calculus for Business, Humanities and the Social Sciences
An introduction to differential calculus and its applications.
Three lectures, one tutorial; one term.
Prerequisite: OSS Grade 11 Mathematics or OSIS Grade 12 Mathematics (Advanced).
Normally not open to students who have completed Grade 12 Advanced Functions and Introductory Calculus U.

Math 1L33 Mathematics for the Life Sciences
Topics from differential and integral calculus, differential equations, discrete math, chosen for their relevance to the life sciences.
Three lectures, one tutorial; one term.
Prerequisite: One of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U or MATH 1F03
Not open to students with credit or registration in ISCI 1A24 or to students with a grade of at least 10 in MATH 1A03, 1M03, 1N03, 1X03, 1Z04.
Students with a grade of at least 10 in MATH 1L33 may use it as a substitut for MATH 1A03 for prerequisites and for consideration to a Level II program for which MATH 1A03 is normally required.

Math 1M03 Calculus for Business, Humanities and the Social Sciences
Integral calculus of polynomial, rational, exponential and logarithmic functions. Optimization problems. Applications in the Social Sciences and Business.
Three lectures, one tutorial; one term.
Prerequisite: One of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1F03 or 1K03
Students considering upper year mathematics courses should take MATH 1A03.
Not open to students with credit or registration in ARTS & SCI 1D06, ISCI 1A24, MATH 1A03, 1L33, 1N03, 1X03, 1Z04.

Math 1X03 Calculus for Math and Stats I
For students with interest in mathematics/statistics: emphasis on geometric intuition, but also theoretical foundations. Functions: limits, continuity, derivatives, optimization, curve sketching. Antiderivative, definite integral, techniques of integration.
Three lectures, one tutorial; one term.
Prerequisite: Registration in Math and Stats I.
Antirequisite: ARTS & SCI 1D06, MATH 1A03, 1N03, 1Z04
Not open to students with credit or registration in ISCI 1A24.
MATH 1XX3 CALCULUS FOR MATH AND STATISTICS II

For students in mathematics/statistics. Additional techniques of integration, applications of definite integrals, differential equations, polar coordinates, parametrized curves. Sequences, infinite series, power series. Partial derivatives. Three lectures; one tutorial; one term
Prerequisite: MATH 1X03 and registration in Math and Stats I
Antirequisite: ARTS&SCI 1D06, MATH 1AA3, 1NN3, 1ZZ5
Not open to students with credit or registration in ISCI 1A24.

MATH 1Z04 ENGINEERING MATHEMATICS I

Differential calculus, sequences and series, vectors and the geometry of space. Four lectures, one lab (two hours) every other week; one term
Prerequisite: Registration in a program in Engineering Antirequisite: ARTS&SCI 1D06, MATH 1A03, 1NN3, 1ZZ5, MATH 1225

MATH 1ZZ5 ENGINEERING MATHEMATICS II

The definite integral, techniques of integration, parametrized curves, partial derivatives, multiple integrals, complex numbers, vector spaces, systems of linear equations, matrices, determinants, applications. Five lectures, one lab (two hours) every other week; one term
Prerequisite: MATH 1Z04
Antirequisite: ARTS&SCI 1D06, MATH 1A03, 1NN3, 1ZZ5, MATH 1X03

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, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A2A; and credit or registration in one of MATH 1B03, 1D03, 1H03, 1H05 or 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2M06, 2M3, 2Q04, 2ZZ3
Students interested in taking upper level mathematics courses should consider MATH 2X03 and 2XX3 instead. MATH 2A03 is not equivalent to MATH 2X03 and is not a sufficient prerequisite for MATH 2XX3.

MATH 2C03 DIFFERENTIAL EQUATIONS

Ordinary differential equations, Laplace transforms, series solutions, partial differential equations, separation of variables, Fourier series. Three lectures; one term
Prerequisite: One of MATH 1A03, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A2A; and one of MATH 1B03, 1D03, 1H03, 1H05 or 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2M06, 2M3, 2Q04, 2ZZ3

MATH 2E03 INTRODUCTION TO MODELLING

General features of modelling. Selected examples from biology, chemistry, economics and physics 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, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A2A; and one of MATH 1B03, 1D03, 1H03, 1H05 or 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2M06, 2M3, 2Q04, 2ZZ3

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, 1M03, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A2A

MATH 2L03 MATHEMATICAL METHODS FOR BUSINESS AND SOCIAL SCIENCES

Selected topics from: linear programming, Markov chains, game theory, differential equations, and the calculus of several variables. Three lectures; one term
Prerequisite: One of MATH 1A03, 1L03, 1M03, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A2A
Not open to students registered in Science or Engineering programs.

MATH 2M03 ENGINEERING MATHEMATICS II

Ordinary differential equations, Laplace transforms, Fourier series, with engineering applications. Three lectures; one term
Prerequisite: MATH 1NN3; and one of MATH 1H03, 1H05, 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2C03, 2P04, 2M06

MATH 2MM3 ENGINEERING MATHEMATICS III

Vector calculus, functions of several variables, integral theorems, with engineering applications. Three lectures; one term
Prerequisite: MATH 2M03; and one of MATH 1H03, 1H05, 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2A03, 2Q04, 2M06
Not open to students with credit in MATH 2X03.

MATH 2P04 DIFFERENTIAL EQUATIONS FOR ENGINEERING

Ordinary differential equations, systems of linear ordinary differential equations, Laplace transform, power series solutions, Fourier series with engineering applications. Three lectures and two tutorials; one term
Prerequisite: ENGINEER 2ZZ3, MATH 1NN3 and one of MATH 1H03, 1H05, 1HH3
Antirequisite: MATH 2C03, 2M03, 2M06

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: MATH 1NN3 and one of MATH 1H03, 1H05, 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2A03, 2M06, 2M3

MATH 2XX3 ADVANCED CALCULUS II

Canonical forms, determinants, bilinear forms, groups of linear transformations, other topics selected by the instructor. Three lectures; one term
Prerequisite: MATH 2R03

MATH 2R03 TEACHING MATHEMATICS

This course is designed to give a maximum of 20 students practical experience with teaching methods in mathematics. The course also provides an introduction to mathematics writing and development of communication skills relevant to mathematics. Two lectures and one practicum; one term
Prerequisite: A grade of A- in both MATH 1A03 and 1AA3, or in both MATH 1X03 and 1XX3, or in ARTS&SCI 1D06, and permission of the instructor. Applications must be submitted to the instructor by May 1 of the academic year prior to registration, with selection for placements announced by September 9. Enrolment is limited.

MATH 2X03 ADVANCED CALCULUS I

Introduction to the theory of functions of several variables: limits, continuity, differentiability. Taylor's Theorem and optimization, with applications. Three lectures; one term
Prerequisite: One of MATH 1AA3, 1XX3, ARTS&SCI 1D06, ISCI 1A2A; and one of MATH 1B03, 1D03, 1H03, 1H05 or 1HH3; or MATH 1ZZ5

MATH 2XX3 ADVANCED CALCULUS II

Multiple integration, path and surface integrals and applications. Classical integration theorems of vector calculus. Three lectures; one term
Prerequisite: MATH 2X03

MATH 2Z03 ENGINEERING MATHEMATICS III

Ordinary differential equations, Laplace transforms, eigenvalues and eigenvectors, applications. Three lectures; one term
Prerequisite: MATH 2Z03
Antirequisite: ENGINEER 2ZZ3, MATH 2C03, 2M03, 2P04
First offered in 2009-2010.
MAT 2ZZ3 | ENGINEERING MATHEMATICS IV
---
Fourier series, vector calculus, line and surface integrals, integral theorems, partial differential equations, applications.
Three lectures, one lab (two hours) every other week; one term.
Prerequisite: MATH 2Z03
Antirequisite: ENGINEER 2ZZ3, MATH 2A03, 2M03, 2Q04
First offered in 2009-2010.

MAT 3A03 | REAL ANALYSIS I
---
Sequences of real numbers; supremum, continuity. Riemann integral, differentiation. Sequences and series of functions; uniform continuity and uniform convergence.
Three lectures; one term
Prerequisite: MATH 2R03, 2X03.

MAT 3B03 | GEOMETRY
---
Selected topics from: affine and projective geometry, Euclidean, spherical and hyperbolic geometry, differential geometry of curves and surfaces.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and MATH 2R03

MAT 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, 2M03, 2Q04 or 2X03; and one of MATH 2C03, 2M03 or 2P04. One of PHYSICS 2B06, 2D03 or 2E03 is recommended.
Not open to students with credit or registration in MATH 3F03 or credit in MATH 3J04.

MAT 3C03* | CRYPTOGRAPHY
---
Introduction to cryptosystems used in modern security systems: elementary number theory, primality testing and factorization, discrete logarithm, RSA cryptosystems, elliptic curve cryptosystems.
Three lectures; one term
Prerequisite: MATH 2R03.

MAT 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: ELEC ENG 3C03, MATH 3K03
Not open to students with credit or registration in MATH 3X03 or credit in MATH 3J04.
Not open to students registered in Honours Mathematics and Physics.

MAT 3D03* | DISCRETE DYNAMICAL SYSTEMS AND CHAOS
---
Iteration of functions: orbits, graphical analysis, fixed and periodic points, stability, bifurcations, chaos, fractals.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03

MAT 3E03 | ALGEBRA I
---
An introduction to group theory, including Sylow theorems and structure of finitely generated Abelian groups; applications of group theory.
Three lectures; one term
Prerequisite: MATH 2R03

MAT 3EEE3 | ALGEBRA II
---
Topics in ring and module theory, in particular principal ideal domains, unique factorization domains, Euclidean rings; field theory and Galois theory.
Three lectures; one term
Prerequisite: MATH 3E03

MAT 3F03 | ADVANCED DIFFERENTIAL EQUATIONS
---
Three lectures; one term
Prerequisite: MATH 2C03, 2X03 and credit or registration in MATH 2R03

MAT 3FF3 | PARTIAL DIFFERENTIAL EQUATIONS I
---
First order equations, well-posedness, characteristics, wave equation, heat equation, Laplace equation, boundary conditions, Fourier series, applications.
Three lectures; one term
Prerequisite: MATH 2C03, 2R03, 2X03

MAT 3G03 | PROBLEM SOLVING
---
A course designed to illustrate the principles of mathematical problem solving. Maximum enrolment is 20 students.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and MATH 2R03

MAT 3GP3* | GEOMETRIC IDEAS IN PHYSICS
---
Minkowski space, Lorentz metric, Maxwell's equations, general relativity, geodesics, curvature, black hole geometries and other selected topics.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and MATH 2R03 or credit or registration in MATH 3C03

MAT 3H03* | NUMBER THEORY
---
Selected topics from: congruence and residues, continued fractions, approximation of irrational numbers, arithmetic in selected quadratic number fields; Diophantine equations, partitions, geometry of numbers, quadratic reciprocity.
Three lectures; one term
Prerequisite: Credit in at least 12 units of Mathematics or Statistics Level II or above

MAT 3I03 | PARTIAL DIFFERENTIAL EQUATIONS FOR ENGINEERING
---
Topics in partial differential equations of interest to mechanical, material, and ceramic engineering, including the wave equation, the heat diffusion equation and Laplace equation, in various coordinate systems.
Three lectures; one term
Prerequisite: MATH 2M06 or 2M03 or 2MM3; or MATH 2P04 and 2Q04; or registration in Level III or IV of a program in the Department of Materials Science and Engineering

MAT 3K03 | ENGINEERING MATHEMATICS III
---
Complex variable theory with applications to electrical and computer engineering.
Three lectures; one term
Prerequisite: MATH 2P04
Antirequisite: ELEC ENG 3C03, MATH 3D03

MAT 3L03 | MATHEMATICAL BIOLOGY
---
Three lectures; one term
Prerequisite: MATH 3F03

MAT 3N03 | MATHEMATICAL PHYSICS II
---
Topological ideas, concepts of mechanics, quantum mechanics for finite dimensional systems; information on quantum bits, logical operations and quantum gates; quantum parallelism and complexity theory; examples of quantum algorithms.
Three lectures; one term
Prerequisite: MATH 2X03 or 2X03 and MATH 2T03

MAT 3Q03 | NUMERICAL INTERPOLATION AND APPROXIMATION THEORY
---
Polynomial and spline interpolations; approximation in Hilbert space; Hermite interpolation and orthogonal polynomials; wavelets; numerical differentiation and integration; solution of nonlinear equations; minimization of nonlinear functions.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and MATH 2T03

MAT 3QC3* | INTRODUCTION TO QUANTUM COMPUTING
---
Postulates of quantum mechanics for finite dimensional systems; information on quantum bits, logical operations and quantum gates; quantum parallelism and complexity theory; examples of quantum algorithms.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and MATH 2R03

MAT 3TP3* | TRUTH AND PROBABILITY; GODEL’S INCOMPLETENESS THEOREMS
---
The goal is to inquire into Gödel's proof of incompleteness; in any sufficiently powerful axiomatic system there will be statements which are true but not provable.
Three lectures; one term
Prerequisite: MATH 2R03

MAT 3U03* | COMBINATORICS
---
Inversion formulae, systems of distinct representatives, block designs and other configurations; other topics.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and MATH 2R03
Antirequisite: MATH 4C03
### Mathematics and Statistics

**MATH 3V03**  
**GRAPH THEORY**  
Graphs, trees, bipartite graphs, connectivity, graph colouring, matrix representations, applications.  
Three lectures; one term  
Prerequisite: MATH 2A03 or 2X03; and MATH 2R03  
Antirequisite: MATH 4J03

**MATH 3X03**  
**COMPLEX ANALYSIS I**  
Analytic functions, Cauchy’s theorem, Cauchy’s integral formula, residues, zeroes of analytic functions; Laurent series, the maximum principle.  
Three lectures; one term  
Prerequisite: MATH 2R03, 2XX3

**MATH 3Z03**  
**INQUIRY: HISTORY OF MATHEMATICS**  
An introduction to the history of mathematics, including interaction with other phases of culture, with special emphasis on the past three centuries.  
Three lectures; one term  
Prerequisite: At least two Level II Mathematics or Statistics courses other than MATH 2K03, 2L03  
Enrolment is limited.

**MATH 4A03**  
**REAL ANALYSIS II**  
Metric spaces, compactness. Spaces of continuous functions, functions of several variables, inverse and implicit function theorems.  
Lebesgue integration,  
Three lectures; one term  
Prerequisite: MATH 3A03  
Antirequisite: MATH 3AA3

**MATH 4AT3**  
**TOPICS IN ANALYSIS**  
Precise topics will vary; consult the department for current information.  
Possible topics include: functional analysis, measure theory, harmonic analysis, calculus of variations.  
Three lectures; one term  
Prerequisite: Permission of the instructor  
**MATH 4AT3 may be repeated, if on a different topic.**

**MATH 4B03**  
**CALCULUS ON MANIFOLDS**  
Review of multivariable calculus, basic properties of manifolds, differential forms, Stokes' theorem, de Rham cohomology and applications.  
Three lectures; one term  
Prerequisite: MATH 3A03 or 3C03

**MATH 4BT3**  
**TOPICS IN GEOMETRY**  
Precise topics will vary; consult the department for current information.  
Possible topics include: differential geometry, riemannian metrics, connections, curvature, geodesics, topological and analytic properties of Riemannian manifolds.  
Three lectures; one term  
Prerequisite: Permission of the instructor  
**MATH 4BT3 may be repeated, if on a different topic.**

**MATH 4E03**  
**GALOIS THEORY**  
Field extensions, splitting fields, normality and separability, Galois extensions, finite fields, solvability by radicals, cyclic extensions, cyclotomic extensions, algebraic closure, classical constructions, computations of Galois groups.  
Three lectures; one term  
Prerequisite: MATH 3E03

**MATH 4ET3**  
**TOPICS IN ALGEBRA**  
Precise topics will vary; consult the department for current information.  
Possible topics include: algebraic geometry, algebraic number theory.  
Three lectures; one term  
Prerequisite: Permission of the instructor  
**MATH 4ET3 may be repeated, if on a different topic.**

**MATH 4F03**  
**DYNAMICAL SYSTEMS**  
Topics to be selected from ordinary differential equations theory, bifurcation and stability theory.  
Three lectures; one term  
Prerequisite: MATH 3F03. MATH 3A03 is recommended

**MATH 4K03**  
**APPLICATIONS OF LINEAR ALGEBRA**  
Examples and applications of linear algebra, including least squares problems, Markov chains, and linear inequalities.  
Three lectures; one term  
Prerequisite: Permission of the instructor

**MATH 4L03**  
**INTRODUCTION TO MATHEMATICAL LOGIC**  
First order logic, deduction systems, completeness and compactness theorems, model theory.  
Three lectures; one term  
Prerequisite: MATH 3E03

**MATH 4LT3**  
**TOPICS IN LOGIC**  
Precise topics will vary; consult the department for current information.  
Possible topics include: axiomatic set theory, computability theory, model theory or proof theory.  
Three lectures; one term  
Prerequisite: Permission of the instructor  
**MATH 4LT3 may be repeated, if on a different topic.**

**MATH 4Q03**  
**NUMERICAL METHODS FOR DIFFERENTIAL EQUATIONS**  
Approximation error; methods for ordinary differential equations, stiffness; iterative methods for boundary value problems; weighted residuals; spectral methods; methods for partial differential equations, accuracy, consistency, convergence; stability analysis.  
Three lectures; one term  
Prerequisite: Credit or registration in MATH 3C03 or 3FF3, or permission of the instructor

**MATH 4T03**  
**TOPICS IN TOPOLOGY**  
Precise topics will vary; consult the department for current information.  
Possible topics include: fundamental group and covering spaces, cell complexes and homology theory, theory of knots, links, and braids.  
Three lectures; one term  
Prerequisite: Permission of the instructor  
**MATH 4T03 may be repeated, if on a different topic.**

**MATH 4V03**  
**APPLIED ANALYSIS**  
Three lectures; one term  
Prerequisite: MATH 3A03

**MATH 4W03**  
**TOPICS IN MATHEMATICS**  
Directed reading in areas of mathematics of interest to the student and the instructor.  
Prerequisite: Permission of the Chair of the Department  
**MATH 4W03 may be repeated, if on a different topic.**

**MATH 4X03**  
**COMPLEX ANALYSIS II**  
Conformal maps, analytic continuation, harmonic functions, the Riemann mapping theorem, Riemann surfaces.  
Three lectures; one term  
Prerequisite: MATH 3X03

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### Statistics

**STATS 1L3**  
**PROBABILITY AND LINEAR ALGEBRA**  
The algebra of probability, conditional probability and independence, discrete and continuous random variables, mean and variance, matrices, determinants, Cramer’s rule, solution of linear equations.  
Three lectures, one tutorial; one term  
Prerequisite: OSS Grade 11 Mathematics  
Not open to students with credit in Grade 12 Mathematics of Data Management U or STATS 1C03, 2B03, 2D03, 2MA3, 2MB3  
Not open to students registered in the Faculties of Science or Engineering.

**STATS 2B03**  
**STATISTICAL METHODS FOR SCIENCE**  
Applied statistics, with emphasis on inferential methods relevant to the environmental and life sciences. Use of a computer statistics package.  
Three lectures; one term  
Prerequisite: One of Grade 12 Data Management U, STATS 1A03 or registration in Level II or above of a program in the Faculty of Science  
Not open to students with credit or registration in COMMERC 2QA3, ECN 2B03, HTH SCI 1F03, 2A03, STATS 2D03, 2MA3, 2MB3.
STATS 2D03  **INTRODUCTION TO PROBABILITY AND BASIC STATISTICAL INFERENCE**  
Combinatorics, independence, conditioning; Poisson-process; discrete and continuous distributions with statistical applications; expectation, transformations moment-generating functions; introduction to statistical inference.  
Three lectures; one term  
Prerequisite: One of MATH 1AA3, 1NN3, 1XX3, 1ZZ5  
*Not open to students with credit or registration in PSYCH 2RA3.*  

STATS 2MB3  **STATISTICAL METHODS AND APPLICATIONS**  
Multivariate distributions: marginal, conditional, independent variables; central limit theorem; estimation; sampling distributions; confidence intervals; hypothesis testing, power; linear regression; graphical methods; introduction to statistical packages.  
Three lectures; one term  
Prerequisite: STATS 2D03

STATS 3A03  **APPLIED REGRESSION ANALYSIS WITH SAS**  
Introduction to SAS; linear regression model; least squares method; model fitting and diagnostics; influence analysis; model building; one-way and two-way ANOVA; applications.  
Three lectures; one term  
Prerequisite: STATS 2MB3  
Antirequisite: STATS 4B03

STATS 3C03  **COMPUTATIONAL MÉTHODES FOR INERENCE**  
Linear and non-linear likelihood inference; model-free methods; Bayesian concepts and methods; applications.  
Three lectures; one term  
Prerequisite: STATS 3D03

STATS 3D03  **MATHEMATICAL STATISTICS I**  
Sampling distributions, limiting distributions; maximum likelihood methods; sufficiency and its statistical inference implications; pivotal quantities; interval estimation; tests of hypotheses, optimality.  
Three lectures; one term  
Prerequisite: STATS 2D03 or 2MB3; and one of MATH 2A03, 2L03, 2Q04, 2X03  
Pre requisite (Beginning 2009-2010): STATS 2MB3 and one of MATH 2A03, 2L03, 2Q04, 2X03  
Antirequisite: STATS 3D06

STATS 3D03  **MATHEMATICAL STATISTICS II**  
Estimation tests of hypotheses, sufficient statistics, inference about normal models, and selected topics from robust inference, Bayesian inference, nonparametric inference and resampling methods.  
Three lectures; one term  
Prerequisite: STATS 3D03  
Antirequisite: STATS 3D06

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

STATS 3H03*  **ACTUARIAL MATHEMATICS II**  
Multiple life functions, multiple decrement models, valuation theory for pension plans.  
Three lectures; one term  
Prerequisite: STATS 3G03

STATS 3H53*  **HISTORY OF PROBABILITY AND STATISTICS**  
Origin, development and evolution of modern probabilistic and statistical concepts and methods are discussed. Emphasis is placed on the logic of inference.  
Three lectures; one term  
Prerequisite: MATH 2A03 or 2X03; and STATS 2D03

STATS 3J04  **PROBABILITY AND STATISTICS FOR ENGINEERING**  
Introduction to probability, data analysis, statistical inference, regression, correlation and analysis of variance, applications to civil and environmental engineering.  
Three lectures, one tutorial; first term  
Prerequisite: Registration in Level II or above of any program in Engineering  
Antirequisite: ENGINEER 3JR4, MATH 3J04, STATS 3N03, 3Y03

STATS 3N03  **STATISTICAL METHODS FOR ENGINEERING**  
Introduction to probability, data analysis, statistical inference, regression, correlation and analysis of variance.  
Three lectures; one term  
Prerequisite: Registration in a program in Engineering above Level I  
Antirequisite: ENGINEER 3JR4, STATS 3Y03, 3J04

STATS 3P03*  **PROBABILITY AND GAMES OF CHANCE**  
Conditional expectation; discrete martingales, Markov chains; game theory: house advantage, gambler’s ruin, betting systems, bold play, optimal proportional play and card theory; probabilistic treatment of games of chance.  
Three lectures; one term  
Prerequisite: MATH 2A03 or 2X03; and STATS 2D03

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, 2MB3

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: MATH 2A03 or 2X03; and STATS 2D03

STATS 3Y03  **STATISTICAL ANALYSIS FOR ENGINEERING**  
Introduction to probability, univariate and multivariate random variables and their distributions, statistical estimation and inference, regression and correlation, decision making, applications.  
Three lectures; one term  
Prerequisite: Registration in a program in Engineering above Level I  
Antirequisite: ENGINEER 3JR4, STATS 3J04, 3N03

STATS 4A03*  **TIME SERIES**  
Stationary, auto-regressive and moving-average series, Box-Jenkins methods, trend and seasonal effects, tests for white noise, estimation and forecasting methods, introduction to time series in the frequency domain.  
Three lectures; first term  
Prerequisite: MATH 3A03, STATS 3D03; and STATS 3A03 or 4B03

STATS 4C03*  **GENERALIZED LINEAR MODELS**  
Normal linear model, exponential family, iteratively-reweighted least squares, logistic regression, Poisson regression and log-linear models, other families of GLM's, analysis of deviance and model checking, residual analysis.  
Three lectures; one term  
Prerequisite: STATS 3A03 or 4B03; and STATS 3D03

STATS 4D03*  **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: MATH 3A03, STATS 2D03

STATS 4E03*  **BROWNIAN MOTION AND DIFFUSION**  
Brownian motion, stochastic integrals, one-dimensional Ito’s formula, diffusion processes, option pricing and other financial applications. Simulation of the Black-Scholes formula and related models.  
Three lectures; one term  
Prerequisite: STATS 2D03

STATS 4F03*  **CATEGORICAL DATA ANALYSIS**  
Two-way and three-way contingency tables, logistic regression, log-linear models for contingency tables, collapsibility, ordinal associations, multivariate logit models.  
Three lectures; one term  
Prerequisite: STATS 3A03 or 4B03; and STATS 3D03

STATS 4G03*  **OPERATIONS RESEARCH**  
Network models and algorithms, dynamic models, queuing models and other topics.  
Three lectures; one term  
Prerequisite: Credit or registration in STATS 3D03 (or 3D06)
Three lectures; first term
Prerequisite: MATH 2R03; and STATS 3D03 (or 3D06)
STATS 4P03* ADVANCED APPLIED STATISTICS
Statistical computing; statistical software packages; working with large data sets; exploratory data analysis; graphical methods; statistical consulting practice.
Three lectures, second term
Prerequisite: Credit or registration in one of STATS 3A03, 3D03 or 4B03
STATS 4W03 TOPICS IN STATISTICS
Directed reading in areas of statistics of interest to the student and the instructor.
Prerequisite: Permission of the Chair of the Department
STATS 4W03 may be repeated, if on a different topic.

MECHANICAL ENGINEERING

WEB ADDRESS: http://www.mech.mcmaster.ca
John Hodgins Engineering Building, Room 316 Ext. 42942

Faculty as of January 15, 2008
Chair
Samir Ziada
Professors
Gary Bone/B.Sc. (Queen's), M.Eng., Ph.D. (McMaster), P.Eng.
Iliene Busch-Vishniac/B.Sc. (Rochester), M.Eng., Ph.D. (M.I.T.)
Samir Ziada/B.Sc. (Carlo), M.Eng. (McMaster), Ph.D. (Lehigh), P.Eng.
Adjunct Professors
Mamdouh Shokri/York), B.Sc. (Carlo), M.Eng., Ph.D. (McMaster), P.Eng.
Vincent M. Sowa/B.Sc. (Illinois), Ph.D. (Purdue), P.Eng.
Associate Professors
Chan Y. Ching/B.Sc. (Peradeniya), P.Eng. (Syracuse), P.Eng.
James Cotton/B.Sc., M.Eng., Ph.D. (McMaster), P.Eng.
Saeed Habibi/B.Sc. (Dundee), Ph.D. (Cambridge), P.Eng.
Mohran Kasra/B.Sc. (Tehran Polytechnic), M.Eng. (McGill), Ph.D. (Ecole Polytechnique)
Philip Koshy/B.E. (Anna), P.Eng. (IT Kanpur)
Marilyn F. Lightstone/B.A.Sc. (Queen's), M.A.Sc., Ph.D. (Waterloo), P.Eng.
Joseph R. McDermid/B.Sc. (Queen's), M.Eng., Ph.D. (McGill), P.Eng.
Steve Nossal-NSERC Industrial Research Chair in Steel Product Application
Sumanth Shankar/B.Tech. (Banaras Hindu), Ph.D. (Worcester Polytechnic)
Braley-Orlick Chair in Advanced Manufacturing
Mateusz P: Sklad/M.Sc., Ph.D. (Warsaw)
Allan D. Spence/B.Math., M.A.Sc. (Waterloo), Ph.D. (British Columbia), P.Eng.
Stephen C. Veldhuis/B.Eng. (McMaster), M.Eng. (Carnegie Mellon),
Ph.D. (McMaster), P.Eng.
Peidong Wu/B.Sc. (Zhijiang), M.Eng. (China University of Mining), Ph.D. (Delft)
Assistant Professors
Ponnambalam Ravi/Selvaganapathy/B.Sc. (Madurai Kamaraj), M.S., Ph.D. (Michigan)
Stephen W. Tullis/B.Sc., M.Sc. (Queen's), Ph.D. (Cambridge), P.Eng.
Gregory R. Wohlf/B.Sc., M.Sc., Ph.D. (Calgary)
Associate Members
Justin de Villiers de Beer (Surgery) Ch. B., M.B. (Cape Town)
J. David Embury/Materials Science and Engineering) B.Sc. (Manchester),
Ph.D. (Cambridge), P.Eng.
Andrew N. Hrymak (Chemical Engineering) B.Eng. (McMaster), Ph.D. (Carnegie Mellon), P.Eng.
Nicholas Kevlahan (Mathematics and Statistics) B.Sc. (British Columbia),
Ph.D. (Cambridge)
Philip E. Wood (Chemical Engineering) B.A.Sc. (Waterloo), Ph.D. (California Institute of Technology), P.Eng.

Department Note:
Enrolment in Mechanical Engineering courses by students in programs other than those administered by the Department may be restricted.

Courses
If no prerequisite is listed, the course is open.

MECH ENG 2B03 MECHANICAL ENGINEERING MEASUREMENTS
Static and dynamic characteristics of instruments, statistical analysis of measurement errors, variable conversion elements and signal amplification.
Metrology, measurement of strain and force, pressure, flow, temperature and power.
Technical writing and communication.
Two lectures, one lab (three hours); second term
Prerequisite: Registration in Level II of any Mechanical Engineering or Mechatronics Engineering program
Antirequisite: MECH ENG 2P02

MECH ENG 2C03 MECHANICAL ENGINEERING DESIGN I
Lectures on Geometric Dimensioning and Tolerancing. Design projects involving modelling, analysis, synthesis, computing and drawing.
Two lectures, one lab (three hours); second term
Prerequisite: Registration in Level II of any Mechanical Engineering program

MECH ENG 2D03 MECHANICAL ENGINEERING DESIGN ELEMENTS
Design synthesis, fundamental principles of standard design elements, mechanical and fluid power elements, formal mechanical design drawing requirements, component specification and optimization.
Three lectures; first term
Prerequisite: Registration in Level II of any Mechanical Engineering program

MECH ENG 2P04 STATICS AND MECHANICS OF MATERIALS
Principles of statics as applied to deformable solid bodies. Stress and strain, elastic behaviour of simple members under axial force, bending and torsion. Principle 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
Antirequisite: ENGINEER 2P04

MECH ENG 2Q04 ENGINEERING MECHANICS: KINETICS AND DYNAMICS
Kinematics and dynamics of particles and rigid bodies. Analysis of planar mechanisms. Displacement, velocity and acceleration analysis methods.
Motion with respect to a rotating frame reference. Work, energy and momentum principles.
Three lectures, plus one unit comprising tutorials or lectures devoted to applications at the discretion of the instructor; first term
Prerequisite: Registration in Level II of any Mechanical Engineering or Mechatronics Engineering program
Antirequisite: CIV ENG 2Q04, ENGINEER 2Q04, MECH ENG 2Q04

MECH ENG 2Q04 ENGINEERING MECHANICS: KINETICS AND DYNAMICS
Kinematics and dynamics of particles and rigid bodies. Analysis of planar mechanisms. Displacement, velocity and acceleration analysis methods.
Motion with respect to a rotating frame reference. Work, energy and momentum principles. Offered overseas as part of the Study Abroad Program.
Three lectures, one tutorial; one term (summer)
Prerequisite: Registration in Level II of any Mechanical Engineering or Mechatronics Engineering program; and permission of the Associate Dean (Academic) of Engineering
Antirequisite: CIV ENG 2Q04, ENGINEER 2Q04, MECH ENG 2Q04
MECH ENG 2W04 THERMODYNAMICS
Introduction to the principles of thermodynamics, and applications in engineering. Basic concepts: energy systems, properties of pure substances, entropy. Laws of thermodynamics, power and refrigeration cycles.
Three lectures, one tutorial; second term
Prerequisite: Registration in Level II of any Mechanical Engineering program
Antirequisite: ENGINEER 2H03, 2W04

MECH ENG 3A01 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. Introduction to yield criteria.
Three lectures; second term
Prerequisite: ENGINEER 2P04 or MECH ENG 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 cold forming, metal cutting, welding, bonding, electrical machining, surface treatment, mechanical handling, assembly, cleaning, packaging.
Three lectures; second term
Prerequisite: Registration in any Mechanical Engineering or Chemical Engineering program

MECH ENG 3D03 THERMODYNAMICS OF ENERGY SYSTEMS
Re-examination of laws of thermodynamics, analysis using second law of thermodynamics, multicomponent systems, psychrometry, HVAC systems, combustion systems, steam power systems and micro-nano systems.
Three lectures; first term
Prerequisite: MECH ENG 2W04

MECH ENG 3E05 MECHANICAL ENGINEERING DESIGN II
3-D stress transformation, curved beams, thick walled pressure vessels, contact stresses, fatigue, bolted and welded joints, machine elements. The laboratories feature a major design project from concept development through analysis to formal report preparation.
Four lectures, one lab (two hours); second term
Prerequisite: ENGINEER 2P04 or MECH ENG 2P04; and MECH ENG 2Q04, 3A03
Antirequisite: MECH ENG 3E04

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 tutorial period, every other week, devoted to the modelling of mechanical systems.
Three lectures; one tutorial; first term
Prerequisite: Registration in any Mechanical Engineering program

MECH ENG 3M03 COMPOSITE LABORATORY
Laboratory exercises in fluid mechanics, thermodynamics and solid mechanics.
One lab (three hours); both terms
Prerequisite: Registration in any Mechanical Engineering program
Antirequisite: MECH ENG 3M02

MECH ENG 3O04 FLUID MECHANICS
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 2M03 and 2MM3) or both MATH 2P04 and 2Q04; and registration in any Mechanical Engineering program

MECH ENG 3R03 HEAT TRANSFER
Three lectures; second term
Prerequisite: MATH 2M06 (or 2M03 and 2MM3), MECH ENG 2W04

MECH ENG 4B03 TOPICS IN PRODUCT DEVELOPMENT
Case studies using modern product development methods, value engineering, product specification, rapid product development, lean design and continuous improvement. Product liability and robust design.
Three lectures; first term
Prerequisite: Registration in Level IV or above of a Mechanical Engineering or Mechatronics Engineering program or permission of the department

MECH ENG 4BB3 BIOMECHANICS
Application of mechanical engineering principals to biomechanics problems including cellular biomechanics, hemodynamics, circulatory system, respiratory system, muscles and movement and skeletal biomechanics.
Three lectures; first term
Prerequisite: MECH ENG 2Q04, 3A03, 3O04; or permission of the department

MECH ENG 4CC3 EXPERIMENTAL AND COMPUTATIONAL BIOMECHANICS
Introduction to experimental and computational biomechanics including biomechanical testing concepts and application of finite element method in simulations of biomechanical structures/systems.
Three lectures; second term
Prerequisite: MECH ENG 4BB3, 4T03, STATS 3Y03; or permission of the department

MECH ENG 4D03 MANUFACTURING PROCESSES (METAL REMOVAL)
Three lectures; second term
Prerequisite: Registration in Level IV or above of a Mechanical Engineering program or permission of the department

MECH ENG 4F03 NOISE ANALYSIS AND CONTROL
Acoustic quantities; noise measurements and analysis; noise standards; sound generation, propagation, absorption, transmission; acoustic materials; noise control techniques; case studies.
Three lectures; second term
Prerequisite: MECH ENG 4Q03

MECH ENG 4J03 INTRODUCTION TO COMPUTATIONAL FLUID MECHANICS AND HEAT TRANSFER
Three lectures, one lab (one and one-half hours), second term
Prerequisite: MECH ENG 3F04

MECH ENG 4K03 INTRODUCTION TO ROBOTIC MECHANICS
Spatial descriptions and transformations, manipulator kinematics, inverse kinematics; Jacobians, dynamics.
Three lectures; first term
Prerequisite: Either ENGINEER 2Q04 or MECH ENG 2Q04 and registration in any Mechanical or Mechatronics Engineering program; or permission of the department

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: MECH ENG 2C03
MECH ENG 4M06 PROJECT
A major mechanical or manufacturing engineering design or experimental project to be completed under the supervision or co-supervision of a faculty member holding an appointment in the Department of Mechanical Engineering. One lecture; two labs (three hours); first term

MECH ENG 4P03 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 (or 3M03) and registration in any Mechanical Engineering program.

Antirequisite: MECH ENG 4P02

MECH ENG 4Q03 MECHANICAL VIBRATIONS
Transient and steady state vibration of single- and multi-degree of freedom systems. Free and forced vibrations of single and multiple degree-of-freedom mechanical systems, transient response, damping and vibration isolation.

Three lectures; first term

Prerequisite: MECH ENG 2Q04 or MECH ENG 2Q04

MECH ENG 4R03 CONTROL SYSTEMS
Fundamentals of linear, continuous control systems. Control system performance in both time and frequency domains. Design and analysis of controllers.

Three lectures; second term

Prerequisite: Registration in Level III Mechanical Engineering; or Level IV Mechanical Engineering and Management or Mechanical Engineering and Society

Antirequisite: MECH ENG 4203

MECH ENG 4R03 CAD/CAM/CAE

Solid modelling theory, part creation, assemblies and rigid bodies, mechanism simulation, B-Splines, data exchange, CNC machining and inspection. Major project using computer laboratory facilities.

Three lectures, one lab (three hours); second term

Prerequisite: Registration in Level IV or above of any Mechanical Engineering program.

Antirequisite: MECH ENG 4R3

MECH ENG 4Z03 CAD/CAM/CAE

Solid modelling theory, part creation, assemblies and rigid bodies, mechanism simulation, B-Splines, data exchange, CNC machining and inspection. Major project using computer laboratory facilities. Offered overseas as part of the Study Abroad Program.

Three lectures, one lab (one hour); one term (summer)

Prerequisite: Registration in Level IV or above of any Mechanical Engineering program and permission of the Associate Dean (Academic) of Engineering Antirequisite: MECH ENG 4Z03

MECHATRONICS ENGINEERING

WEB ADDRESS: http://www.cas.mcmaster.ca

Information Technology Building, Room 202
Ext. 24614

Notes:
1. Courses in Mechatronics Engineering are administered within the Department of Computing and Software in the Faculty of Engineering.
2. All Mechatronics Engineering courses are open to students registered in a Mechatronics Engineering program, subject to prerequisite requirements. Prior permission of the Department is necessary for other students.

Courses

MECHTRON 3TA4 EMBEDDED SYSTEMS DESIGN I
Interfacing to digital and analog systems, sensors and actuators. Signals and conditioning: data acquisition, active and passive filtering, optical and analog isolation, PWM, de/multiplexing. Architecture of micro-controllers and DSP. Embedded system design and documentation.

Three lectures, one tutorial (two hours) every other week, one lab (three hours) every other week; first term

Prerequisite: ENG PHYS 2E04
Corequisite: SFWR ENG 3K04

MECHTRON 3TB4 EMBEDDED SYSTEMS DESIGN II
Design and implementation of embedded systems interacting with analog systems. Software design and implementation for embedded systems and DSP systems. Simulation and testing of embedded systems.

Three lectures, one tutorial (two hours) every other week, one lab (three hours) every other week; second term

Prerequisite: MECHTRON 3TA4

MECHTRON 4TB6 MECHATRONICS CAPSTONE DESIGN PROJECT

Student teams prepare the requirements, design, documentation and implementation of a Mechatronics System taking economic, health, safety, cultural, legal and marketing factors into account. Students must demonstrate a working system and convincing test results.

Three hours (lectures, discussion, group project, seminar); two terms

Prerequisite: MECHTRON 3TB4 and registration in Level IV of any Mechatronics Engineering program

MEDICAL PHYSICS AND APPLIED RADIATION SCIENCES

WEB ADDRESS: http://www.science.mcmaster.ca/medphys/

Nuclear Research Building, Room 124
Ext. 27650, 26159

Faculty as of January 15, 2008

Chair
Fiona E. McNeill
Courses

**MED PHYS 2A03 PHYSICS IN MEDICINE AND BIOLOGY**
Applications of introductory physics concepts to medicine and biology. Con-}


**MED PHYS 4A01 MEDICAL PHYSICS COMMUNICATIONS A**
Preparation and presentation of report on first work term.
One seminar (one hour); one term
Prerequisite: Registration in Level IV of Honours Medical and Health Physics Co-op
Antirequisite: MED PHYS 3101, 4A03, PHYSICS 3101, 4A03, 4A11, 4A02, 4I01

**MED PHYS 4A02 MEDICAL PHYSICS COMMUNICATIONS B**
Preparation and presentation of report on second work term.
One seminar (one hour); one term
Prerequisite: MED PHYS 4A01
Antirequisite: MED PHYS 4A03, 4I01, PHYSICS 4A03, 4A11, 4A02, 4I01

**MED PHYS 4B03 RADIOACTIVITY AND RADIATION INTERACTIONS**
Radioactivity and radiation phenomenology: interaction of radiations with matter, dosimetry, radiation in medicine, biological effects, radiation levels and regulations, radiation protection.
Three lectures; one term
Prerequisite: One of MEDRADSC 1C03, PHYSICS 1B03 or permission of the instructor

**MED PHYS 4I03 INTRODUCTION TO BIOPHOTONICS**
This is a survey course on basic principles of light interaction with biological systems and specific biomedical applications of photonics.
Three lectures; one term
Prerequisite: ENG PHYS 3E03 or PHYSICS 3N03

**MED PHYS 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.
Two lectures every week, one lab (three hours) every other week; two terms
Prerequisite: One of BIOLOGY 3L03, ENG PHYS 3D03, MED PHYS 3T03 or 4B03
Antirequisite: PHYSICS 4R06
This course will study the short and long term impact of nuclear weapons testing and use, upon humans and the environment. Students will visit critical sites where nuclear weapons were developed and detonated. The travel portion of the course will run for 10-12 days (dependent on available travel schedules) and will involve group discussions and field experiences. Students will be required to pay incidental fees over and above the normal tuition fees set by the Unit to cover travel costs.

Prerequisite: Registration in Level IV of any Honours program in the Faculty of Science
Cross-list: SCIENCE 48Z3
Antirequisite: INQUIRY 46Z3
Enrolment is limited.

MED PHYS 4T03 CLINICAL APPLICATIONS OF PHYSICS IN MEDICINE

Basic physical concepts underlying medical imaging, nuclear medicine, physiological measurement, radiation therapy and biomedical laser applications with an overview of their technical implementation.

Three lectures; one term
Prerequisite: MATH 2A03 or 2Q04; and MATH 2C03 or 2P04; and one of BIOLOGY 3L03, ENG PHYS 3D03, MED PHYS 3T03, 4B03, PHYSICS 3T03
Antirequisite: PHYSICS 4T03

MED PHYS 4XX3 HUMAN BIOLOGY FOR PHYSICAL SCIENTISTS

An overview of the structure and the function of the major organ systems of the body with some reference to radiation interactions.

Three hours; one term
Prerequisite: Registration in Level III or above of an Honours program in the Faculty of Science; or permission of the instructor
Cross-list: SCIENCE 4XX3
Antirequisite: BIOLOGY 2A03, 3U03, 3UU3, 4306, HTH SCI 1D06, 1H03, 1H06, 1HH3, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1Y03, 1YY3

MEDICAL RADIATION SCIENCES ...

WEB ADDRESS: http://www.science.mcmaster.ca/MedRadSci
Nuclear Research Building, Room 104
Ext. 26256

Notes:

1. Courses for Levels I, II, III and IV Medical Radiation Sciences, Radiography, Ultrasonography or Radiation Therapy specialization are available only to students registered in the Medical Radiation Sciences program unless otherwise stated.

2. Lab courses may be held at learning settings external to the University.

3. Students are responsible for arranging their own travel to and from or accommodation in learning settings external to the University and for covering any costs incurred. All students enrolled in the Medical Radiation Sciences program are expected to be able to travel to any learning setting in Ontario. The final assignment of learning settings for any clinical practicum course is constrained by the availability of the requested setting and resources. Students may, therefore, be required to complete a clinical practicum course in a learning setting that is not of their choosing.

Courses

MEDRADSC 1A03 INTRODUCTION TO MEDICAL RADIATION SCIENCES

An introduction to the professions and subspecialties of medical radiation sciences and a broad insight into the Canadian health care system, including hospital organizations, Regulated Health Professionals and medical terminology.

One hour (lecture), three hours (tutorial); one term
Prerequisite: Registration in Medical Radiation Sciences

MEDRADSC 1B03 INTRODUCTION TO PATHOLOGY

Processes of disease and trauma, from damage and repair processes at the cellular level to tissues and systems. Disease development and recovery, immunity and heredity are examined.

Three hours (lectures); one term
Prerequisite: Credit or registration in KINESIOL 1Y03 and registration in Medical Radiation Sciences

MEDRADSC 1C03 INTRODUCTION TO PHYSICS FOR MEDICAL RADIATION SCIENCES

Fundamental physics relevant to Medical Radiation Sciences. Wave motion, electricity and magnetism, heat, radioactivity and radiation interaction, absorption and emission of light and applications in Medical Radiation Sciences.

Three lectures; one term
Prerequisite: One of PHYSICS 1L03, 1P03 or a grade of at least 60% in Grade 12 Physics U; and registration in Medical Radiation Sciences

MEDRADSC 1D03 INTRODUCTION TO PROFESSIONAL PRACTICE

Introduction to the legislative and regulatory frameworks of health care and health care professions, the behaviours and attitudes required of a health care professional and concepts of reflective practice.

Two hours (lectures), one hour (tutorial); one term
Prerequisite: Registration in Medical Radiation Sciences

MEDRADSC 2A03 PATIENT CARE

Theoretical foundation and skills development to enable the student to meet the physical and emotional needs of patients in the clinical setting while utilizing self-care concepts and safe practices.

This course is evaluated on a Pass/Fail basis.

Two hours (lectures), two hours (lab); one term
Prerequisite: MEDRADSC 1D03 or 2C03; and registration in Level II of a Medical Radiation Sciences Specialization

MEDRADSC 2B03 MEDICAL INFORMATICS

Examination of the acquisition, storage, communication and security of digital patient records in health care facilities.

Two hours (lectures), one hour (lab); one term
Prerequisite: Registration in Level II of a Medical Radiation Sciences Specialization

MEDRADSC 2C03 INTRODUCTION TO PROFESSIONAL PRACTICE

Introduction to the legislative and regulatory frameworks of health care and health care professions, the behaviours and attitudes required of a health care professional, and concepts of reflective practice.

Two hours (lectures), one hour (tutorial); one term
Prerequisite: Registration in Level II of a Medical Radiation Sciences Specialization

MEDRADSC 2D03 RELATIONAL ANATOMY I

This course examines spatial relationships of anatomical structures (appendicular and axial skeleton, excepting skull, plus structures of the pelvic and thoracic cavities) using projection, sectional and volume-rendered images.

Two hours (lectures), two hours (lab); one term
Prerequisite: Registration in Level II of the Radiography or the Radiation Therapy Specialization

MEDRADSC 2E03 RADIOGRAPHIC IMAGE PRODUCTION

Image production, processing and display of analogue and digital radiographic images are covered. Image quality in terms of spatial and contrast resolution are explored.

Two hours (lectures), one hour (lab), one hour (tutorial); one term
Prerequisite: Credit or registration in MEDRADSC 2F03 and registration in Level II of the Radiography Specialization

MEDRADSC 2F03 RADIOGRAPHIC PHYSICS AND INSTRUMENTATION I

The course focuses on the production of x-rays in radiography and the interactions of x-rays with matter. Control of beam quality and quantity is related to image quality and dose minimization.

Two hours (lectures), one hour (lab), one hour (tutorial); one term
Prerequisite: Credit or registration in MEDRADSC 2E03 and registration in Level II of the Radiography Specialization

MEDRADSC 2G03 RADIOGRAPHIC SKILLS I

Fundamental radiographic techniques and basic radiography of the appendicular skeleton through image production using anatomical phantoms and performance of simulated examinations on peers.

This course is evaluated on a Pass/Fail basis.

One hour (lectures), two labs, two hours each; one term
Prerequisite: Credit or registration in MEDRADSC 2D03, 2E03, 2F03; and MEDRADSC 1D03 or 2C03; and registration in Level II of the Radiography Specialization
MEDRADSC 2H03  
**Radiographic Skills II**  
Radiography of the axial skeleton, chest and abdomen through image production using anatomical phantoms and performance of simulated examinations on peers. 
This course is evaluated on a Pass/Fail basis. 
One hour (lecture), four hours (lab); one term 
Prerequisite: MEDRADSC 2C03, 2D03, 2G03 and registration in Level II of the Radiography Specialization

MEDRADSC 2K03  
**Pathology and Procedures I**  
Radiological procedures and associated pathologies of the skeletal, digestive, respiratory, and urinary systems. Physiological properties of contrast media and their use in radiological procedures are studied. 
Three hours (lectures); one term 
Prerequisite: MEDRADSC 2D03 and registration in Level II of the Radiography Specialization

MEDRADSC 2K15  
**Radiography Clinical Practicum I**  
Four month placement in a Diagnostic Imaging department. Students develop clinical and professional skills by participating in radiological procedures under direct supervision of a qualified professional. 
This course is evaluated on a Pass/Fail basis. 
One term (Offered in Spring/Summer session only.) 
Prerequisite: MEDRADSC 2A03, 2C03, 2D03, 2E03, 2F03, 2H03. 2I03 and registration in Level II of the Radiography Specialization

MEDRADSC 2P03  
**Sonographic Skills II**  
Emphasis is on performance of sonography of the pancreas, urinary system, complete abdomen and female pelvis to include routine and alternate techniques, image recognition, patient care, communication and ergonomics. 
This course is evaluated on a Pass/Fail basis. 
One hour (lecture), four hours (lab); one term 
Prerequisite: MEDRADSC 2K03, 2L03, 2N03; and credit or registration in MEDRADSC 2M03; and registration in Level II of the Ultrasonography Specialization

MEDRADSC 2R15  
**Ultrasonography Clinical Practicum I**  
Four month placement in a Diagnostic Imaging department. Students develop clinical and professional skills by participating in sonographic procedures under direct supervision of a qualified professional. 
This course is evaluated on a Pass/Fail basis. 
One term (Offered in Spring/Summer session only.) 
Prerequisite: MEDRADSC 2A03, 2C03, 2K03, 2M03, 2Q03 and registration in Level II of the Ultrasonography Specialization

MEDRADSC 2S03  
**Clinical Oncology I**  
This course introduces the oncologic concepts that characterize malignant neoplasms. Topics include epidemiology, etiology, signs and symptoms, routes of spread, staging and management. An in-depth study of some of the more common disease sites is also undertaken. 
Three hours (lectures); one term 
Prerequisite: Registration in Level II of the Radiation Therapy Specialization

MEDRADSC 2T03  
**Clinical Oncology II**  
This course builds on MEDRADSC 2S03 (Clinical Oncology I) through continued in-depth study of prevalent malignancies. 
Three hours (lectures); one term 
Prerequisite: MEDRADSC 2S03 and registration in Level II of the Radiation Therapy Specialization

MEDRADSC 2U03  
**Radiation Therapy Skills I**  
Students are introduced to the professional behaviors and skills involved in interacting and treating cancer patients. Basic radiation therapy treatment techniques are introduced and evaluated through simulated labs. 
This course is evaluated on a Pass/Fail basis. 
One hour (lecture), two labs (two hours each); one term 
Prerequisite: Registration in Level II of the Radiation Therapy Specialization

MEDRADSC 2V15  
**Radiation Therapy Clinical Practicum I**  
Four month placement in a Radiation Therapy department. Students develop clinical skills by participating in various areas of a Radiation Therapy Department under the direct supervision of a qualified professional. 
One term (Offered in Spring/Summer session only.) 
Prerequisite: MEDRADSC 2A03, 2C03, 2D03, 2E03, 2F03, 2H03, 2I03 and registration in Level II of the Radiation Therapy Specialization

MEDRADSC 2W03  
**Physics and Instrumentation for Radiation Therapy**  
Photon production, interaction processes, measurement of exposure and absorption characteristics are presented, followed by the calculation of doses and treatment times prescribed in radiation therapy. 
Two hours (lectures); two hours (lab/tutorial); one term 
Prerequisite: Registration in Level II of the Radiation Therapy Specialization

MEDRADSC 2X03  
**Radiobiology and Protection**  
Radiation effects on cells, tissues and organs are covered with emphasis on clinical radiation hazards. Dose minimization and protective practices guidelines and regulations are examined. 
Three hours (lectures); one term 
Prerequisite: MEDRADSC 2F03 or 2W03; and registration in Level II of the Radiography or the Radiation Therapy Specialization Antirequisite: MEDRADSC 3F03

MEDRADSC 2Z03  
**Imaging Procedures in Radiation Therapy**  
An examination of the various imaging modalities and procedures involved in the cancer patient's diagnostic work-up and treatment. 
Three hours (lectures); one term 
Prerequisite: Registration in Level II of the Radiation Therapy Specialization Antirequisite: MEDRADSC 3E03

MEDRADSC 2Z00  
**Pre-Clinical Professional Skills Reassessment I**  
Practice and reassessment of skills performance prior to Clinical Practicum 1. Specific skills and performance criteria will be detailed in a learning contract. 
Prerequisite: MEDRADSC 2C03; and one of MEDRADSC 2H03, 2Q03, 2U03; and permission of the department
MEDRADSC 3A03 DIGITAL IMAGE MANAGEMENT
Using concepts of digital databases in health care, picture archiving and communication systems are examined, with attention to DICOM conformance standards and interconnectivity of medical imaging devices.
Three hours (lectures), one hour (lab or tutorial); one term
Prerequisite: MEDRADSC 2B03; and MEDRADSC 2J15 or 2R15; and registration in Level II of the Radiography or Ultrasonography Specialization.

MEDRADSC 3B03 QUALITY MANAGEMENT IN MEDICAL RADIATION SCIENCES
Examination of various quality management methodologies in health care facilities, external accreditation processes and legislation associated with quality in Medical Radiation Sciences.
Two hours (lectures), two hours (tutorial); one term (Offered in Spring/Summer session only.)
Prerequisite: One of MEDRADSC 2J15, 2R15 or 2V15; and registration in Level III of a Medical Radiation Sciences Specialization.

MEDRADSC 3C03 MULTIDISCIPLINARY INTERVENTIONAL PROCEDURES
A survey of changing approaches to treating pathologies of various organ systems through intervention using imaging guidance.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: MEDRADSC 2J15 or 2R15; and registration in Level III of the Radiography or Ultrasonography Specialization.

MEDRADSC 3D03 SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - ADVANCED STUDIES IN COMPUTED TOMOGRAPHY
A study of clinical use of CT in diagnosis, including clinical indications, pathophysiology, imaging appearances, imaging protocols and post-processing tools.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: MEDRADSC 3K03 and registration in Level III of the Radiation Therapy or the Radiography Specialization.

MEDRADSC 3D3 SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - BONE MINERAL DENSITOMETRY
Pathophysiology of osteoporosis, diagnosis and treatment are discussed. The principles and practice of bone density measurements, with emphasis on dual energy x-ray absorptiometry, are covered, with hands-on experience in a simulated clinical environment.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: Registration in Level III of the Radiography Specialization.

MEDRADSC 3DC SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - ULTRASONOGRAPHY OF THE BREAST
A comprehensive study of sonographic breast imaging technology. Sonographic appearance, technique and correlation with other diagnostic modalities are covered.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: Registration in Level III of the Ultrasonography Specialization.

MEDRADSC 3DE3 SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - MAMMOGRAPHY
A comprehensive study of dedicated mammographic imaging technology (both film-screen and digital systems) plus mammographic imaging technique and appearances with correlation to other imaging modalities. Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: Registration in Level III of the Radiation Therapy or the Radiography Specialization.

MEDRADSC 3DF3 SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - NEUROSONOGRAPHY
A comprehensive study of the diagnostic application of ultrasound in the neonatal brain and spinal cord. Sonographic appearance, technique and correlation with other diagnostic modalities are covered.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: Registration in Level III of the Ultrasonography Specialization.

MEDRADSC 3DG3 SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - FETAL ECHOCARDIOGRAPHY
A comprehensive study of the normal and pathologic structure of the fetal heart. Sonographic appearance and technique are covered.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: Registration in Level III of the Ultrasonography Specialization.

MEDRADSC 3E03 INQUIRY IN MEDICAL RADIATION SCIENCES
Independent study of the scientific literature, including the preparation of seminars and reports or research proposals on assigned topics.
Three hours (lectures or seminars); one term (Offered in Spring/Summer session only.)
Prerequisite: Registration in Level III of a Medical Radiation Sciences Specialization.

MEDRADSC 3F03 RADIOBIOLOGY AND PROTECTION
Radiation effects on cells, tissues and organs and bodies are covered with emphasis on clinical radiation hazards. Dose minimization and protective practices guidelines and regulations of provincial, federal and international bodies are examined.
Three hours (lectures); one term
Prerequisite: MEDRADSC 2J15 or 2V15; and registration in Level III of the Radiography or the Radiation Therapy Specialization

MEDRADSC 3G03 RADIOGRAPHIC PHYSICS AND INSTRUMENTATION II
The main operations of radiographic and fluorographic equipment, from underlying physical principles to clinical application.
Three hours (lectures), one hour (lab or tutorial); one term
Prerequisite: MEDRADSC 2F03, 2J15 and registration in Level III of the Radiography Specialization.

MEDRADSC 3H03 QUALITY CONTROL IN RADIOGRAPHY
Students perform quality control testing procedures on both analogue and digital radiographic equipment, comparing equipment performance to legislated standards and best practices concepts.
One hour (lecture), two hours (lab), one hour (tutorial); one term
Prerequisite: MEDRADSC 2J15, 3G03 and registration in Level III of the Radiography Specialization.

MEDRADSC 3I03 RELATIONAL ANATOMY II
This course examines the spatial relationships of anatomical structures (contents of cranium, neck and abdominal cavity) using projection, sectional and volume-rendered images.
Two hours (lectures), two hours (lab); one term
Prerequisite: MEDRADSC 3D03 and 2R15 or 2V15; and registration in Level III of the Radiography or the Radiation Therapy Specialization.

MEDRADSC 3J03 PATHOLOGY AND PROCEDURES II
Radiological procedures and image appearances of associated pathologies of the cardiovascular, endocrine, nervous and reproductive systems.
Three hours (lectures); one term
Prerequisite: MEDRADSC 2B03, 2J15; and credit or registration in MEDRADSC 3I03; and registration in Level III of the Radiography Specialization.

MEDRADSC 3K03 COMPUTED TOMOGRAPHY
Processes of data acquisition, image reconstruction and post-processing are discussed. Scan protocol optimization in terms of image quality, demonstrated structures and patient dose are examined. Labs include scanning of anatomical phantoms.
Three hours (lectures), one lab; one term
Prerequisite: MEDRADSC 3I03 and registration in Level III of the Radiation Therapy or Radiography Specialization.

MEDRADSC 3L03 RADIOGRAPHIC SKILLS III
Radiography of craniofacial structures and development of case management and adaptation skills in modifying standard radiographic procedures to the special needs patient.
This course is evaluated on a Pass/Fail basis.
One hour (lecture), four hours (lab); one term (Offered in Spring/Summer session only.)
Prerequisite: MEDRADSC 2J15, 3I03 and registration in Level III of the Radiography Specialization.

MEDRADSC 3M03 ABDOMINAL ULTRASONOGRAPHY III
A comprehensive overview with sonographic correlation of the relational anatomy, normal, abnormal and pathologic conditions of the adrenal glands, abdominalpelvic and thoracic cavities, GI tract and specific superficial structures.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: MEDRADSC 2003, 2R15 and registration in Level III of the Ultrasonography Specialization.
MEDRADSC 3N03 VASCULAR ULTRASONOGRAPHY
Vascular anatomy, physiology, flow hemodynamics, sonographic technique of normal and pathological flow states, relevant alternative methods of assessing the vasculature of the head, neck, abdomen and extremities.
Three hours (lectures); one term
Prerequisite: MEDRADSC 2K03, 2R15 and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3O03 SONOGRAPHIC SKILLS III
Emphasis is on performance of sonography of superficial structures, doppler of abdominal and peripheral vasculature to include routine and alternate techniques, image recognition, patient care, communication and ergonomics.
This course is evaluated on a Pass/Fail basis.
One hour (lecture), four hours (lab); one term
Prerequisite: MEDRADSC 2R15; and credit or registration in MEDRADSC 3N03; and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3P03 OBSTETRICAL AND GYNECOLOGIC ULTRASONOGRAPHY III
A comprehensive study of obstetric anomalies and abnormal sonographic appearances of amniotic fluid, fetal growth, fetal syndromes, Doppler studies of the gravid patient and fetal anomalies of each system.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: MEDRADSC 2P03 or 3PA3; and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3P3A OBSTETRICAL AND GYNECOLOGICAL ULTRASONOGRAPHY II
A comprehensive study of gynaecological pathologies and abnormal sonographic appearances of the female pelvis. Pathologies of the obstetrical patient will be examined.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: MEDRADSC 2K03 and registration in Level III of the Ultrasonography Specialization
Antirequisite: MEDRADSC 2P03

MEDRADSC 3Q03 SONOGRAPHIC PHYSICS AND INSTRUMENTATION II
Recent and emerging technological advances in ultrasound instrumentation. Emphasis will be placed on the added diagnostic value provided by the technology and new applications for the instrumentation.
Two hours (lectures), one hour (lab); one term
Prerequisite: MEDRADSC 2Q03 and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3R03 MUSCULOSKELETAL ULTRASONOGRAPHY
Sonographic correlation of upper/lower extremity joint anatomy; normal and pathologic musculoskeletal structures using standard scanning techniques and protocols.
Two hours (lectures), one hour (lab); one term (Offered in Spring/Summer session only)
Prerequisite: MEDRADSC 2R15; and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3S03 TREATMENT PLANNING I
In this course students gain the knowledge and skills required to plan and calculate radiation therapy treatments independently for a variety of sites under variable conditions.
Two hours (lectures), three hours (lab); one term
Prerequisite: MEDRADSC 2V15 and registration in Level III of the Radiation Therapy Specialization

MEDRADSC 3T03 APPLIED PATIENT CARE IN RADIATION THERAPY
This course presents the theory and skills to provide the radiation therapy patient with appropriate patient care. Patient assessment, professionalism and the management of radiation therapy toxicities will be emphasized.
Two hours (lectures); one hour (tutorial); one term
Prerequisite: MEDRADSC 2A03, 2V15 and registration in Level III of the Radiation Therapy Specialization

MEDRADSC 3U03 RADIATION PROTECTION AND RADIATION BIOLOGY IN RADIATION THERAPY
This course provides an in-depth understanding of radiation protection and radiobiological principles related to high energy radiation used in Radiation Therapy.
Three hours (lectures); one term (Offered in Spring/Summer session only.)
Prerequisite: MEDRADSC 2X03 or 3F03; and MEDRADSC 3S03, 3T03; and registration in Level III of the Radiation Therapy Specialization

MEDRADSC 3V03 TREATMENT PLANNING II
This course further develops dosimetry problem-solving skills. Photon and electron beams, brachytherapy, conformal therapy and Intensity Modulated Radiation Therapy principles are emphasized.
Two hours (lectures), three hours (lab); one term
Prerequisite: MEDRADSC 3S03 and registration in Level III of the Radiation Therapy Specialization

MEDRADSC 3W03 RADIATION THERAPY SKILLS II
Students develop critical thinking, psychomotor and problem-solving skills that are required in the simulation and treatment of radiation therapy patients. The student will practice on simulators and treatment units.
This course is evaluated on a Pass/Fail basis.
Two hours (lecture), three hours (lab); one term (Offered in Spring/Summer session only)
Prerequisite: MEDRADSC 2V15, 3T03, 3V03 and registration in Level III of the Radiation Therapy Specialization

MEDRADSC 3X03 RESEARCH METHODS IN MEDICAL RADIATION SCIENCES
Prepares students for applied clinical research in Medical Radiation Sciences. Topics include systematic description of observations, testing hypotheses, distinctive of quantitative and qualitative research and critical review of published literature.
Three hours (lectures), one hour (tutorial), one hour (lab); one term
Prerequisite: STATS 1CC3 and registration in Level III of a Medical Radiation Sciences specialization
Prerequisite: Beginning (2009-2010): STATS 1CC3 or 2B03; and registration in Level III of a Medical Radiation Sciences specialization

MEDRADSC 3Y03 ETHICS FOR MEDICAL RADIATION SCIENCES
This course will introduce students to basic theories of ethics before concentrating on health related "situational" ethics through discussion of current ethical issues in Medicine and Radiation Sciences.
Two hours (lectures), one hour (tutorial); one term
Prerequisite: Registration in Level III of a Medical Radiation Sciences specialization; or Level III or above of a Medical and Health Physics program

MEDRADSC 3Z00 PRE-CLINICAL PROFESSIONAL SKILLS REASSESSMENT II
Practice and reassessment of skills performance prior to Clinical Practicum 2 or 3. Specific skills and performance criteria will be detailed in a learning contract.
Prerequisite: Permission of the Department

MEDRADSC 4A15 RADIOGRAPHY CLINICAL PRACTICUM II
Four month placement in a diagnostic imaging department. Students further develop clinical and professional skills, integrating theory, developing independent decision-making capacity in the management of cases, working towards competence in general radiography, fluoroscopy and computed tomography.
This course is evaluated on a Pass/Fail basis.
One term
Prerequisite: MEDRADSC 3F03, 3G03, 3H03, 3J03, 3K03, 3L03 and registration in Level IV of the Radiography Specialization

MEDRADSC 4B15 RADIOGRAPHY CLINICAL PRACTICUM III
Four month placement in a Diagnostic Imaging department. Students further develop clinical skill and professional skills, integrating theory, developing independent decision-making capacity in the management of cases, attaining competence in general radiography, fluoroscopy and computed tomography.
This course is evaluated on a Pass/Fail basis.
One term
Prerequisite: MEDRADSC 4A15 and registration in Level IV of the Radiography Specialization

MEDRADSC 4C15 ULTRASONOGRAPHY CLINICAL PRACTICUM II
Four month placement in the Sonography department. Students further develop clinical and professional skills, integrating theory, developing independent decision-making capacity in the management of cases, working towards competence in the generalist sonographic specializations.
This course is evaluated on a Pass/Fail basis.
One term
Prerequisite: MEDRADSC 2R15, 3M03, 3N03, 3O03, 3P03 and registration in Level IV of the Ultrasonography Specialization
**MEDRADSC 4D15 ULTRASONOGRAPHY CLINICAL PRACTICUM III**

Four month placement in the Sonography department. Students further develop clinical and professional skills, integrating theory, developing independent decision-making capacity in the management of cases, attaining competence in the generalist sonographic specializations. This course is evaluated on a Pass/Fail basis.

One term

Prerequisite: MEDRADSC 4C15 and registration in Level IV of the Ultrasonography Specialization

**MEDRADSC 4E15 RADIATION THERAPY CLINICAL PRACTICUM II**

Four month placement in a Radiation Therapy department. Students further develop clinical and professional skills, integrating theory, developing independent decision-making capacity in the management of cases, working towards competence in radiation therapy. This course is evaluated on a Pass/Fail basis.

One term

Prerequisite: MEDRADSC 3K03, 3T03, 3U03, 3V03, 3W03 and registration in Level IV of the Radiation Therapy Specialization

**MEDRADSC 4F15 RADIATION THERAPY CLINICAL PRACTICUM III**

Four month placement in a Radiation Therapy department. Students further develop clinical and professional skills, integrating theory, developing independent decision-making capacity in the management of cases, attaining competence in radiation therapy. This course is evaluated on a Pass/Fail basis.

One term

Prerequisite: MEDRADSC 4E15 and registration in Level IV of the Radiation Therapy Specialization

**MIDWIFERY**

**WEB ADDRESS: http://www.fhs.mcmaster.ca/midwifery**

Michael G. DeGroote Centre for Learning and Discovery, Room 3103
Ext. 26654

Faculty as of January 15, 2008

Assistant Dean
Eileen Hutton

Professor
Eileen Hutton/B.N.Sc. (Queen's), M.Sc.N., Ph.D. (Toronto)

Associate Professors
Paul Krueger/B.Sc., M.Sc. (Waterloo), M.H.Sc., Ph.D. (Toronto)
Derek Lobb/B.Sc. (Western Ontario), M.Sc. (Guelph), Ph.D. (Toronto)
Helen McDonald/M.Sc. (McMaster), R.M.
Patricia McNiven/M.Sc., Ph.D. (Toronto), R.M.
Bruce Wainman/B.Sc. (Laurentian), M.H.Sc. (McMaster), Ph.D. (York)

Assistant Professor
Anne Malott/B.Sc.N. (Windsor), M.S.N (Case Western Reserve)

Courses

**MIDWIF 1D03 THE MIDWIFERY PROFESSION**

Seminar presentations, discussion and arranged experiences to introduce students to the history, philosophy of care, and role of the midwife in Canada and elsewhere.

Seminar (three hours); first term

Prerequisite: Registration in the Midwifery Education Program

Antirequisite: MIDWIF 1A06

**MIDWIF 2F03 PHARMACOTHERAPY**

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 lactation and pharmacology in the neonate. Two lectures (three hours), one tutorial (one hour); one term

Prerequisite: HTH SCI 1D06

**MIDWIF 2G06 CLINICAL SKILLS FOR MIDWIFERY PRACTICE**

Lecture, demonstration and laboratory practice of fundamental skills for midwifery practice. This course combines theoretical aspects with clinical lab as well as including short placement components in which students attend births and midwifery clinics.

One lecture (three hours), one lab (three hours); first term

Prerequisite: MIDWIF 2A03, 2G03

May be taken concurrently with MIDWIF 1D03 with permission of the Program Director.

**MIDWIF 2H15 NORMAL CHILDBEARING**

First clinical placement under the supervision of a registered midwife (18 weeks): students focus on beginning level skills for the care of women experiencing normal childbearing. Weekly problem-based tutorials include normal antepartum, intrapartum, postpartum and newborn care situations.

Second term

Prerequisite: HTH SCI 2M03, MIDWIF 1D03, 2F03, 2G03 (or 1A06 or 2G06).

A minimum CA of 6.0 in first term is required.

Antirequisite: MIDWIF 2E12

**MIDWIF 3A09 COMMUNITY PLACEMENTS**

(2008-2009 ONLY)

INTERPROFESSIONAL PLACEMENTS (EFFECTIVE 2009-2010)

Three one month placements will be organized over the term. One placement will be with a hospital labour and delivery department and one with an obstetrician. The third placement will be chosen by the student and may take place within or outside the province or country.

Second term

Prerequisite: MIDWIF 3G15 (or 2B15)

Prerequisite (Beginning 2009-2010): MIDWIF 2H15

**MIDWIF 3D03 HEALTH EDUCATION AND HEALTH PROMOTION**

This course incorporates concepts and principles from areas that contribute to the understanding of human behaviour in health related situations. Of special interest are teaching-learning situations that arise in primary health care settings for childbearing families.

Offered by WebCT/Print Management-based. The Program reserves the right to cancel the course due to low enrolment.

One term

Prerequisite: HTH SCI 1C06

**MIDWIF 3F03 MIDWIFERY SYNTHESIS PAPER**

(2008-2009 ONLY)

The goal of this course is the synthesis of in-depth knowledge and critical analysis about a selected topic that leads to relevant application of the information for the midwifery profession. Each student is assigned to a faculty supervisor who will work closely with the student throughout the preparation of the paper.

One term

Prerequisite: Registration in Level III of the Midwifery Education Program

**MIDWIF 3F03 CLINICAL ISSUES (EFFECTIVE 2009-2010)**

This course addresses the theoretical basis for inter-professional collaboration and explores related professional issues such as ethics and risk management. The course includes an online midwife-led tutorial component.

One term

Prerequisite: MIDWIF 2H15

Co-requisite: MIDWIF 3A09

**MIDWIF 3G15 MIDWIFERY CARE II**

Second clinical placement under the supervision of a registered midwife: students develop additional skills in planning and providing care to women and their newborn infants. Weekly problem-based tutorials focus on a range of normal and more common abnormal situations.

First term

Prerequisite: One of MIDWIF 2A03, 2E12 or 2H15

Antirequisite: MIDWIF 2B15


**MIDWIF 3H15 MIDWIFERY CARE III (2008-2009 ONLY)**

Third placement in a midwifery practice: students extend skills to more complex childbearing situations. Problem-based tutorials focus on expanding the knowledge base of maternal-newborn complications, for consultation and referral, and relationships with other health care providers.

Summer term

Prerequisite: MIDWIF 3G15 (or 2B15)

Antirequisite: MIDWIF 3C15

**MIDWIF 3H15 MIDWIFERY CARE III (EFFECTIVE 2009-2010)**

Second placement in a midwifery practice: students extend skills to more complex childbearing situations. Problem-based tutorials focus on expanding the knowledge base of maternal-newborn complications, for consultation and referral, and relationships with other health care providers.

Summer term

Prerequisite: MIDWIF 2H15, 3A09, 3L03

Antirequisite: MIDWIF 3C15

First offered in 2009-2010.
MIDWIF 3L03  ADVANCED CLINICAL SKILLS II
A five day intensive course using workshop format to focus on emergency interventions, evidence-based management of prenatal and intrapartum situations and neonatal resuscitation. Students receive hands-on instruction in preparation for senior midwifery clinical placements.
Prerequisite: MIDWIF 2H15
First offered in 2009-2010.

MIDWIF 3J06  PREPARATION FOR ADVANCED PRACTICE
Web-tutorial and lecture format are utilized to provide a greater theoretical understanding of progressively complex midwifery scenarios. The course will also focus on situations where midwives consult and work collaboratively with other care providers in the provision of care.
Prerequisite: MIDWIF 2H15
First offered in 2009-2010.

MIDWIF 3K06  ENHANCED PRACTICE PLACEMENTS
Students will be placed in community clinical settings for the equivalent of eight weeks. Placements will focus on neonatal needs, including Neonatal Intensive Care Units or Special Care Units and or paediatric placements, as well as with women in populations at risk.
Prerequisite: MIDWIF 2H15
First offered in 2009-2010.

MIDWIF 4A15  MIDWIFERY CARE IV (2008-2009 ONLY)
Fourth placement in a midwifery practice. In defined situations, supervision is indirect. Students care for an assigned caseload, including situations with complications. Problem-based tutorials focus on midwifery roles and responsibilities in highly complex and urgent situations.
First term
Prerequisite: MIDWIF 3H15 or MIDWIF 3B15
Antirequisite: MIDWIF 3B15
First offered in 2009-2010.

MIDWIF 4A15  MIDWIFERY CARE IV (EFFECTIVE 2009-2010)
Third placement in a midwifery practice. In defined situations, supervision is indirect. Students care for an assigned caseload, including situations with complications. Problem-based tutorials focus on midwifery roles and responsibilities in highly complex and urgent situations.
First term
Prerequisite: MIDWIF 3H15 or MIDWIF 3B15
Antirequisite: MIDWIF 3B15

MIDWIF 4B15  MIDWIFERY CLERKSHIP
Final placement in a midwifery practice. Supervision is increasingly indirect. Students formulate and provide care to an entire caseload of women. Tutorials and workshops include case review, preparation for registration and establishing a practice in Ontario.
Second term
Prerequisite: MIDWIF 4A15 or MIDWIF 3C12, 3E03
Antirequisite: MIDWIF 3C12, 3E03

MODERN LANGUAGES AND LINGUISTICS

(SEE LINGUISTICS AND LANGUAGES)

MOHAWK

(SEE INDIGENOUS STUDIES, MOHAWK)

MOLECULAR BIOLOGY

The Molecular Biology courses are administered within the Faculty of Science through a Committee of Instruction, and draw on the Departments of Biochemistry and Biomedical Sciences, Biology and the Bachelor of Health Science program. Information may be obtained from the Program Administrator in Life Sciences Building, Room 119A or Health Sciences Centre, Room 4H45 who can refer students to the appropriate faculty counsellor.
A thesis based on a research project in molecular biology supervised or co-supervised by a member of the Department of Biology or the Department of Biochemistry and Biomedical Sciences.

Prerequisite: Registration in Level IV Honours Molecular Biology and permission of the Course Coordinator. Application for permission should be made through the Department of Biology, Life Sciences Building, Room 119A by the end of March in Level III. Normally, a CA of at least 8.5 is required. Antirequisite: BIOCHEM 4L03, 4P03, BIOLOGY 4FF3, 4I03, HTH SCI 3H03, 4A09, 4B06. Enrolment is limited.

**MULTIMEDIA**

(SEE COMMUNICATION STUDIES AND MULTIMEDIA)

**MUSIC**

**WEB ADDRESS:** http://www.humanities.mcmaster.ca/~sota/

Togo Salmon Hall, Room 414

Ext. 27671

Courses and programs in Music are administered within the School of the Arts in the Faculty of Humanities.

**Courses**

*If no prerequisite is listed, the course is open.*

**MUSIC 1A03**

**INTRODUCTION TO THE HISTORY OF MUSIC I**

An introductory survey of Western music, from Gregorian chant to the time of Mozap to the time of Bach and Handel. Emphasis is on important composers and their works in relation to their society and culture. No previous knowledge of music required.

Three lectures; one term

Prerequisite: Registration in any Music program.

**MUSIC 1A03**

**INTRODUCTION TO THE HISTORY OF MUSIC II**

An introductory survey of Western music, from the time of Mozart to the present. Composers studied include Beethoven, Schubert, Chopin, Verdi, Wagner, Debussy, and Stravinsky. No previous knowledge of music required.

Three lectures; one term

Prerequisite: Registration in any Music program.

**MUSIC 1B03**

**HISTORY OF WESTERN MUSIC: CLASSICAL AND ROMANTIC (1770-1890)**

A survey of Classical and Romantic music. Includes consideration of performance practices, influences of the other arts and socio-political developments.

Three lectures; one term

Prerequisite: Registration in a Music program

Antirequisite: MUSIC 1Y03

**MUSIC 1B33**

**HISTORY OF WESTERN MUSIC: BAROQUE (1560-1770)**

A survey of Baroque music. Includes consideration of performance practices, influences of the other arts and socio-political developments.

Three lectures; one term

Prerequisite: Registration in a Music program

Antirequisite: MUSIC 1Y03

**MUSIC 1CC3**

**HARMONY**

The analysis and writing of functional harmony. Includes study of music by J.S. Bach and others.

Two lectures, term one; one lecture, term two; two terms

Prerequisite: Registration in a Music program; or a grade of at least B- in MUSIC 1CD3; or qualifying tests

**MUSIC 1D03**

**AURAL SKILLS**

Sight-singing and dictation.

Two lectures, one lab; two terms

Prerequisite: Registration in a Music program, 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 program

Antirequisite: MUSIC 1EE6

**MUSIC 1EE6**

**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: Successful audition at a minimum level of Honours Grade 8 RCM or equivalent and permission of the School of the Arts

Antirequisite: MUSIC 1EE9

Lesson fees are charged to students taking MUSIC 1EE6. Lesson fees must be paid by September 1.

Not open to students in any Music Program.

**MUSIC 1G03**

**ENSEMBLE PERFORMANCE**

One of the McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band or McMaster Vocal Ensemble or accompanying.

Prerequisite: Registration in a Music program or successful audition required

**MUSIC 2A03**

**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

Cross-list: CMST 2003

Offered in alternate years.

**MUSIC 2B03**

**HISTORY OF WESTERN MUSIC: LATE ROMANTIC TO THE PRESENT (1890-PRESENT)**

A survey of music from the late 19th century to the present. Includes consideration of performance practices, influences of the other arts and socio-political developments.

Three lectures; one term

Prerequisite: Registration in Level II of a Music program

Antirequisite: MUSIC 2Y03

**MUSIC 2B33**

**HISTORY OF WESTERN MUSIC: MEDIEVAL AND RENAISSANCE (-1580)**

A survey of Medieval and Renaissance music. Includes consideration of performance practices, influences of the other arts and socio-political developments.

Three lectures; one term

Prerequisite: Registration in Level II of a Music program

Antirequisite: MUSIC 2Y0Y3

**MUSIC 2CC3**

**HARMONY**

A continuation of MUSIC 1CC3. Chromatic harmony and the completed chord.

One lecture, term one; two lectures, term two

Prerequisite: MUSIC 1CC3

**MUSIC 2D03**

**KEYBOARD HARMONY**

Keyboard Harmony.

Two lectures; two terms

Prerequisite: Registration in a Music program or qualifying tests

**MUSIC 2E06**

**SOLO PERFORMANCE**

A continuation of MUSIC 1E06.

12 one-hour meetings per term; two terms

Prerequisite: MUSIC 1E06; and registration in Level II of any program in Music

Antirequisite: MUSIC 2EE6

Lesson fees are charged to students taking MUSIC 2E06 if the course is not a specific requirement for their music degree program. Lesson fees must be paid by September 1.

**MUSIC 2EE6**

**SOLO PERFORMANCE**

A continuation of MUSIC 1EE6.

12 one-hour meetings per term; two terms

Prerequisite: MUSIC 1EE6

Antirequisite: MUSIC 2EE6

Lesson fees are charged to students taking MUSIC 2EE6. Lesson fees must be paid by September 1.

Not open to students in any Music Program.

**MUSIC 2F03**

**MUSIC FOR FILM AND TELEVISION**

An examination of how music functions to help create meanings in film and television programs. Examples will be drawn from throughout the history of film and television.

Three lectures; one term

Prerequisite: Registration in Level II or above

Cross-list: CMST 2T03, THTR&FLM 2T03
MUSIC 2G03  
**ENSEMBLE PERFORMANCE**
One of the McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band or McMaster Vocal Ensemble or accompanying.
Prerequisite: MUSIC 1G03 and successful audition.

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 1CC3.

MUSIC 2I03  
**POPULAR MUSIC IN NORTH AMERICA AND THE UNITED KINGDOM: PRE-WORLD WAR II**
Two centuries of popular music, its social meanings, and media and technology interactions, emphasizing the early 20th century. Topics include minstrelsy, early blues, and musical theatre.
Three lectures; one term.
Prerequisite: Registration in Level II or above.
Antirequisite: CMST 2R03, 3JJ3.

MUSIC 2J03  
**POPULAR MUSIC IN NORTH AMERICA AND THE UNITED KINGDOM: POST-WORLD WAR II**
Popular music, its social meanings, and media and technology interactions, from rock-and-roll to now. Topics include rhythm and blues (Chuck Berry), pop (Madonna), metal (Led Zeppelin).
Three lectures; one term.
Prerequisite: Registration in Level II or above.
Cross-list: CMST 2R03.
Antirequisite: MUSIC 2A03.

Not open to students with credit or registration in MUSIC 2BB3.

MUSIC 2Y03  
**HISTORY OF WESTERN MUSIC: ROMANTIC TO THE PRESENT**
Three lectures; one term.
Prerequisite: MUSIC 1Y03.
Antirequisite: MUSIC 2B03.

MUSIC 2Z03  
**INTRODUCTION TO MIDI AND COMPUTER MUSIC**
Basic electroacoustic theory; introduction to techniques of digital music composition, emphasizing MIDI applications; computer music notation; aesthetics of music composition. Students will be expected to produce at least one original work. Prior experience with computers and/or music composition is strongly encouraged, though not required. Independent studio work will be required.
Two lectures, one tutorial; one term.
Prerequisite: Registration in the Combined Honours in Multimedia Program or registration in Level II or above of a Music program.
Cross-list: MMEDIA 2G03.
This course is administered by the Department of Communication Studies and Multimedia.

MUSIC 3A03  
**ELEMENTARY MUSIC EDUCATION**
A survey of elementary music education methods such as those of Kodaly, Orff and Suzuki.
Three lectures; one term.
Prerequisite: MUSIC 1A03 and 1AA3; or 18 units of Music.

MUSIC 3C03  
**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 Lasso.
Seminar (two hours); one term.
Prerequisite: MUSIC 2CC3 and registration in Honours Music.
Antirequisite: MUSIC 2C03.

Offered in alternate years.

MUSIC 3C03  
**TONAL COUNTERPOINT**
The writing and analysis of tonal counterpoint in Baroque style. Includes study of music by major composers of the 17th and early 18th centuries.
Seminar (two hours); one term.
Prerequisite: MUSIC 2C03 and registration in Honours Music.
Antirequisite: MUSIC 3C03.
Offered in alternate years.

MUSIC 3E03  
**SOLO PERFORMANCE**
The technique and repertoire of any orchestral instrument, piano, organ, harpsichord, voice, recorder, saxophone or guitar.
12 one-hour meetings; one term.
Prerequisite: MUSIC 2E06 and registration in a program in Music.
Antirequisite: MUSIC 3E03, 3E06.
Lesson fees are charged to students taking MUSIC 3E03 if the course is not a specific requirement for their music degree program. Lesson fees must be paid by September 1 for Term 1 and by January 1 for Term 2.

MUSIC 3E06  
**SOLO PERFORMANCE**
A continuation of MUSIC 2E06.
12 one-hour meetings per term; two terms.
Prerequisite: MUSIC 2E06 and registration in a program in Music.
Antirequisite: MUSIC 3E03, 3E06.
Lesson fees are charged to students taking MUSIC 3E06 if the course is not a specific requirement for their music degree program. Lesson fees must be paid by September 1.
Not open to students in any Music Program.

MUSIC 3E03  
**SOLO PERFORMANCE**
The technique and repertoire of any orchestral instrument, piano, organ, harpsichord, voice, recorder, saxophone or guitar.
12 one-hour meetings; one term.
Prerequisite: MUSIC 2E06.
Antirequisite: MUSIC 3E03, 3E06.
Lesson fees are charged to students taking MUSIC 3E03. Lesson fees must be paid by September 1 for Term 1 and by January 1 for Term 2.
Not open to students in any Music Program.

MUSIC 3G03  
**ENSEMBLE PERFORMANCE**
One of the McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band or McMaster Vocal Ensemble or accompanying.
Prerequisite: MUSIC 2G03 and successful audition.

MUSIC 3H03  
**ANALYSIS**
Techniques of analysis applied to selected works of the 20th century.
Seminar (two hours); one term.
Prerequisite: MUSIC 2CC3, 2H03 and registration in Honours Music.
Offered in alternate years.

MUSIC 3J03  
**ORCHESTRATION AND ARRANGING**
A study of the orchestral/band instruments; scoring of music for various ensembles.
Two lectures; two terms.
Prerequisite: MUSIC 2CC3, 2H03 and registration in a Music program.
Offered in alternate years.

MUSIC 3K03  
**BRASS METHODS**
Basic techniques of playing brass instruments. Brass literature for various educational levels. The instruments studied differ from those studied in MUSIC 4K03.
Two lectures, one lab; one term.
Prerequisite: Registration in Honours Music.
Alternates with MUSIC 4K03.

MUSIC 3L03  
**WOODWIND METHODS**
Basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. The instruments studied differ from those studied in MUSIC 4L03.
Two lectures, one lab; one term.
Prerequisite: Registration in Honours Music.
Alternates with MUSIC 4L03.
MUSIC 3N03 VOCAL METHODS
Basic techniques of singing; organization, conducting, and rehearsing a choir; choral literature for primary and junior levels.
Two lectures; one term
Prerequisite: Registration in Honours 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 2CC3, 2H03 and registration in Honours Music Alternates with MUSIC 4P03.

MUSIC 3S03 SPECIAL STUDIES IN CHAMBER MUSIC OR ACCOMPANYING I
Advanced supervised studies in chamber music performance or vocal or instrumental accompanying.
Times to be arranged between the students and instructor; one term
Prerequisite: A grade of at least A- in MUSIC 2E06; and registration in Level III or IV of a Music program; and permission of the School of the Arts. Students requesting this course must submit a written proposal to the School of the Arts by April 15. This course is primarily for students pursuing the Diploma in Music Performance. Antirequisite: MUSIC 3S03.

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 FOUNDATIONS OF MUSIC EDUCATION
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 program Offered in alternate years.

MUSIC 3W03 TOPICS IN MUSIC HISTORY: MUSIC FOR THE ORCHESTRA
A study of selected orchestral music in its historical, socio-political and artistic contexts. Possible topics include: the concerto, the symphonic poem, orchestral music, 1880-present.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level III or IV of an Honours Music program Alternates with MUSIC 3YY3.

MUSIC 3Y03 TOPICS IN MUSIC HISTORY: OPERA AND/OR MUSICAL THEATRE
A study of selected music for the stage in its historical, socio-political and artistic contexts. Possible topics include: Mozart’s operas, Wagner’s Ring, American musical theatre.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level III or IV of an Honours Music program Alternates with MUSIC 3Y03.

MUSIC 3Z03 ADVANCED MIDI AND DIGITAL AUDIO FOR MULTIMEDIA
The creation of digital music and audio. Students work individually and in teams to develop skills for multimedia audio production. Topics include: advanced MIDI, mixing, audio processing and frequency equalization.
Two lectures, one tutorial; one term
Prerequisite: MMEDIA 2G03 or MUSIC 2203 Cross-list: MMEDIA 3C03

This course is administered by the Department of Communication Studies and Multimedia.

MUSIC 4C03 TOPICS IN HARMONY AND COUNTERPOINT
Advanced studies in writing an analysis. Possible topics include: sonatas, songs, jazz arranging and scoring.
Seminar (two hours); one term
Prerequisite: MUSIC 2CC3 and registration in Honours 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; and registration in a program in Music Antirequisite: MUSIC 4E06, 4E09, 4EE3
Lesson fees are charged to students taking MUSIC 4E03 if the course is not a specific requirement for their music degree program. Lesson fees must be paid by September 1 for Term 1 and by January 1 for Term 2.

MUSIC 4E06 SOLO PERFORMANCE
A continuation of MUSIC 3E03 or 3E06.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3E03 or 3E06; and registration in any Music Program Antirequisite: MUSIC 4E03, 4E09, 4EE6
Lesson fees are charged to students taking MUSIC 4E06 if the course is not a specific requirement for their music degree program. Lesson fees must be paid by September 1.

MUSIC 4E09 SOLO PERFORMANCE, DIPLOMA
Advanced technique and repertoire of any approved instrument, leading to a final examination in a recital presentation of approximately forty minutes duration.
Individual instruction; two terms
Prerequisite: MUSIC 3E06 or 3E06 with a grade of at least A-; and permission of the School of the Arts. Antirequisite: MUSIC 4E03, 4E09, 4EE3, 4EE6
Lesson fees are charged to students taking MUSIC 4E09. Lesson fees must be paid by September 1 for Term 1 and by January 1 for Term 2. Not open to students in any Music Program.

MUSIC 4E13 SOLO PERFORMANCE
A continuation of MUSIC 3E13 or 3E16.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3E13 or 3E16 Antirequisite: MUSIC 4E03, 4E09, 4EE3
Lesson fees are charged to students taking MUSIC 4E13. Lesson fees must be paid by September 1 for Term 1 and by January 1 for Term 2. Not open to students in any Music Program.

MUSIC 4E16 SOLO PERFORMANCE
A continuation of MUSIC 3E13 or 3E16.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3E13 or 3E16 Antirequisite: MUSIC 4E03, 4E09, 4EE3
Lesson fees are charged to students taking MUSIC 4E16. Lesson fees must be paid by September 1. Not open to students in any Music Program.

MUSIC 4G03 ENSEMBLE PERFORMANCE
One of the McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band or McMaster Vocal Ensemble or accompanying.
Prerequisite: MUSIC 3G03 and successful audition; or a grade of at least A- in MUSIC 2E06 and registration in the Diploma in Music Performance program.
Those students registered in the diploma program must, where possible, perform in this course in the same medium as they do in their other diploma courses.
MUSIC 4H03  TOPICS IN ANALYSIS
Advanced studies in analysis. Possible topics include: Schenkerian analysis, song cycles of Schubert, advanced set theory.
Seminar (two hours); one term
Prerequisite: MUSIC 2CC3, 2H03 and registration in Honours 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. The instruments studied differ from those studied in MUSIC 3K03.
Two lectures; one lab; one term
Prerequisite: Registration in Honours 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. The instruments studied differ from those studied in MUSIC 3L03.
Two lectures; one lab; one term
Prerequisite: Registration in Honours Music Alternates with MUSIC 3L03.

MUSIC 4M03  STRING METHODS
A study of the basic techniques of playing string instruments. String literature for various educational levels. The instruments studied differ from those studied in MUSIC 3M03.
Two lectures; two terms
Prerequisite: Registration in Honours Music Alternates with MUSIC 3M03.

MUSIC 4N03  VOCAL METHODS
Basic techniques of singing; organization, conducting, and rehearsing a choir; choral literature for intermediate and senior levels.
Two lectures; one term
Prerequisite: Registration in Honours Music Alternates with MUSIC 3N03.

MUSIC 4O03  ADVANCED CONDUCTING: CHORAL
Rehearsal and conducting techniques, including warm-up exercises, tone, intonation, balance, attack, sustain, cueing, repertoire, score reading, and score preparation.
Three lectures; one term
Prerequisite: MUSIC 3O03 and registration in Honours Music Alternates with MUSIC 4O03.

MUSIC 4P03  Percussion Methods
A continuation of MUSIC 3P03.
Two lectures; one term
Prerequisite: Registration in Honours Music Alternates with MUSIC 3P03.

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 III or IV of an Honours Music program Offered in alternate years.

MUSIC 4R03  SPECIAL STUDIES
Advanced supervised study in any area offered and approved by the School of the Arts.
Three lectures; one term
Prerequisite: Registration in Level IV of an Honours Music program and permission of the School of the Arts. Students requesting this course must submit a written proposal to the School of the Arts by April 15th. This course is primarily for students pursuing the Diploma in Music Performance. Fees are charged to students taking MUSIC 4SS3. Lessor fees must be paid by September 1 for Term 1 and by January 1 for Term 2.

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 4V03  CURRENT ISSUES IN MUSIC EDUCATION
An investigation of new political initiatives, philosophical views, developing research, and curricular and administrative changes that are currently influencing the practice of music in the schools.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours program or Music with MUSIC 3V03.

MUSIC 4W03  TOPICS IN MUSIC HISTORY
An intensive examination of a composer, period, genre, or issue from the style areas of “classical” music, film music, popular music, or jazz.
Alternates (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours Music program MUSIC 4W03 may be repeated, if on a different topic, to a total of six units.

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 program and permission of the instructor

MUSIC 4ZZ3  ADVANCED COMPOSITION
The composition of various instrumental or vocal works.
Times to be arranged between the student and instructor; one term
Prerequisite: MUSIC 4Z03; and registration in an Honours Music program; and permission of the instructor

MUSIC COGNITION ....

Courses  If no prerequisite is listed, the course is open.

MUSICC0G 2A03  INTRODUCTION TO MUSIC COGNITION
This course gives an introductory survey of topics central to Music Cognition, including acoustics, the cognitive and neurological basis of music perception and production, and auditory cognitive development.
Three lectures; one term
Prerequisite: Registration in any Music Cognition program (B.A., B.Mus., B.Sc.); or PSYCH 1A03 1A03, or 1X03, 1X03) and registration in Honours Music; or either PSYCH 2E03 or 2H03 and registration in any Honours program

MUSICC0G 3A03  NEUROSCIENCE OF MUSIC COGNITION
This course provides an advanced exploration of how the perception, development and experience of music are mediated by the brain.
Three lectures; one term
Prerequisite: MUSICC0G 2A03 and registration in any Music Cognition program (B.A., B.Mus., B.Sc.) or Honours Music; or MUSICC0G 2A03, two of PSYCH 2D03, 2E03, 2F03, 2H03, 2T03, 2TT3 and registration in any Honours program

MUSICC0G 3B03  COGNITIVE DEVELOPMENT AND MUSIC EDUCATION
This course examines the cognitive and perceptual development of auditory and musical abilities from before birth through to adulthood, and explores how this knowledge can be applied to music education.
Three lectures; one term
Prerequisite: MUSICC0G 2A03 and registration in any Music Cognition program (B.A., B.Mus., B.Sc.) or Honours Music; or MUSICC0G 2A03, two of PSYCH 2D03, 2E03, 2F03, 2H03, 2T03, 2TT3 and registration in any Honours program

MUSICC0G 4D06  THESIS IN MUSIC COGNITION
Students conduct an individual research project under the supervision of a faculty member in Psychology or Music.
Prerequisite: Registration in Level IV of any Music Cognition program (B.A., B.Mus., B.Sc.) and permission of the instructor
Faculty as of January 15, 2008

Associate Dean of Health Sciences (Nursing) and Director of the School of Nursing

Catherine Tompkins

Professors

Heather Arthur/B.Sc.N. (McMaster), M.Sc.N., Ph.D. (Toronto), R.N.
Andrea Baumann/B.Sc.N. (Windsor), M.Sc.N. (Western Ontario), Ph.D. (Toronto), R.N.
Gina Brown/B.Sc.N. (Catherine Spaulding), M.S. (Boston), M.Ed., Ph.D. (Toronto), R.N.
Donna Ciliska/B.Sc.N., M.Sc.N. (Western Ontario), Ph.D. (Toronto), R.N.
Alba DiCenso/B.Sc.N. (McMaster), M.Sc.N. (Toronto), M.Ed. (Columbia), Ph.D. (Michigan), R.N.
Janet Finelli/B.Sc. (Boston), M.Sc.N. (Toronto), D.N.S. (Buffalo), R.N.
Jennifer Blythe1B.A. (Hull), M.A., Ph.D. (McMaster), M.L.S. (Toronto)
Jennifer Skelly/M.H.Sc., M.Sc. (McMaster), Ph.D. (Toronto), R.N.
Anne Ehrlich/B.N.S. (Queen's), M.H.Sc. (Toronto), R.N.
John Vickers1B.Sc.N. (McMaster), Ph.D. (York)

Associate Professors

Noon Ashkar-Danesh, B.Sc., M.Sc. (Iran), Ph.D. (Newcastle-upon-Tyne)
Margaret Black/B.Sc.N. (McGill), M.Sc.N. (Case Western Reserve), Ph.D. (Michigan), R.N.
Jennifer Blythe/B.A. (Hull), M.A., Ph.D. (McMaster), M.L.S. (Toronto)
Sheryl Boblin/B.Sc.N. (Alberta), M.Ed. (Alberta), Ph.D. (Toronto), R.N.
Maureen Dobbins/B.Sc.N. (McMaster), Ph.D. (Toronto), R.N.
Anita Fisher/B.A. (Windor), M.H.Sc. (McMaster), R.N.
Carolyn Ingram/B.Sc.N. (Pittsburg), M.Sc.N. (Maryland) D.S.N. (SUNY), R.N.
Janet Landeen/B.Sc.N. (Connecticut), M.Ed. (Victoria), Ph.D. (Toronto), R.N.
Maureen Markle-Reid/B.Sc.N. (McMaster), M.Sc.N. (Toronto), Ph.D. (McMaster), R.N.
Ann Mohide/B.Sc.N. (Toronto), M.H.Sc., M.Sc. (McMaster), R.N.
Linda O'Mara/B.Sc.N., M.Sc.N. (McGill), Ph.D. (Toronto), R.N.
Jenny Ploeg/B.Sc.N., M.Sc.N. (Western Ontario), Ph.D. (Toronto), R.N.
Jennifer Skelly/M.H.Sc., M.Sc. (McMaster), Ph.D. (Toronto), R.N.
Wendy Sword/B.Sc.N., M.Sc.T. (McMaster), Ph.D. (Guelph), R.N.
Catherine Tompkins/B.Sc.N. (Western Ontario), M.Ed. (Toronto), Ph.D. (California), R.N.
Ruta Vaisalitis/B.A., B.Sc.N. (Windor), M.H.Sc. (McMaster), Ph.D. (Toronto), R.N.

Assistant Professors

Pamela Baxter/B.Sc.N., M.Sc. (McMaster), Ph.D. (McMaster), R.N.
Gertrude Benson/B.Sc.N. (McGill), M.Sc.N. (Boston), R.N.
Lynda Bentley Poole/B.Sc.N. (McMaster), M.Sc.N. (Toronto), R.N.
Denise Bryant-Lukouis/B.Sc.N. (McMaster), M.Sc.N. (D'Youville), Ph.D. (McMaster), R.N.
Michelle Butri/B.Sc.N., B.N. (Memorial), M.Sc. (Queen's), Ph.D. (McMaster), R.N.
Patricia Caldwell/B.Sc.N. (McMaster), M.Sc.N. (Guelph), Ph.D. (McMaster), R.N.
Ruth Chen/B.A. (California-Berkeley), M.Sc. (Yale), R.N.
Kirsten Culver/B.Sc.N. (Queen's), Ph.D. (McMaster), R.N.
Michele Drummond-Young/B.Sc.N., M.H.Sc. (McMaster), R.N.
Anne Ihrich/B.N.Sc. (Queen's), M.H.Sc. (Toronto), R.N.
Ruth Hannon/B.N.Sc. (Queen's), M.H.A. (Wales), M.S.F.N.P. (D'Youville)
Susan Jack/B.Sc.N. (Alberta), Ph.D. (McMaster), R.N.
Sharon Kaasalainen/B.Sc.N. (McMaster), M.Sc. (Toronto), Ph.D. (McMaster), R.N.
Michelle Ladouceur/B.N. (Victoria), M.P.H. (Boston), R.N.
Yvonne Lavelin/B.Sc.N. (New Brunswick), M.Ed. (Brook), R.N.
Jeanette LeGris/B.N. (Manitoba), M.H.Sc. (McMaster), R.N.
Ola Lanyik-Child/B.Sc.N. (McMaster), M.Sc.N. (Toronto), R.N.
Louella Manankil-Ranikin/B.Sc.N., M.A. (Toronto), M.Sc. (McMaster), R.N.

NURSE PRACTITIONER

(SEE NURSING, NURSE PRACTITIONER CERTIFICATE)

NURSING

WEB ADDRESS: http://www.fhs.mcmaster.ca/nursing

Health Sciences Centre, Room 2J36 Ext. 22694

Lynn Martin/B.Sc.N. (McMaster), M.Sc.N. (Western Ontario), Ph.D. (McMaster), R.N.
Colleen McKay/B.Sc.N. (Niagara), M.Sc. (D'Youville), Ph.D. (Capella), R.N.
Iris Muljo/B.Sc.N., M.Sc.N. (McMaster), R.N.
Charlotte Noeisgaard/B.N. (McGill), M.Sc.N. (Western Ontario), R.N.
Chris Patterson/B.Sc. (Waterloo), B.Sc.N. (McMaster), M.Sc.N. (Western Ontario), R.N.
Glazys Peaceny/B.N., M.Ed. (Memorial), M.H.Sc. (Toronto), Ph.D. (McMaster)
Joan Priestrazzo/B.Sc.N., M.Sc.N. (Western Ontario), R.N.
Kristine Rogers/B.Sc.N. (Ryerson), M.N. (Toronto), R.N.
Jennine Saill/B.Sc.N., M.Sc. (McMaster), R.N.
Ruth Schofield/B.Sc.N., M.Sc. (T) (McMaster), R.N.
Dyanne Semogas/B.Sc.N. (McGill), M.N. (Washington), R.N.
Eric Staples/B.A.A. (N.) (Ryerson), Ms.N. (D'Youville), Ph.D. (Case Western Reserve), R.N.
Olive Wahouns/M.Sc. (Uiller), 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).

NURSING ... 

Courses

NURSING 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).
This course is evaluated on a Pass/Fail basis. Students who fail will be required to register in the course again, during the same academic year.

Prerequisite: Registration in the B.Sc.N. Program or the Ontario Primary Health Care Nurse Practitioner Certificate program

NURSING 1F04 INTRODUCTION TO NURSING AND HEALTH I
An introduction to definitions of nursing and health. Emphasis is on the relevance of context and on caring. Nursing process, beginning level skills in assessment, including physical assessment, and communication are stressed. A clinical practice component includes laboratory and community experience.

Wouk modules

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) or (D) Stream

NURSING 1G04 INTRODUCTION TO NURSING AND HEALTH II
A continuation of NURSING 1F04. An introduction to reflective practice. Concepts and theories related to specific priority health issues are studied. There is continued development of skills in health assessment and introduction to health education. A clinical practice component includes laboratory and community experience.

Two and one half hours (lecture/problem-based tutorials); four hours (clinical lab); one term

Prerequisite: NURSING 1F04

NURSING 1H03 PATIENT AND FAMILY PERSPECTIVE OF LIVING WITH THE LABEL “DISABLED”
Theoretical, attitudinal and practical knowledge relevant to people labeled as “disabled” is explored. Students explore health care provider attitudes and values and how these impact individuals and families. Nursing practice will be examined using a patient centered approach.

Three hours (lecture/tutorials), community-based experience; one term

Prerequisite: Registration in Nursing I

NURSING 2A04 TRANSITION TO BACCALAUREATE NURSING I
Role differences between R.P.N. and B.Sc.N. are explored. Problem-based, small group learning is introduced. Biological, physical, psychological, social science and nursing theories/concepts are integrated and applied to health care problems and clinical practice.

This course is evaluated on a Pass/Fail basis.

Three hours (lecture/professional based tutorials), three hours (clinical), self study; one term

Prerequisite: NURSING 1A00 and registration in Level II of the B.Sc.N. (E) Stream
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites/Notes</th>
</tr>
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<tbody>
<tr>
<td>NURSING 2A04</td>
<td>TRANSITION TO BACCALAUREATE NURSING II</td>
<td>A continuation of NURSING 2A04. Theories/concepts from a variety of disciplines are integrated and applied to complex health care problems and clinical practice settings. Nursing concepts related to health and illness across the continuum of individual and family growth and development are examined. This course is evaluated on a Pass/Fail basis. Two hours (lecture/problem-based tutorials); six hours (clinical), self-study; one term. Prerequisite: NURSING 2A04.</td>
</tr>
<tr>
<td>NURSING 2I06</td>
<td>INTRODUCTION TO PROFESSIONAL NURSING</td>
<td>Students will be introduced to core concepts related to nursing and health through small-group, problem-based tutorials. Biological, physical, psychological, social sciences, and nursing theories/concepts are integrated and applied to health care problems. Three hours (tutorial/lecture, twice weekly); one term. Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream.</td>
</tr>
<tr>
<td>NURSING 2L03</td>
<td>GUIDED NURSING PRACTICE I</td>
<td>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 the clinical laboratory and acute care institutions. This course is evaluated on a Pass/Fail basis. Twelve hours (clinical lab); one term. Prerequisite: NURSING 2I06.</td>
</tr>
<tr>
<td>NURSING 2M03</td>
<td>NURSING CONCEPTS IN HEALTH AND ILLNESS I</td>
<td>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 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 2M03.</td>
</tr>
<tr>
<td>NURSING 2N03</td>
<td>NURSING CONCEPTS IN HEALTH AND ILLNESS II</td>
<td>A continuation of NURSING 2M03. Integration of nursing, biological, psychological, and social sciences theory in problem-based tutorials. Three hours (lecture/problem-based tutorials); one term. Prerequisite: NURSING 2M03. Normally to be taken concurrently with NURSING 2P03.</td>
</tr>
<tr>
<td>NURSING 2P03</td>
<td>GUIDED NURSING PRACTICE II</td>
<td>A continuation of NURSING 2L03. Planned and guided clinical practice in institutional settings. 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.</td>
</tr>
<tr>
<td>NURSING 3L3</td>
<td>CLIENT HEALTH ASSESSMENT</td>
<td>This course focuses on knowledge and skills related to the assessment of the client in a community-based health care setting. History-taking and physical assessment skills are developed. Three hours (problem-based tutorials, clinical lab, self-study); one term. Prerequisite: Registration in Level III or IV of the B.Sc.N. (B), (E) or (F) Stream or permission of the instructor. Antirequisite: NURSING 3A03.</td>
</tr>
<tr>
<td>NURSING 3M3</td>
<td>COMMUNICATION SKILLS FOR INDIVIDUALS, FAMILIES AND COMMUNITIES</td>
<td>Communication skills relevant to the complex nursing care of individuals, families, and communities are developed through small-group tutorials and use of standardized patients. Three hours (problem-based tutorials); one term. Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream. Antirequisite: NURSING 3H03. Not open to students with credit in NURSING 3H03.</td>
</tr>
<tr>
<td>NURSING 3N03</td>
<td>INTRODUCTION TO NURSING CONCEPTS AND THEORETIES IN HEALTH AND ILLNESS</td>
<td>Biological, physical, psychological, social sciences, and nursing theory are integrated and applied to health care situations through problem-based learning. Principles and strategies for lifelong learning are introduced. Three hours (lecture/problem-based tutorials); one term. Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream. Antirequisite: NURSING 3CC3, 3E03, 3P03, 3S03.</td>
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<tr>
<td>NURSING 3Q03</td>
<td>POPULATION HEALTH</td>
<td>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 provides experience in conducting a community assessment. Three hours (clinical lab) and two hours (tutorial and self-study); one term. Prerequisite: Registration in Level III B.Sc.N. (E) or (F) Stream; and HTH SCI 2RR3 or 3BB3. Antirequisite: NURSING 2Q02, 2Q03.</td>
</tr>
<tr>
<td>NURSING 3S03</td>
<td>COMMUNICATION SKILLS FOR INDIVIDUALS, FAMILIES AND COMMUNITIES</td>
<td>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 3N03, 3S03. Normally to be taken concurrently with NURSING 3T03 (for (A), (D), and (E) Stream students).</td>
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<tr>
<td>NURSING 3T03</td>
<td>NURSING CONCEPTS IN HEALTH AND ILLNESS IV</td>
<td>A continuation of NURSING 3S03. A problem-based course in which students integrate theories from biological, physical, psychological, social, and nursing sciences and apply them to health care situations. Three hours (lecture/problem-based tutorials); one term. Prerequisite: NURSING 3N03, 3T03. Antirequisite: NURSING 3D03, 3F03, 3Q03. Normally to be taken concurrently with NURSING 3Y04 (for (A) and (D) Stream students).</td>
</tr>
<tr>
<td>NURSING 3U02</td>
<td>INTEGRATIVE NURSING PRACTICE SEMINAR</td>
<td>This course is an in-depth analysis of the scientific basis of nursing practice. Selected scientific mechanisms are studied and applied to nursing practice. Two hours (lecture/student presentations); one term. Prerequisite: Registration in Level III of the B.Sc.N. (A), (D), or (F) Stream. Normally to be taken concurrently with NURSING 3X04 or 3Y04.</td>
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<tr>
<td>NURSING 3V03</td>
<td>COMMUNITY HEALTH</td>
<td>Introduction to assessment of the health status of communities within a Primary Health Care framework. Models of community development and community assessment, health promotion and health education are critiqued and applied to clinical scenarios. Three hours (lecture/problem-based tutorials); one term. Prerequisite: HTH SCI 3B03 and registration in B.Sc.N. (B) or (F) Streams. Antirequisite: NURSING 3M05, 3V02. Normally to be taken concurrently with NURSING 3T03.</td>
</tr>
<tr>
<td>NURSING 3X04</td>
<td>GUIDED NURSING PRACTICE III</td>
<td>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); one term. Prerequisite: NURSING 2P03; or NURSING 2AA4, 3LL3 ((E) Stream); or NURSING 2J04, 3LL3 ((F) Stream). Normally to be taken concurrently with NURSING 3M03.</td>
</tr>
<tr>
<td>NURSING 3Y04</td>
<td>GUIDED NURSING PRACTICE IV</td>
<td>A continuation of NURSING 3X04 with emphasis on integration of scientific mechanisms. Twelve hours (clinical lab); one term. Prerequisite: NURSING 3X04. Normally to be taken concurrently with NURSING 3T03.</td>
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</table>
NURSING 4B06 LEADERSHIP/MANAGEMENT IN HEALTH CARE ORGANIZATIONS

Introduction to theories and methods of leadership and management integrating nursing and health care and management disciplines. Given in both distance education and problem-based tutorial formats. A document of recognition is granted on course completion. Enrollment 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 or health care professional with a minimum of one year clinical experience and permission of the instructor
Antirequisite: HTH SCI 4E06

NURSING 4DD6 ADVANCED LEADERSHIP MANAGEMENT IN HEALTH CARE ORGANIZATIONS

This advanced course builds upon NURSING 4B06 content. It integrates theories and research in leadership and management to enhance the health care provider's knowledge of key issues in today's workplace. Offered in tutorial or distance format.

Four hours (tutorial or equivalent), six hours (independent study in an organization); one term
Prerequisite: NURSING 4B06
Antirequisite: HTH SCI 4D06

NURSING 4FF3 INTEGRATIVE LEADERSHIP PROJECT

Students integrate learning and demonstrate a leadership role in addressing a real health care issue. Students work with both a tutor and a health care leader to address a mutually agreed upon leadership issue in the workplace. Offered in a distance or tutorial format.

Three hours (seminar and clinical lab); one term
Prerequisite: NURSING 4B06, 4D06, 4I03, 4HH3, 4Z03
Antirequisite: HTH SCI 4FF3

Normally to be taken concurrently with NURSING 4K07 or NURSING 4T06.

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

NURSING 4H03 ISSUES IN INTERNATIONAL AND INTERCULTURAL HEALTH

An introduction to health issues in a rural Canadian and international context including theories of: development; political economy; medical and social anthropology; and intercultural health care practice. Three hours (lecture/problem-based tutorials); one term
Prerequisite: HTH SCI 3B03; and registration in Level III or IV of the B.Sc.N. Program; and permission of the instructor
Antirequisite: COLLAB 4H03, HTH SCI 4H03

NURSING 4HH3 QUALITY MANAGEMENT IN HEALTH CARE ORGANIZATIONS

This course focuses on the role of leadership in quality management in health care organizations. Theories, concepts and best practices are utilized to examine issues in the health care work environment. Concepts studied include patient safety, safety culture, benchmarks and scorecards, program evaluation and risk/utilization management. Offered in a distance or tutorial format.

Three hours (lecture/seminar); one term
Prerequisite: Registered Nurse or health care professional and permission of the instructor
Antirequisite: HTH SCI 4HH3

NURSING 4I03 LEADING EFFECTIVE TEAMS IN HEALTH CARE ORGANIZATIONS

This course introduces health care providers to the concepts and dynamics of teams within health care organizations. Theories and concepts related to leadership, communication and health systems are applied in the current work environment. Distance education and tutorial formats.

Three hours (problem-based tutorial or equivalent); one term
Prerequisite: Registered Nurse or health care professional and permission of the instructor
Antirequisite: HTH SCI 4I03

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); one term
Prerequisite: NURSING 3X04 or 3Y04
Normally to be taken concurrently with NURSING 4P04.

Notes:

1. The following courses are available to those students currently completing the Nurse Practitioner Certificate program. The last intake to this program will be in September 2008.

2. Distance education modalities are employed in all courses in the Nurse Practitioner Certificate program. Tutorial sessions are held on site at the University. Field experience is required for several courses. Students must attend McMaster for the clinical laboratory components of the program.
### Courses

#### NURSPRAC 4A45 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS I

This course focuses on the development of clinical decision making and advanced health assessment knowledge and skills in providing primary health care for the adult client.

Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: NURSING 1A00; and credit or registration in NURSPRAC 4P03; and registration in the Primary Health Care Nurse Practitioner Certificate Program
Antirequisite: NURSPRAC 4A05, 4A10

#### NURSPRAC 4A55 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS II

A continuation of NURSPRAC 4A45. This course applies frameworks, concepts and methods of health assessment and clinical decision making to specific populations across the lifespan, families and communities.

Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: NURSPRAC 4A45; and credit or registration in NURSPRAC 4P03
Antirequisite: NURSPRAC 4A05, 4A10

#### NURSPRAC 4C13 NURSE PRACTITIONER INTEGRATIVE PRACTICUM

An intensive field study with a focus on assessment, diagnosis and management of the care of clients. Emphasis is on synthesizing advanced knowledge and applying evidence-based health care to clinical practice.

29 hours (clinical lab: six hours tutorial); one term
Prerequisite: NURSPRAC 4A10, (or NURSPRAC 4A45 and 4A55), 4P03, 4R03, 4T10, (or 4T5 and 4TB5)
Antirequisite: NURSPRAC 4C10, 4S03.

#### NURSPRAC 4P03 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 the etiology, pathogenesis and clinical manifestation of diseases in adults and children found in primary care.

Three hours (tutorial); two terms
Prerequisite: Registration in the Primary Health Care Nurse Practitioner Certificate Program

#### NURSPRAC 4R03 NURSE PRACTITIONER ROLES AND RESPONSIBILITIES

This course examines and analyzes the political, economic, social, ethical and legal issues related to the role and scope of practice of Nurse Practitioners.

Three hours (tutorial); two terms
Prerequisite: Registration in the Primary Health Care Nurse Practitioner Certificate Program

#### NURSPRAC 4T45 THERAPEUTICS IN PRIMARY HEALTH CARE I

Concepts integral to pharmacotherapy, advanced counselling and complementary therapies related to episodic conditions across the lifespan are introduced. The therapeutic care plan approach is emphasized.

Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: NURSING 1A00; and credit or registration in NURSPRAC 4A45, 4P03; and registration in the Primary Health Care Nurse Practitioner Certificate Program
Antirequisite: NURSPRAC 4T05, 4T10, 4TT5

#### NURSPRAC 4T5 THERAPEUTICS IN PRIMARY HEALTH CARE II

A continuation of NURSPRAC 4T45. This course applies the frameworks and concepts of pharmacotherapy, advanced counselling and complementary therapies to clients with chronic conditions and/or specific populations.

Three hours (tutorial), three hours (clinical lab); one term
Prerequisite: NURSPRAC 4T45
Antirequisite: NURSPRAC 4T05, 4T10, 4TT5

### Note:

The following courses are open only to those students at the Mohawk College or Conestoga College sites who are registered in the McMaster/Mohawk/Conestoga Collaborative B.Sc.N program with the exception of

**COLLAB 2F03** (Medical Informatics) and **COLLAB 2K03** (Introduction to Health Informatics) which are also open to students registered in the B.Sc.N. (A), (E) and (F) Streams.

### Courses

#### COLLAB 1A03 INTRODUCTION TO PSYCHOLOGY

An introduction to the basic principles of scientific psychology related to the understanding of "normal" human behaviour.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)
Antirequisite: COLLAB 1C03, PSYCH 1A03
Not open to students with credit or registration in PSYCH 1XX3.

#### COLLAB 1B03 DEVELOPMENTAL PSYCHOLOGY

The study of human psychological development from the pre-natal period to old age.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)
Antirequisite: COLLAB 1D03, PSYCH 1A03
Not open to students with credit or registration in PSYCH 1XX3.

#### COLLAB 1C03 PSYCHOLOGY: BASIC PROCESSES OF BEHAVIOUR

Basic concepts of psychological research methods, learning, memory, perception, states of consciousness, motivation and emotion.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)
Antirequisite: COLLAB 1C03, PSYCH 1A03
Not open to students with credit or registration in PSYCH 1XX3.

#### COLLAB 1D03 PSYCHOLOGY: DYNAMICS OF HUMAN BEHAVIOUR

Stress and stress management, thinking and intelligence, the biological basis of behaviour, social psychology, personality theory and measurement, abnormal behaviour and therapies.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)
Antirequisite: COLLAB 1D03, PSYCH 1A03
Not open to students with credit or registration in PSYCH 1XX3.

#### COLLAB 1E03 ESSENTIALS OF CANADIAN HISTORY

A study of recurrent themes in public affairs within the historical context of Canada from Confederation to the present.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)
Antirequisite: HISTORY 2.006

#### COLLAB 1F03 POLITICAL STRUCTURES AND ISSUES

Introduction to the study of politics within the Canadian context.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

#### COLLAB 1G03 MULTICULTURALISM

An examination of the ethnic and cultural diversity of Canadian society, including an investigation of Canada's multicultural policy.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

#### COLLAB 1H03 INTRODUCTION TO CRITICAL THINKING IN THE SOCIAL SCIENCES

The basic principles of the social sciences disciplines, Economics, Sociology and Politics. The development of critical thinking by focusing on inequalities in contemporary Canadian society.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

#### COLLAB 1I03 SOCIOLOGY I

An analysis of Canadian social institutions and social processes.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

#### COLLAB 2A03 ABNORMAL PSYCHOLOGY

Applied principles and related theories of normal and abnormal personality development.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)

#### COLLAB 2C03 SOCIOLOGY I

The study of various aspects of Canadian society including social class, gender, religion, education, health care and family.

Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)
COLLAB 2D03  HUMAN SEXUALITY
An introduction to biological, behavioural and cultural aspects of human sexuality.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)

COLLAB 2E03  LITERATURE: A PRACTICAL APPROACH
Various literary, cinematic and non-fiction works will be used to develop aesthetic judgment.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)

COLLAB 2F03  MEDICAL INFORMATICS
A study of current topics in Medical Informatics and their practical application in the workplace.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (A) or (D) Stream (Mohawk College site); Enrolment is limited.

COLLAB 2G03  QUEST FOR MEANING
Using insights from the arts, humanities and sciences, students will explore ways in which meaning is sought.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

COLLAB 2H03  PRINCIPLES OF ETHICAL REASONING
A study of ways to clarify values and establish a framework for ethical decision making. Students examine professional ethical codes and apply ethical decision making models to dilemmas in their personal and professional lives.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

COLLAB 2I03  THE USES OF LAUGHTER: COMEDY AND SATIRE
This course will explore the history of comedy and satire through works ranging from ancient Greek comedy to contemporary film and fiction.
One hour (lecture), two hours (discussion/seminar); one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

COLLAB 2J03  DESIRE IN LITERATURE
The historical and cross-cultural coverage of this course will lead to an in-depth consideration of the ways culture, society and art shape desire and are in turn informed by it.
One hour (lecture), two hours (discussion/seminar); one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Conestoga College site)

COLLAB 2K03  INTRODUCTION TO HEALTH INFORMATICS
An introduction to the theory of data and information needs of health care professionals and the role of information management in patient care. Topics include decision support systems, electronic records, telemedicine, security, privacy and future trends.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (A) or (D) Stream (Conestoga College site)

COLLAB 2L03  INTRODUCTION TO STATISTICS
An introductory course in statistics which includes organizing and summarizing univariate and bivariate data; measures of central tendency and variation; regression and correlation; collecting data, experiments and surveys; probability distributions; sampling distribution confidence interval and hypothesis testing; use of MINITAB.
Three hours (lecture); one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)

COLLAB 2M03  MEDICAL ANTHROPOLOGY: ILLNESS AND HEALTHCARE IN CROSS-CULTURAL PERSPECTIVE AND SOCIAL ISSUES
Medical anthropology gains theoretical and practical knowledge by studying other societies’ medical systems. It helps broaden the understanding of “health” and address issues of inequality.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)
Antirequisite: ANTHROP 3203, 32Z3

COLLAB 3A03  SOCIETY, TECHNOLOGY AND SOCIAL ISSUES
An examination of technologies that have influenced society.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)

COLLAB 3B03  SOCIOLOGY: DIVERSITY AND INEQUALITY
A study of the problems of daily life and social issues.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (D) Stream (Mohawk College site)

COLLAB 4H03  ISSUES IN INTERNATIONAL AND INTERCULTURAL HEALTH
An introduction to health issues in a rural Canadian and international context including theories of: development; political economy; medical and social anthropology; and Intercultural health care practice.
Three hours (lecture/problem based tutorial); one term
Prerequisite: HTH SCI 3B03; and registration in Level III or IV of the B.Sc.N. (D) Stream; and permission of the instructor
Antirequisite: HTH SCI 4H03, NURSING 4H03

NURSING CONSORTIUM

(SEE NURSING, NURSING CONSORTIUM (D) STREAM)

OJIBWE

(SEE INDIGENOUS STUDIES, OJIBWE)

ORIGINS

WEB ADDRESS: http://origins.mcmaster.ca
Life Sciences Building, Room 327
Ext. 26136

Note:
ORIGINS courses usually are available to students who are registered in the Origins Research Specialization.

Courses  If no prerequisite is listed, the course is open.

ORIGINS 2B03  BIG QUESTIONS
Ultimate questions in modern science, with emphasis on physical sciences, are surveyed: origin of space-time, elements, structure in the cosmos, conditions for life, and the search for life on other planets.
Three lectures, one tutorial; first term
Prerequisite: Registration in Level II or above in the Origins Research Specialization and credit or registration in ORIGINS 2S03; or permission of the instructor
Cross-list: SCIENCE 2B03

ORIGINS 2F03  ORIGINS AND EVOLUTION OF ORGANISMS
Origins and evolution of organisms are considered. A tree-of-life is examined internally from the root to terminal branch tips, by evaluating critically the data with which the tree was constructed.
Three lectures, one tutorial; one term
Prerequisite: Registration in ORIGINS 2S03 or permission of the instructor

ORIGINS 2S03  ORIGINS SEMINAR I
Concepts, literature and research skills relevant to origins research are examined internally from the root to terminal branch tips, by evaluating critically the data with which the tree was constructed.
Three lectures, one tutorial; one term
Prerequisite: Registration in the Origins Research Specialization or permission of the instructor

ORIGINS 3A03  ORIGIN OF SPACE-TIME
The mathematics, particle physics and astronomy that are required to understand how the elements formed and are distributed in our universe are explored.
Three hours; one term
Prerequisite: ORIGINS 2503 or permission of the instructor
Offered in alternate years.

ORIGINS 3B03  ORIGIN OF THE ELEMENTS
The mathematics, particle physics and astrophysics that are required to understand how the elements formed and are distributed in our universe are explored.
Three hours; one term
Prerequisite: ORIGINS 2S03 or permission of the instructor
Offered in alternate years.
ORIGINS 3C03  ORIGINS OF STRUCTURE IN THE COSMOS
Topics about structure in the cosmos are explored: planet, star, galaxy, and large-scale structure formation.  
Three hours; one term 
Prerequisite: ORIGINS 2S03 or permission of the instructor 

ORIGINS 3D03  ORIGIN OF LIFE 
Topics in astrobiology are explored: planetary system formation, conditions in extra-solar systems, criteria for defining and sustaining life, and "extremophile" systems on Earth and possibly, elsewhere in our solar system. 
Three hours; one term 
Prerequisite: ORIGINS 2S03 or permission of the instructor 
Offered in alternate years. 

ORIGINS 3E03  ORIGINS OF SPECIES AND BIODIVERSITY 
Concepts and techniques that are required to understand how species originate and groups diversity are explored: species, natural selection, adaptation, and phylogenetic systematic analysis. 
Three hours; one term 
Prerequisite: ORIGINS 2S03 or permission of the instructor 

ORIGINS 3F03  ORIGIN OF HUMANITY
Concepts and techniques that are required to understand when, where and how human beings arose are explored: topics from genetics, anthropolo- 
y and archaeology. 
Three hours; one term 
Prerequisite: ORIGINS 2S03 or permission of the instructor 
Offered in alternate years. 

ORIGINS 3G03  ORIGINS SEMINAR II
Concepts, literature and research skills relevant to origins research are considered or practiced. Members in or visitors to the Origins Institute present their research for discussion. 
Seminar (one hour), one tutorial; two terms 
Prerequisite: ORIGINS 2S03 or permission of the instructor 

ORIGINS 4A00  ORIGINS RESEARCH THESIS 
A student conducts a research project and composes an independent the- 


sis under supervision by a faculty member in the Origins Institute (with a committee including at least one faculty member from the Honours program with which the student is combining the Origins Research Specialization). 
Two terms 
Prerequisite: Registration in Level IV of the Origins Research Specialization 

PEACE STUDIES

WEB ADDRESS: http://www.humanities.mcmaster.ca/~peace 
Togo Salmon Hall, Room 726 
Ext. 27734 

Director 
Bonny Ibhwah 

Committee of Instruction 

Chair 
Bonny Ibhwah (History) 
Virginia Aksan (History) 
Iris Bruce (Linguistics and Languages) 
Juanita Dubrowsky (History) 
Martin Horn (History) 
Susan Searls-Giroux (English and Cultural Studies) 
Helena Strauss (English and Cultural Studies) 
Mark Vorobej (Philosophy) 

Courses  If no prerequisite is listed, the course is open. 

PEACE ST 1A03  INTRODUCTION TO PEACE STUDIES 
An introduction to the discipline of peace research, focusing on the con- 
cepts of peace, war, security, conflict, violence and nonviolence, and 
examining the roles of values and ideologies in the attainment of peace. 
Three hours (two lectures, one tutorial); one term 

PEACE ST 1B03  INTRODUCTION TO THE STUDY OF WAR 
A Peace Studies approach to the study of war, including the effects of 
war on people, societies and the earth. War prevention processes will 
be examined at the levels of interstate and state politics, social move- 
mements, and individual peace. 
Three hours (two lectures, one tutorial); one term 

PEACE ST 2A03  CONFLICT TRANSFORMATION: THEORY AND PRACTICE 
An examination of ways of preventing, resolving and transforming con- 
flicts in everyday life, in our own culture and others, and in the arenas of 
family, business, the law, schools and large-scale political conflicts. 
Three hours (lectures and discussion); one term 
Prerequisite: Registration in Level II or above 
Antirequisite: CMST 2V03 

PEACE ST 2A3  THE MODERN CARIBBEAN 
An examination of the 19th- and 20th-century Caribbean, focusing on 
the end of slavery; the arrival of indentured Asian immigrants; pan- 
africanism; anti-colonial movements and revolution. 
Three hours (lectures and discussion); one term 
Prerequisite: Registration in Level II or above 
Cross-list: HISTORY 2A3A3 
This course is administered by the Department of History. 

PEACE ST 2B03  HUMAN RIGHTS AND SOCIAL JUSTICE 
An introduction to the growing national and international discussion of 
human rights, exploring the value and limitations of universal rights, equality 
under the law and social justice. 
Three hours; one term 
Prerequisite: PEACE ST 1A03, 1B03; or WOMEN ST 1A03, 1AA3; or 
permission of the Director of Women's Studies 
Cross-list: HISTORY 2B03 
This course is administered by the Women's Studies Program. 

PEACE ST 2B3  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 or above 
Cross-list: PHILOS 2B3 
This course is administered by the Department of Philosophy. 

PEACE ST 2C03  MODERN GERMANY 
This course examines the complexities of German social and political his- 
tory since 1890, including World War One, Third Reich, cold war division, 
questions of national identity and the peaceful revolution of 1989. 
Three hours (lectures and discussion groups); one term 
Prerequisite: Registration in Level II or above 
Cross-list: HISTORY 2C03 
Antirequisite: HISTORY 3C03, PEACE ST 3G03 
This course is administered by the Department of History. 

PEACE ST 2S03  WAR IN THE WEST, 1850-1945 
A survey of the development of warfare in the Western world from 1850 to 
1945. Particular attention is paid to the two World Wars in the 20th century. 
Three hours; one term 
Prerequisite: Registration in Level II or above 
Cross-list: HISTORY 2S03 
This course is administered by the Department of History. 

PEACE ST 3A03  CRITICAL RACE STUDIES 
This course examines contemporary debates in critical race theory in an 
attempt to critically decode the operations of race in literary and cultural texts. 
Three hours; one term 
Prerequisite: Registration in a program in Comparative Literature, Cultural 
Studies and Critical Theory, English, Peace Studies or Women's Studies 
Cross-list: COMPL LIT 3RR3, CSCT 3A03, ENGLISH 3A03, WOMEN ST 3H03 
This course is administered by the Department of English and Cultural 
Studies. 

PEACE ST 3B03  PEACE BUILDING THROUGH HEALTH INITIATIVES 
An examination of the multiple links between health and peace, concen- 
trating on the strategic use of health initiatives to encourage peace in 
zones of potential or existing armed conflict. 
Three hours (lectures and discussion); one term 
Prerequisite: Registration in Level II or above 

ANTIREQUISITE: CMST 2V03 
This course is administered by the Department of History. 

PEACE ST 3B03  PEACE-BUILDING THROUGH HEALTH INITIATIVES 
An examination of the multiple links between health and peace, concen- 
trating on the strategic use of health initiatives to encourage peace in 
zones of potential or existing armed conflict. 
Three hours (lectures and discussion); one term 
Prerequisite: Registration in Level II or above
PEACE ST 3E06 POSTCOLONIAL CULTURES: THEORY AND PRACTICE
A study of contemporary texts including literature, film, art and other forms of popular culture that engage the implications of living in a postcolonial world. Close consideration will be given to issues of imperialism, globalization, race, gender, ethnicity, nation, language and representation.
Three hours; two terms
Prerequisite: Registration in the Combined Honours in Peace Studies Program
Cross-list: COMP LIT 3R06, CSCT 3R06, ENGLISH 3R06
This course is administered by the Department of English and Cultural Studies.

PEACE ST 3F03 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 or above
Cross-list: HISTORY 3AA3
This course is administered by the Department of History.

PEACE ST 3J03 THE INTERNATIONAL RELATIONS OF THE EUROPEAN POWERS, 1870-1945
An examination of the origins and course of the First World War, the failure of post-war stabilization; and the origins and course of the Second World War.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 3J03
This course is administered by the Department of History.

PEACE ST 3L03 THE HISTORY OF SOCIAL ACTIVISM, 1500-2000
A thematic study of community activism in Europe and North America. Students will be exposed to the religious, socio-economic and political contexts of social activism, and the historical theory and practice of community-based actions.
Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 3L03
This course is administered by the Department of History.

PEACE ST 3M03 PHILOSOPHIES OF WAR AND PEACE
A philosophical appraisal of the rationality and morality of the conduct of war and proposals for fostering peace among nations.
Three lectures; one term
Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any program; or registration in Level III or IV of the Combined Honours in Peace Studies Program
Cross-list: PHILOSOPHY 3M03
Offered in alternate years.
This course is administered by the Department of Philosophy.

PEACE ST 3MM3 THE LITERATURE OF ISRAEL AND PALESTINE
Through the study of relevant literature and film, with a focus on contemporary Israeli and Arab texts, students gain a context for the exploration of conflicts in the Middle East.
Three hours; one term.
Prerequisite: Registration in Level II or above
Cross-list: COMP LIT 3MM3
This course is administered by Comparative Literature.

PEACE ST 3N03 ETHICAL ISSUES IN COMMUNICATION
This course will examine ethical issues as they arise in interpersonal communication and mass communication. The dominant moral theories and approaches to moral decision-making will be analysed and put to use to help students understand and evaluate concrete examples.
Three hours (lectures and discussion groups); one term
Prerequisite: CMST 2C03; and one of CMST 2A03 or 2B03; and registration in Level III or above of a program in Communication Studies, Multimedia or Peace Studies
Cross-list: CMST 3N03
Not open to students with credit in CMST 3A03, TOPICS IN COMMUNICATION, if the topic was Ethical Issues in Communication.
This course is administered by the Department of Communication Studies and Multimedia.

PEACE ST 3O03 SLAVERY IN THE ATLANTIC WORLD
An examination of slavery in the Americas, from the fifteenth to the nineteenth centuries. Topics to be examined include plantations and labour regimes, gender, slave health, slave resistance, Afro-Creole cultures, emancipation.
Three hours (lecture and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 3O03
This course is administered by the Department of History.

PEACE ST 3V03 WAR AND SOCIETY IN EARLY MODERN BRITAIN, 1485-1815
A thematic study of the nature of British warfare and its relationship to society during the period when Britain developed as a major military and naval power.
Three hours (lectures and discussion groups); one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 3V03
This course is administered by the Department of History.

PEACE ST 3W03 CONTEMPORARY NATIVE LITERATURE IN CANADA
A study of significant works by Native writers who give voice to their experience in Canada. Issues examined include appropriation of voice, native identity, women in indigenous societies, and stereotyping.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor
Cross-list: CSCT 3W03, ENGLISH 3W03, INDIG ST 3D03
This course is administered by Indigenous Studies.

PEACE ST 3X03 CONTEMPORARY NATIVE LITERATURE IN THE UNITED STATES
A study of contemporary works by Native writers in the United States within the context of American society and Post-Modern and Post-Colonial Literary Theory.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or six units of Level II English or permission of the instructor
Cross-list: CSCT 3X03, ENGLISH 3X03, INDIG ST 3E03
This course is administered by Indigenous Studies.

PEACE ST 3Y03 HUMAN RIGHTS IN HISTORY
A thematic examination of the global historical evolution of the notion of human rights from antiquity up to the Universal Declaration of Human Rights in the 20th century.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 3Y03
This course is administered by the Department of History.

PEACE ST 3Y03 SPECIAL TOPICS III PEACE STUDIES
Guided reading in and/or independent study of selected topics of relevance to Peace Studies.
Prerequisite: Registration in Level III or IV of the Combined Honours in Peace Studies Program and permission of the Director of Peace Studies

PEACE ST 3Y13 BRITAIN AND THE FIRST WORLD WAR
This course is designed to be an in-depth thematic exploration of the British experience of the First World War Military, political, social, economic, technological and cultural issues and concerns will be considered.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 3Y13
Antirequisite: HISTORY 3RR3, PEACE ST 3RR3
This course is administered by the Department of History.

PEACE ST 3Z03 WOMEN AND MEN IN WAR AND PEACE
This course focuses on how gender and other differences shape our experiences of war and struggles for a more peaceful world.
Three hours; one term
Prerequisite: Registration in Level III or IV of the Combined Honours in Women's Studies Program or Peace Studies Program or permission of the Director of either program
Cross-list: WOMEN ST 3Z03

PEACE ST 4A03 RESEARCH SEMINAR
An interdisciplinary examination of selected topics of current relevance to peace research.
Seminar (two hours); one term.
Prerequisite: Registration in Level III or IV of the Combined Honours in Peace Studies Program
PHARMACOLOGY

PHARMAC 3A06 INTRODUCTION TO PHARMACOLOGY
Principles of pharmacodynamics, principles of pharmacokinetics. Drugs acting on the CNS, female reproductive system, autonomic nervous system and respiratory system. Antimicrobials. One tutorial (three hours); two terms
Prerequisite: Registration in the Honours Biology and Pharmacology program

PHARMAC 4A03 RECEPTOR-DRUG INTERACTIONS
Receptor classification, receptor theory, stimulus response coupling, second messengers.
One tutorial (three hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4A03 ADVANCED TOPICS IN PHARMACOLOGY
New developments in pharmacology, with an emphasis on mechanisms of drug action.
One tutorial (three hours); one term
Prerequisite: PHARMAC 4A03

PHARMAC 4C03 PRINCIPLES OF TOXICOLOGY
General principles of toxicology, adverse effects of selected agents on man and other organisms.
One tutorial (three 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 (three hours); one term
Prerequisite: PHARMAC 3A06, 4A03

PHARMAC 4E03 SOCIAL PHARMACOLOGY
Epidemiological analysis of drug use in humans; adverse drug reactions; legal and economic aspects of drug utilization, prescribing patterns in national and international contexts.
One tutorial (three hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4F09 SENIOR THESIS
A thesis based upon a research project carried out under the direction of a supervisor approved by the Committee of Instruction.
Prerequisite: PHARMAC 3A06
Anti-requisite: BIOLOGY 4C09, 4F06, 4FF3, 4GG9, 4I03, HTH SCI 3H03, 4A09, 4B06, MOL BIOL 4R09

PHILOSOPHY

WEB ADDRESS: http://www.humanities.mcmaster.ca/~philos
University Hall, Room 310
Ext. 24275

Faculty as of January 15, 2008

Chair
Elisabeth Gedge

Professors
Barry Allen/B.A. (Lethbridge), Ph.D. (Princeton)
Nicholas Griffin/B.A. (Leicester), Ph.D. (Australian National)
David L. Hitchcock/B.A. (McMaster), Ph.D. (Claremont)
Wilfrid Waluchow/B.A., M.A. (Western Ontario), D.Phil. (Oxford)

Adjunct Professor
Kenneth M. Blackwell (Russell Archivist, Mills Libran), B.A. (Victoria), M.A., Ph.D. (Guelph)

Associate Professors
Elisabeth Gedge/B.A., M.A. (Alberta), Ph.D. (Calgary), MTh. (Newman Theological College)
Jill LeBlanc/B.A. (McMaster), M.A., Ph.D. (Toronto)
Spiano Panagiotou/B.Sc., M.A. (Guelph), Ph.D. (St. Andrews)
Brigitte Sassen/B.A. (Toronto), M.A., Ph.D. (Pennsylvania State)
Mark Vorobjov/B.A. (Carleton), M.A., Ph.D. (Toronto)

Assistant Professors
Diane Enns/B.A. (Ottawa), M.A. (Carleton), Ph.D. (SUNY-Binghampton)
Brian Garrett/B.A., M.A. (Auckland), Ph.D. (McGill)
Violetta Igneski/B.A., M.A. (Western Ontario), Ph.D. (Toronto)

Associate Members
Geoffrey Rockwell (School of the Arts), B.A. (Haverford), M.A., Ph.D. (Toronto)

Department Notes:
1. The Department of Philosophy offers courses in four major areas of Philosophy, namely History of Philosophy, Logic, Ethics and Theory of Value, and Theory of Knowledge and Metaphysics. Students are advised to include courses from each of these areas in their programs.
2. Students who do not meet the specified prerequisites for a course may, in exceptional circumstances, obtain permission of the instructor to take the course.
3. An Undergraduate Philosophy Handbook is available in the Departmental Office.
4. Students interested in registering in PHILOS 3W03, 4W03 or 4Z06 are strongly encouraged to obtain permission from the Departmental Undergraduate Counselor by the end of May of the preceding year. Access to these courses cannot be guaranteed beyond that date.

Courses If no prerequisite is listed, the course is open.

PHILOS 1A03 PHILOSOPHICAL TEXTS
An introduction to philosophy through the close reading of selected classical texts. Authors to be considered may include Plato, Descartes, Hobbes, Hume, Marx, Mill, Nietzsche, Russell, and De Beauvoir.
Two lectures, one tutorial; one term
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Offered</th>
<th>Notes</th>
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<tr>
<td>PHILOS 1B03</td>
<td>PHILOSOPHY, LAW AND SOCIETY</td>
<td>An introduction to social, political, legal and moral philosophy. Topics to be discussed may include ecology, health-care ethics, civil rights, and alternative views of human nature, the state, social conflict, inequality and justice.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Alternates with PHILOS 1C03.</td>
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<tr>
<td>PHILOS 1C03</td>
<td>PHILOSOPHIC IN LITERATURE</td>
<td>An introduction to philosophy through the study of literature. The course shows how works of literary art treat such philosophical issues as the nature of morality, the possibility of freedom, human nature, the self, and religious belief.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Not open to students with credit or registration in PHILOS 3D03.</td>
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<td>PHILOS 1D03</td>
<td>PHILOSOPHY AND THE SCIENCES</td>
<td>An introduction to philosophical issues arising from modern science and technology. Topics to be discussed may include science versus pseudoscience, the nature of scientific explanation, the impact of science on society, and the contribution of society to the development of science.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
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<tr>
<td>PHILOS 1E03</td>
<td>PROBLEMS OF PHILOSOPHY</td>
<td>A critical investigation of philosophical arguments concerning such topics as God, politics, morality, human nature, knowledge, and art.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
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<tr>
<td>PHILOS 2A06</td>
<td>ANCIENT GREEK PHILOSOPHY</td>
<td>A study of Western philosophical thought from its earliest beginnings to late Roman times, with emphasis on Plato and Aristotle.</td>
<td>Three lectures; two terms</td>
<td>Prerequisite: One of three units of Philosophy, ARTS&amp;SCI 1A06, registration in a program in Classics or Philosophy, or permission of the Department.</td>
<td>Cross-list: CLASSICS 2P06</td>
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<td>PHILOS 2B03</td>
<td>INTRODUCTORY LOGIC</td>
<td>Sentential and quantification logics are introduced and applied to arguments in English.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
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<td>PHILOS 2C06</td>
<td>DESCARTES TO HUME</td>
<td>A comprehensive survey of early modern philosophy, concentrating on the metaphysical and epistemological innovations of the period.</td>
<td>Three lectures; two terms</td>
<td>Prerequisite: Registration in Level II or above</td>
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<tr>
<td>PHILOS 2D03</td>
<td>MORAL ISSUES</td>
<td>An introduction to moral philosophy, through a consideration of issues in health care ethics. Topics such as abortion, human experimentation, euthanasia, and genetic screening will be investigated.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
<td>Cross-list: RELIG ST 2C03</td>
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<tr>
<td>PHILOS 2E03</td>
<td>CLASSICAL CHINESE PHILOSOPHY</td>
<td>Introductory survey of classical Chinese philosophy, especially Confucianism and Daoism. Readings include Confucius, Mencius, Laozi and Zhuangzi.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
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<td>PHILOS 2F03</td>
<td>PHILOSOPHICAL PSYCHOLOGY</td>
<td>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? When is action 'free'? Can intelligence be duplicated artificially?</td>
<td>Three lectures; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
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<td>PHILOS 2G03</td>
<td>SOCIAL AND POLITICAL ISSUES</td>
<td>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.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
<td>Cross-list: PEACE ST 2I03</td>
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<tr>
<td>PHILOS 2H03</td>
<td>AESTHETICS</td>
<td>An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
<td>Cross-list: ARTHIST 2H03, CMST 2G03</td>
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<tr>
<td>PHILOS 2I03</td>
<td>BUSINESS ETHICS</td>
<td>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.</td>
<td>Two lectures, one tutorial; one term</td>
<td>Prerequisite: Registration in Level II or above</td>
<td>Cross-list: COMMERCE 2B03</td>
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<td>PHILOS 3A06</td>
<td>FROM KANT TO HEGEL</td>
<td>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.</td>
<td>Three lectures; two terms</td>
<td>Prerequisite: PHILOS 2C06</td>
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<tr>
<td>PHILOS 3B03</td>
<td>PHILOSOPHIES OF EXISTENCE</td>
<td>An examination of the 19th-century forerunners of contemporary existential philosophy, concentrating principally on the thought of Kierkegaard and Nietzsche.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: At least six units of Philosophy and registration in Level II or above</td>
<td>Offered in alternate years.</td>
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<td>PHILOS 3C03</td>
<td>ADVANCED BIOETHICS</td>
<td>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.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: A grade of at least B in PHILOS 2D03 or RELIG ST 2C03, and at least three additional units of Philosophy; or registration in Level III or above of an Honours program in Philosophy</td>
<td>Offered in alternate years.</td>
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<td>PHILOS 3D03</td>
<td>PHILOSOPHY OF SCIENCE</td>
<td>A survey of philosophical problems concerning science. Topics to be considered include explanation, causation, scientific laws, and instrumentalism vs. realism.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: At least six units of Philosophy and registration in Level III or above</td>
<td>Offered in alternate years.</td>
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<td>PHILOS 3E03</td>
<td>PHILOSOPHY OF LANGUAGE</td>
<td>A survey of philosophical problems concerning language. Topics to be considered include reference, synonymy, truth, and linguistic knowledge.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: At least six units of Philosophy or PHILOS 2B03; and registration in Level III or above</td>
<td>Cross-list: CMST 3Y03</td>
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<td>PHILOS 3F03</td>
<td>INTERMEDIATE LOGIC</td>
<td>Selected topics in the study of formal languages and their interpretations, metalogic, and the philosophy of logic.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: PHILOS 2B03</td>
<td>Offered in alternate years.</td>
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<td>PHILOS 3G03</td>
<td>ETHICS</td>
<td>An introduction to the major types of ethical theory and the problem of their justification.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: At least six units of Philosophy and registration in Level III or above</td>
<td>Cross-list: ARTHIST 2H03, CMST 2G03</td>
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<td>PHILOS 3H03</td>
<td>PHILOSOPHY OF RELIGION</td>
<td>An analysis of the concept of religion in light of the philosophical claims of religious experience, practice, and belief.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: Six units of Philosophy and registration in Level III or above</td>
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<td>PHILOS 3I03</td>
<td>PHILOSOPHY AND FEMINISM</td>
<td>A study of philosophical issues in feminist thought.</td>
<td>Three lectures; one term</td>
<td>Prerequisite: Six units of Philosophy or WOMEN ST 1A03, 1AA3 (or 1A06); and registration in Level II or above</td>
<td>Cross-list: WOMEN ST 3I03</td>
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<td>PHILOS 3J03</td>
<td>MODERN JEWISH THOUGHT</td>
<td>Introduction to different conceptions of the connection between Jewish traditions</td>
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<td>and philosophical questioning. Authors may include: Maimonides, Spinoza, Mendelssohn,</td>
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<td>Cohen, Buber, Rosenzweig, Strauss, Levinas, Soloveitchik. Three hours (lectures</td>
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<td>and discussion); one term Cross-list: RELIG ST 3A03 This course is administered</td>
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<td>by the Department of Religious Studies.</td>
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<td>PHILOS 3L03</td>
<td>ENVIRONMENTAL PHILOSOPHY</td>
<td>A consideration of the characterization of nature and/or our evaluative responses to</td>
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<td>it. Three lectures; one term Prerequisite: At least six units of Philosophy and</td>
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<td>registration in Level III or above Offered in alternate years.</td>
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<td>PHILOS 3M03</td>
<td>ARGUMENTATION THEORY</td>
<td>A study of some theoretical issues concerning the identification, analysis and</td>
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<td>evaluation of arguments. Three hours (lectures and discussion); one term</td>
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<td>Prerequisite: One of ARTS&amp;SCI 1B06, CMST 2W03, HUMAN 2C03 or PHILOS 2B03; and</td>
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<td>registration in Level II or above Cross-list: CMST 3E03</td>
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<td>PHILOS 3N03</td>
<td>POLITICAL PHILOSOPHY</td>
<td>A study of major political concepts and issues, such as social contract, ideology,</td>
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<td>justice, freedom vs. equality, reform vs. revolution, state vs. individual.</td>
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<td>Three lectures; one term Prerequisite: At least six units of Philosophy and</td>
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<td>registration in Level III or above Offered in alternate years.</td>
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<td>PHILOS 3Q03</td>
<td>THEORY OF KNOWLEDGE</td>
<td>A study of scepticism and certainty, knowledge and belief, perception, memory, and</td>
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<td>truth. Three lectures; one term</td>
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<td>Prerequisite: PHILOS 2C06</td>
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<td>PHILOS 3R03</td>
<td>PHILOSOPHIES OF WAR AND PEACE</td>
<td>A philosophical appraisal of the rationality and morality of the conduct of war and</td>
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<td>proposals for fostering peace among nations. Three lectures; one term</td>
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<td>Prerequisite: At least six units of Philosophy and registration in Level III or</td>
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<td>above; or registration in Level III or IV of the Combined Honours in Peace</td>
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<td>Studies Program Cross-list: PEACE ST 3M03 Offered in alternate years.</td>
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<tr>
<td>PHILOS 3S03</td>
<td>PHILOSOPHY OF LAW</td>
<td>An investigation of the nature of law and of issues arising within legal systems.</td>
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<td>These issues include legal reasoning, equality, legal insanity, punishment, and</td>
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<td>the Charter of Rights and Freedoms.</td>
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<td>Three lectures; one term Prerequisite: At least six units of Philosophy and</td>
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<td>registration in Level III or above Offered in alternate years.</td>
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<tr>
<td>PHILOS 3T03</td>
<td>READING COURSE</td>
<td>A tutorial course in which individual students meet regularly with an instructor on</td>
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<td>a list of readings outside normally available course offerings. It is the student's</td>
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<td>responsibility to secure the agreement of an instructor and to complete a proposal</td>
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<td>form (available in the Philosophy Department office), before attempting to register</td>
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<td>in the course. Prerequisite: Registration in Level III or IV of any program in</td>
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<td>Philosophy, with a Cumulative Average of at least 8.5 and permission of the</td>
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<tr>
<td>PHILOS 4A03</td>
<td>EARLY MODERN PHILOSOPHY</td>
<td>A critical study of one or more 17th- or 18th-century European or British</td>
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<td>philosophers, such as Descartes, Leibniz, Hume. Seminar (Two hours); one term</td>
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<td>Prerequisite: PHILOS 2C06 and registration in Level III or above Offered in</td>
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<td>alternate years.</td>
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<td>PHILOS 4B03</td>
<td>THEORY OF VALUE</td>
<td>A study of human practices of evaluation in morality, politics, art, religion, and</td>
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<td>economics. Seminar (Two hours); one term Prerequisite: PHILOS 3G03 and registration</td>
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<td>in Level III or above Cross-list: PEACE ST 4C03 Offered in alternate years.</td>
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<td>PHILOS 4D03</td>
<td>TWENTIETH-CENTURY ANALYTIC PHILOSOPHY</td>
<td>A study of some main currents of 20th-century philosophy, including the work of</td>
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<td>such figures as Russell, Wittgenstein, Quine, and Davidson. Seminar (two hours);</td>
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<td>one term Prerequisite: At least six units of Philosophy and registration in Level III</td>
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<td>or above Offered in alternate years.</td>
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<td>PHILOS 4E03</td>
<td>EXISTENTIALISM AND PHENOMENOLOGY</td>
<td>A study of selected texts of major existential and phenomenological philosophers in</td>
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<td>the 20th-century, such as Camus, Heidegger, Jaspers, Marcel. Seminar (two hours);</td>
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<td>one term Prerequisite: At least six units of Philosophy and registration in Level III</td>
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<td>or above Offered in alternate years.</td>
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<td>PHILOS 4G03</td>
<td>RECENT EUROPEAN PHILOSOPHY</td>
<td>Contemporary trends in European Philosophy as represented by such writers as Derrida,</td>
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<td>Foucault and Habermas. Seminar (two hours); one term Prerequisite: At least six</td>
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<td>units of Philosophy and registration in Level III or above Offered in alternate</td>
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<td>years.</td>
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<td>PHILOS 4H03</td>
<td>METAPHYSICS</td>
<td>An investigation of metaphysical concepts, such as substance, individuation, identity,</td>
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<td>essence, quality, process, mind, time and causality. Some contemporary criticisms of</td>
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<td>metaphysics will be discussed. Seminar (two hours); one term Prerequisite: PHILOS</td>
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<td>2A06, 2C06 and registration in Level III or above of a program in Philosophy</td>
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<td>PHILOS 4I03</td>
<td>MEDIEVAL PHILOSOPHY</td>
<td>A study of one or more central medieval philosophers, such as Augustine, Aquinas,</td>
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<td>or William of Ockham. Seminar (two hours); one term Prerequisite: PHILOS 2A06 or</td>
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<td>2C06 Offered in alternate years.</td>
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<td>PHILOS 4K03</td>
<td>ANCIENT PHILOSOPHY</td>
<td>A critical study of one or more ancient Greek philosophers such as Parmenides, Plato,</td>
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<td>Aristotle. Seminar (two hours); one term Prerequisite: PHILOS 2A06 and registration</td>
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<td>in Level III or above Antirequisite: PHILOS 4C03, 4J03 Cross-list: CLASSICS 4K03</td>
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<td>Offered in alternate years.</td>
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<td>PHILOS 4N03</td>
<td>PHILOSOPHY OF THE ENLIGHTENMENT</td>
<td>An examination of the philosophy of 18th-century Europe, particularly of the thinkers</td>
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<td>associated with the Encyclopaedia project. This movement was a concerted attempt to</td>
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<td>replace the old theological-cum-political order with one based on scientific reason</td>
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<td>and human rights. Seminar (two hours); one term Prerequisite: At least six units of</td>
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<td>Philosophy and registration in Level III or above Antirequisite: PHILOS 4C03, 4J03</td>
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<td>Cross-list: CLASSICS 4K03 Offered in alternate years.</td>
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<td>PHILOS 4P03</td>
<td>INDEPENDENT STUDY</td>
<td>In consultation with a member of the Department of Philosophy, students will prepare</td>
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<td>an essay on an approved topic, on the basis of a list of readings outside normally</td>
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<td>available course offerings. It is the student’s responsibility to secure the</td>
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<td>agreement of an instructor and to complete a proposal form (available in the</td>
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<td>Philosophy Department office), before attempting to register in the course.</td>
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<td>Prerequisite: Registration in Level IV of any Honours program in Philosophy, with</td>
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<td>a Cumulative Average of at least 8.5 and permission of the Department Antirequisite:</td>
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<td>PHILOS 4J06</td>
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<td>PHILOS 4Q03</td>
<td>THESIS</td>
<td>Reading and research under the supervision of two members of the Department. A</td>
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<td>major paper is required as well as a formal examination. It is the student’s</td>
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<td>responsibility to secure the agreement of an instructor and to complete a proposal</td>
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<td>form (available in the Philosophy Department office), before attempting to register</td>
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<td>in the course. Prerequisite: Registration in Level IV of any Honours program in</td>
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<td>Philosophy, with a Cumulative Average of at least 8.5 and permission of the</td>
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<td>Department Antirequisite: PHILOS 4Q03</td>
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PHYSICS AND ASTRONOMY

WEB ADDRESS: http://www.physics.mcmaster.ca/
A.N. Bourns Science Building, Room 241
Ext. 24559

Faculty as of January 15, 2008

Chair
D.E. Venus

Associate Chair
K. Dalnoki-Veress

Professors
A. John Berlinsky/B.Sc. (Fordham), M.Sc., Ph.D. (Pennsylvania)
Cliff Burgess/B.Sc. (Waterloo), Ph.D. (Texas)
Hugh M. Couchman/B.A., M.A., Ph.D. (Cambridge)
Bruce D. Gaulin/B.Sc. (McGill), Ph.D. (McMaster), Brockhouse Chair in the Physics of Materials
William E. Harris/B.Sc. (Alberta), M.Sc., Ph.D. (Toronto), F.R.S.C.
Harold K. Haugen/B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)
Paul G. Higgs/B.Sc., Ph.D. (Cambridge), Senior Canada Research Chair
Takashi Imai/B.Sc., M.Sc., Ph.D. (Tokyo)

Associate Professors
David E. Venus

Assistant Professors
Alison Sills/B.Sc. (Western Ontario), Ph.D. (Yale)
Paul G. Higgs/B.Sc., Ph.D. (Cambridge), Senior Canada Research Chair
An-Chang Shi/B.Sc. (Fudan), MSc., Ph.D. (Illinois)
Kari Dalnoki-Veress/B.Sc., M.Sc., Ph.D. (Guelph)

Graduate Students
Alex Vorobyov/Ph.D. (Kharkov)

Department Notes:
1. The Department reserves the right to withdraw a Level III or IV course which is not specifically required in a Physics program if the registration falls below four.
2. Students in Level III or IV of Physics programs will find a number of relevant electives among the offerings of the Department of Biology, the Department of Engineering Physics and the School of Geography and Earth Sciences.

PHYSICS AND ASTRONOMY

Courses

Astronomy...

Courses If no prerequisite is listed, the course is open.

ASTRON 1F03 INTRODUCTION TO ASTRONOMY AND ASTROPHYSICS

Topics include orbital motion, electromagnetic radiation, the solar system, stars and stellar evolution, the Milky Way Galaxy, galaxies and quasars, the evolution of the universe.
Three lectures; one term
Prerequisite: One of Grade 12 Advanced Functions U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1K03; and one of Grade 12 Physics U, PHYSICS 1L03, 1P03
Cross-list: PHYSICS 1F03
Antirequisite: SCIENCE 1D03
Not open to students with credit or registration in ISCI 1A24.

ASTRON 2E03 PLANETARY ASTRONOMY

Physical and mathematical foundation of planetary astronomy. Historical development of ideas about the solar system. A modern view of the planets; the origin and evolution of the solar system and planets around other stars.
Three lectures; one term
Prerequisite: One of PHYSICS 1B03, 1D03, ISCI 1A24, ARTS&SCI 2D06; and one of MATH 1A03, 1N03, ARTS&SCI 1D06

ASTRON 3X03 GALAXIES AND COSMOLOGY

Stellar populations, star formation and the interstellar medium in galaxies. The Milky Way Galaxy; normal and active galaxies and large scale structure in the universe; observational and theoretical cosmology.
Three lectures and occasional lab periods; one term
Prerequisite: PHYSICS 2D03 or 2E03; and one of ENG PHYS 2A03, 2A04, PHYSICS 2A03, 2B06; and either one of CHEM BIO 2P03, CHEM 2R03, ENG PHYS 2H04, PHYSICS 2H04, or both CHEM 2PA3 and 2PB3
Alternates with ASTRON 3Y03.

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. Taught in an inquiry style.
Three lectures; one term
Prerequisite: PHYSICS 2D03 or 2E03; and one of ENG PHYS 2A03, 2A04, PHYSICS 2A03, 2B06; and either one of CHEM BIO 2P03, CHEM 2R03, ENG PHYS 2H04, PHYSICS 2H04, or both CHEM 2PA3 and 2PB3. PHYSICS 2G03 is strongly recommended.
Alternates with ASTRON 3X03.

PHYSICS...

Courses If no prerequisite is listed, the course is open.

PHYSICS 1B03 MECHANICS AND WAVES

Mechanics of a point particle, emphasising work and energy. Fluids. Simple Harmonic Motion and Waves, including properties of sound and light waves, interference and diffraction.
Three lectures; one lab (two hours) every week; one term
Prerequisite: One of Grade 12 Physics U, PHYSICS 1L03, 1P03; and one of Grade 12 Calculus and Vectors U, MATH 1F03; and credit or registration in SCIENCE 1A00
Not open to students with credit or registration in ISCI 1A24.

PHYSICS 1B03 INTRODUCTION TO MODERN PHYSICS

A course for students intending to proceed in the physical sciences. Linear and angular momentum. Electric and magnetic fields. Atomic and quantum physics. Nuclear and Particle Physics.
Three lectures; one lab (three hours) every other week; one term
Prerequisite: PHYSICS 1B03
Antirequisite: PHYSICS 1B03
Not open to students with credit or registration in ISCI 1A24.

PHYSICS 1B03 MODERN PHYSICS FOR LIFE SCIENCES

A course presenting aspects of modern physics relevant to life sciences. Electromagnetic fields, Atomic, quantum, and nuclear physics. Applications to imaging and understanding biological systems.
Three lectures; one lab (three hours) every other week; one term
Prerequisite: PHYSICS 1B03
Antirequisite: PHYSICS 1B03
Not open to students with credit or registration in ISCI 1A24.
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.
Three lectures, one lab (three hours) every other week; one term
Prerequisite: Registration in Engineering
Antirequisite: PHYSICS 2A03

PHYSICS 1F03  INTRODUCTION TO ASTRONOMY
AND ASTROPHYSICS
Topics include orbital motion, electromagnetic radiation, the solar system, stars and stellar evolution, the Milky Way Galaxy, galaxies and quasars, the evolution of the universe.
Three lectures; one term
Prerequisite: One of Grade 12 Advanced Functions U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1K03; and one of Grade 12 Physics U, PHYSICS 1L03, 1P03
Cross-list: ASTRON 1F03
Antirequisite: SCIENCE 1D03
Not open to students with credit or registration in ISCI 1A24.

PHYSICS 1L03  PHYSICS OF LIVING SYSTEMS
Physical models describing biological systems are introduced. Topics include biomechanics, light and vision, fluid, energy, and mass transfer and their interaction with or by biological systems.
Three lectures; one term
Prerequisite: One of Grade 12 Advanced Functions U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1K03
Not open to students with credit or registration in ISCI 1A24.

PHYSICS 2A03  INTRODUCTORY ELECTRICITY
AND MAGNETISM
Electrostatics; circuits; electric and magnetic field; Faraday's law of induction.
Three lectures; one term
Prerequisite: ARTS&SCI 2D06 or PHYSICS 1B03, and one of ARTS&SCI 1D06, MATH 1A03; or ISCI 1A24
Antirequisite: PHYSICS 1E03, 2B06

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 1B03, ARTS&SCI 2D06, ISCI 1A24; and credit or registration in MATH 2A03 (or 2XX3), 2C03
Antirequisite: PHYSICS 2A03

PHYSICS 2C03  MODERN PHYSICS
Special Relativity. Introductory quantum physics.
Three lectures; one term
Prerequisite: One of PHYSICS 1BA3, 1BB3, ARTS&SCI 2D06, ISCI 1A24
Antirequisite: PHYSICS 2A03

PHYSICS 2D03  MECHANICS
Dynamics of a particle, simple harmonic motion and resonance, many-particle systems, the mechanics of rigid bodies, Lagrange's equations, non-inertial systems.
Three lectures; one term
Prerequisite: Registration in a program in the Faculty of Engineering; or permission of the instructor
Antirequisite: PHYSICS 2E03

PHYSICS 2E03  MECHANICS
Dynamics of a particle, simple harmonic motion and resonance, central field problems, many-particle systems, non-inertial systems, generalized coordinates and Lagrange's equations.
Three lectures; one term
Prerequisite: Registration in a program in Physics or Medical and Health Physics; or one of PHYSICS 1A03, ARTS&SCI 2D06, ISCI 1A24, and credit or registration in MATH 2A03 (or 2XX3), 2C03
Antirequisite: PHYSICS 2D03

PHYSICS 2G03  SCIENTIFIC COMPUTING
A comprehensive introduction to modern, scientific structured programming using FORTRAN 95. The course will discuss modules, operator overloading, scripting, program management, etc., and features a series of programming problems under Linux.
Three lectures; one term
Prerequisite: MATH 1A03 or 1X03

PHYSICS 2H04  THERMODYNAMICS
An introduction to thermodynamics and its statistical basis at the microscopic level, with applications.
Three lectures, one tutorial every other week, one lab (three hours); one term
Prerequisite: PHYSICS 1B03 and credit or registration in PHYSICS 1BA3 or 1BB3, or ARTS&SCI 2D06 or ISCI 1A24; and credit or registration in MATH 2A03 (or 2XX3), 2C03
Cross-list: ENG PHYS 2H04
Antirequisite: CHEM BIO 2P03, CHEM 2PA3, 2PD3, 2R03, ENGINEER 2H03, MATHS 2B03
This course is administered by the Department of Engineering Physics.

PHYSICS 3A03  RELATIVITY
An introduction to general relativity.
Three lectures; one term
Prerequisite: PHYSICS 2C03; and credit or registration in MATH 3C03; and registration in any Honours program in the Faculty of Science or any program in the Faculty of Engineering
Alternates with PHYSICS 3C03.

PHYSICS 3B03  ELECTRONICS I
P-N junctions, diodes, bipolar junction transistors, field effect transistors, dc and ac modeling, differential amplifiers and operational amplifiers, feedback and oscillators, digital circuits and multivibrators, signal processing.
Two lectures, one lab (two hours); one term
Prerequisite: One of ENG PHYS 2A03, 2A04, 2E04, PHYSICS 2606
Antirequisite: PHYSICS 3B06

PHYSICS 3BB3  ELECTRONICS II
Design and synthesis project in electronics, based on the material presented in PHYSICS 3B03.
One tutorial (one hour), two labs (three hours); one term
Prerequisite: PHYSICS 3B03
Antirequisite: PHYSICS 3B06

PHYSICS 3C03  ANALYTICAL MECHANICS
Motion of rigid bodies; coupled oscillators and normal modes; Lagrangian and Hamiltonian dynamics; transformation theory and action-angle variables; perturbation theory; non-integrable systems and chaos.
Three lectures; one term
Prerequisite: PHYSICS 2D03 or 2E03, and credit or registration in MATH 3C03 and registration in any Honours program in the Faculty of Science or any program in the Faculty of Engineering; or permission of the instructor
Alternates with PHYSICS 3A03.

PHYSICS 3H03  INTERMEDIATE LABORATORY
Experiments in atomic physics, neutron physics, optics, spectroscopy, mechanics.
One lecture, one lab (three hours); two terms
Prerequisite: PHYSICS 2B06; and credit or registration in one of PHYSICS 2C03, 3M03, ENG PHYS 2QM3
Antirequisite: PHYSICS 3H04, 3HC1

PHYSICS 3HC1  INTERMEDIATE LABORATORY (I)
Experiments in atomic physics, neutron physics, optics, spectroscopy, mechanics.
One lecture, one lab (three hours); one term
Prerequisite: PHYSICS 2B06; and credit or registration in one of PHYSICS 2C03, 3M03, ENG PHYS 2QM3; and registration in Level III of Honours Physics Co-op or Honours Medical and Health Physics Co-op
Antirequisite: PHYSICS 3H03, 3H04

PHYSICS 3HD2  INTERMEDIATE LABORATORY (II)
The continuation of PHYSICS 3HC1.
One lab (three hours); one term
Prerequisite: PHYSICS 3HC1
PHYSICS 3K03 THERMODYNAMICS AND STATISTICAL MECHANICS
The laws of thermodynamics, with emphasis on the mathematical structure of the theory; classical and quantum statistical mechanics. Three lectures; one term
Prerequisite: MATH 2A03 (or 2X03), 2C03, PHYSICS 2H04; or registration in Honours Mathematics and Physics

PHYSICS 3M03 QUANTUM MECHANICS I
Quantum physics in 1D and 3D systems, with applications including the hydrogen atom. Three lectures; one term
Prerequisite: MATH 3C03, and one of PHYSICS 2C03, 3M03, ENG PHYS 2QM3; or registration in Honours Mathematics and Physics

PHYSICS 3N03 PHYSICAL OPTICS
Interference; 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, 2X04, 2XX3; and MATH 2C03 or 2P04; and either PHYSICS 2B06 or both ENG PHYS 2A04 (or 2A03) and 2E04

PHYSICS 3O03 SOFT CONDENSED MATTER PHYSICS
Soft materials include polymers, liquid crystals, surfactants and colloids. The course will cover structure, dynamics, phase transitions and self-assembly, and discuss applications and links to the life sciences. Three lectures; one term
Prerequisite: CHEM 2R03 or PHYSICS 2H04

PHYSICS 4A03 INQUIRY IN PHYSICS
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 program in which PHYSICS 4A03 is required or is a specified option
Antirequisite: MED PHYS 4A03, 4A1, 4A2, PHYSICS 4A1A, 4A2B

PHYSICS 4A1 INQUIRY IN PHYSICS (I)
Independent study of the scientific literature, including the preparation of seminars and reports on assigned topics. Two lectures or seminars; one term
Prerequisite: Registration in Level IV of Honours Physics Co-op
Antirequisite: MED PHYS 4A03, 4A1A, 4A2B, PHYSICS 4A03

PHYSICS 4A2 INQUIRY IN PHYSICS (II)
The continuation of PHYSICS 4A1. Two lectures or seminars; one term
Prerequisite: PHYSICS 4A1
Antirequisite: MED PHYS 4A03, 4A1A, 4A2B, PHYSICS 4A03

PHYSICS 4B03 ELECTROMAGNETIC THEORY
Potential theory, electrostatics and magnetostatics in matter, electrodynamics, electromagnetic waves and wave guides. Two lectures; one term
Prerequisite: MATH 3D03 and either PHYSICS 2B06 or both ENG PHYS 2A04 (or 2A03) and 2E04; or registration in Honours Mathematics and Physics or Honours Physics Co-op

PHYSICS 4B04 ELECTROMAGNETIC THEORY
Potential theory, electrostatics and magnetostatics in matter, electrodynamics, electromagnetic waves and wave guides. Two lectures; one term
Prerequisite: MATH 3D03 and either PHYSICS 2B06 or both ENG PHYS 2A04 (or 2A03) and 2E04; or registration in Honours Mathematics and Physics or Honours Physics Co-op

PHYSICS 4D06 DIGITAL LOGIC AND COMPUTER SYSTEMS
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); two terms
Prerequisite: PHYSICS 2B06; or ENG PHYS 2A04 (or 2A03) and 2E04
Antirequisite: COMP ENG 3D34, PHYSICS 4D3A, 4DB3

PHYSICS 4D06 DIGITAL LOGIC AND COMPUTER SYSTEMS
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); one term
Prerequisite: PHYSICS 2B06; or ENG PHYS 2A04 (or 2A03) and 2E04
Antirequisite: COMP ENG 3D34, PHYSICS 4D06

PHYSICS 4E03 NUCLEAR PHYSICS
Nuclear masses and stability; radioactivity and nuclear reactions; elementary nuclear models. Three lectures; one term
Prerequisite: PHYSICS 3MM3

PHYSICS 4F03 QUANTUM MECHANICS II
Advanced quantum mechanics with applications such as scattering, perturbation theory and the variational method. Three lectures; one term
Prerequisite: MATH 3D03, PHYSICS 3MM3; or registration in Honours Mathematics and Physics

PHYSICS 4G03 COMPUTATIONAL PHYSICS
A course using computers to solve selected problems in physics. The emphasis is in applying computational methods to physics, rather than numerical methods or computer programming. One lab (three hours); one term
Prerequisite: PHYSICS 2G03, 3MM3

PHYSICS 4H03 SOLID STATE PHYSICS
Crystal structure and binding; lattice vibrations; electron energy bands; metals and semiconductors; magnetism. Three lectures; one term
Prerequisite: PHYSICS 3MM3 or registration in Level IV of an Honours Medical and Health Physics program

PHYSICS 4L03 LITERATURE REVIEW
A directed reading and review of the literature in any field of physics or astronomy, associated with a faculty member's research area. A report will be required. Students in the Mathematics and Physics program may be supervised by a faculty member in the Department of Mathematics and Statistics. Occasional tutorial (2 hours); one term
Prerequisite: Registration in Level IV of Honours Mathematics and Physics or any Honours Physics program; and permission of the Chair of the Department
Enrollment is limited.

PHYSICS 4P06 SENIOR RESEARCH PROJECT
An experimental or theoretical project to be carried out under the supervision of a faculty member. A report will be required. Students registered in the Mathematics and Physics program may be supervised by a faculty member in the Department of Mathematics and Statistics. One occasional tutorial (two hours); two terms
Prerequisite: Registration in Level IV of any Honours Physics or the Honours Mathematics and Physics program; and a CA of at least 9.0; and permission of the Chair of the Department
Antirequisite: PHYSICS 4Q03, 4Q04
Enrollment is limited.

PHYSICS 4S03 INTRODUCTION TO MOLECULAR BIOPHYSICS
An introduction to recent contributions made to the fields of molecular and cell biology by the use of physical approaches. In particular, the following topics are discussed: physical properties of biomolecules, protein folding, molecular motors, cell motion and cell adhesion. Emphasis on the critical evaluation of current research literature. Three lectures; one term
Prerequisite: One of CHEM 2R03, MATLS 2B03, PHYSICS 2H04. PHYSICS 3S03 is recommended. Cross-list: BIOCHEM 4S03

POLISH
(SEE LINGUISTICS AND LANGUAGES, POLISH)

POLITICAL SCIENCE
WEB ADDRESS: http://www.socsci.mcmaster.ca/polisci/
Kenneth Taylor Hall, Room 527
Ext. 24741

Faculty as of January 15, 2008
Chair
Robert O'Brien
Distinguished University Professor
William D. Coleman/R.B. (Carleton), A.M., Ph.D. (Chicago)/Canada Research Chair in Global Governance and Public Policy
Department Notes:

1. The Department of Political Science offers courses in the fields of Canadian Politics, Comparative Politics, International Relations, Political Theory and Public Policy, as well as courses that are not field specific. The Department does not require students to concentrate in any field of study. However, students should note that prerequisites for upper year courses normally come from the specific field of which those courses are part. In some instances, prerequisites call simply for prior coursework in a particular field, in which case students may consult the lists below to determine which courses satisfy these requirements.

2. Not every Political Science course listed in this Calendar is offered every year. Students should consult the Department after April 1st for the list of courses that will be offered in the following academic year.

3. All students are encouraged to seek advice from members of the Department in developing a program of study. All Honours students are strongly advised to discuss their program with an undergraduate advisor to ensure that it meets Departmental requirements.

4. POL SCI 2006 and 3N06 (formerly 2F06) are required for students in Honours Political Science programs. These two courses are recommended for students in B.A. programs. Effective 2009-2010 for students entering Level II of an Honours B.A. or B.A. program in Political Science, a course in Canadian Politics will be required (See Canadian Politics field of study below). For students who entered these programs prior to 2009-2010, three units of Canadian Politics is strongly recommended. Three hours (lectures and tutorials); one term.

5. Students should be alerted 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.

6. Some Level III courses do not have course prerequisites. However, students without related Level II courses should contact one of the Department's undergraduate advisors or the course instructor to determine whether they have the appropriate academic background for any specific Level III course.

7. Priority for all Level IV courses will be given to students registered in Level IV of any Honours Political Science program on a first come, first served basis. Students should register early. Permission of the faculty supervisor and the Department are required for POL SCI 4206 and 4Z26.

Fields of Study

CANADIAN POLITICS

POL SCI 2D03, 2D23, 2F03, 2L03, 3FF3, 3G3H, 3H3, 3JU3, 3NN6, 3SN0, 3SP3, 3Z02, 4D06, 4T06

COMPARATIVE POLITICS

POL SCI 2A06, 2B03, 2C03, 2N03, 2XX3, 2Z03, 3BB3, 3D03, 3EE3, 3F03, 3G03, 3G3H, 3I03, 3KK3, 3LL3, 3M03, 3M3M, 3T03, 3U03, 3Y03, 3YYYY, 4A03, 4AA6, 4D06, 4G06, 4L03, 4Q06, 4R06

INTERNATIONAL RELATIONS

POL SCI 2BB3, 2C03, 2H03, 2J03, 2XX3, 3AA6, 3E03, 3EE3, 3FF3, 3KK3, 3P03, 3Q03, 3QQ3, 3T03, 3Y03, 4D06, 4M06, 4MM6

POLITICAL THEORY

POL SCI 2006, 3CC3, 4E06, 4P06

PUBLIC POLICY

POL SCI 2L03, 3003, 3E03, 3FF3, 3LL3, 3M03, 3S03, 3SP3, 3U03, 3YYYY, 3Z03, 4A03, 4Q06, 4L03, 4Q06, 4R06

POL SCI 2006

POL SCI 2AA6

POL SCI 2B03

U.S. POLITICAL SYSTEM

POL SCI 2F03

POL SCI 3C03

U.S. FOREIGN POLICY

POL SCI 2G06

POL SCI 3A03

PARTICIPATION AND ELITIST POLITICS IN CANADA

POL SCI 3B03

POL SCI 3B03

POL SCI 3C03

POL SCI 3D03, 3DD6
POL SCI 2F03  POLITICS, POWER AND INFLUENCE IN CANADA
This course analyzes who gets represented and whose interests get translated into public policies in Canada, including issues of inequality, immigration and citizenship, and representation by parties, interest groups and social movements. Three hours (lectures and tutorials); one term

POL SCI 2H03  GLOBALIZATION AND THE STATE
An overview of the inroads that globalization has had on the powers of the state and an assessment of how states have tried to preserve their authority in the face of globalization. Three hours (lectures and tutorials); one term

POL SCI 2I03  GLOBAL POLITICS
A study of institutions and processes of the international political system. Three hours (lectures and tutorials); one term

Antirequisite: POL SCI 2E06

POL SCI 2J03  GLOBAL POLITICAL ECONOMY
A study of institutions and processes of the international political economy. Three hours (lectures and tutorials); one term

Antirequisite: POL SCI 2E06

POL SCI 2L03  BUREAUCRACY IN CANADIAN POLITICS
An examination of the structures and processes of public administration in Canada, including an assessment of their effectiveness, efficiency, and accountability. Three hours (lectures and tutorials); one term

Antirequisite: POL SCI 32Z3

POL SCI 2N03  POLITICS OF INDIA AND SOUTH ASIA
An examination of the political systems of South Asia with emphasis on the government, politics and administration of India and other selected countries in the region, such as Pakistan. Three hours (lectures and tutorials); one term

POL SCI 2O06  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 Note 4 above.)

POL SCI 2XX3  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 (lectures and tutorials); one term

Antirequisite: POL SCI 3XX3

POL SCI 2Z03  POLITICS AND THE MEDIA
Theories and practices of the reciprocal relationship between the communications media and the political system. Three hours (lectures and tutorials); one term

Prerequisite: CMST 1A03 and 1B03; or POL SCI 1G06

Cross-list: CMST 2Z03

POL SCI 3A03  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

Prerequisite: Registration in Level III or above

Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3B03  POLITICAL COMMUNICATION
The relationship between politics and the media is analysed in terms of issues such as political news coverage, electioneering, political marketing, policy formation and publicity, and agenda setting and public opinion. Three hours; one term

Prerequisite: Registration in a Communication Studies or Political Science program

Cross-list: CMST 3D03

POL SCI 3C03  GOVERNMENT AND POLITICS OF INDIGENOUS PEOPLE
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

Cross-list: INDIG ST 3J03

This course is administered by Indigenous Studies.

POL SCI 3CC3  POLITICAL AUTHORITY: 20TH-CENTURY POLITICAL THEORY
An examination of major themes in political theory in the 20th century focusing on concerns about legitimate political authority and the nature of power and human relations in modern society. Three hours (lectures and discussion); one term

Prerequisite: POL SCI 2006 and registration in Level III or above. (See Note 6 above.)

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

Prerequisite: Registration in Level III or above. (See Note 6 above.)

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

Prerequisite: Registration in Level III or above

Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3EE3  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

Prerequisite: Registration in Level III or above

Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3F03  CONTEMPORARY SOCIAL MOVEMENTS AND POPULAR COALITIONS
An examination of selected social movements and popular coalitions primarily in Canada and the United States. Movements may include the labour, environmental, peace, feminist, indigenous rights, and/or religious fundamentalist movements. Three hours (lectures and discussion); one term

Prerequisite: Registration in Level III or above. (See Note 6 above.)

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 the foreign policy in Canada. Three hours; one term

Prerequisite: Registration in Level III or above

Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3G03  ETHNICITY AND MULTICULTURALISM: THEORY AND PRACTICE
An examination of ethnicity, multiculturalism and citizenship in theoretical and comparative perspectives, principally in industrially advanced societies. Three hours (lectures and discussion); one term

Prerequisite: Six units of Political Science and registration in Level III or above. (See Note 6 above.)

Not open to students with credit in POL SCI 3WW3 if the topic was Ethnicity and Multiculturalism: Theory and Practice.

POL SCI 3GG3  FEDERALISM: THEORETICAL, CONSTITUTIONAL AND INSTITUTIONAL ISSUES
An analysis of the constitutional framework, evolution, and structure of the federal system in Canada and/or other Western countries. Three hours; one term

Prerequisite: Registration in Level III or above. (See Note 6 above.)

POL SCI 3I03  TOPICS IN AMERICAN POLITICS
The study of a central component of the U.S. political system. Three hours; one term

Prerequisite: Registration in Level III or above. (See Note 6 above.)

POL SCI 3J03  MAY BE REPEATED, IF ON A DIFFERENT TOPIC, TO A TOTAL OF SIX UNITS.
POL SCI 3KK3  GENOCIDE: SOCIOLOGICAL AND POLITICAL PERSPECTIVES
An examination of genocide and other extreme crimes against humanity.
Three hours; one term
Prerequisite: Registration in Level III or above
Cross-list: SOC 3K3
Antirequisite: SOC SCI 2K3
Priority will be given to students registered in a Political Science or Sociology program. (See Note 6 above.)

POL SCI 3LL3  DEVELOPMENT AND PUBLIC POLICY
An examination of critical issues in public policy as they impact on the process of development.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above
Not open to students with credit in POL SCI 3Y3 if the topic was Development or Public Policy.

POL SCI 3M03  HEALTH POLICY IN A CHANGING WORLD
This course examines major models of health care and policy systems, and the key ideas and instruments that underlie health policy in selected countries such as Canada.
Three hours; one term
Prerequisite: One of CMST 2Z03 or POL SCI 2Z03; and registration in Level III or above
Cross-list: CMST 3MM3

POL SCI 3N08  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
Prerequisite: Registration in Level III or above
Antirequisite: POL SCI 2F06
(See Notes 4 and 6 above.)

POL SCI 3NN6  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
Prerequisite: Registration in Level III or above
Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3P03  THE POLITICAL ECONOMY OF REGIONAL INTEGRATION
An examination of regional integration in Europe, the Americas and Asia-Pacific and the implications for global politics and global economics.
Three hours; one term
Prerequisite: POL SCI 2E06; or POL SCI 2103 and 2J03

POL SCI 3Q03  THE CAUSES OF WAR
An examination of theoretical perspectives on the causes of war and conditions for peace between and within political communities.
Three hours; one term
Prerequisite: Registration in Level III or above
Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3Q03  WEAPONS AND WAR IN THE DIGITAL AGE
An examination of the social and political implications of new military technologies, new ways of war, and the implications of both for the future of arms control and disarmament.
Three hours (lectures and discussion); one term
Prerequisite: POL SCI 2103

POL SCI 3R03  LOCAL GOVERNMENT, THE STATE 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
Prerequisite: Registration in Level III or above
Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3S03  SERVICE DELIVERY IN THE MODERN CANADIAN CITY: PLACEMENT EXPERIENCE
A civic placement providing students the opportunity to gain valuable experience and insight into the municipal administration and political process. Provides the essential links between classroom knowledge and civic internship practice. Students may be involved in academic placements within the community.
Placement experience requires a minimum of 80 hours; one term
Prerequisite: Credit in POL SCI 3503; and permission of the instructor

POL SCI 3T03  PROBLEMS OF POSTCOMMUNIST TRANSITION
An examination of the legacy of communism and system transformation in selected countries, including Poland and the successor states of Czechoslovakia and the former Yugoslavia.
Three hours; one term
Prerequisite: Registration in Level III or above. (See Note 6 above.)
Antirequisite: POL SCI 3M06, 4J06

POL SCI 3U03  POLITICS IN EUROPE
Politics, government and policies of the European Union and/or selected countries within Europe.
Three hours; one term
Prerequisite: Registration in Level III or above
Priority will be given to students registered in a Political Science program. (See Note 6 above.)

POL SCI 3UU3  READING COURSE
Topics to be arranged between an individual student and instructor.
One term
Prerequisite: Registration in Level III or IV of any program 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 by the Instructor prior to the term in which the course is to be taken.

POL SCI 3V03  WOMEN AND POLITICS
An introduction to a broad range of theoretical and empirical approaches to the study of women and politics, including feminist theory and the history and evolution of the organized women's movement.
Three hours; one term
Prerequisite: Registration in Level III or IV of any program 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 by the Instructor prior to the term in which the course is to be taken.

POL SCI 3X03  CONTEMPORARY SECURITY ISSUES
This course critically examines developments in theory and practice of international security since the end of the cold war.
Three hours (lectures and discussion); one term
Prerequisite: One of POL SCI 2E06, 2Z03, 2J03; and registration in Level III or above

POL SCI 3Y03  DEMOCRATIZATION AND HUMAN RIGHTS
A review of the process of democratization and the forces that drive it and an assessment of the place of human rights in emerging democracies.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above. (See Note 6 above.)

POL SCI 3Z03  CANADIAN PUBLIC SECTOR: IMPLEMENTATION OF POLICIES
The organizational arrangements for implementing public policies in Canada, including an assessment of their efficiency, effectiveness and accountability.
Three hours; one term
Prerequisite: Registration in Level III or above. (See Note 6 above.)
Antirequisite: POL SCI 3Z06

POL SCI 4A03  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 (problem-based tutorial); one term
Prerequisite: Registration in Level IV Honours Political Science. (See Note 7 above.)
Antirequisite: GERONTOL 4S03, SOC WORK 4A03, 4L03, 4V03
This course is administered by the Department of Health, Aging and Society.

POL SCI 4A06  PROBLEMS IN AMERICAN POLITICS
An examination in depth of one of the important dimensions of the American political system.
Three hours (seminars); two terms
Prerequisite: One course in Comparative Politics and registration in Level IV Honours Political Science. (See Note 7 above.)
An examination of the concept of human rights as reflected in international declarations and practices.

Three hours (seminar); two terms
Prerequisite: One of POL SCI 2E06, 2I03, 2J03, 3Y03; and registration in Level IV Honours Political Science. (See Note 7 above.)
Antirequisite: POL SCI 4D03, 4F06

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: A course in Political Theory and registration in Level IV Honours Political Science. (See Note 7 above.)
Not open to students with credit in POL SCI 4U06 PROBLEMS OF POLITICAL PHILOSOPHY if taken in 1995-1996.

POL SCI 4G06 POLITICS OF PUBLIC POLICY
An examination of the political causes and mechanisms that shape public policies, such as political parties, interest groups, policy legacies, and how they influence policy choices on challenging issues as well as account for cross-national differences.

Three hours (seminar); two terms.
Prerequisite: One course in Public Policy or Comparative Politics; and registration in Level IV Honours Political Science. (See Note 7 above.)

POL SCI 4L03 THE POLITICS OF CHANGE IN SOCIAL WELFARE
An examination of how social welfare policy establishes the boundary between public and private roles, and how the boundary changes.

Three hours (seminar); one term
Prerequisite: HEALTHST 3M03 or POL SCI 3M03; and registration in Level IV of an Honours Health Studies or Political Science program. (See Note 7 above.)
Cross-list: HEALTHST 4L03

POL SCI 4M06 TOPICS IN INTERNATIONAL POLITICS
An examination of selected topics in international politics and foreign policy.

Three hours (seminar); two terms
Prerequisite: POL SCI 2I03, 2J03 (or POL SCI 2E06); and registration in Level IV Honours Political Science. (See Note 7 above.)

POL SCI 4M6 TOPICS IN INTERNATIONAL POLITICAL ECONOMY
An examination of selected topics in the international political economy.

Three hours (seminar); two terms
Prerequisite: POL SCI 2I03, 2J03 (or POL SCI 2E06); and registration in Level IV Honours Political Science. (See Note 7 above.)

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: POL SCI 1G06 or 2G06; and registration in Level IV Honours Political Science. (See Note 7 above.)

POL SCI 4P06 TOPICS IN POLITICAL THEORY
An examination of selected topics in political theory.

Three hours (seminar); two terms
Prerequisite: POL SCI 2006; and registration in Level IV Honours Political Science.

Antirequisite: POL SCI 4BB6

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 2XX3; and registration in Level IV Honours Political Science.

Antirequisite: POL SCI 4BB6

POL SCI 4R06 INNOVATION AND ACCOUNTABILITY IN PUBLIC SECTOR GOVERNANCE
An examination of the theory and practice of public sector governance with emphases on Canadian, comparative, and international organizations.

Three hours (seminar); two terms
Prerequisite: One of POL SCI 2L03, 3Z03, 3Z23; and registration in Level IV Honours Political Science. (See Note 7 above.)
320 PSYCHOLOGY, NEUROSCIENCE AND BEHAVIOUR

Judith M. Shedden/B.Sc. (Alberta), M.S., Ph.D. (Pittsburgh)
David I. Shore/B.Sc. (McMaster), M.A., Ph.D. (British Columbia)
Honglin Sun/B.Sc., M.Sc. (Peking), M.A. (Western Ontario), Ph.D. (Queen's)
Tracy Vaillancourt/B.A., M.A., Ph.D. (British Columbia)
Assistant Professors
Brett Bestor/B.Sc., Ph.D. (McMaster)
Paul A. Faure/B.Sc., M.Sc. (Calgary), Ph.D. (Cornell)
David Feinberg/B.Sc. (Rutgers), Ph.D. (St. Andrews)
Dada C. Gillespie/B.Sc. (Yale), Ph.D. (California-San Francisco)
Karlin Humphreya/B.A. (Queensland), A.M., Ph.D. (Illinois)
Joseph Kim/B.Sc., Ph.D. (McMaster)
Jennifer Ostovich/B.Sc. (Toronto), M.A., Ph.D. (Pennsylvania)
Gautam Ullal/M.B., B.S. (Bangalore), Ph.D. (Hamamatsu)
Associate Members
Ian C. Bruce (Electrical and Computer Engineering), B.Eng., Ph.D. (Melbourne)
Bruce Christensen/Psychiatry and Behavioural Neurosciences, B.A. (British Columbia), M.A. (Wayne State), Ph.D. (Vanderbilt)
Charles E. Cunningham/Psychiatry and Behavioural Neurosciences, B.A. (California-State), M.A. (San Diego State), Ph.D. (The American University)
Kevin W. Eva/Clinical Epidemiology and Biostatistics, B.Sc., Ph.D. (McMaster)
Eleni Hapidou/Psychiatry and Behavioural Neurosciences, B.A. (The American College of Greece), M.A. (New Brunswick), Ph.D. (McMaster)
Joel P. Hunderi/Psychiatry and Behavioural Neurosciences, B.A., M.A. (McMaster), Ph.D. (Western Ontario)
Ellen Lipman/Psychiatry and Behavioural Neurosciences, B.Sc. (Western Ontario), M.D., M.Sc. (McMaster)
Harriet L. MacMillan/Psychiatry and Behavioural Neurosciences, M.D. (Queen's), M.Sc. (McMaster), F.R.C.P.S.
William Mahoney/Pediatrics, M.D. (McMaster)
Catherine L. Mancini/Psychiatry and Behavioural Neurosciences, B.Sc., M.Sc., M.D. (Western Ontario)
Heather McNeely/Psychiatry and Behavioural Neurosciences, B.A. (Lakehead), M.A. (Carleton), Ph.D. (Waterloo)
Alison G. Nicoll/Psychiatry and Behavioural Neurosciences, B.A., M.A., Ph.D. (York)
Geoff R. Norman/Clinical Epidemiology and Biostatistics, B.Sc. (Manitoba), M.A. (Michigan State), Ph.D. (McMaster)
James Quinn/Biology, B.Sc. (Queen's), M.Sc. (Brock), Ph.D. (Alabama)
Christopher David Rollo/Biology, B.Sc., M.Sc. (Queens), Ph.D. (British Columbia)
Patricia I. Rosebush/Psychiatry, B.Sc., M.Sc. (Toronto), M.D. (McMaster), F.R.C.P.S.
Alexandre Sévigny/Communication Studies and Multimedia, French, B.A. (York), M.A. (McMaster)
William Sulls/Psychiatry and Behavioural Neurosciences, B.Sc. (Carleton), M.D., M.A. (McMaster), Ph.D. (Western Ontario), F.R.C.P.C.
Henry Szechtmann/Biomedical Sciences, B.Sc., Ph.D. (Pittsburgh)
Larry Tutt/Psychiatry and Behavioural Neurosciences, B.Sc., Ph.D. (McMaster)
Michael A. Van Ameringen/Psychiatry and Behavioural Neurosciences, B.Sc., M.D. (McMaster)

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 students registered in an Honours program in the Department of Psychology, Neuroscience and Behaviour.
2. The Psychology, Neuroscience and Behaviour Department pre-regISTRATION ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09, 4D10), and the Individual Study courses (PSYCH 2Q31, 3Q31, 4Q31). Students wishing to take these courses must complete and submit a ballot by mid February. Students will be informed of the outcome of the first phase by mid March. The second phase will include lab courses (PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03). Students wishing to take these courses must complete and submit a ballot by mid April. Specific dates will be announced during the fall term. Ballots can be obtained from the Psychology, Neuroscience and Behaviour Department website at http://www.mcmaster.ca/psychology. Priority will be given to students registered in Honours Psychology, Honours Psychology, Neuroscience and Behaviour and Combined Honours Psychology programs.

Courses
If no prerequisite is listed, the course is open.

PSYCH 1X03 INTRODUCTION TO PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR
This course introduces the scientific methods used to study the psychology of higher order processes and interpersonal behaviour. Three hours (seminars), web modules; one term
Antirequisite: PSYCH 1A03
It is strongly recommended that students without Grade 12 Biology U complete BIOLOGY 1P03 concurrent with this course.
Not open to students with credit or registration in ISCI 1A24 or students registered in the B.Sc./N. (D) Stream (Mohawk College and Conestoga site).

PSYCH 1X03 FOUNDATIONS OF PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR
This course builds on the scientific methods of PSYCH 1X03 and introduces important themes as the foundations to investigate psychology, neuroscience and behaviour with an emphasis on sensory systems, and behaviours critical to survival. Three hours (seminars), web modules; one term
Prerequisite: PSYCH 1X03 and credit or registration in Grade 12 Biology U or BIOLOGY 1P03
Antirequisite: PSYCH 1A03
Not open to students with credit or registration in ISCI 1A24 or students registered in the B.Sc./N. (D) Stream (Mohawk College and Conestoga site).

PSYCH 2A03 SURVEY OF DEVELOPMENTAL PSYCHOLOGY
A general survey of theories and mechanisms of development, illustrated through examples from neural, perceptual, cognitive, social and emotional development. This is a general survey course and is an antirequisite to the advanced developmental courses. Students wishing to do further work in developmental psychology are referred to PSYCH 3G3G.
Three lectures; one term
Prerequisite: PSYCH 1A03, 1A3; or registration in the Bachelor of Health Sciences (Honours) program
Prerequisite (Beginning 2009-2010): PSYCH 1X03 (or 1A3) or registration in the Bachelor of Health Sciences (Honours) program
Antirequisite: PSYCH 2A03, 3G3G

PSYCH 2B03 PERSONALITY
An introduction to the scientific study of personality which will consider theory, assessment and research in five approaches to personality: psychodynamic, biological, trait, behavioural and humanistic.
Three lectures; one term
Prerequisite: PSYCH 1A03, 1A3; or registration in the Bachelor of Health Sciences (Honours) program
Prerequisite (Beginning 2009-2010): PSYCH 1X03 (or 1A3) or registration in the Bachelor of Health Sciences (Honours) program
Antirequisite: PSYCH 2A03, 3G3G

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, 1A3; or registration in the Bachelor of Health Sciences (Honours) program
Prerequisite (Beginning 2009-2010): PSYCH 1X03 (or 1A3) or registration in the Bachelor of Health Sciences (Honours) program

PSYCH 2D03 NEUROPSYCHOLOGY
Neural organization and the relation between human brain function and behaviour.
Three lectures; one term
Prerequisite: PSYCH 1A03, 1A3 with a grade of at least C+ in each, and one of BIOLOGY 1A03, 1A3 (or 1M03), 1K03 (or 1P03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program
Prerequisite (Beginning 2009-2010): Six units from PSYCH 1A03, 1A3, 1K03, 1X03, 1XX3 with a grade of at least C+ in each, and one of BIOLOGY 1A03,
PSYCHOLOGY, NEUROSCIENCE AND BEHAVIOUR

1M03 (or 1AA3), 1P03 (or 1K03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program

Antirequisite: Effective 2008-2009: PSYCH 2F03

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, 1AA3 with a grade of at least C+ in each, and one of BIOLOGY 1A03, 1AA3 (or 1M03), 1K03 (or 1P03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program

Antirequisite: Beginning 2009-2010: Six units from PSYCH 1A03, 1AA3, 1X03, 1XX3 with a grade of at least C+ in each, and one of BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program

Antirequisite: Effective 2008-2009: PSYCH 2D03

PSYCH 2F03 FUNDAMENTALS OF NEUROSCIENCE
Fundamentals of nervous system function in humans and animals, including neurophysiology, neural transmission and neuroanatomy.

Prerequisite: PSYCH 1A03, 1AA3, 1X03, 1XX3 with a grade of at least C+ in each, and BIOLOGY 1A03, and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program; or credit or registration in BIOLOGY 1A03, and registration in the Honours Linguistic Cognitive Science program; or credit or registration in BIOLOGY 1A03, and registration in the Honours Music (Music Cognition) program

Antirequisite: Beginning 2009-2010: Six units from PSYCH 1A03, 1AA3, 1P03 (or 1K03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program

Antirequisite: Effective 2008-2009: PSYCH 2D03

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 tutorial; one term

Prerequisite: PSYCH 1A03, 1AA3 with a grade of at least C+ in each, and one of BIOLOGY 1A03, 1AA3 (or 1M03), 1K03 (or 1P03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program

Antirequisite: Beginning 2009-2010: Six units from PSYCH 1A03, 1AA3, 1X03, 1XX3 with a grade of at least C+ in each, and one of BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program, the Honours Linguistic Cognitive Science program or the Honours Music (Music Cognition) program

Antirequisite: One of PSYCH 2AA3, 3GG3

PSYCH 2Q03 RESEARCH PRACTICUM
Independent research practicum that provides students the opportunity to participate in experimental psychology projects in a research laboratory under the supervision of a faculty member.

One lab; one or two terms

Prerequisite: A grade of at least B in PSYCH 1A03; and registration in Level II of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program; and permission of the course coordinator

Prerequisite (Beginning 2009-2010): A grade of at least B in PSYCH 1X03 (or 1A03); and registration in Level II of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program; and permission of the course coordinator

Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 2RA3 RESEARCH DESIGN AND STATISTICS FOR BEHAVIOURAL SCIENCES I
Research methods, experimental design, and statistics: Topics include parametric and nonparametric techniques; probability; hypothesis testing; central limit theorem; effect size; power; t-tests; linear regression.

Three lectures, one tutorial; one term

Prerequisite: Registration in Honours Biology (Biodiversity Specialization), Honours Biology and Pharmacology, the Bachelor of Health Sciences (Honours), Honours Linguistic Cognitive Science, Honours Music (Music Cognition) or any Honours Psychology Neuroscience and Behaviour or Combined Honours Psychology program

Antirequisite: PSYCH 2RR3

Not open to students with credit or registration in STATS 2D03.

PSYCH 2RB3 RESEARCH DESIGN AND STATISTICS FOR BEHAVIOURAL SCIENCES II
Advanced research methods, experimental design, and statistics: Advanced topics include the general linear model; multiple regression; analysis of variance; repeated measures; data transformations; factor analysis.

Three lectures, one tutorial; one term

Prerequisite: PSYCH 2RA3

Antirequisite: PSYCH 2RR3

Not open to students with credit or registration in STATS 2MB3.

PSYCH 2S03 PSYCHOLOGY AND AGING
A survey of changes in behaviour and cognitive functioning in the elderly.

Three lectures; one term

Prerequisite: PSYCH 1A03, 1AA3

Antirequisite: Beginning 2009-2010: One of PSYCH 1AA3, PSYCH 1X03

Antirequisite: GERONTOL 3D03, PSYCH 3GG3

Offered in alternate years.


PSYCH 2T03 ANIMAL BEHAVIOUR
A discussion of the major classes of behaviour shared by most animals including humans. The course will integrate evolutionary analyses with an in-depth discussion of the genetic and cognitive mechanisms that generate behaviour.

Three lectures; one term

Prerequisite: PSYCH 1A03, 1AA3 with a grade of at least C+ in each, and one of BIOLOGY 1A03 (or 1M03), 1K03 (or 1P03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program; or credit or registration in BIOLOGY 1A03 (or 1M03) or 1K03 (or 1P03), and registration in the Honours Music (Music Cognition) program

Antirequisite: Beginning 2009-2010: Six units from PSYCH 1A03, 1AA3, 1X03, 1XX3 with a grade of at least C+ in each, and one of BIOLOGY 1A03 (or 1M03), 1P03 (or 1K03), and registration in a program in Arts & Science, Psychology or the Faculty of Science; or registration in the Bachelor of Health Sciences (Honours) program; or credit or registration in BIOLOGY 1A03 (or 1M03) or 1K03 (or 1P03), and registration in the Honours Music (Music Cognition) program

Antirequisite: PSYCH 2T03, 3R03

PSYCH 3A03 AUDITION
An introduction to the biology of hearing with an emphasis on fundamental auditory principles and underlying physiological mechanisms. Topics include physical acoustics, sound analysis, anatomy and physiology of mammalian auditory system, and perception and psychoacoustics.

Three lectures; one term

Prerequisite: One of BIOLOGY 2A03, PSYCH 2E03 or 2P03

PSYCH 3AB3 ADOLESCENT PSYCHOLOGY
This course will explore cognitive, social, emotional, neurological and physical development from puberty through the teenage years.

Three lectures; one term

Prerequisite: One of PSYCH 2AA3, 3GG3

PSYCH 3AC3 HUMAN SEXUALITY
This course will survey research and theory on human sexuality from biological, evolutionary, social and cultural perspectives.

Three lectures; one term

Prerequisite: PSYCH 2AA3 or 2C03

PSYCH 3B03 SPECIAL POPULATIONS
Discusses selected topics related to normal and abnormal development in children, including behavioral affective, perceptual, and cognitive disorders and developmental disability.

Three lectures; one term

Prerequisite: PSYCH 3GG3 or 3N03; and six units from PSYCH 2D03, 2E03, 2F03, 2H03, 2T03; and one of ARTS&SCI 2R06, HTH SCI 1F03, 2A03, PSYCH 2RA3, SOC SCI 2J03, STATS 1A03, 1CC3, 2B03, 2D03
PSYCH 3A03 POSITIVE PSYCHOLOGY
This course will explore the physiology, psychological effects, and adaptive value of positive emotional and cognitive responses to the outside world, and to our own thoughts and behaviors.
Three lectures; one term
Prerequisite: PSYCH 2B03
Offered in alternate years.

PSYCH 3B03 PSYCHOLINGUISTICS
The course discusses biological foundations of language and the way language is represented and processed in the brain (in norm and pathology). Special attention is paid to methods of psycho- and neurolinguistic research and to their connection with theoretical linguistics.
Three lectures (lectures and discussion); one term
Prerequisite: LINGUIST 1A03 and 1A03 (or 1A06); or PSYCH 2H03
Cross-list: LINGUIST 3B03
Alternates with PSYCH 3C03.
This course is administered by the Department of Linguistics and Languages.

PSYCH 3B53 COGNITIVE NEUROSCIENCE I
An introduction to the behavioural neurosciences, which are aimed at the study of psychological, computational, and neuroscientific bases of perception and cognition. The course will focus on behavioural neuroscience methods and their application to contemporary research issues.
Three lectures; one term
Prerequisite: Six units from PSYCH 2D03, 2E03, 2F03, 2H03; and one of ARTS & SCI 2R06, PSYCH 2B03, 2R3, STATS 2MB3

PSYCH 3C03 CHILD LANGUAGE ACQUISITION
Language behaviour and development in children, from birth to school age. The course examines how data from children's language acquisition can inform linguistic theory.
Three lectures; one term
Prerequisite: LINGUIST 1A03; and one of LINGUIST 1A03, PSYCH 2H03
Cross-list: LINGUIST 3C03
Alternates with PSYCH 3B3.
This course is administered by the Department of Linguistics and Languages.

PSYCH 3C83 ATTITUDES AND BELIEFS
This course will explore social psychological theories and research relating to attitude formation and change, and the impact of attitudes on behavior.
Three lectures; one term
Prerequisite: PSYCH 2C03
Offered in alternate years.

PSYCH 3C93 FORENSIC PSYCHOLOGY
Provides students with advanced knowledge of Forensic Psychology. Includes topics such as criminal responsibility, fitness to stand trial, duty to warn, homicide and psychopathy.
Three lectures; second term
Prerequisite: Registration in Level III or IV of a Psychology program

PSYCH 3C10 INTERGROUP RELATIONS
This course will discuss social psychology perspectives on how cognitive, emotional and behavioral processes affect relations among groups.
Three lectures; one term
Prerequisite: PSYCH 2C03
Offered in alternate years.

PSYCH 3D03 THE MULTISENSORY MIND
This course will consider how unsensory phenomena rely on more than one sensory modality. Topics will include: flavour, posture, music, empathy, synesthesia and sensory substitution.
Three lectures; one term
Prerequisite: PSYCH 2H03, 2E03; and PSYCH 2I03 or 2I03; and registration in an Honours program

PSYCH 3E03 PERCEPTION LABORATORY
Learn the skills needed to take you to graduate school: Experimental design, computer programming, manuscript writing and oral presentation. Previous programming experience not required.
One tutorial (one hour), one lab (three hours); one term
Prerequisite: One of PSYCH 2B03, 2R3, STATS 2MB3; and PSYCH 2E03; and registration in Level III or IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program, or registration in Level III or IV of an Honours Psychology Cognitive Science program. PSYCH 2H03 is strongly recommended.
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 3F03 EVOLUTION AND HUMAN BEHAVIOUR
The study of human social psychology and behaviour in light of evolutionary theory. Topics include family relationships, sex differences, mate choice, cooperation and conflict, and universality and diversity across cultures.
Three lectures; one term
Prerequisite: ANTHROP 2D03 or PSYCH 2TT3; or six units from BIOLOGY 1A03, 1A03, 2A03 (or 1M03); or nine units from BIOLOGY 1A03 (or 1M03), 1D06

PSYCH 3F53 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 2003 or 2F03

PSYCH 3G03 ESSENTIALS OF DEVELOPMENTAL PSYCHOLOGY
This course covers topics and mechanisms of development. The evidence for biological and environmental influences on development are examined and the principles and mechanisms of development are illustrated through examples from neural, perceptual, cognitive, social and emotional development.
Three lectures; one term
Prerequisite: Six units from PSYCH 2D03, 2E03, 2F03, 2H03, 2T03, 2T03; and one of ARTS & SCI 2R06, HTH SCI 2F03, 2A03, PSYCH 2RA3, STATS 1CC3, 2B03, 2D03; and registration in an Honours program
Antirequisite: PSYCH 2A03, 2A03, 2B03, 3G03

PSYCH 3H03 THE ARTS AND THE BRAIN
This course deals with the neurocognitive bases of the production and perception of the major art forms, including music, dance, the literary arts and the visual arts.
Three lectures; one term
Prerequisite: Two of PSYCH 1A03, 1A03, 1G03, 1X03; and one of MUSICOOG 2A03, PSYCH 2E03 or 2H03; and registration in Level III of an Honours program

PSYCH 3H13 DEVELOPMENT DURING INFANCY
An intensive examination of development during the first year of life, with an emphasis on perceptual development.
Three lectures; one term
Prerequisite: PSYCH 2003, 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 behavioural 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 academic year, with selection for placements announced by March 15.
Prerequisite: One of ARTS & SCI 2R06, PSYCH 2B03, 2R3, 2T03, 2T03, 2T03; and registration in Level III or IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program; and permission of the coordinator. This course cannot be taken concurrently with any independent study course (PSYCH 3Q03, 3Q03, 4Q03, 4Q03, 4Q04, 4Q06, 4D09, 4D09) with the same supervisor.

PSYCH 3I13 COGNITIVE DEVELOPMENT
The development of attention, concepts, memory, reasoning and language.
Three lectures; one term
Prerequisite: PSYCH 2H03, 3G03

PSYCH 3J03 VISUAL NEUROSCIENCE
Examination of the organization and function of the visual system aimed at understanding the neural basis of visual perception.
Three lectures; one term
Prerequisite: PSYCH 2E03; and BIOLOGY 3P03 or PSYCH 2F03; and registration in Level III or IV of an Honours program

PSYCH 3J13 SOCIO-EMOTIONAL DEVELOPMENT
Discusses historical and contemporary topics related to socio-emotional development from infancy to middle childhood, with an emphasis on the development of maladaptive social behaviours.
Three lectures; one term
Prerequisite: PSYCH 2C03, 3G03
PSYCH 3K03 INTRODUCTION TO BAYESIAN INFERENCE
This course introduces a sophisticated method for data analysis and guide to scientific reasoning, derived remarkably from a single, intuitive equation. Requires only basic mathematical background. Three lectures; one term.
Prerequisite: One of ARTS & SCI 2R06, ECON 2B03, PSYCH 2R83, 2RR3, STATS 2M83.

PSYCH 3L03 NEUROSCIENCE LABORATORY
Seminars and laboratory experience in current problems in neurobiology. One lab (three hours); one term.
Prerequisite: One of PSYCH 2E03, 2F03, BIOLOGY 3P03; and registration in Level III or IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program. Enrolment is limited. Permission is by pre-registration ballot. (See Department Note 2 above.)

PSYCH 3L32 GENERAL EXPERIMENTAL PSYCHOLOGY LABORATORY
Working in research teams, students select a topic area, design an experiment based on background readings, obtain ethical approval, collect and analyze data, make oral presentations and prepare written reports. One lecture, one lab (two hours); one term.
Prerequisite: PSYCH 2T03 or 2TT3; and PSYCH 2D03 or 2F03. Not open to students with credit or registration in PSYCH 3Y03 or 4Y03.

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: PSYCH 2T03 or 2TT3; and PSYCH 2D03 or 2F03. Not open to students with credit or registration in PSYCH 3Y03 or 4Y03.

PSYCH 3M83 COGNITIVE NEUROSCIENCE LABORATORY
Working in groups, students will learn to conduct experiments in the field of cognitive neuroscience. Issues related to research design and scientific communication will be emphasized. One lab (three hours); one term.
Prerequisite: One of ARTS & SCI 2R06, PSYCH 2R83, 2RR3, STATS 2M83; and one of PSYCH 2E03, 2F03, 2H03; and registration in Level III or IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program. Enrolment is limited. Permission is by pre-registration ballot. (See Department Note 2 above.)

PSYCH 3N03 ABNORMAL PSYCHOLOGY: FUNDAMENTALS AND MAJOR DISORDERS
Provides students with a current and comprehensive survey of psychopathology and the fundamentals of clinical psychology, including viewpoints on the nature of behavioural disorders and diagnostic systems. Three lectures; one term.
Prerequisite: Six units from PSYCH 2D03, 2E03, 2F03, 2H03, 2T03, 2TT3; or nine units of Psychology; or HTH SCI 1G03 and six units of Psychology and registration in the Bachelor of Health Sciences (Honours) program. Antirequisite: PSYCH 3N83.

PSYCH 3Q03 INDIVIDUAL LIBRARY STUDY
A library project under the supervision of a faculty member that may extend over both terms. Prerequisite: Registration in Level III or IV. If PSYCH 3Q03 is taken concurrently with PSYCH 4D06, 4D09 or 4DD6, a different faculty member must supervise each course. Enrolment is limited. Permission is by pre-registration ballot. (See Department Note 2 above.)

PSYCH 3QQ3 INDIVIDUAL LAB STUDY
A laboratory project under the supervision of a faculty member that may extend over both terms. Prerequisite: Registration in Level III or IV. If PSYCH 3QQ3 is taken concurrently with PSYCH 4D06, 4D09 or 4DD6, a different faculty member must supervise each course. Enrolment is limited. Permission is by pre-registration ballot. (See Department Note 2 above.)

PSYCH 3S03 ANIMAL BEHAVIOUR LABORATORY
Laboratory and field studies involving a wide variety of species. One lab (three hours); one term.
Prerequisite: PSYCH 2T03; and one of ARTS & SCI 2R06, PSYCH 2R83, 2RR3, STATS 2M83, 2MB83; and registration in Level III or IV of an Honours program in Biology or Psychology. Enrolment is limited. Permission is by pre-registration ballot. (See Department Note 2 above.)

PSYCH 3T03 BEHAVIOURAL ECOLOGY
Social behaviour from the perspective of evolutionary theory. Topics include aggression, altruism, kinship, parent-offspring interaction, sex and reproduction. Three lectures; one term.
Prerequisite: One of BIOLOGY 2C03, 2D03, 2F03, 3FF3, PSYCH 2TT3.

PSYCH 3TT3 APPLIED EDUCATIONAL PSYCHOLOGY
Students will gain practical experience with teaching methods and communication skills relevant to psychology, neuroscience and behaviour and explore issues in educational psychology. Applications must be submitted by March 1 of the preceding academic year, with selection for placements announced by May 15. Three hours (seminar); one term.
Prerequisite: A grade of A- in both PSYCH 1A03 (or 1XX3) and 1A03 (or 1X03); registration in Level III or IV of an Honours Psychology program; and permission of the instructor/coordinator. Enrolment is limited.

PSYCH 3U03 PSYCHOLOGY OF READING
Cognitive processes involved in encoding, storing and retrieving written language will be discussed in terms of information processing models. Three lectures; one term.
Prerequisite: PSYCH 2H03; and registration in Level III or IV of a Psychology, B.Sc. Life Science, Honours Life Science or Honours Linguistic Cognitive Science program; or permission of the instructor.

PSYCH 3UU3 PSYCHOLOGY OF LANGUAGE
This course discusses the cognitive and neurological basis of language comprehension and production, from an experimental perspective. The emphasis is on the processing of spoken language. Three lectures; one term.
Prerequisite: PSYCH 2H03; or LINGUIST 1A03, 1AA3; or permission of the instructor.

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 2H03, 3V03 and one of ARTS & SCI 2R06, PSYCH 2R83, 2RR3, STATS 2M83, and registration in Level III or IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program; or PSYCH 2H03, 3V03 and registration in Level III or IV of the Honours Linguistic Cognitive Science program. Enrolment is limited. Permission is by pre-registration ballot. (See Department Note 2 above.) Not offered in 2008-2009.

PSYCH 3V83 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; and registration in Level III or IV of a Psychology, B.Sc. Life Science, Honours Life Science or Honours Linguistic Cognitive Science program. Not offered in 2008-2009.

PSYCH 3Y03 EVOLUTION OF COMMUNICATION
This course will discuss how and why communication systems evolved, with a special focus on speech and language. Three lectures; one term.
Prerequisite: PSYCH 2T03, 3F03.

PSYCH 4B03 HISTORY OF PSYCHOLOGY
An account of the various schools of thought leading up to contemporary psychology including a history of how philosophers and psychologists influenced the earliest roots of Psychology as a science. Three lectures; one term.
Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program.
PSYCH 4BN3
Cognitive Neuroscience II
Seminar course on one or more selected topics in cognitive neuroscience, including biological and computational models of learning and memory, sensory science, neuropsychology, and functional brain imaging. Three lectures; one term.
Prerequisite: PSYCH 3BN3 and registration in Level IV of an Honours program.

PSYCH 4C03
Language Disorders in Childhood
Seminar with student presentations on selected language disorders. Three hours (seminar); one term.
Prerequisite: PSYCH 3U03 or 3UU3; and registration in Level IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program.

PSYCH 4D06
Senior Thesis
Students conduct an individual research project under the supervision of a faculty member. If any of PSYCH 3Q03, 3Q03, 4Q03 or 4Q03 are taken concurrently with PSYCH 4D06, a different faculty member must supervise each course. For information and guidelines regarding this course, refer to the department web site at http://www.science.mcmaster.ca/psychology/courses.html and click on PSYCH 4D06, or contact the Course Administrator. Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program; and credit in one of PSYCH 3B03, 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03; and permission of the department. Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4D09
Senior Honours Thesis
Students conduct an individual research project under the supervision or co-supervision of a Department of Psychology, Neuroscience and Behaviour faculty member. If any of PSYCH 3Q03, 3Q03, 4Q03, 4Q03 are taken concurrently with PSYCH 4D09, a different faculty member must supervise each course. For information and guidelines regarding this course, refer to the department web site at http://www.science.mcmaster.ca/psychology/courses.html and click on PSYCH 4D09, or contact the Course Administrator. Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program with a Cumulative Average of at least 8.0; and credit in one of PSYCH 3B03, 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03; and permission of the department. Antirequisite: PSYCH 4D09, 4D06. Not open to students in the Honours Biology and Psychology program. Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4D06
Special Topics in Animal Behaviour
A laboratory project under the supervision of a faculty member that may extend over both terms. Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience and Behaviour or Combined Honours Psychology program. If PSYCH 4Q03 is taken concurrently with PSYCH 4D06, 4D09 or 4D6, a different faculty member must supervise each course. PSYCH 4Q03 may be repeated once with permission of the course coordinator. Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4Q03
Special Topics in Animal Behaviour
An advanced seminar focusing on selected topics in animal behaviour. Seminar and discussions (three hours); one term.
Prerequisite: PSYCH 2TT3; and PSYCH 3F03 or 3T03; and registration in Level IV of an Honours Biology or Psychology program.

PSYCH 4Y03
Hormones, Neurochemistry and Behaviour
Steroids, peptides, monoamines, and interacting neural structures are considered in relation to feeding, reproductive behaviour, aggression, stress, and learning in humans and other vertebrates. Seminar and discussions (three hours); one term.
Prerequisite: PSYCH 3M03; and six units of Biochemistry and/or Biology; and registration in Level IV of an Honours Psychology program. Antirequisite: PSYCH 3Y03.

PSYCH 4Z03
Topics in Psycholinguistics
Topics include: First Language Acquisition; Brain and Language. Consult the Department of Linguistics and Languages for topics to be offered. Seminar (two hours); one term.
Prerequisite: Any Level III course in Linguistics; or PSYCH 3BB3 or 3UU3.
Cross-list: LINGUIST 4203
PSYCH 4Z03 may be repeated if on a different topic to a total of six units. Offered in alternate years. Offered in 2008-2009.
This course is administered by the Department of Linguistics and Languages.

RELIIGIOUS STUDIES

WEB ADDRESS:  http://www.soisci.mcmaster.ca/relstud/

University Hall, Room 104
Ext. 23109

Faculty as of January 15, 2008

Chair
P. Travis Kroeker

Professors

Associate Professors
Department Notes:

1. Students are advised to consult both the Department (University Hall, Room 104) and the Undergraduate Timetable for a list of the courses offered in the current year.

2. Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit or Japanese or both early in their program (See course offerings listed under Religious Studies, Sanskrit or Linguistics and Languages, Japanese in the Course Listings section of this Calendar.). Students wishing to specialize in Biblical Studies should consider work in Greek or Hebrew or both (See course offerings under Classics, Greek or Religious Studies, Hebrew in the Course Listings section of this Calendar.).

3. 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

If no prerequisite is listed, the course is open.

REIG 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

REIG 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

REIG ST 1E03 LOVE IN WESTERN CIVILIZATION
A discussion of 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; one term
Antirequisite: RELIG ST 1E06

REIG ST 1J03 GREAT BOOKS IN ASIAN RELIGIONS
This course introduces foundational books of the major religious traditions of Asia, including Buddhism, Hinduism, Taoism, Confucianism and Shinto, in their historical and cultural contexts.
Two lectures, one tutorial; one term

REIG 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

REIG 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

REIG ST 2C03 MORAL 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 or above
Cross-list: PHILOS 2D03
This course is administered by the Department of Philosophy.

REIG 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

REIG ST 2EE3 PROPHETS OF THE BIBLE
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

REIG ST 2F03 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: JAPAN ST 3H03
Antirequisite: RELIG ST 3H03

REIG ST 2FF3 MEDITERRANEAN ENCOUNTERS 1500-1800
This course examines the Mediterranean region as a zone of intense cultural interaction. Particular emphasis will be given to the interaction between Christian, Jewish and Islamic societies.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: HISTORY 2H03
This course is administered by the Department of History.

REIG ST 2G03 RELIGIOUS THEMES IN MODERN LITERATURE
An introduction to religious themes, imagery and issues through a study of selected modern literature.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 1106,1103

REIG ST 2G03 RELIGIOUS THEMES IN MODERN LITERATURE
An introduction to religious themes, imagery and issues through a study of selected modern literature.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 1106,1103

REIG ST 2H03 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

REIG 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

REIG ST 2I03 STORYTELLING IN INDIAN RELIGION
A survey of some of the many stories that were told by Buddhists, Jains and Hindus as a form of popular religious instruction and of the various uses made of humour and wit in religious teaching.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 3I03
RELIG ST 3C03 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
Antirequisite: RELIG ST 2V03

RELIG ST 3C33 SOVEREIGNTY AND SECULARIZATION
Exploration of key modern Western topics concerning the nature of leadership and authority in both religious and secular contexts. Readings by Hobbes, Weber, Schmitt, Buber: plus case studies of important modern or contemporary dilemmas regarding the place of religion in public life.
Three hours (lectures and discussion); one term

RELIG ST 3D03 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 3DD3 THE JEWISH WORLD IN NEW TESTAMENT TIMES
A study of Judaism in the Greco-Roman world. The course will explore selected questions in political history, the development of sects and parties, the role of the temple, apocalypticism, and the Dead Sea Scrolls.
Two lectures, one tutorial; one term
Cross-list: HISTORY 3D03
Antirequisite: RELIG ST 2NN3

RELIG ST 3E03 JAPANESE RELIGIONS
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. Three units from the Asian Religions Field of Study or three units of Japanese Studies is strongly recommended.
Cross-list: JAPAN ST 3E03

RELIG ST 3EE3 SACRED JOURNEYS
A study of the significance of travel in various religious traditions, focusing on shrines, pilgrimages, and the inter-relationships between secular and sacred travel.
Two lectures, one tutorial; one term

RELIG ST 3F03 APPROACHES TO THE STUDY OF RELIGION
A study of the various ways religious phenomena can be studied, e.g. psychologically, 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 3FF3 GENDER AND RELIGION
A study of gender in several religions, such as Hinduism, Buddhism, Confucianism, Christianity, Judaism, and Islam. Important female religious figures and feminist theology will also be studied.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 2SS3

RELIG ST 3GG3 TOPICS IN JEWISH STUDIES
An exploration of selected themes in Jewish thought, history, and/or culture.
Three hours (lectures and discussion); one term
RELIG ST 3GG3 may be repeated, to a total of six units, if on a different topic.

RELIG ST 3JJ3 JEWS, CHRISTIANS AND OTHERS IN ANTIQUITY
An examination of the contacts, conflicts, and competition among Jews, Christians, and their non-Jewish, non-Christian neighbours (Greeks, Romans, Egyptians) in the ancient world.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. RELIG ST 1006 or three units from the Biblical Studies Field of Study is strongly recommended.

RELIG ST 3KK3 THE BIBLE THROUGH THE AGES
A study of the different ways in which the Bible has been read, from antiquity to the modern world, both inside and outside the communities for which it serves as sacred scripture. The course will focus on selected key figures in the history of biblical interpretation.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. RELIG ST 1006 or three units from the Biblical Studies Field of Study is strongly recommended.

RELIG ST 3KK3 CHRISTIANITY IN THE MODERN PERIOD
Topics in Christianity (Catholic and Protestant) from the 17th to the 20th centuries. Attention is given to the interaction between secular and religious thought.
Two lectures, one tutorial; one term

RELIG ST 3L03 THE INDIAN RELIGIOUS TRADITION
Readings of Indian religious texts in translation will concentrate on 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 3L13 RELIGION AND HUMAN NATURE
What is the nature of human nature and its fulfillment? A study of recent philosophical, scientific and religious anthropology.
Two lectures, one tutorial; one term

RELIG ST 3M03 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 3N03 JOHN'S PORTRAIT OF JESUS
An examination of the Gospel of John, with emphasis on its historical background, its literary character and its distinctive theology. The history of the Johannine community will also be considered.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 2003

RELIG ST 3P03 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

RELIG ST 3R03 TAOISM
An introduction to the history, doctrines, and practices of Taoism from the mid-2nd century C.E. up to the present, with a focus on reading Taoist texts in translation.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. Three units from the Asian Religions Field of Study is strongly recommended.

RELIG ST 3S03 THE EAST ASIAN RELIGIOUS TRADITION
Readings in East Asian religious texts in translation will concentrate on 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, JAPAN ST 3S03

RELIG ST 3T03 THE QUEST FOR THE HISTORICAL JESUS
A look at the continuing scholarly effort to reconstitute the career and teaching of the historical Jesus.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. RELIG ST 1006 or 2GG3 is strongly recommended.

RELIG ST 3U03 THE BUDDHIST 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
Prerequisite: Registration in Level II or above. Three units from the Asian Religions Field of Study is strongly recommended.

RELIG ST 3U33 BUDDHISM IN EAST ASIA
An examination of myth, history, doctrine, monastic culture, and ritual practices in East Asian Buddhism.
Two lectures, one tutorial; one term
Cross-list: JAPAN ST 3U33

RELIG ST 3ZZ3 JUDAISM AND THE JEWISH PEOPLE IN THE 20TH 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 study of Jewish identities in literature and the arts.
Two lectures, one tutorial; one term
Cross-list: HISTORY 3ZZ3
Antirequisite: RELIG ST 2XX3
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
SOTA 2G03 PERFORMANCE AND PERFORMATIVITY
An introduction to the study of performative modes of communication such as storytelling, gesture, movement, dress. Students will learn to analyze the relationship between cultural performances, such as games, work and craft, music, and the body as artistic medium. Normally students will complete 60 hours of placement work through a variety of methods from the traditional lecture to more experiential methods (e.g., simulation). Self-directed learning will include experimentation and the application form can be found at http://sota.mcmaster.ca.

This course is administered by the Department of Communication Studies and Multimedia.

Cross-list: CMST 2G03

SOTA 3B03 PERFORMANCE ART
This course will examine historical and contemporary concerns related to performance art including the relevance of traditional categories of artistic production, the roles of the audience, the institution and market, and the body as artistic medium.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level II or above

Cross-list: CMST 3U03

SOTA 3C03 TOPICS IN VISUAL CULTURE
This course will examine a variety of topics in the critical study of visual culture, including gender and spectatorship, consumerism, and the arts, and visual literacy in the 21st century.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level II or above

Cross-list: CMST 3F03
SCIENCE 3S03  TEACHING INQUIRY (PEER TUTORING)
This course provides an opportunity to learn about the teaching of inquiry through practical experience as a peer tutor working closely with an instructor, and through projects investigating some aspects of inquiry in more detail.

Peer tutoring responsibilities, weekly seminars; two terms
Prerequisite: INQUIRY 1SC3 (or equivalent) and permission of the instructor
Antirequisite: HTH SCI 4X03, INQUIRY 3S03, 4S03

SCIENCE 4A03  INDEPENDENT STUDY
An independent study under the supervision of a faculty member.
One term
Prerequisite: Registration in Level IV of an Honours program in the Faculty of Science and permission of the supervising faculty member
Antirequisite: INQUIRY 4SJ3, 4SK6, SCIENCE 4B06, 4C09

SCIENCE 4B06  INDEPENDENT STUDY
An independent study under the supervision of a faculty member.
Two terms
Prerequisite: Registration in Level IV of an Honours program in the Faculty of Science and permission of the supervising faculty member
Antirequisite: INQUIRY 4SJ3, 4SK6, SCIENCE 4A03, 4C09

SCIENCE 4C09  INDEPENDENT STUDY
An independent study under the supervision of a faculty member.
Two terms
Prerequisite: Registration in Level IV of an Honours program in the Faculty of Science and permission of the supervising faculty member
Antirequisite: INQUIRY 4SJ3, 4SK6, SCIENCE 4A03, 4B06

SCIENCE 4S23  PHOENIX: OUT OF THE ASHES AND INTO THE ATOMIC AGE
This course will study the short and long term impact of nuclear weapons testing and use, upon humans and the environment. Students will visit critical sites where nuclear weapons were developed and detonated. The travel portion of the course will run for 10-12 days (dependent on available travel schedules) and will involve group discussions and field experiences.
Students will be required to pay incidental fees over and above the normal tuition fees set by the Unit to cover travel costs.
Prerequisite: Registration in Level IV of any Honours program in the Faculty of Science
Cross-list: MED PHYS 4S23
Antirequisite: INQUIRY 4S23
Enrolment is limited.
This course is administered by the Department of Medical Physics and Applied Radiation Sciences.

SCIENCE 4X33  HUMAN BIOLOGY FOR PHYSICAL SCIENTISTS
An overview of the structure and the function of the major organ systems of the body with some reference to radiation interactions.
Three hours; one term
Prerequisite: Registration in Level III or above of an Honours program in the Faculty of Science; or permission of the instructor
Cross-list: MED PHYS 4X33
Antirequisite: BIOLOGY 2A03, 3U03, 3UU3, 4G06, HTH SCI 1G06, 1H03, 1H06, 1H03, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1Y03, 1Y03

SOCIAL SCIENCES

Notes:
1. All students are strongly recommended to complete SOC SCI 2E0L. Completion of SOC SCI 2E0L is required to participate in an internship.
2. Students who previously completed SOC SCI 2E03 and 2F03 may substitute these units as Level II Sociology.
3. SOC SCI 2003, 2P03, 2Q03 and 2R03 may be substituted as units of Level II Sociology.

Courses
If no prerequisite is listed, the course is open.

SOC SCI 2E0L  INTRODUCTION TO CAREER PLANNING THROUGH EXPERIENTIAL LEARNING
Provides an opportunity to engage in a variety of hands-on exploration activities to provide a strong foundation for career and education planning. Students will better understand the skills acquired in academic studies, extracurricular activities, work experience and how this relates to making occupational choices and job searching.
Six; two hour lectures/workshop; one term
Prerequisite: Registration in Level II or above of an Honours Bachelor of Kinesiology, Bachelor of Kinesiology General or Social Sciences program
Antirequisite: SOC SCI 3EL0
(See Note 1 above.)

SOC SCI 2J03  INTRODUCTION TO STATISTICS
An introduction to basic statistical concepts and their application to the analysis of data from the social sciences. The use of spreadsheets is emphasized.
Three hours; one term
Prerequisite: Registration in Level II or above of an Honours Bachelor of Kinesiology, Bachelor of Kinesiology General, Social Sciences or Music Cognition program
Antirequisite: COMMERCE 2QA3
Not open to students with credit in ECON 2B03, 3006, 3100, GEO 2E03, 2F03, 2A03, KINESIOL 1B03, 1B06, 3C03, POL SCI 2F06, 3N03, PSYCH 2G03, 2RA3, 2RB3, 2R03, 2RR3, SOCIOL 3H06, STATS 1A03, 1CC3 or any Level II, III or IV statistics course.

SOC SCI 2003  CANADIAN CHILDREN
This course deals with a spectrum of issues related to Canadian children such as family, socialization, identity formation, moral development, abuse and strategies for a better future.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of an Honours program in the Faculty of Science; or permission of the instructor
Not open to students with credit in SOC SCI 2E03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES I if the topic was Canadian Children.
(See Note 3 above.)

SOC SCI 2P03  CANADIAN ADOLESCENTS
This course deals with a spectrum of issues related to Canadian adolescents such as identity formation, sexuality, peer groups and the social politics of career formation.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of an Honours program in the Faculty of Science; or permission of the instructor
Not open to students with credit in SOC SCI 2F03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II if the topic was Canadian Adolescents.
(See Note 3 above.)

SOC SCI 2Q03  WOMEN AND FAMILY IN CANADA
A discussion of contrasting approaches to the study of the family from a Symbolic Interactionist perspective. Topics include mother-daughter, father-daughter, mother-son relationships and motherless daughters.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of an Honours program in the Faculty of Science; or permission of the instructor
Not open to students with credit in SOC SCI 2Q03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II if the topic was The Structure of the Family and the Role of Women in Historical and Contemporary Society.
(See Note 3 above.)

SOC SCI 2R03  WOMEN AND WORK IN CANADA
The life cycle of contemporary women, the increased integration into the labour force and the impact this has had upon their traditional roles as wife and mother will be discussed. The experiences of women will be interfaced with those of men.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of an Honours program in the Faculty of Science; or permission of the instructor
Not open to students with credit in SOC SCI 2R03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II if the topic was Women and Work in Canada.
(See Note 3 above.)

SOC SCI 3F00  FULL-TIME INTERNSHIP
Full-time, non-credit, paid work opportunities of four, eight, or 12 month duration allowing students to explore careers, develop employability skills and make important contacts for job searching.
Normally 30 to 35 hours per week
Prerequisite: Registration in a program in the Faculty of Social Sciences; credit or registration in SOC SCI 2E0L; and permission of the Career Development Coordinator
SOC SCI 3F00 may be repeated.

SOC SCI 3I00  PART-TIME INTERNSHIP
Part-time, non-credit, paid work opportunities of four, eight, or 12 month duration allowing students to explore careers, develop employability skills and make important contacts for job searches.
Normally 5 to 10 hours per week
Prerequisite: Registration in a program in the Faculty of Social Sciences; credit or registration in SOC SCI 2E0L; and permission of the Career Development Coordinator
SOC SCI 3I00 may be repeated.
SOC SCI 3S10 SUMMER INTERNSHIP

Full-time, non-credit, paid work opportunities normally lasting four months during the Spring/Summer Session allowing students to explore careers, develop employability skills and make important contacts for job searches. Students selected to complete a McMaster Summer or NSERC USRA may use this experience toward a Summer Internship. Normally 30 to 35 hours per week.

Prerequisite: Registration in a program in the Faculty of Social Sciences; credit or registration in SOC SCI 2E10; and permission of the Career Development Coordinator. SOC SCI 3S10 may be repeated.

SOC SCI 3MP3 COMMUNITY LEADERSHIP IN SPORT AND PHYSICAL ACTIVITY

This placement course provides the essential links between classroom knowledge and professional practice. Working with special needs populations, children, adolescents, adults and the elderly, students will experience the challenges faced by community agencies that deliver sport and physical activity programs.

Placement experience equivalent to one day per week (60 hrs.), seminars; one term.

Prerequisite: Credit or registration in KINESIOL 3M03 and registration in Level III or above.

Antirequisite: KINESIOL 3M03, 3M03

Not open to students with credit or registration in KINESIOL 4E03 if the placement is in the area of coaching or leadership. This course is administered by the Department of Kinesiology.

SOCIAL WORK

WEB ADDRESS: http://www.socsci.mcmaster.ca/socwork/

Kenneth Taylor Hall, Room 319
Ext. 23795

Faculty as of January 15, 2008

Director
Jane Aronson

Professors
Jane Aronson/B.Sc. (New University of Ulster), B.S.W., M.S.W. (McGill), Ph.D. (Toronto)
Roy Cairn/B.S.W., M.S.W., Ph.D. (McGill)
James W. Gladstone/B.A. (McGill), M.S.W. (British Columbia), Ph.D. (Toronto)

Associate Professors
Donna Baines/Labour Studies B.S.W. (Calgary), M.S.W. (Ottawa), Ph.D. (Toronto)
Patricia M. Daenzer/B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)
Gary C. Dumbrell/B.S.W. (South Bank, London), M.S.W. (York), Ph.D. (Toronto)
L. William Lee/B.A. (St. Thomas, Texas), M.S.W., Adv. Dip. S.W., Ed.D. (Toronto) (Retired)
Sheila Sammon/B.A. (Nazareth College, New York), M.S.W. (Toronto)

Assistant Professors
Mirna E. Carranza/B.S.W. (University of El Salvador), M.T.S (Wilfrid Laurier), Ph.D. (Guelph)
Christina Sinding/Health, Aging and Society B.A. (Western Ontario), M.A. (McMaster), Ph.D. (Toronto)
Y. Rachel Zhou/B.A. (Institute on Globalization and the Human Condition), LLM (Wuhan, China), M.A., Ph.D. (Toronto)

Adjunct Assistant Professors
Christine Walsh/Calgary/B.Sc., M.Sc. (Guelph), M.S.W. (McMaster), Ph.D. (Toronto)

Associate Members
Karen A. Balcom/History, B.A. (Carleton); M.A. (Dalhousie), Ph.D (Rutgers)
Robert D. Wilton/Geography and Earth Sciences, B.A. (Harvard), M.A., Ph.D. (Southern California)

Lecturer
Rick Sin/B.S.W. (Hong Kong Baptist), M.S.W. (McGill)

School Notes:

1. SOC WORK 1A06 is available to all students.
2. With the exception of SOC WORK 4Q03, the following courses are available for elective credit for students enrolled in Level III or above of a non-Social Work program. SOC WORK 1A06 is a prerequisite. Space for such students is limited and places are assigned on a first come basis.

SOC WORK 3C03 Social Aspects of Health and Illness
SOC WORK 3H03 Justice and Social Welfare
SOC WORK 3K03 Human Sexuality in Social Context
SOC WORK 4B03 Adult Family Violence
SOC WORK 4C03 Racism and Social Marginalization in Canadian Society
SOC WORK 4G03 Selected Topics
SOC WORK 4I03 Social Work and Indigenous Peoples
SOC WORK 4J03 Social Change: Social Movements and Advocacy
SOC WORK 4L03 Social Work with an Aging Population
SOC WORK 4Q03 Inquiry into Anti-Oppression: Facilitating the Dialogue
SOC WORK 4R03 Social Work with Women
SOC WORK 4U03 Immigration, Settlement and Social Work
SOC WORK 4W03 Child Welfare
SOC WORK 4Y03 Critical Issues in Mental Health and Addiction

Courses

All courses are open only to Social Work students unless otherwise specified. (See Notes 1 and 2 above.)

SOC WORK 1A06 INTRODUCTION TO SOCIAL WORK

Explores how society causes or affects 'personal' problems. Introduces social issues such as poverty, violence and oppression and considers social workers' roles in service provision, advocacy and policy development. Lectures and discussions; two terms.

(See Note 1 above.)

SOC WORK 2A06 THEORY, PROCESS AND COMMUNICATION SKILLS FOR SOCIAL WORK

Knowledge, value base and intervention methods of social work practice; basic skill development in interpersonal communication and interviewing. Lectures, discussions, exercises; two terms.

Antirequisite: SOC WORK 2C03, 2C06, 2D03

SOC WORK 2B03 SOCIAL WELFARE: GENERAL INTRODUCTION

Purpose, values underlying development of social welfare programs; Canada's social security system in historical perspective. Lectures, discussion; one term.

Cross-list: LABR ST 2B03

Antirequisite: SOC WORK 2B06

Students in a Social Work program must register for this course as SOC WORK 2B03.

SOC WORK 2BB3 SOCIAL WORK AND SOCIAL WELFARE: ANTI-OFFENSIVE PERSPECTIVES

Exploration and analysis of systematic patterns of oppression, their relationships to social policies and practices and the implications for social work within a variety of instruction including experiential exercises. Topics could include: race, gender, disability, sexual orientation. Exercises, lectures, discussion; one term.

Cross-list: LABR ST 2BB3

Antirequisite: SOC WORK 2BB6

Students in a Social Work program must register for this course as SOC WORK 2BB3.

SOC WORK 2E03 HUMAN GROWTH AND DEVELOPMENT IN THE SOCIAL ENVIRONMENT

Human development throughout the life span with emphasis on the interaction between the personal and social contexts and social work concerns at each developmental stage. Lectures, discussion; one term.

SOC WORK 3A03 SOCIAL WORK WITH INDIVIDUALS AND GROUPS

Examination of theories of social work intervention and current practice models of intervention with individuals and groups. Seminars; one term.

Antirequisite: SOC WORK 3N03, 3R03, 4N03
SOC WORK 3C03 SOCIAL ASPECTS OF HEALTH AND ILLNESS
Exploration of the meaning of health and sickness in our society. Organization and delivery of health care. Consideration of ethical and other issues. Lectures, discussion and selective use of community resources; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 3D06 GENERAL SOCIAL WORK I
Social work intervention processes; interviewing: development of basic skills in formation of relationships with individuals, families, groups and communities. Seminars, workshops; two terms
Option of equivalent summer block in combination with SOC WORK 3DD6 Antirequisite: SOC WORK 4D12
variables such as race, ethnicity and cultural specificity in the social Prerequisite: Credit or registration in SOC WORK 3D06 and 3DD6; or
This course involves critical analysis of the construction of social relations in Canadian society. Students will have the opportunity to examine Seminars; one term
Seminars; workshops; two terms
Option of equivalent summer block in combination with SOC WORK 3DD6 (summer). Priority for summer block given to B S.W. students.
Prequisite: SOC WORK 2B06 or both SOC WORK 2B03 and 2B3; and SOC WORK 2A06 or both SOC WORK 2C03 and 2D03; and SOC WORK 2E03
Corequisite: SOC WORK 3D06
Credit in this course is dependent on achieving a minimum grade of C+ and a Pass in SOC WORK 3DD6.

SOC WORK 3D06 FIELD PRACTICUM I
Field practicum to develop basic intervention and interviewing skills, particularly in the formation of relationships with individuals, families, groups and communities. Students participate in developing goals and experiences. This course is evaluated on a Pass/Fail basis.
Field experience equivalent to 15 hours per week; two terms
Option of equivalent summer block placement in combination with SOC WORK 3D06 taken in the summer. Priority for summer block given to B.S.W. students.
Prequisite: SOC WORK 2B06 or both SOC WORK 2B03 and 2B3; and SOC WORK 2A06 or both SOC WORK 2C03 and 2D03; and SOC WORK 2E03
Corequisite: SOC WORK 3D06
Credit in this course is dependent on achieving a minimum grade of C+ and a Pass in SOC WORK 3DD6.

SOC WORK 3H03 JUSTICE AND SOCIAL WELFARE
Human rights and the role of law in enhancing civil liberties in Canada. Social work, law and social change. Study of selected issues and review of administrative discretion.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 3Q03 HUMAN SEXUALITY IN SOCIAL CONTEXT
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.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 4B03 ADULT-FAMILY VIOLENCE
To assist students in acquiring knowledge and perspectives concerning social policy issues pertaining to adult violence with emphasis on violence against women.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
Not open to students with credit or registration in SOC WORK 4D03
SELECTED ISSUES IN SOCIAL WELFARE POLICY, if the issue was Family Violence.
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 4C03 RACISM AND SOCIAL MARGINALIZATION IN CANADIAN SOCIETY
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 social ascription and adaptation process.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
Not open to students with credit or registration in SOC WORK 4D03
SELECTED ISSUES IN SOCIAL WELFARE POLICY, if the issue was Racial and Cultural Issues in Canadian Welfare.
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

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 4D2D
Prequisite: SOC WORK 3D06, 3DD6
Corequisite: SOC WORK 4D6
Credit in this course is dependent on achieving a minimum grade of C+ and a Pass in SOC WORK 4D6.

SOC WORK 4D10 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.
This course is evaluated on a Pass/Fail basis.
Option of equivalent block placement in conjunction with SOC WORK 4D6.
Prequisite: SOC WORK 3D06, 3DD6
Corequisite: SOC WORK 4D6
Credit in this course is dependent on achieving a Pass and a minimum grade of C+ in SOC WORK 4D6.

SOC WORK 4G03 SELECTED TOPICS
Critical examination of social work practice in respect to selected social issues. Topics vary from year to year and the School should be consulted for details for any particular year.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
SOC WORK 4G03 may be repeated, if on a different topic.
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 4J03 SOCIAL WORK AND INDIGENOUS PEOPLES
Examination of structural and cultural variables underlying the complex relationships between Indigenous communities and mainstream society, with particular attention to how they are played out in social work practice.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
Not open to students with credit in SOC WORK 4G03 if the topic was Social Work and Indigenous Peoples.
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 4J03 SOCIAL CHANGE:
SOCIAL MOVEMENTS AND ADVOCACY
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
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 4L03 SOCIAL WORK WITH AN AGING POPULATION
Analysis of the context of aging within Canadian society; examination of selected themes related to social welfare policies and models of social work practice with the elderly.
Seminars; one term
Prequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
Not open to students with credit in SOC WORK 4L03 if the topic was Social Work with Communities.
This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work program who have completed SOC WORK 1A06.

SOC WORK 4O03 SOCIAL WORK WITH COMMUNITIES
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
Prequisite: Credit or registration in SOC WORK 3D06 and 3DD6; or permission of the instructor
SOCIOL 2C06  DEVIANT BEHAVIOUR

An analysis of deviant behaviour and conformity in relation to social structure and processes, and a discussion of problems of control within the social system.

Three hours (lectures and discussion); two terms

Prerequisite: Registration in a Social Work program; or SOC WORK 1A06 and several other courses are divided into independent sections.

3. Prerequisite: Academically exceptional students wishing to take a course for which they do not have the prerequisite may seek permission of the instructor to register. However, priority is given in all Level III courses to Sociology students, and in all Level IV courses to Honour's Sociology students.

4. All Level IV courses are normally open only to students registered in a Level IV Honours Sociology program on a first come basis. SOCIOL 4M03, 4M66 and 4N03 require permission of the instructor.

Courses  If no prerequisite is listed, the course is open.

SOCIOL 1A06  AN INTRODUCTION TO SOCIOLOGY

A survey of the areas of research which interest the sociologist. Interpretation of human action from the standpoint of the group.

Two lectures, one tutorial, two terms

SOCIOL 2C06  DEVIANT BEHAVIOUR

An analysis of deviant behaviour and conformity in relation to social structure and processes, and a discussion of problems of control within the social system.

Three hours (lectures and discussion); two terms

Prerequisite: SOCIOL 1A06

Priority will be given to students registered in a Sociology program.
SOCIOL 2D06  THE HUMAN GROUP
An examination of the individual in social interaction, with emphasis upon
the relationships among individuals, social interaction and social structure.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06

SOCIOL 2E06  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

SOCIOL 203  SOCIOLOGY OF ORGANIZATIONS
A theoretical and empirical analysis of formal and informal organiza-
tional structures and processes in the major sectors of modern indus-
trial society. Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Antirequisite: CMST 2L03, 2I06, 3I03, SOCIOL 2I06

SOCIOL 2L03  MEDIA INSTITUTIONS
An examination of the institutional structure and production processes
of the press, television, and radio. Topics include news gathering, televi-
sion and radio program production and the relationship between media
production and management. Three hours (lectures); one term
Prerequisite: CMST 1A03 and 1B03; or SOCIOL 1A06
Antirequisite: CMST 2L03

SOCIOL 2P06  SOCIOLOGY OF EDUCATION
A comprehensive analysis of educational institutions in modern society.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Priority will be given to students registered in a Sociology program.

SOCIOL 2Q06  SOCIOLOGY OF GENDER
A theoretical and empirical examination of gender differences and gen-
der inequalities with a focus on women’s experiences. Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Priority will be given to students registered in a Sociology program.

SOCIOL 2R03  PERSPECTIVES ON SOCIAL INEQUALITY
This course will introduce the student to major theories of social inequality,
such as the Marxist, Weberian and structural-functionalist perspectives.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Antirequisite: SOCIOL 2006

SOCIOL 2R03  CASE STUDIES OF SOCIAL INEQUALITY
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 (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Antirequisite: SOCIOL 2006

SOCIOL 2S06  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 a Sociology program
Antirequisite: SOCIOL 2S03, 3A06

SOCIOL 2T03  SOCIOLOGY OF SPORT
This course provides a detailed theoretical and empirical examination of
how sport is culturally organized, experienced and mediated.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Antirequisite: KINESIOL 1H03, 3P03
Not open to students with credit or registration in SOCIOL 3J03 if the
topic was Sociology of Sport.
Priority will be given to students registered in a Sociology program.

SOCIOL 2U06  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
Priority will be given to students registered in a Sociology program.

SOCIOL 2V06  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

SOCIOL 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 a Sociology or Social Work program
Antirequisite: ANTHROP 2203, CMST 2A03, GEO 2HR3, GEOG 2MB3,
GERONTOL 2C03, HLTH AGE 2A06, HEALTHST 2B03

SOCIOL 3A03  EUROPEAN SOCIOLOGICAL THEORY
An advanced examination of classical and contemporary European so-
ociological theory.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2S06 and registration in Level III or IV of an Hon-
cours Sociology program.
The Department of Sociology guarantees that all Level III and IV Hon-
cours Sociology students will have access to either this course, SOCIOL
3P03 or 3P53.

SOCIOL 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 including SOCIOL 2P06
SOCIOL 3B03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 3C03  MEDIA AND SOCIAL ISSUES
An analysis of the relationships between mass media and modern soci-
ety. Topics may include ideology and agenda-setting in the media, rep-
resentations of social problems (e.g., homelessness, violence), moral pan-
lics, media scandals, or public ceremonies.
Three hours (lectures); one term
Prerequisite: Registration in Level III or above of a Communication Studies
program; or SOCIOL 2L03 and registration in a Sociology program
Cross-list: CMST 3C03

SOCIOL 3CC3  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 (lectures and discussion); one term
Prerequisite: SOCIOL 2U06 or registration in a Combined Honours in So-
ciology and Gerontology program
Antirequisite: GERONTOL 3M03

SOCIOL 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
SOCIOL 3D03 may be repeated, if on a different topic, to a total of six units.
Priority will be given to students registered in a Sociology program

SOCIOL 3G03  SOCIOLOGY OF HEALTH CARE
Selected issues concerning forms of providing health care.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Priority will be given to students registered in a Sociology program.

SOCIOL 3GG3  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 2006
SOCIOL 3GG3 may be repeated, if on a different topic, to a total of six units.
Priority will be given to students registered in a Sociology program.

SOCIOL 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 program 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 Sciences programs; SOCIOL 2Y03; all Statistics courses except STATS 1A03, 1L03, 2D03, 3S03, 3U03, 4H03.

SOCIO 2HH3 SOCIOLOGY OF HEALTH
Sociological approaches to the study of health and illness.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Priority will be given to students registered in a Sociology program.

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
SOCIO 3J03 may be repeated, if on a different topic, to a total of six units.

SOCIO 3K03 SPECIAL TOPICS IN SOCIOLOGICAL ANALYSIS II
Same as SOCIO 3J03.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
SOCIO 3K03 may be repeated, if on a different topic, to a total of six units.

SOCIO 3K33 GENOCIDE: SOCIOLOGICAL AND POLITICAL PERSPECTIVES
An examination of genocide and other extreme crimes against humanity.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above
Cross-list: POL SCI 3K33
Antirequisite: SOC SCI 2C03
Priority will be given to students registered in a Political Science or Sociology program.
This course is administered by the Department of Political Science.

SOCIO 3L33 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

SOCIO 3M03 QUALITATIVE RESEARCH METHODS
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
Antirequisite: GERONTOL 3R03, HLTH AGE 3A03
The Department of Sociology guarantees that all Level III and Level IV Honours Sociology students will have access to either this course, or 3W03.

SOCIO 3P03 AMERICAN SOCIOLOGICAL THEORY
An advanced examination of classical and contemporary American sociological theory.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2S06 and registration in Level III or IV of an Honours Sociology program.
Antirequisite: SOCIOL 3A06
Alternates with SOCIO 3P03.

SOCIO 3P33 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 left-nationalist progeny and critics.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2S06 and registration in Level III or IV of an Honours Sociology program.
Alternates with SOCIO 3P03.
The Department of Sociology guarantees that all Level III and IV Honours Sociology students will have access to either this course, SOCIOL 3A03 or 3P03.

SOCIO 3U03 SOCIOLOGY OF SEXUALITIES
An exploration of the social aspects of sexuality and consideration of how sexual experiences are shaped by, and interpreted through, historically specific social contexts.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06. SOCIOL 2Q06 is strongly recommended. Priority will be given to students registered in a Sociology program.

SOCIO 3W03 HISTORICAL METHODS IN SOCIOLOGY
An examination of methods for incorporating historical data and archival sources into sociological argument.
Three hours (seminar and discussions); one term
Prerequisite: Registration in Honours Sociology.

SOCIO 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: SOCIOL 1A06
Not open to students with credit in SOCIO 4G03 if on a similar topic.
SOCIO 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

SOCIO 4A3 SELECTED TOPICS IN THE SOCIOLOGY OF THE FAMILY
An intensive examination of selected probleins in the sociology of the family.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology
Not open to students with credit in SOCIO 4G03 if on a similar topic.

SOCIO 4A3 SELECTED TOPICS IN SOCIOLOGICAL THEORY
A discussion of various sociological and non-sociological critiques of sociological theory.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology

SOCIO 4B3 SELECTED TOPICS IN THE SOCIOLOGY OF EDUCATION
This advanced course offers an intensive examination of selected problems involving the relationship between schooling and society.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology
Not open to students with credit in SOCIOL 4J03 or 4K03 if on a similar topic.

SOCIO 4D3 PERSPECTIVES ON SOCIOLOGICAL THEORY
A discussion of various sociological and non-sociological critiques of sociological theory.
Three hours (seminar); one term
Prerequisite: SOCIOL 2S06 and registration in Level IV Honours Sociology

SOCIO 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

SOCIO 4EE3 SELECTED TOPICS IN THE SOCIOLOGY OF CULTURE
A sociological examination of topics related to the production, dissemination, consumption and/or interpretation of culture. Community service learning may be a component of this course.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology
SOCIO 4EE3 may be repeated, if on a different topic, to a total of six units.

SOCIO 4G03 ADVANCED TOPICS IN THE SOCIOLOGY OF HEALTH AND 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
SOCIO 4G03 may be repeated, if on a different topic, to a total of six units.
SOCIOL 4GG3

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: Registration in Level IV Honours Sociology
SOCIOL 4GG3 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4J03

SELECTED TOPICS IN SOCIOLOGY I

Topics of contemporary interest to sociologists, 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
SOCIOL 4J03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4K03

SELECTED TOPICS IN SOCIOLOGY II

Topics of contemporary interest to sociologists, 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
SOCIOL 4K03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4M03

DIRECTED RESEARCH I FOR HONOURS 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.
One term
Prerequisite: Registration in Level IV Honours Sociology and permission of the instructor
SOCIOL 4M03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4M6

DIRECTED RESEARCH FOR HONOURS 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.
Two terms
Prerequisite: Registration in Level IV Honours Sociology and permission of the instructor
SOCIOL 4M6 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4N03

DIRECTED RESEARCH II FOR HONOURS STUDENTS

Same as SOCIOL 4M03.
One term
Prerequisite: Registration in Level IV Honours Sociology and permission of the instructor
SOCIOL 4N03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4P03

ISSUES IN THE SOCIOLOGY OF AGING

A study of selected issues in the sociology of aging such as sociodemographic changes, changes in the family, social and health services, retirement, political economy, and theoretical approaches in aging.
Three hours (seminar); one term
Prerequisite: GERONTOL 1A03 or SOCIOL 3X03; and registration in Level IV Honours Sociology.
Antirequisite: GERONTOL 4K03, SOCIOL 4P03

SOCIOL 4R03

INDIVIDUAL AND SOCIETY

An intensive examination of selected problems involving the relationship of individuals to social structures.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology

SOCIOL 4U03

SPECIAL TOPICS IN THE SOCIOLOGY OF WOMEN

An intensive examination of selected problems concerning women. Depending upon the instructor, topics may include: stratification, inequality, political participation, sexuality, health and work.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology
SOCIOL 4U03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 4V03

ISSUES IN THE SOCIOLOGY OF OCCUPATIONS AND THE PROFESSIONS

An advanced course allowing detailed study of one or more topics of special interest.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology

SOFTWARE ENGINEERING

(SEE COMPUTING AND SOFTWARE)

SPANISH

(SEE LINGUISTICS AND LANGUAGES, HISPANIC STUDIES)

STATISTICS

(SEE MATHEMATICS AND STATISTICS)

TECHNOLOGY

WEB ADDRESS: http://btech.mcmastermohawk.ca
Communications Research Laboratory (CRL), Room 112B
Ext. 27056

Executive Director
Arthur C. Heidebrecht

Associate Director (Four-Year B.Tech. Programs)
Ishwar Singh

Program Chair, Automotive and Vehicle Technology
Appointmeat Pending

Program Chair, Biotechnology
Appointmeat Pending

Program Chair, Civil Engineering Infrastructure Technology
Cameron Churchill

Program Chair, Computing and Information Technology
Fred Laidman

Program Chair, Energy Engineering Technologies
Nafia Al-Mutawaly

Program Chair, Manufacturing Engineering Technology
Eu-Gene Ng

Program Chair, Process Automation Technology
Ishwar Singh

Notes:
1. All Level I, II, III and IV B.Tech. (Four-Year programs) courses are available only to students registered in the B.Tech. programs.
2. All Level III and Level IV Process Automation Technology courses will be offered in 2008-2009.
3. All Four-Year program courses will be offered at Mohawk College.

AUTOMOTIVE AND VEHICLE TECHNOLOGY ...

Courses

AUTOTECH 2AC3	ADVANCED CAD
Design cycle; graphic workstations; representation methods; Brep, CSG; shape then size modelling-profiles, relational dimensioning; libraries; assemblies; mechanism design; IGES/STEP; hardware, software, graphics, networking.
One lab (four hours); one term
Prerequisite: AUTOTECH 2AE3, 2CD3
AUTOTECH 2AE3 AUTOMOTIVE ENGINEERING TECHNOLOGY I
Stress and strain; deformation; failure prediction; lubrication, friction and wear; columns; cylinders; shafts, hydrodynamic, hydrostatic and rolling bearings; gears; fasteners; springs; brakes and clutches; disassemble and reassemble vehicle systems.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1CH3, 1EL3, 1ME3, 1PH3

AUTOTECH 2CD3 CAD FOR DESIGN
Two dimensional drafting (AutoCAD); drawing commands, drafting settings, drawing editing, plotting output, drawing environment, dimensions, tolerances, shape description, orthographic projections, sectional and auxiliary views. Parametric 3D-modelling and assemblies.
One lab (four hours); one term
Prerequisite: ENG TECH 1ME3, 1PR3

AUTOTECH 2MT3 MATERIALS TECHNOLOGY
Physical properties including tensile and impact of materials, ductile and brittle fracture, testing, applications and selection of ceramics, metals and alloys, polymers and advanced materials used in automobiles and vehicles. Metal casting for automotive applications. Case studies.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1ME3, 1PR3

AUTOTECH 2AE3 AUTOMOTIVE ENGINEERING TECHNOLOGY II
Spark ignition engines; diesel engines, transmissions and driveline; steering systems and dynamics; suspensions; brakes; tires; vehicle aerodynamics; transmission matching and vehicle performance; alternative vehicles; case studies.
Three lectures, one lab (two hours); one term
Prerequisite: AUTOTECH 2AE3, 2TS3

AUTOTECH 3AE3 AUTOMOTIVE ENGINEERING TECHNOLOGY III
Alternate vehicular power systems: hybrid and fuel cell technology. Current and future vehicular power train design changes and their implications and commercial viability.
Three lectures, one lab every other week (three hours); one term
Prerequisite: AUTOTECH 2AE3, ENG TECH 1CH3, 1PH3, 2M3A

AUTOTECH 3CT3 CONTROL THEORY
Analysis and design of closed loop control systems course to include: control system characteristics and performance, stability analysis, system types and performance improvement, digital control systems, compensation, filtering and motion control system analysis and tuning.
Three lectures, one lab (three hours); one term
Prerequisite: AUTOTECH 2AE3, ENG TECH 1CP3, 1EL3, 2MT3

AUTOTECH 3MP3 MANUFACTURING PROCESSES AND SYSTEMS
Metal-casting processes and equipment; forming and shaping processes and equipment for metals, ceramics and plastics; material-removal processes and machines; joining processes and equipment; surface technology; engineering metrology and instrumentation.
Three lectures, one lab (two hours); one term
Prerequisite: AUTOTECH 2AE3, 2MT3

AUTOTECH 3MV3 MECHATRONICS FOR VEHICLE TECHNOLOGY
Sensors, actuators, programmable controllers and modelling of dynamic systems. System identification; simulation and control. Analog to digital and digital to analog conversion. Communication interfaces; automotive examples and case studies.
Three lectures, one lab (three hours); one term
Prerequisite: AUTOTECH 3AE3, 3CT3

AUTOTECH 3TS3 FLUID MECHANICS
Fluid statics; forces on submerged and floating bodies; kinematics of flow and Bernoulli's equations; dimensional analysis and similarity; flow in closed conduits. Automotive turbomachines, fluid flow around bodies, lift and drag minimization by proper vehicle design.
Three lectures, one lab (two hours every other week); one term
Prerequisite: AUTOTECH 2TS3

AUTOTECH 3VD3 VEHICLE DYNAMICS I
Single degree of freedom systems; free vibration; harmonically excited vibration; vibration under general forcing conditions; two degree of freedom systems; multi-degree of freedom systems; natural frequencies and mode shapes; vibration control; vehicle oscillations.
Three lectures, one lab (two hours every other week); one term
Prerequisite: AUTOTECH 3AE3, ENG TECH 3FE3

AUTOTECH 4AE3 AUTOMOTIVE ENGINEERING TECHNOLOGY IV
Vehicle manufacture and assembly; automotive testing; research methods and design of experiments, diagnostics, ergonomics; vehicle acoustics; vehicle safety and accident analysis; standards for safety and emissions; environmental assessment.
Three lectures; one term
Prerequisite: AUTOTECH 3AE3, 3AV3

AUTOTECH 4EC3 ELECTRICAL AND ELECTRONICS CONTROL SYSTEMS
Intelligent vehicles; vehicle controllers, protocols buses and applications areas such as chassis, steering, braking, traction and stability control etc.; and safety critical systems.
Three lectures, one lab (three hours); one term
Prerequisite: AUTOTECH 3AE3, 4EC3, ENG TECH 1CP3

AUTOTECH 4DV3 VEHICLE DYNAMICS II
Acceleration performance; braking performance; aerodynamics and rolling resistance; ride; tires; steady-state cornering; suspensions; steering systems; rollover.
Three lectures, one lab (two hours every other week); one term
Prerequisite: AUTOTECH 3VD3, 4AE3

AUTOTECH 4MS3 MODELLING AND SIMULATION
Multi-body dynamic modelling and simulation of automotive vibrations (ADAMS software); car body modelling; complex multi-body dynamic models and parametric solid models; engine modelling.
Three lectures, one lab (three hours); one term
Prerequisite: AUTOTECH 2AC3, 3AV3, 3VD3, ENG TECH 3FE3, 3MN3

AUTOTECH 4TP3 TECHNICAL PROJECT
This course requires students to research, design, develop and implement an independent project. The project will be documented as a technical report and presented in a seminar.
One lab (three hours); two terms
Prerequisite: AUTOTECH 3AV3, 3MV3, 3VD3, GEN TECH 3PM3

BIOTECHNOLOGY

Courses

BIOTECH 2BC3 BIOCHEMISTRY
Biochemistry and biotechnology; amino acids, nucleotides, nucleic acids, proteins, peptides, enzymes, carbohydrates, lipids, membranes and their functions, metabolism, gene expression and DNA.
Three lectures; one term
Prerequisite: BIOTECH 2OC3

BIOTECH 2BE3 BIOTECHNOLOGY I
Basic elements of biotechnology and career opportunities in biotechnology industries. Proteins, enzymes, nucleic acids, gene expression and manipulation, DNA cloning and recombinant technology, with applications in genetics, medicine and industry.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1B3, 1CH3
BIOTECH 2BT3 BIOTECHNOLOGY I
A continuation of Biotechnology I, which includes a more in depth examination of select topics from the first level course. Topics include biotechnology applications in immunology, medical biotechnology, plant biotechnology and animal biotechnology.
Three lectures, one lab (three hours); one term
Prerequisite: BIOTECH 2BE3, 2CB3

BIOTECH 2GB3 GENETICS
This course covers the fundamentals of genetic studies including genes and genetic code, DNA, RNA and protein synthesis, cellular reproduction and human genetics.
Three lectures; one term
Prerequisite: BIOTECH 2BE3, 2CB3

BIOTECH 2MG3 MICROBIOLOGY
An introduction to basic living cell structure, functions, genetics and the fundamentals of metabolism.
Three lectures, one lab (three hours every other week); one term
Prerequisite: BIOTECH 2BE3, 2CB3

BIOTECH 2OC3 ORGANIC CHEMISTRY
This course covers a working knowledge of the major classes of organic compounds, including their physical and chemical properties. The laboratory introduces the techniques of organic synthesis and identification.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1CH3

BIOTECH 2BP3 BIOREACTOR PROCESSES
An overview of fermentation technology and bioprocessing, including the kinetics and thermodynamics of microbial processes and fermentation. Batch and continuous fermentation, bioreactor design, operation and control, scale up, as well as bioprocess development.
Four lectures, one lab (three hours); one term
Prerequisite: BIOTECH 2BT3, 3EC3, ENG TECH 1EL3

BIOTECH 2EC3 CHEMICAL ENGINEERING CONCEPTS
This course provides an introductory survey of chemical engineering concepts. The topics covered are: material and energy balances; survey of momentum, heat and mass transfer; basics of chemical process design.
Three lectures, one lab (two hours every other week); one term
Prerequisite: ENG TECH 1CH3, 1MT3, 1PH3

BIOTECH 3FM3 FOOD MICROBIOLOGY
An introduction to the microbiology of raw materials used in the manufacturing of food products. The course will review microbial growth and examine the types of microorganisms found in foods, the fermentation processes in foods and food borne illness.
Three lectures; one term
Prerequisite: BIOTECH 2BT3, 2GB3

BIOTECH 3FR3 FORENSICS
An introduction to the field of forensic biology, with applications to criminal forensics, paternity testing and forensic microbiology.
Three lectures, one lab (three hours every other week); one term
Prerequisite: BIOTECH 2BT3, 3MB3

BIOTECH 3IV3 IMMUNOLOGY AND VIROLOGY
Structure and function of antibodies, antibody diversity and interactions, immune system and immunity, immunological responses to disease, antibodies production and applications, structure of viruses, methods to study viruses, virus transcription and interactions.
Three lectures, one lab (three hours); one term
Prerequisite: BIOTECH 2GT3, 2MB3

BIOTECH 3MB3 MOLECULAR BIOLOGY
Principles of molecular biology with emphasis on nucleic acid based methodologies; gene manipulation, expression systems for proteins; protein interactions; DNA repair, recombination and transcription; RNA processing, translation and gene expression.
Three lectures, one lab (three hours); one term
Prerequisite: BIOTECH 2GT3, 2MB3

BIOTECH 3MP3 PROTEOMICS
Genomics, proteomics and bioinformatics are discussed. The students will gain practical experience in bioinformatics tools and databases.
Three lectures; one term
Prerequisite: BIOTECH 2BP3, 3PM3

BIOTECH 3PB3 BIOETHICS, SAFETY AND REGULATIONS
This course introduces the ethical, legal, and social aspects of biotechnology. It covers the ethical issues, benefits and risks of biotechnology applications; professional, federal and international guidelines/regulations.
Three lectures; one term
Prerequisite: BIOTECH 2BP3, 3MB3

BIOTECH 4BM3 BIOPHARMACEUTICALS
An introduction to biopharmaceutical drug development and manufacture. Emphasis will include basic genetic engineering principles used in the development and large-scale manufacture of biopharmaceutical products.
Three lectures; one term
Prerequisite: BIOTECH 3BP3, 3PM3

BIOTECH 4GP3 GENOMICS AND PROTEOMICS
This course examines genomics, functional genomics and proteomics. Topics covered are the organization of model system genomes, gene expression profiling at the mRNA and protein levels, microarrays, analysis of interactions, genomic and proteomic databases.
Three lectures, one lab (three hours); one term
Prerequisite: BIOTECH 2BT3, 3MB3

BIOTECH 4TB3 BIOTECHNOLOGY III
This advanced course examines select topics of interest that reflect current methods and utilize advanced new products and processes in the field of biotechnology. The course invites subject experts from various sectors of the biotech industry as guest lecturers.
Three lectures; one term
Prerequisite: BIOTECH 2BT3, 4GP3

CIV TECH 3BD3 BRIDGE DESIGN, MAINTENANCE AND REPAIR
Bridge elements, structural forms, design loads and required concrete and steel properties. Causes and mechanisms of damage in bridges and methods of damage detection and assessment. Effective repair materials and techniques and maintenance strategies.
Three lectures; one term
Prerequisite: CIV TECH 3SA3, 4SD3

CIV TECH 3GS3 CONTAMINATED SITE MANAGEMENT
Theoretical and practical aspects of contaminated site management; regulatory compliance; basic hydrogeology and geochemical principles; site assessment procedures; risk assessment and risk management; remediation technologies.
Three lectures; one term
Prerequisite: CIV TECH 3GE3
Three lectures; one term

CIV TECH 3FR3 INSPECTION AND FOUNDATION REPAIR
Investigation and evaluation of damaged foundations; analysis of causes and failure mechanisms; repair techniques and remedial measures; preventative measures; optimization of repair effectiveness.

Three lectures; one term
Prerequisite: CIV TECH 3GT3

CIV TECH 3GE3 GEOTECHNICAL ENGINEERING I
Composition of soils, soil identification and classification; compaction; seepage theory; effective stress concept; stresses and displacements using elastic solutions; consolidation theory and settlement.

Two lectures, one lab; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 3GT3 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; borehole testing and interpretation.

Two lectures, one lab; one term
Prerequisite: CIV TECH 3GE3

CIV TECH 3UL3 ADVANCED LAND USE PLANNING
Management of land use; land development and redevelopment processes; infrastructure requirements; land redevelopment; principles and practices of land use planning, legislation and regulations; public consultation; GIS applications.

Two lectures, one lab; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 3MN3 NUMERICAL SOLUTIONS IN CIVIL ENGINEERING
Numerical techniques including error analysis, root finding, linear algebraic equations, curve fitting, integration and differentiation, ordinary differential equations; sensitivity analysis; civil engineering applications.

Three lectures; one term
Prerequisite: ENG TECH 3MA3 and registration in Civil Engineering Infrastructure Technology

CIV TECH 3ND3 NON-DESTRUCTIVE TESTING METHODS
Theoretical and practical applications of NDT methods; application of NDT to specific problems of civil infrastructure, including monitoring of construction quality (QA/QC), in-service inspection, critical defect assessment, “fitness for purpose” assessments.

Two lectures, one lab; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 3PM3 PAVEMENT MATERIALS AND REHABILITATION
Properties of aggregates and soils, asphalt and Portland cement concrete; characterization and design of bituminous mixtures; pavement rehabilitation; distress mechanisms; rehabilitation alternatives; construction techniques; preventative measures.

Two lectures, one lab; one term
Prerequisite: CIV TECH 3GE3, ENG TECH 3ML3

CIV TECH 3RM3 INSPECTION, REPAIR AND MAINTENANCE OF CONCRETE STRUCTURES
Causes, mechanisms, detection and assessment of damage in concrete structures; repair materials and techniques for damaged structures; long term protection and maintenance strategies; repair effectiveness and cost comparisons; life-cycle cost analysis.

Three lectures; one term
Prerequisite: ENG TECH 3ML3

CIV TECH 3SA3 STRUCTURAL ANALYSIS
Structural analysis and modelling of linear elastic truss, beam and frame structures; analysis of determinate and indeterminate structures; matrix stiffness method of analysis; introduction to finite element analysis.

Two lectures, one lab; one term
Prerequisite: ENG TECH 3ML3

CIV TECH 3TP3 TRANSPORTATION PLANNING AND MODELLING
Fundamental theories and applications of transportation planning and modelling; short and long range transportation planning; traffic impacts of land development; trip generation and gravity models; software applications.

Two lectures, one lab; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 3UM3 UTILITIES MANAGEMENT
Introduction to utilities products and networks. Planning and management tools for utilities infrastructure, including inventory management, needs assessment, demand management and investment decisions.

Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 3WT3 POTABLE WATER AND SEWER SYSTEMS REHABILITATION
Diagnostic tools to determine the condition of underground services; “no dig” or “trenchless” rehabilitation technologies; modes and types of failure.

Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 4EM3 ENVIRONMENTAL IMPACT AND SUSTAINABILITY
Introduction to ecology; natural and urban ecosystems; environmental impact assessment and legislation; energy and environmental audits; life cycle analysis; solid and hazardous wastes; air quality and control; sustainable infrastructure design; ecological footprinting analysis; sustainability indicators.

Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology

CIV TECH 4ES3 MODELLING OF ENGINEERING SYSTEMS
Mathematical models and systems; economic comparison of projects; linear and non-linear programming; simulation modelling; optimization; computer applications in civil engineering.

Two lectures, one lab; one term
Prerequisite: ENG TECH 3MN3

CIV TECH 4MH3 MUNICIPAL HYDRAULIC SYSTEMS
Analysis and design of water distribution networks; analysis and design of wastewater collection systems; analysis and design of stormwater collection systems.

Two lectures, one lab; one term
Prerequisite: CIV TECH 3MF3

CIV TECH 4PS3 STRUCTURAL DESIGN
Limit states design methods to ensure capacities for bending moment, shear and diagonal tension, axial force; serviceability requirements; failure analysis for common structural materials.

Three lectures; one term
Prerequisite: CIV TECH 3SA3

Notes
1. Students who have completed the equivalent of a Computer Engineering Program at Mohawk College must take COMPTECH 4CC3 and 4DM3. These students are not required to take COMPTECH 4AP3.
2. Students with a background in Software Engineering and NESA (Network Engineering Security Analyst) graduates must take COMPTECH 4CC3 and either COMPTECH 4DC3 or 4DM3.

Courses
COMPTECH 3DS3 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. Algorithm analysis.
One lecture (three hours); one term
Prerequisite: COMPTECH 3PD3

COMPTECH 4ET3 ETHICS AND IT LAW
A study of the impact of the technological revolution on our privacy; digitized information and legal and ethical issues surrounding computer technologies in the global marketplace.
One lecture (three hours); one term
Prerequisite: Registration in Computing Information Technology

COMPTECH 3IA3 INTERNET APPLICATIONS
A study of the relationship between applications, middleware and networking infrastructure technologies.
One lecture (two hours), one lab; one term
Corequisite: COMPTECH 3NT3
COMPTECH 3N3 INQUIRY I (INDIVIDUAL)
Inquiry-based course in which students investigate relevant IT problems, formulate precise problem statements and propose documented dataflow and control flow-based testing. Coverage: Test planning and execution. Testing tools, validation testing, system handover.
One lecture (three hours); one term
Prerequisite: Registration in Computing Information Technology

COMPTECH 3T3 NETWORKING I
Network, transport, physical and data link layers in cable-based and wireless LANs.
One lecture (two hours); one lab; one term
Prerequisite: Registration in Computing Information Technology

COMPTECH 3NT3 NETWORKING II
Network security, firewalls, penetration testing, risk assessment and security auditing.
One lecture (two hours); one lab; one term
Prerequisite: Registration in Computing Information Technology

COMPTECH 3P3 PROGRAMMING DESIGN I
Programming in C, with event handling, using a visual programming language.
One lecture (two hours); one lab; one term
Prerequisite: Registration in Computing Information Technology

COMPTECH 3PR3 PROGRAMMING DESIGN II
Encapsulation, inheritance, polymorphism, operator overloading, friends, specialized built-in classes using C++ and Java.
One lecture (two hours); one lab; one term
Prerequisite: COMPTECH 3P3

COMPTECH 3R3 REQUIREMENTS IN SYSTEMS ANALYSIS
Requirements gathering, documentation and validation for computer systems. Estimating costs and resource requirements.
One lecture (three hours); one term
Prerequisite: Registration in Computing Information Technology

COMPTECH 3PD3 SOFTWARE TESTING
Role of testing in systems development, software testing principles, dataflow and control flow-based testing, coverage, test planning and execution. Testing tools, validation testing, system handover.
One lecture (two hours); one lab; one term
Prerequisite: COMPTECH 3R3

COMPTECH 3TQ3 TRAINING
Development of training programs in organizations: needs assessment, establishment of training objectives, planning and delivery of instruction. Learning principles, evaluation of training. Technological aids to training.
One lecture (three hours); one term
Prerequisite: Registration in Computing Information Technology

Notes
1. Nuclear Energy Technologies students must complete ENR TECH 4EP3 (a project in Nuclear Energy Technology), 4NA3 and 4NP3.
2. Renewable Energy Technologies students must complete ENR TECH 4EP3 (a project in Renewable Energy Technology), 4RE3 and 4RT3.

Courses

ENR TECH 3CT3 CONTROL THEORIES AND DRIVE SYSTEMS
Basic control theories and their applications to power systems. Closed loop control systems for current, voltage, speed and position in the motor. Describe and evaluate variable speed drives. Calculation of system settings, component ratings, testing and troubleshooting procedures.
Two lectures, one lab; one term
Prerequisite: ENR TECH 3IE3, 3SG3 and registration in Energy Engineering Technologies

ENR TECH 3EP3 ELECTRICAL POWER GENERATION
General layout of a power generation station and its interconnection to a distribution network. Discuss various types of power plants. Compare plants based on cost, limitations and advantages.
Three lectures; one term
Prerequisite: Registration in Energy Engineering Technologies

ENR TECH 3FM3 FLUID MECHANICS AND HEAT TRANSFER
Thermodynamic principles, steam plant cycles, heat engines, gas and steam turbine cycles, conduction, transient systems, convection, radiation, heat exchangers. Kinematics of flow, control volume approach, continuity, momentum, energy and Bernoulli's equations; dimensional analysis and similarity; flow in closed conduits.
Two lectures, one lab; one term
Prerequisite: Registration in Energy Engineering Technologies

ENR TECH 3IS3 INDUSTRIAL ELECTRONICS
Analysis and design of high power control circuits using power electronic devices (i.e., Triacs, SCR's, IGBT's, etc.). Design and test high power control circuits such as three phase rectifiers, converters, D.C. and A.C. drives circuits.
Two lectures, one lab; one term
Prerequisite: Registration in Energy Engineering Technologies

ENR TECH 3IN3 INDUSTRIAL NETWORKS AND COMMUNICATION SYSTEMS
Corporate and industrial network standards; proprietary buses and protocols and interfaces, distributed I/O drivers, devices and their implementation in PC and PLC based systems.
Two lectures, one lab; one term
Prerequisite: Registration in Energy Engineering Technologies

ENR TECH 3MI3 MEASUREMENTS AND INSTRUMENTATION
Calculate the input (s) and output(s) quantities for power measurement instruments. Recognize, identify, explain, install and use various instruments at power plants and distribution stations.
Two lectures, one lab; one term
Prerequisite: Registration in Energy Engineering Technologies

ENR TECH 3MP3 MECHATRONICS AND PLC IN POWER APPLICATIONS
Configure and analyze industrial systems that are based on mechanical and electronic devices. Study various types of mechanical concepts. Power and micro electronic devices and their use in industrial applications while the third section aids you in building simple projects.
Two lectures, one lab; one term
Prerequisite: ENR TECH 3IE3, 3M3 and registration in Energy Engineering Technologies
ENR TECH 3PD3  POWER DISTRIBUTION I
Principle concepts and theories of power distribution. Skills required to work at an industrial environment and/or power utilities (generation, transmission, distribution). Based on the Ontario Hydro system, a power flow computer program will be introduced.
Three lectures; one term
Prerequisite: ENR TECH 3EP3, 3M3 and registration in Energy Engineering Technologies

ENR TECH 3SG3  SYNCHRONOUS GENERATORS AND INDUCTION MACHINES
Principles and operation of synchronous generators and induction machines. Installation, operation, troubleshooting and maintenance of such machines within a power station.
Three lectures; one term
Prerequisite: Registration in Energy Engineering Technologies

ENR TECH 4EM3  ENVIRONMENTAL MANAGEMENT OF POWER STATIONS
Introduction to ecology; natural and urban ecosystems; environmental impact assessment and legislation; energy and environmental audits; life cycle analysis; solid and hazardous power station wastes; air quality and control; sustainable infrastructure design.
Three lectures; one term
Prerequisite: ENR TECH 3EP3 and registration in Energy Engineering Technologies

ENR TECH 4EP3  SENIOR ENGINEERING PROJECT
Apply the knowledge gained in the previous semesters and complete a project. Such a project involves research, design, development and implementation of a process. The project is documented as a technical report and presented in a seminar.
Two lectures, one lab; one term
Prerequisite: ENR TECH 3MP3, 4EM3, 4PD3, 4PM3, 4PP3; and ENR TECH 4NA3 or 4RE3; and registration in Energy Engineering Technologies. (See Notes 1 and 2 above.)

ENR TECH 4NA3  NUCLEAR REACTOR ANALYSIS
Introduction nuclear energy, nuclear physics, chain reactions, reactor design, reactor states analysis and fuel management. Understand modern nuclear engineering, analyze characteristics of fission reactors. Understand the physical processes within a reactor, solve basic equations of nuclear reaction and simulate a reactor/source configuration.
Three lectures; one term
Prerequisite: ENR TECH 3EP3 and registration in Energy Engineering Technologies

ENR TECH 4NP3  NUCLEAR POWER PLANT - SYSTEMS AND OPERATION
Science fundamentals, equipment and systems principles relevant to CANDU reactors. CANDU reactor power plant systems and their operation. The operation of a power plant simulator.
Three lectures; one term
Prerequisite: ENR TECH 4NA3 and registration in Energy Engineering Technologies

ENR TECH 4PD3  POWER DISTRIBUTION II
Power Flow equations, various solution algorithms and the aspect and topology of different power grids. Controlling real and reactive power flow, various types of power simulation packages and computer software programs. Simulate and evaluate the performance of a power grid.
Three lectures; one term
Prerequisite: ENR TECH 3PD3 and registration in Energy Engineering Technologies

ENR TECH 4PM3  POWER PROTECTION AND MAINTENANCE I
Various power devices such as relays, circuit breaker, power monitor, control devices and other components used in a power system protection. Other devices such as CTs, and PTs and substation hardware will also be covered.
Three lectures; one term
Prerequisite: ENR TECH 3M3, 3PD3 and registration in Energy Engineering Technologies

ENR TECH 4PP3  POWER PROTECTION AND MAINTENANCE II
Three lectures; one term
Prerequisite: ENR TECH 4PM3 and registration in Energy Engineering Technologies

ENR TECH 4PO3  POWER QUALITY AND ENERGY MANAGEMENT
Analyze and monitor power quality. Case studies for EMI/RFI related problems that are commonly encountered in commercial and industrial loads.
Three lectures; one term
Prerequisite: ENR TECH 3EP3, 3IE3 and registration in Energy Engineering Technologies

ENR TECH 4RE3  RENEWABLE ENERGY TECHNOLOGIES I (BIOMASS, FUEL-CELLS, GEOTHERMAL)
Outline the design, installation and commissioning of Bio-Mass, Fuel-Cells and Geothermal powered systems. The environmental and economical impacts of such technologies. Rules, regulations and federal and provincial legislation.
Three lectures; one term
Prerequisite: ENR TECH 3EP3 and registration in Energy Engineering Technologies

ENR TECH 4RT3  RENEWABLE ENERGY TECHNOLOGIES II (SOLAR, WIND)
Design, installation and commissioning of Solar and Wind powered systems. The environmental and economical impacts of such technologies. Rules, regulations, federal and provincial legislation.
Three lectures; one term
Prerequisite: ENR TECH 3EP3 and registration in Energy Engineering Technologies

ENR TECH 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).
This course is evaluated on a Pass/Fail basis. Students who fail will be required to register in the course again, during the same academic year.

ENR TECH 1B13  BIOLOGY
This course provides basic introduction to the following topics: chemistry of life, cells, genetics, evolution and diversity and plant and animal form and function.
Three lectures, one tutorial; one term
Prerequisite: Registration in Technology I of at least 10 credits toward completion of Technology Program or Level I, II or III of a Degree Completion Technology Program. ENR TECH 1A00 must be completed in the first term of a program.

ENR TECH 1C13  CHEMISTRY
Basic chemical concepts, calculations and laboratory procedures. Chemical formulas and equations, chemical stoichiometry, nomenclature, acids and bases, gasses, chemical equilibrium, thermochemistry and thermodynamics, redox reactions and electrochemistry.
Forbes Building, 1 lab (3 hours every other week); one term
Prerequisite: ENR TECH 1C13

ENG TECH 1CH3  C++ PROGRAMMING
Introduction to C++ programming. C++ syntax, functions, decision-making, looping, operators, arrays and data structures.
Two lectures, one lab (two hours); one term
Prerequisite: Registration in Technology I

ENG TECH 1DE0  INTRODUCTION TO THE TECHNOLOGY CO-OP PROGRAM
Orientation to Technology Co-op programs and the workplace; self-assessment and goal setting; application procedures and materials; occupational health and safety.
Five sessions: first or second term
Prerequisite: Registration in a Four-Year Technology Co-op program
**ENG TECH 1E01** ELECTRICITY AND ELECTRONICS I
Introductory course in electricity and electronic science. Voltage and current sources, circuit elements, electronic components, circuit analysis techniques. Four lectures, one lab (three hours); one term.
Prerequisite: Registration in Technology I.

**ENG TECH 1ET0** INTRODUCTION TO THE TECHNOLOGY CO-OP PROGRAM
Orientation to Technology Co-op programs and the workplace; self-assessment and goal setting; application procedures and materials; occupational health and safety. Five sessions; first or second term.
Prerequisite: Registration in a Degree Completion Technology Co-op program.

**ENG TECH 1MC3** MATHEMATICS I
Introductory mathematics course covering pre-calculus concepts, including algebra, trigonometry, complex numbers, exponential and logarithmic functions, systems of equations and matrices. Four lectures; one term.
Prerequisite: Registration in Technology I.

**ENG TECH 1ME3** MECHANICS
Statics and kinematics of particles and rigid bodies: force vectors; equilibrium; trusses, frames, machines; internal forces; centroids; friction; axial load, torsion, bending and shear; stress and strain. Newton's Second Law; moments of inertia; plane motion. Four lectures; one term.
Prerequisite: Registration in Technology I.

**ENG TECH 1MT3** MATHEMATICS II
Prerequisite: ENG TECH 1MC3

**ENG TECH 1PH3** PHYSICS
Prerequisite: ENG TECH 1ET0

**ENG TECH 1PR3** PROGRAMMING PRINCIPLES
Project-based course covering computer programming using Visual Basic. Object-oriented, event-driven programs involving decisions, looping, arithmetic calculations, string handling and data file handling. Two lectures, one lab (two hours); one term.
Prerequisite: Registration in Technology I.

**ENG TECH 1SP3** SOFTWARE PROGRAMMING
Introduction to C++ programming. C++ syntax, functions, decision-making, looping, operators, arrays and data structures. Two lectures, one lab (two hours); one term.
Prerequisite: Registration in Technology I.

**ENG TECH 2EE0** FOUR MONTH CO-OP EXPERIENCE I
Minimum of 15 weeks of full-time employment in a professional environment. Prerequisite: ENG TECH 1EE0 and registration in a Four-Year Technology Co-op program.

**ENG TECH 2ET0** FOUR MONTH CO-OP EXPERIENCE I
Minimum of 15 weeks of full-time employment in a professional environment. Prerequisite: ENG TECH 1ET0 and registration in a Degree Completion Technology Co-op program.

**ENG TECH 2MA3** MATHEMATICS III
Advanced integration and applications; vector calculus; series and sequences; differential equations. Three lectures, one tutorial; one term.
Prerequisite: ENG TECH 1MT3.

**ENG TECH 2MT3** MATHEMATICS IV
Prerequisite: ENG TECH 2MA3

**ENG TECH 2CT3** SYSTEM ANALYSIS AND CONTROLS
Mathematical foundation: differential equations, Laplace transforms, transform by partial-fraction expansion; transfer functions; modelling of physical systems; stability; Routh criteria; time and frequency domain; Root-locus technique; design of control systems. One lecture (three hours); one term.
Prerequisite: ENG TECH 3MA3 and registration in Manufacturing Engineering Technology.

**ENG TECH 3DM3** DISCRETE MATHEMATICS
Fundamental discrete mathematics concepts relevant to IT: sets, relations, functions, graphs, propositional logic. State machines. Input/output specifications. Invariants. One lecture (three hours); one term.
Prerequisite: Registration in Computing Information Technology.

**ENG TECH 3EE0** FOUR MONTH CO-OP EXPERIENCE II
Minimum of 15 weeks of full-time employment in a professional environment. Prerequisite: ENG TECH 2EE0 and registration in a Four-Year Technology Co-op program.

**ENG TECH 3ET0** FOUR MONTH CO-OP EXPERIENCE II
Minimum of 15 weeks of full-time employment in a professional environment. Prerequisite: ENG TECH 2ET0 and registration in a Degree Completion Technology Co-op program.

**ENG TECH 3FE3** FINITE ELEMENT ANALYSIS
Matrix techniques; eigenvalue problems: equations of elasticity; plane stress, plane strain, 3D problems; variational methods; element types, element stiffness, mass matrices and load vector; assemblage of elements; boundary conditions. Two lectures, one lab (two hours every other week); one term.
Prerequisite: AUTOTECH 2AC3, 2TS3, ENG TECH 3MN3 and registration in Automotive and Vehicle Technology.
Antirequisite: ENG TECH 2FE3, 3FN3.

**ENG TECH 3FN3** FINITE ELEMENT ANALYSIS AND NUMERICAL SOLUTIONS
Solutions of nonlinear equations; differentiation and integration; eigenvalue problems; plane stress and strain, element types, element stiffness, load vector, assemblage of elements, boundary conditions. Three lectures; one term.
Prerequisite: ENG TECH 3ML3 and registration in Manufacturing Engineering Technology.
Antirequisite: ENG TECH 2FE3, 3FE3.

**ENG TECH 3MA3** MATHEMATICS V
Ordinary and partial differential equations; Laplace transforms; Fourier series; vector calculus; integral theorems, with engineering applications. Three lectures; one term.
Prerequisite: Registration in Civil Engineering Infrastructure Technology or Manufacturing Engineering Technology.
Antirequisite: ENG TECH 1MA3.

**ENG TECH 3ML3** STRENGTH OF MATERIALS
Stresses under combined loads, generalized Hooke's Law; two and three dimensional stresses, stress transformation, principal stresses, Mohr's circle; deflections by integration; energy methods, Castigliano's theorem; columns; yield criteria. Three lectures; one term.
Prerequisite: Registration in Civil Engineering Infrastructure Technology or Manufacturing Engineering Technology.
Antirequisite: ENG TECH 1ML3.

**ENG TECH 3MN3** MODELLING AND NUMERICAL SOLUTIONS
Number systems and errors; solutions to nonlinear equations; interpolation by polynomials; matrices and systems of linear equations; differentiation and integration; differential equations; applications to mechanical systems. Three lectures; one term.
Prerequisite: ENG TECH 1CP3 and registration in Automotive and Vehicle Technology or Process Automation Technology.
Antirequisite: CIV TECH 3MN3, ENG TECH 2MN3, 3SP3.

**ENG TECH 3SP3** STRUCTURE AND PROPERTIES OF MATERIALS
Structure of crystalline solids; imperfections in solids; mechanical properties of metals, dislocations and strengthening mechanisms, failure, phase diagrams, phase transformation in metals, processing of metal alloys, composites, structures and properties of ceramics, processing of ceramics. Three lectures; one term.
Prerequisite: ENG TECH 3MA3; and ENG TECH 1CP3 or 1SP3; and registration in Manufacturing Engineering Technology.
Antirequisite: ENG TECH 2MN3, 3MN3.
Three lectures; one term
Prerequisite: ENG TECH 1MT3 or registration in Computing and Information Technology

ENG TECH 4EE0  FOUR MONTH CO-OP EXPERIENCE III
Minimum of 15 weeks of full-time employment in a professional environment.
Prerequisite: ENG TECH 3EE0 and registration in a Four-Year Technology Co-op program

ENG TECH 4IT3  INTERNET TECHNOLOGIES AND DATABASES
Internet technologies and standards, database concepts; structured query language elements; web database processing; client and server side scripts.
Two lectures, one lab; one term
Prerequisite: ENG TECH 1CP3

GENERAL TECHNOLOGY ...

Notes:
1. With the approval of the Associate Director the following courses may be substituted for GEN TECH 2TC3:
   ARTS&SCI 3B03 Technology and Society I
   CMST 2BB3 Introduction to Culture and Communication
   CMST 4M03 Communication, Culture and Technology
   ENSOCTY 3Y03 The Culture of Technology
2. With the approval of the Associate Director the following courses may be substituted for GEN TECH 2TE3:
   COMMERCE 2B03 Business Ethics
   'ENGINEER 4A03 Engineering and Social Responsibility
   PHILOS 2N03 Business Ethics
3. With the approval of the Associate Director the following course may be substituted for GEN TECH 2TL3:
   LABR ST 2G03 Labour and Globalization
4. With the approval of the Associate Director the following courses may be substituted for GEN TECH 2TP3:
   ARTS&SCI 3B03 Technology and Society II
   ENSOCTY 4Z03 The Social Control of Technology

Courses

GEN TECH 3ST3  ENGINEERING STATISTICS
An introductory statistics course covering the following topics with engineering applications: organization and description of data, probability and distributions, confidence intervals and hypothesis testing and bivariate data analysis using regression.
Three lectures; one term
Prerequisite: ENG TECH 1MT3 or registration in Computing and Information Technology

GEN TECH 1OB3  HUMAN BEHAVIOUR IN TECHNOLOGY SETTINGS
The basic principles of human behaviour and organization for application in technical organizations and their sub-units.
Three lectures; one term
Prerequisite: Registration in Level I or above of a Technology program

GEN TECH 1T13  TECHNOLOGY INQUIRY
Inquiry focuses on problem definition, formulating questions, research underlying issues of public concern and analyzing opposing arguments.
Three lectures (lectures, discussion, group work); one term
Prerequisite: Registration in Level I or above of a Technology program

GEN TECH 2EN3  TECHNOLOGICAL ENTREPRENEURSHIP
The processes for bringing new technologies to market through business formulation and entrepreneurship.
Three lectures; one term
Prerequisite: Registration in Level II or above of a Technology program

GEN TECH 2IS3  INFORMATION SYSTEMS IN TECHNOLOGY MANAGEMENT
The use of information systems in the management of the technical aspects of business and in integrating the technical functions in the broader organization.
Three lectures; one term
Prerequisite: Registration in Level II or above of a Technology program

GEN TECH 2TC3  TECHNOLOGY AND CULTURE
This course examines culture contexts and their relationship with the development and implementation of technology.
Three lectures; one term
Prerequisite: Registration in Level II or above of a Technology program

GEN TECH 2TE3  TECHNOLOGY AND ETHICS
In this course the students will critically examine the ethical underpinnings of technological development and implementation and the new ethical dilemmas raised by our abilities to reshape all aspects of our social and physical environment.
Three lectures; one term
Prerequisite: Registration in Level II or above of a Technology program

GEN TECH 2TL3  TECHNOLOGY AND LABOUR
The interplay of labour, management and government is critically examined within the context of technology as a driver of change within organizations.
Three lectures; one term
Prerequisite: Registration in Level II or above of a Technology program

GEN TECH 2TP3  TECHNOLOGY AND POLITICS
This course examines the politics of technology and its application. Students will examine how political interests fashion technological development and implementation and the social and physical environment.
Three lectures; one term
Prerequisite: Registration in Level II or above of a Technology program

GEN TECH 3PM3  THE MANAGEMENT OF TECHNICAL PROJECTS
Introduction to best practice in the management of technical projects including the use of planning, software and the management of people.
Three lectures; one term
Prerequisite: Registration in Level III or above of a Technology program

GEN TECH 3SP3  FORMULATING TECHNOLOGY STRATEGY
Issues in the development of organizational strategy around technological and market imperatives, emphasizing the competitive mobilization of technical capabilities.
Three lectures; one term
Prerequisite: GEN TECH 1FS3, 1OB3, 2EN3, 3PM3

GEN TECH 3TL3  TECHNOLOGY LEADERSHIP
This course examines the roles, responsibilities and styles for providing leadership in technology driven organizations.
Three lectures; one term
Prerequisite: Registration in Level III or above of a Technology program.
GEN TECH 4LM3 LEAN MANUFACTURING
Application of lean methods in manufacturing settings including: developing overall lean strategies, value stream mapping, rapid change techniques and other lean strategies.
Three lectures; one term
Prerequisite: Registration in Level IV of a Technology program

GEN TECH 4PS3 POWER SYSTEMS SAFETY - RULES AND REGULATIONS
Skills required to conduct maintenance, inspection and utilization of the electrical systems in industrial, commercial and institutional locations. Electrical safety procedures based on guidelines of current Federal (CSA), provincial, Electrical Utility Safety Association (EUSA) and OSHA (Canada) safety regulations. The proper steps to restore power in an efficient and safe manner.
Three lectures; one term
Prerequisite: Registration in Level IV of Energy Engineering Technologies

GEN TECH 4SS3 STATISTICAL PROCESS CONTROL
Use of the 6 Sigma scientific paradigm to statistical process control and data-based decision-making methods; continuous improvement process strategies.
Three lectures; one term
Prerequisite: Registration in Level IV of a Technology program

GEN TECH 4ST3 SPECIAL TOPICS
Students are offered a selection of six to eight emerging issues of the day as those issues relate to current technology practices.
Three lectures; one term
Prerequisite: Registration in Level IV of a Technology program

MANUFACTURING TECHNOLOGY

Courses

MAN TECH 3CC3 ADVANCED CAD/CAM
Fundamentals of CAD system; data storage methods; part modelling and assembly; complex surfaces and surface development; image rendering; cutter path selection and optimization; high speed performance machining methodology; customized post processing cutter paths.
Three lectures; one term
Prerequisite: Registration in Manufacturing Engineering Technology

MAN TECH 3MD3 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 3CT3

MAN TECH 3TF3 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
Prerequisite: Credit or registration in ENG TECH 3MA3

MAN TECH 4DM3 DESIGN FOR MANUFACTURING
Product design process; product life cycle; competitive analysis; consumer-product interaction issues; documenting and communicating a design; design for manufacturability; material properties and selection; recycling issues; aesthetics; ergonomics; human factors; “Green” or environmental design.
Three lectures; one term
Prerequisite: MAN TECH 4FB3, 4MT3 and registration in Manufacturing Engineering Technology

MAN TECH 4FM3 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, one lab; one term
Prerequisite: MAN TECH 3CC3, 3CD3 and registration in Manufacturing Engineering Technology

MAN TECH 4FT3 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; one lab; one term
Prerequisite: ENG TECH 3FE3, 3FN3 and registration in Manufacturing Engineering Technology

MAN TECH 4MC3 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, one lab; one term
Prerequisite: ENG TECH 3CT3 and registration in Manufacturing Engineering Technology

MAN TECH 4MT3 MACHINING TECHNOLOGY
Metal removal; chip formation; tool life; cutting temperature, fluids and forces, power, optimization, finish, tolerances; CNC machine tools; structures and drives; control; machinability; complex tools; non-traditional processes.
Three lectures, one lab; one term
Prerequisite: MAN TECH 4FB3 and registration in Manufacturing Engineering Technology

MAN TECH 4TF3 THERMO FLUIDS II
Fluids 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, one lab; one term
Prerequisite: MAN TECH 3TF3 and registration in Manufacturing Engineering Technology

MAN TECH 4ST3 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 3MA3 and registration in Manufacturing Engineering Technology

PROCESS AUTOMATION TECHNOLOGY

Courses

PROCTECH 2CA3 CAD FOR DESIGN
This course provides an introduction to computer aided drafting methods for the production and interpretation of electrical and P and ID drawings.
One lab (three hours); one term
Prerequisite: ENG TECH 1EL3, 1PR3
Corequisite: PROCTECH 2IC3

PROCTECH 2CE3 CHEMICAL ENGINEERING I
The first part of this course focuses on physical chemistry (Gas Laws and Phase Rule). The remainder of the course is devoted to chemical engineering.
Topics include mass and energy balance, heat transfer and unit operations.
Two lectures, one tutorial, one lab (two and one half hours); one term
Prerequisite: ENG TECH 1CHS, 1MC3, 1PH3.
PROCTECH 2EC3 CHEMICAL ENGINEERING II
This course examines both the unit processes and engineering principles applicable to a number of industrial processes. Also, Process Instrumentation Diagrams (PID) and I
d will be interpreted.
Two lectures, one tutorial, one lab (two and one half hours); one term
Prerequisite: ENG TECH 1MT3, PROCTECH 2EC3

PROCTECH 2EE3 ELECTRICITY AND ELECTRONICS II
This second course in electricity and electronic science will be presented through lectures and labs. The course content covers: sources of electrical energy, AC circuit analyses, transistor circuitry, amplifiers and oscillators.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1EL3, 1MC3

PROCTECH 2IC3 INSTRUMENTATION AND CONTROL
This course covers common pressure, level, temperature and flow measuring systems that provide the basis to specify, design, construct, test and tune a control loop using a PID controller. A distributed control system is also introduced.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1MT3
Corequisite: PROCTECH 2EE3

PROCTECH 2IO3 INDUSTRIAL ORGANIC CHEMISTRY
A study of organic chemistry, including structure, nomenclature, major reactions and industrial applications. Emphasis will be placed on industrial manufacturing and uses. Lab sessions will emphasize common organic chemistry techniques.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1CH3

PROCTECH 2PL3 PLCs AND AUTOMATION I
An introduction to Programmable Logic Controllers (PLCs) and their use in automation applications. AC and DC motors, PLC basics, Input/output, memory addressing and program control instructions, and PLC networking, motor control protection and starting.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1MT3, PROCTECH 2EE3, 2IC3

PROCTECH 3CE3 CHEMICAL ENGINEERING II
This course covers simulation and analysis of integrated process units within a chemical process plant. Key topics covered are: process flow diagrams and simulation models process analysis using simulation model, rudimentary process optimization and plant simulation.
Three lectures, one lab (two hours); one term
Prerequisite: PROCTECH 2EC3, 3CT3

PROCTECH 3CT3 CONTROL THEORY I
This course covers analysis and design of closed loop control systems. System characteristics and performance, stability analysis, system types, performance improvement, digital control systems, compensation, filtering and motion system tuning.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 2MT3, PROCTECH 2IC3, 2PL3

PROCTECH 3MC3 MOTION CONTROL AND ROBOTICS
The motion control part of this course covers the theory and operation of AC and DC drive systems and digital motion control. The robotics portion of the course covers the following topics: robot anatomy and attributes, end effectors, robot programming and applications.
Three lectures, one lab (three hours); one term
Prerequisite: PROCTECH 3CT3, 3PL3, 3SC3

PROCTECH 3PL3 PLCs AND AUTOMATION II
Advanced PLC programming concepts such as files, subroutines and indexing, industrial networks, PID and PWM, HMI, AC and DC Drives integration and implementation in PLCs and automation project. Lectures are designed to support the lab program.
Three lectures, one lab (three hours); one term
Prerequisite: PROCTECH 2PL3

PROCTECH 3SC3 SYSTEM CONTROL AND DATA ACQUISITION I
This first level SCADA course covers the following topics: introduction to SCADA, digital conversion theory, sensors and detectors, noise and filtering, communication protocols, databases and process control evaluation. Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1PR3, PROCTECH 2EE3, 2IC3

PROCTECH 3SD3 SYSTEM CONTROL AND DATA ACQUISITION II
SCADA architecture, bus standards and protocols, multi-loop PID control, workstation design, system safety, redundancy and maintenance and SCADA project design.
Three lectures, one lab (three hours); one term
Prerequisite: PROCTECH 2EE3, 3CT3, 3SC3

PROCTECH 4AS3 ADVANCED SYSTEM COMPONENTS AND INTEGRATION
This course covers advanced sensor and actuator technology, robotics and vision systems, automated workcell, flexible manufacturing systems, computer integrated manufacturing, hardware and software integration issues, when and how to automate, OPC and HMI.
Three lectures, one lab (three hours); one term
Prerequisite: PROCTECH 4IC3, 4IT3

PROCTECH 4CT3 CONTROL THEORY II
This course covers process characteristics, methods of analysis, controller design, adaptive control, loop tuning, process control improvement examples with emphasis on plant control and tutorial exercises using MATLAB.
Three lectures, one tutorial; one term
Prerequisite: PROCTECH 3CE3, 3CT3

PROCTECH 4IC3 INDUSTRIAL NETWORKS AND CONTROLLERS
Corporate and Industrial networks, OSI model, Ethernet and TCP/IP, Modbus, Foundation Field Bus, DeviceNet, PROFIBUS, AS-i, proprietary buses and protocols and interfaces, distributed I/O, drivers and devices and their implementation in PC and PLC based systems.
Three lectures, one lab (three hours); one term
Prerequisite: PROCTECH 3MC3, 3PL3, 3SC3

PROCTECH 4IT3 INTERNET TECHNOLOGIES AND DATABASES
This course covers the following topics: internet technologies and standards, database concepts, structured query language elements, web database processing and client and server side scripts.
Two lectures, one lab (two hours); one term
Prerequisite: ENG TECH 1CP3

PROCTECH 4MS3 MANUFACTURING SYSTEMS
This course examines manufacturing and production systems, material selection and design process, measurement and quality assurance, plastics, steels, and ceramics manufacturing, environmental and safety management, asset management and reliability.
Three lectures, one lab (two hours every other week); one term
Prerequisite: PROCTECH 2CA3, 2EC3, 4MT3

PROCTECH 4MT3 MATERIALS TECHNOLOGY
This course covers classes of engineering materials, their important properties and applications. Topics include: metals and alloys, stress and strain, plastics and elastomers, ceramic materials and selection of a material for an application.
Two lectures; one term
Prerequisite: ENG TECH 1CH3, 1PH3

PROCTECH 4SS3 SYSTEM SPECIFICATION AND DESIGN
This course focuses on requirement analysis, functional design, detailed design, reliability, maintainability and system life cycle. Methodologies and tools, requirements and validations, requirements for safety-related systems and mission critical systems.
Three lectures; one term
Prerequisite: PROCTECH 2CA3, 3MC3, 4IC3

PROCTECH 4TR3 TECHNICAL REPORT
This course requires students to research, design, develop and implement an independent project. The project will be documented as a technical report and presented in a seminar.
One tutorial, one lab (two hours); two terms
Prerequisite: ENG TECH 3MN3, PROCTECH 3CE3, 3MC3, 3SC3

THEATRE & FILM

WEB ADDRESS: http://www.humanities.mcmaster.ca/~sota/index.html

To go Salmon Hall, Room 414
Ex 27671

Courses and programs in Theatre & Film are administered within the School of the Arts of the Faculty of Humanities.

Note:
Students are advised to note carefully the prerequisites for all courses, and take note which courses are offered in alternate years.

Courses

If no prerequisite is listed, the course is open.

THTR&FLM 1A03 INTRODUCTION TO PERFORMANCE ANALYSIS
An exploration of the ways theatre artists bring different production elements together to get audiences thinking about important social issues.
Two lectures, one tutorial; one term
THTR&FLM 1B03 INTRODUCTION TO FILM ANALYSIS
An introduction to an interrelated set of approaches to film study, all of which are defined by their attention to the filmic text and which provide students with a grasp of the fundamentals of film analysis. Two lectures, one tutorial, plus one weekly film screening; one term

THTR&FLM 2AA3 THE ACTOR AS CREATOR
Students learn basic techniques for creating short dramatic performances in which the actor’s creative process reflects and challenges the norms that structure contemporary social relationships. Two studios; one term
Prerequisite: Registration in a program in Theatre and Film Studies or permission of the School of the Arts

THTR&FLM 2BB3 CREATING PERFORMANCE ENVIRONMENTS
An introduction to different techniques used to create an environment in which a specific performance can become meaningful for a particular audience. Students will participate in directed work with theatre artists on program productions. One studio; one term (60 practicum hours including evenings and weekends)
Prerequisite: Registration in a program in Art, Communication Studies, Multimedia, Theatre & Film Studies or permission of the School of the Arts
Antirequisite: THTR & FLM 2B03

THTR&FLM 2C03 DRAMATIC FORMS
Different performance techniques and conventions demand particular forms of dramatic narrative. By comparing the way similar stories are told in different media and genres, students identify the structuring elements of dramatic texts written for live performance, film television and music theatre. Three hours (lectures and group presentations); one term
Prerequisite: THTR&FLM 1A03, 1B03
Cross-list: CMST 2P03, COMP LIT 2D03

THTR&FLM 2E03 NEW MEDIA AND PERFORMANCE
This course will explore critical issues in new media and examine the ways in which new media shape the creator, reception and interpretation of forms of performance. Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of a program in Communication Studies, Multimedia or Theatre and Film Studies
Cross-list: CMST 2S03

THTR&FLM 2F03 FILM HISTORY TO THE SECOND WORLD WAR
An introduction to the history of narrative film from its beginnings to the Second World War. It focuses on narrative cinema’s development from aesthetic, social, technological and economic perspectives while also touching on a selected number of issues in film theory. Two lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above
Cross-list: ART HIST 2G03
Antirequisite: CMST 2X03

THTR&FLM 2G03 THE ANCIENT WORLD IN FILM
The emphasis is on myth (Amazons, Hercules) and history (slave revolts, banquets, decadent emperors), studied via Greek and Latin accounts (in translation) and cinematic versions (e.g., Electra, Medea, Mighty Aphrodite, Apocalypse Now, Spartacus, I Claudius)
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CLASSICS 2E03
Antirequisite: CMST 2Y03
This course is administered by the Department of Classics.

THTR&FLM 2I03 ITALY THROUGH THE CAMERA LENS
This course takes the student on a journey through fifty years of Italian cinematic history using nine movies (in Italian, with subtitles) that represent some of the most critical moments related to Italian culture in post WWII period. Taught in English.
Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: ITALIAN 2B03
This course is administered by the Department of Linguistics and Languages.

THTR&FLM 2T03 MUSIC FOR FILM AND TELEVISION
An examination of how music functions to help create meanings in film and television programs. Examples will be drawn from throughout the history of film and television.
Three lectures; one term
Prerequisite: Registration in Level II or above
Cross-list: CMST 2T03, MUSIC 2F03
This course is administered by Music.

THTR&FLM 3CC3 MANAGING PERFORMANCE ENVIRONMENTS
A survey of the skills and practices involved in managing performance environments with special attention to issues in production management and stage/studio management. Students will undertake management of different aspects of Theatre & Film Studies productions as part of their course of study. Term one: two hours; Term two: one hour (Workshop and practical and theoretical aspects. 60 practicum hours including evenings and weekends)
Prerequisite: Registration in a program in Theatre & Film Studies and a grade of at least B- in THTR & FLM 2B03 or 2B33. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Antirequisite: THTR & FLM 3C03
Departmental permission required.

THTR&FLM 3E03 TWENTIETH-CENTURY THEATRE
An exploration of important formal and social experiments that marked 20th-century theatre and paved the way for contemporary theatre forms. Three hour lecture and discussion; one term
Prerequisite: Six units of Level II Theatre & Film; or registration in Level III or IV of a Comparative Literature program and three units of Theatre & Film
Cross-list: COMP LIT 3C03
Offered in alternate years.

THTR&FLM 3F02 DEVELOPMENT OF CANADIAN THEATRE
A study of the development of theatrical performance in English Canadian, Quebecois, First Nations and culturally diverse communities, with an emphasis on the period since 1967.
Three hours (lecture and discussion); one term
Prerequisite: Six units of Level II Theatre & Film
Offered in alternate years.

THTR&FLM 3G03 THEATRE AND COMMUNITY DEVELOPMENT
Students will explore the different approaches to community-based theatre generated in a range of social and cultural milieus and will analyze the sense of community implicit in a variety of popular and community-based theatre projects.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: CMST 3M03
Offered in alternate years.

THTR&FLM 3I03 THEORIZING CULTURE THROUGH PERFORMANCE
Students will explore artists' practices in making performances and will analyse how artists work with theories, texts, spaces, bodies, audiences and produce challenges to artistic, social and political norms.
Three hours; one term
Prerequisite: One of ART HIST 2D03, 3A03, CMST 2G03, 2P03, 2S03, THTR&FLM 2C03, 2D03, 2E03
Cross-list: ART HIST 3L03, CMST 3L33
Not open to students with credit in 2E03 if taken in 2002-2003.
Offered in alternate years.

THTR&FLM 3K03 TOPICS IN DRAMATIC PERFORMANCE I
An exploration of contemporary dramatic performance trends since 1960. Topics will cover dramatic performance in theatre and film.
Three hours lecture and discussion; one term
Prerequisite: One of THTR&FLM 2C03, 2D03, 2E03 or 2F03
Offered on an irregular rotation basis.

THTR&FLM 3K03 TOPICS IN DRAMATIC PERFORMANCE II
An exploration of contemporary dramatic performance trends since 1960. Topics will cover dramatic performance in television and other media.
Three hours lecture and discussion; one term
Prerequisite: THTR&FLM 2C03 or 2D03
Offered on an irregular rotation basis.

THTR&FLM 3L03 FILM HISTORY: 1941 TO THE PRESENT
An exploration of narrative film from 1941 to the present day, incorporating a study of a variety of narrative cinema styles. Theoretical issues will include questions of cinema’s relationship to other art forms, narrative, genre and authorship.
Two lectures, plus one weekly film screening; one term
Prerequisite: THTR&FLM 2F03
Cross-list: ART HIST 3X3X
Antirequisite: CMST 3X3X
THTR&FLM 3M03 FILM, VIDEO AND ENTERTAINMENT CULTURE
Critical approaches to forms of entertainment culture which permeate our everyday lives (e.g., popular films; video culture, television). Topics may include the cultural meanings of popular imagery, star-gazing and commercialization.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: THTR&FLM 2F03
Cross-list: CMST 3SS3

THTR&FLM 3N03 INDEPENDENT FILM AND VIDEO
An exploration of artists' film and video produced outside of dominant institutions, including such practices as documentary, autobiography, community projects, experimental film, short film and video art.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: THTR&FLM 2E03 or 2F03
Cross-list: CMST 3UU3
Offered in alternate years.

THTR&FLM 3P03 WOMEN AND VISUAL CULTURE
Students will explore ideas about representation, spectatorship and production in relation to issues of social difference, such as gender, race and class. Emphasis is on visual modalities such as film, video, television, advertising, etc. cetera.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above and one of ART HIST 2A03, CMST 2F03, 2Q03, THTR&FLM 1B03 or WOMEN ST 1A06 or 1A09 and 1AA3
Cross-list: CMST 3BB3, WOMEN ST 3BB3
Not open to students with credit or registration in WOMEN ST 3B03 if taken in 2001-2002.
This course is administered by Women's Studies.

THTR&FLM 3Q03 TOPICS IN NATIONAL CINEMAS I
This course examines film in relation to nations and national contexts. Areas of investigation may include filmic production of a particular country, national belonging and transnational identities.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: One of THTR&FLM 1B03, 2E03, 2F03
Cross-list: COMP LIT 3V03
Antirequisite: CMST 3T03
Offered on an irregular rotation basis.

THTR&FLM 3Q03 TOPICS IN NATIONAL CINEMAS II
This course examines film in relation to nations and national contexts. Areas of investigation include filmic production of global/local characteristics.
Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: One of THTR&FLM 1B03, 2E03, 2F03
Cross-list: COMP LIT 3V03
Antirequisite: CMST 3T03
Offered on an irregular rotation basis.

THTR&FLM 3R03 READING FILM
A critical examination of selected films and film genres as cultural texts, using methods drawn from film theory and cultural studies.
Three lectures, plus one weekly film screening; one term
Prerequisite: Registration in Level II or above of a program in Art History, Communication Studies, Comparative Literature, Cultural Studies and Critical Theory, English, Multimedia or Theatre & Film Studies. It is recommended that students should already have taken THTR&FLM 2F03.
Cross-list: CMST 3CC3, COMP LIT 3L03, CSCT 3CC3, ENGLISH 3CC3
Offered in alternate years.
This course is administered by the Department of English and Cultural Studies.

THTR&FLM 3S03 MAJOR PRODUCTION WORKSHOP
Students will form the core artistic team for the School's November Major Production. This course is reserved for students with a demonstrated ability to work independently. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Prerequisite: Registration in an Honours program in Theatre & Film Studies with a Cumulative Average of at least 8.0 and permission of the School of the Arts

THTR&FLM 3T03 INDEPENDENT STUDY IN THEATRE & FILM I
This course is reserved for students with a strong academic record and the demonstrated ability to work independently. Students must submit a written proposal to the Academic Counsellor for Theatre & Film Studies no later than the first day of classes.
Prerequisite: Registration in an Honours program in Theatre & Film Studies with a Cumulative Average of at least 9.0 and permission of the School of the Arts

THTR&FLM 3X03 MODERN PERFORMANCE IN ACTION
An exploration in action of modern practices of dramatic representation and the forms of knowledge-building they promote.
Two studios; one term
Prerequisite: Registration in a program in Theatre and Film Studies; and a grade of at least B- in THTR & FLM 2A06 or 2AA3. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Antirequisite: THTR & FLM 3BB3
Departmental permission is required.
Offered on an irregular rotation basis with THTR&FLM 3X03.

THTR&FLM 3XX3 POST-MODERN PERFORMANCE IN ACTION
An exploration in action of post-modern practices of dramatic representation and the forms of knowledge-building they promote.
Two studios; one term
Prerequisite: Registration in a program in Theatre and Film Studies; and a grade of at least B- in THTR & FLM 2A06 or 2AA3. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Antirequisite: THTR & FLM 3BB3
Departmental permission is required.
Offered on an irregular rotation basis with THTR&FLM 3X03.

THTR&FLM 3Y03 NON-WESTERN PERFORMANCE IN ACTION
An exploration in action of non-western practices of dramatic representation and the forms of knowledge-building they promote.
Two studios; one term
Prerequisite: Registration in a program in Theatre and Film Studies; and a grade of at least B- in THTR & FLM 2A06 or 2AA3. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Departmental permission required.
Offered on an irregular rotation basis with THTR&FLM 3Z03.

THTR&FLM 3Z03 WESTERN CLASSICAL PERFORMANCE IN ACTION
An exploration in action of classical practices of dramatic representation and the forms of knowledge-building they promote.
Two studios; one term
Prerequisite: Registration in a program in Theatre and Film Studies; and a grade of at least B- in THTR & FLM 2A06 or 2AA3. Students wishing to register in this course must submit an application form to the School of the Arts by the end of April to guarantee consideration for the following year.
Antirequisite: THTR & FLM 3A03
Departmental permission required.
Offered on an irregular rotation basis with THTR&FLM 3Y03.

THTR&FLM 4A06 HONOURS PERFORMANCE PROJECT
Students will work in small groups to create and critique dramatic performances.
Two lectures and practical exercises, plus rehearsals; two terms
Prerequisite: Registration in Level IV of an Honours program in Theatre & Film Studies; and one of THTR & FLM 2A06, 2AA3, 2C03 or 2D03; and one of THTR & FLM 2B03, 2B05, 3A03 or 3B03, 3C03, 3Y03, 3X03, 3XX3, 3Y03; and permission of the School of the Arts
Admission to THTR&FLM 4A06 will be based primarily on academic standing. In addition, students must complete a written application on a form provided by the School of the Arts, which must be submitted in March of the academic year prior to registration. Final selection will be made by Theatre and Film Studies faculty.

THTR&FLM 4C03 STUDIES IN THE THEORY OF DRAMATIC PERFORMANCE
An examination of theoretical documents, with an emphasis on contemporary theories of the nature of dramatic performance.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours program in Theatre & Film Studies
Offered in alternate years.
Priority will be given to students registered in Level IV of any Theatre & Film Studies program.
This course introduces students to the study of the relationship between theatre and film. It is organized by topics that have been the focus of recent scholarship.

Seminar (two hours), plus weekly film screening; one term

Prerequisite: Registration in Level III or IV of an Honours program in Theatre & Film Studies

Priority will be given to students registered in Level IV of any Theatre & Film Studies program.

This course is reserved for Honours Theatre & Film Studies students with the demonstrated ability to work independently. Students must submit a written proposal to the Academic Counsellor for Theatre & Film Studies no later than the first day of classes.

Prerequisite: Registration in an Honours program in Theatre & Film Studies with a Cumulative Average of at least 9.0 and permission of the School of the Arts.

This course examines German film texts of the post-war period and their representation of West and East German identities. Films will be discussed within the context of important political, social and cultural developments at the time of the films' production.

Two hours plus one film screening per week; one term

Prerequisite: Registration in Level III or IV

Cross-list: CMST 4FF3

Priority will be given first to students registered in Level IV of any Theatre & Film Studies program and then to students registered in Level IV of the Communication Studies program.

This course is for Honours Theatre & Film Studies students with a Cumulative Average of at least 9.0 and permission of the Department of Linguistics and Languages.

The following courses, offered by other departments, directly pertain to Theatre & Film Studies. These are recommended as electives. Up to nine units of courses from this list may be available as substitutes for Theatre of the Director of Women's Studies.

Note:

The following courses, offered by other departments, directly pertain to Theatre & Film Studies. These are recommended as electives. Up to nine units of courses from this list may be available as substitutes for Theatre & Film Studies courses, and counted toward the fulfillment of a program in Theatre & Film Studies. Students are advised that there may be restrictions on enrolment in these courses.

For more information, please visit the Department of Women's Studies or contact the Associate Professor.

Director
Appointment Pending

Associate Professor
Melinda Gough (English and Cultural Studies; Women's Studies) B.A. (McGill), M.A., Ph.D. (Yale)

Assistant Professor
Diane Enns (Philosophy and Women's Studies) B.A. (Ottawa), M.A. (Carleton), Ph.D. (SUNY-Binghamton)

Committee of Instruction as of January 15, 2008

Chair
Appointment Pending

Marcusia Hajdukowski-Ahmed (French)
Christina Baade (Communication Studies and Multimedia)
Karen Balcom (History)
Diane Enns (Philosophy and Women's Studies)
Ruth Frager (History)
Melinda Gough (English and Cultural Studies; Women's Studies)
Janice Hladki (School of the Arts)
Susan Sears Giroux (English and Cultural Studies)

Courses

If no prerequisite is listed, the course is open.

WOMEN ST 1A03 WOMEN, CULTURE, POWER
An interdisciplinary introduction to Women's Studies focusing on how women and men shape and are shaped by culture (including popular culture), systems of power and institutional ideologies.

Three hours (two lectures, one tutorial); one term

Antirequisite: WOMEN ST 1A06

WOMEN ST 1AA3 WOMEN TRANSFORMING THE WORLD
An interdisciplinary introduction to Women's Studies that explores women's historic and current collective efforts to transform social, economic and political conditions both nationally and globally.

Three hours (two lectures, one tutorial); one term

Antirequisite: WOMEN ST 1A06

WOMEN ST 2A03 HUMAN RIGHTS AND SOCIAL JUSTICE
An introduction to the growing national and international discussion of human rights, exploring the value and limitations of universal rights, equality under the law and social justice.

Three hours; one term

Prerequisite: WOMEN ST 1A03, 1AA3; or PEACE ST 1A03, 1B03; or permission of the Director of Women's Studies

Cross-list: PEACE ST 2B03

WOMEN ST 2AA3 FEMINIST THEORY
An introduction to various schools of feminist thought, including global feminism, poststructural feminism, radical feminism, cultural feminism, socialist feminism and the "third wave".

Three hours; one term

Prerequisite: WOMEN ST 1A03, 1AA3; or permission of the Director of Women's Studies

WOMEN ST 2F03 HISTORY OF WOMEN IN EUROPE TO 1650
An exploration of the history of European women and gender during the medieval and early modern periods, focusing on the political, social, spiritual, intellectual and economic realms.

Three hours, one term

Prerequisite: Registration in Level II or above

Cross-list: HIST 2F03

This course is administered by the Department of History.

WOMEN ST 2H03 SOCIAL ASPECTS OF REPRODUCTION
An interdisciplinary course exploring birth and reproduction. Topics may include: social determinants of reproductive health, fertility and birthing rituals, reproductive ethics, policy and technologies.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II or above

Cross-list: HEALTHST 2H03, HTH SCI 2103
WOMEN ST 2HH3 WOMEN'S HEALTH: A SOCIO-CULTURAL PERSPECTIVE
Topics may include biomedicine and social construction of gender, women as paid and unpaid health workers, consequences of discrimination for women's health and historical analysis of female healers.

Three hours; one term
Prerequisite: Registration in Level II or above. WOMEN ST 1A03, 1AA3 are recommended.
Antirequisite: SOCIOI 4U03

WOMEN ST 2J03 GENDER AND PERFORMANCE
An examination of gender as identities performed or constructed in complex social, historical and cultural processes and conditions, including how gender gives meaning to different performance texts, as well as to a range of performance practices in daily life.

Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of a program in Communication Studies, Multimedia or Women's Studies
Cross-list: CMST 2H03
This course is administered by the Department of Communication Studies and Multimedia.

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 is a component of the course.

Three hours (seminar and discussion); one term
Prerequisite: WOMEN ST 1A03, 1AA3; or permission of the Director of Women's Studies
Cross-list: CSCT 2K06, ENGLISH 2K06
This course is administered by the Department of English and Cultural Studies.

WOMEN ST 2L03 FEMINIST UTOPIAS
An examination of literary texts offering women's visions of social change.

Three hours (seminar and discussion); one term
Prerequisite: Registration in Level II or above. WOMEN ST 1A03, 1AA3 are recommended.
Cross-list: ENGLISH 2N03

WOMEN ST 3A03 DOING FEMINIST RESEARCH
An exploration of feminist research methods, focusing on experience, power and knowledge and on learning methods such as how to do oral history, interviews and participatory action research.

Three hours; one term
Prerequisite: WOMEN ST 2AA3 or permission of the Director of Women's Studies

WOMEN ST 3AA3 ADVANCED FEMINIST THEORY
An advanced course in feminist theory that explores the critical impact of recent work on identity and difference, nationalism, race, queer theory, poststructuralism and/or postcolonialism.

Three hours; one term
Prerequisite: WOMEN ST 2AA3 or permission of the Director of Women's Studies

WOMEN ST 3BB3 WOMEN AND VISUAL CULTURE
Students will explore ideas about representation, spectatorship and production in relation to issues of social difference, such as gender, race and class. Emphasis is on visuality in forms such as film, video, television, advertising, etcetera.

Two hour lecture and discussion, plus one weekly film screening; one term
Prerequisite: Registration in Level III or above; and one of ART HIST 2A03, CMST 2F03, 2103, THTR&FLM 1B03 or both WOMEN ST 1A03 and 1AA3
Cross-list: CMST 3BB3, THTR&FLM 3P03
Not open to students with credit or registration in WOMEN ST 3BB3, if the topic was Images of Women: Reading Art, Media and Popular Culture.

WOMEN ST 3DD3 WOMEN IN A MULTICULTURAL SOCIETY
An interdisciplinary exploration of women's experiences in sub-cultures within a multicultural society, examining social and historical conditions, policies, and personal narratives. Topics may include immigration, voice, mobility, identity, hybridity.

Three hours; two terms
Prerequisite: Registration in Level II or above. WOMEN ST 1A03, 1AA3 are recommended.
Antirequisite: CMST 3WW3

WOMEN ST 3G03 HISTORY OF WOMEN IN CANADA AND THE U.S. TO 1920
This course examines key areas of women's history, such as indigenous cultures, slavery, immigration, religion, "witchcraft" the family, sexuality, paid and unpaid labour, and the first wave of the women's movement.

Three hours; one term
Prerequisite: Registration in Level II or above
Cross-list: HIST ORY 3W03
Antirequisite: WOMEN ST 3X03
This course is administered by the Department of History.

WOMEN ST 3G04 ADVANCED FEMINIST THEORY
This course examines key areas of women's history, such as the impact of the Great Depression and the Second World War, the civil rights movement, the sexual revolution and the second wave of the women's movement.

Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Cross-list: HIST ORY 3WW3
Antirequisite: WOMEN ST 3X03
This course is administered by the Department of History.

WOMEN ST 3J03 CRITICAL RACE STUDIES
This course examines contemporary debates in critical race theory in an attempt to critically decode the operations of race in literary and cultural texts.

Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory, English or Women's Studies
Cross-list: COMP LIT 3AR3, CSCT 3A03, ENGLISH 3A03, PEACE ST 3A03
This course is administered by the Department of English and Cultural Studies.

WOMEN ST 3H03 THEORIES OF GENDER AND SEXUALITY
This course explores a range of theories of gender and sexuality by working through readings from the intersecting fields of feminist, queer and masculinity studies.

Three hours; one term
Prerequisite: Registration in a program in Comparative Literature, Cultural Studies and Critical Theory, English or Women's Studies
Cross-list: COMP LIT 3AA3, CSCT 3AA3, ENGLISH 3A03
This course is administered by the Department of English and Cultural Studies.

WOMEN ST 3I03 PHILOSOPHY AND FEMINISM
A study of philosophical issues in feminist thought.

Three hours; one term
Prerequisite: Registration in Level III or IV of any program or six units of Philosophy. WOMEN ST 1A03, 1AA3 are recommended.
Cross-list: PHILOS 3I03
Offered in alternate years.
This course is administered by the Department of Philosophy.

WOMEN ST 3W03 INTERNATIONAL WOMEN WRITERS
A critical analysis of a selection of literary works by women authors from across the globe, with an emphasis on theories of gender and sexuality.

Two hours; one term
Prerequisite: Registration in Level II or above
Cross-list: COMP LIT 3WW3
This course is administered by the Department of Comparative Literature.

WOMEN ST 3Z03 WOMEN AND MEN IN WAR AND PEACE
This course focuses on how gender and other differences shape our experiences of war and struggles for a more peaceful world.

Three hours; one term
Prerequisite: Registration in Level III or IV of the Combined Honours in Women's Studies program or Peace Studies program or permission of the Director of either program
Cross-list: PEACE ST 3Z03
This course is administered by the Department of Peace Studies.

WOMEN ST 4A06 INDEPENDENT RESEARCH
Students develop their own research projects, in regular consultation with a faculty supervisor. Upon completion, students present their results at a one-day open forum, and submit a written report.

Prerequisite: Registration in Level IV of the Women's Studies Program

WOMEN ST 4B03 TOPICS IN WOMEN AND THE ECONOMY
An analysis of economic policies and realities as they impact on women's lives. Topics may include women's access to capital, the distribution of goods, access to health care, poverty and aging, and employment.

Three hours (seminar and discussion); one term
Prerequisite: Registration in Level III or IV of the Combined Honours in Women's Studies Program or permission of the Director of Women's Studies
TOPICS IN FEMINIST SCHOLARSHIP: WOMEN IN CANADA

An intensive seminar in a field reflecting the instructor's research interests. Students benefit from current scholarship and learn research methods complementary to those used in WOMEN ST 4A06.

Three hours; one term

Prerequisite: Registration in Level III or IV of the Combined Honours in Women's Studies Program or permission of the Director of Women's Studies

INDEPENDENT STUDY

In consultation with a faculty member, students will research an approved topic, on the basis of materials outside normally available course offerings. A major paper will be required.

Prerequisite: Registration in Level IV of the Combined Honours in Women's Studies program and permission of the Director

CROSSING BORDERS: GLOBAL FEMINISMS

Examines how diverse women's lives are being transformed in a rapidly changing global society and the implication of women's changing places in society and space for feminist theory and practice.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of the Combined Honours in Women's Studies program

Cross-list: CSCT 4J03, ENGLISH 4J03

Note:

The following courses, offered by other departments, may be used to help fulfill Women's Studies program requirements, provided that the prerequisite requirements of the home department are fulfilled.

COMP LIT 4E03 Topics in Comparative Literature (when the topic is Twentieth-Century Women Writers)

HISTORY 4106 Women and Social Movements in the 19th- and 20th-Century United States

KINESIOL 4T03 Gender, Sport and Leisure

LABR ST 3E03 Women, Work and Unionism

SOC WORK 4R03 Social Work with Women

SOCIOL 2Q06 Sociology of Gender
ACADEMIC FACILITIES, STUDENT SERVICES AND ORGANIZATIONS

THE UNIVERSITY LIBRARY

Web Address
http://library.mcmaster.ca/

Email Address
libinfo@mcmaster.ca (Business, Engineering, Humanities, Science and Social Sciences)

hslib@mcmaster.ca (Health Sciences)

University Librarian
Jeffrey Trzeciak, B.S., M.L.S.

Health Sciences Library
Liz Bayley, B.A., M.L.S./Acting Director

Associate University Librarian (Teaching, Learning and Research)
Vivian Lewis, B.A., M.A., M.L.S.

Associate University Librarian (Collections and Facilities)
Anne Pottier, B.A., M.L.S.


Thode Library of Science and Engineering
Kathryn Ball, B.A., M.L.S./Director

Innis Library
Jeannie An, B.A., M.L.S./Business/Assistant Librarian

Administrative Services
Mary Ruth Lintker/Assistant Librarian

The University Library System consists of Mills Memorial Library (Humanities and Social Sciences), the Innis 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 online catalogue covering the holdings of all libraries is available and stacks are open to all library users.

The collection in 2007 contained 2,019,006 volumes and 12,782 linear feet of archival material.

The McMaster University Libraries web site (http://library.mcmaster.ca) contains information on collections, hours and services in all the campus libraries; and is the access point to thousands of electronic resources provided by the libraries. Service is maintained at key Reference points in the various libraries and in-library instructional sessions are available.

Mills Library has several collections - Reference, Periodicals, Government Publications, Music, Maps, 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 35,000 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, Anthony Burgess, Marien Engel, Margaret Laurence, Robert Fulford, Farley Mowat, Susan Musgrave, Matt Cohen and many others.

Business interests are reflected in such files as the General Steel Wares Archives, the J.M. Pigott 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 SUPA/CUCND papers 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 Library News

UNIVERSITY TECHNOLOGY SERVICES (UTS)

Web Address
http://www.mcmaster.ca/uts

Email Address
uts@mcmaster.ca

Chief Information Officer (CIO)
Debbie Barrett, B.A.

Director, Service Development and Delivery
Heather Grigg

Director, Project Management
John Alley, B.A., M.E.Des., M.B.A.

Associate Director, Enterprise Networks
Robin Griffin, B.Sc., Ph.D.

Associate Director, Enterprise Systems
Brian McEntegart, B.Sc.

There are currently four UTS Student Technology Centres on campus:
- Burke Science Building (BSB) - Rooms 248, 249 - Extension 24820
- Kenneth Taylor Hall (KTH) - Rooms B108, B121, B123 - Extension 24230
- John Hodgins Engineering (JHE) - Rooms 233A, 234 - Extension 24529
- Arthur Bourns Building (ABB) - Room 166 - Extension 26107

The operating hours can be found at: http://www.mcmaster.ca/uts/students/hours.htm.

Printing and Scanning Services are available in the Student Technology Centres.

Technology Tools at McMaster University

UTS provides many services that students will use throughout their stay at McMaster University. Some of these services include: MUGSI and SOLAR, E-mail, use of Student Technology Centres, MacConnect - using ports and wireless connections campus, VPN for off campus connections.

For a complete description of all of these services and managing MAC ID visit www.mcmaster.ca/uts/macid.

MUGSI (McMaster University Gateway to Student Information) https://mugsi.mcmaster.ca/

MUGSI enables students to view and print personal, academic, and financial information. Students can check grades, print time-tables, update mailing address and find their exam schedule, among other things. MUGSI also has links to a number of other important tools students use while at McMaster.

Electronic Mail (E-Mail): The E-mail address will be: MAC'ID@mcmaster.ca.

E-Mail is available through MUSP (McMaster Undergraduate Student Server) for undergraduate students https://muss.cis.mcmaster.ca. Graduate students and McMaster staff have e-mail accounts on UNIVERMAIL. UNIVERMAIL accounts can be accessed on line at https://univermail.cis.mcmaster.ca. Students can access McMaster e-mail through other mail clients like Netscape Messenger and Outlook Express. For information on setting up one of those programs, visit http://www.mcmaster.ca/uts/help/email.html.

Student Web Pages

Students can create their own personal WebPages for others to see at https://muss.mcmaster.ca/~userid/pagename. For more information go to http://www.mcmaster.ca/uts/policy/wwpwo.htm.
ACADEMIC FACILITIES, STUDENT SERVICES AND ORGANIZATIONS

VPN (Virtual Private Network) Access
McMaster University students use a VPN connection to connect to school resources off campus. McMaster University operates a Cisco VPN server and provides compatible client software available to students, faculty and staff. For up-to-date instructions please visit: http://www.mcmaster.ca/uts/network/vpn.

MacOnline
MacOnline provides telephone and high-speed Internet service to students living in residence. Please use the following urls for more information on Internet Service: http://mcmaster.ca/maconline and Telecommunications: http://telecom.mcmaster.ca.

Wireless Computing
There are several areas on campus such as the main foyer of the MUSC which have wireless computing capabilities. For more information and to access the wireless network, please visit: http://www.mcmaster.ca/uts/network/wireless.

Registering Online for Courses: SOLAR is an online course registration system. Detailed instructions are available at: http://registrar.mcmaster.ca/gettingregistered/index.htm. There is a 45-minute time limit for registration and therefore students should select their courses before logging on.

Any difficulties with MAC ID or any other UTS provided services should be reported to the UTS Service Desk at ext. 24357 (HELP) or visit them in building T-13, Room 127.

CENTRE FOR LEADERSHIP IN LEARNING

T-13, Room 124, ext. 24540
Web Address: http://www.mcmaster.ca/cll
Email Address: cll@mcmaster.ca, horvathe@mcmaster.ca
Executive Director: Dale Roy, B.A., M.A.
Erika Kustra, Ph.D.
Graduate Student Network Coordinator: TBA
Administrative Assistant: Elvia Horvath

The primary goal of the Centre for Leadership in Learning is to be a resource centre for people who teach at McMaster. The Centre serves individual instructors, departments and other groups directly affecting teaching and learning at McMaster. Our main goals are:

1. To provide opportunities for faculty and graduate students to build teaching skills and, in particular, to develop skills in self-directed learning, inquiry and other innovative teaching models.
2. To support faculty in investigating and using new technologies to enhance learning for our students.
3. To offer advice on policy and projects that support good teaching (e.g., award programs and the evaluation of teaching).
4. To assist individual faculty members and groups of faculty in conducting educational research to understand how students learn and what makes for effective teaching within a university environment.
5. To support and encourage innovation.
6. To assist and support the testing and evaluation of new learning models that build upon the inquiry approach and other innovative teaching models pioneered by McMaster University.
7. To share our knowledge of best teaching practices in higher education to improve the quality of education locally, nationally and internationally.
8. To enable the circulation of teaching and learning insights.

The Centre’s activities include:

The Inquiry Project: The CLL assists and supports the development, evaluation and dissemination of the McMaster Inquiry Project as part of its larger Program for Active Learning. The central goal is to incorporate the concept of student as active learner throughout the entire undergraduate experience.

Learning Innovation Grants: These grants assist faculty to apply and evaluate a variety of innovative educational strategies and support applied research into teaching and learning in higher education.

- The Centre invites applications for projects aimed at the improvement of teaching and learning at McMaster. Groups of individual instructors, teaching assistants, students or departments may apply. Applications for grants up to $1,000 may be submitted at any time. Applications for grants over $1,000 are solicited annually, usually in January, with a deadline of mid-February. Detailed criteria are available on request.
- Departmental Grants of $100,000 over three years are available to assist major new teaching initiatives in departments.

Learning Technologies: The CLL can connect individuals with those who have expertise in technology and its use in education. The Learning Technologies Resource Centre provides assistance to those using technology to promote learning, including support for Course Management Systems (currently WebCT and LearnLink).

Activities for Teaching Assistants: The Centre plans and organizes T.A. Day, a campus-wide welcome and orientation program for teaching assistants. It offers a series of mini-courses designed for graduate students who are about to apply for or take up their first position as a faculty member or a non-academic professional. The Centre also offers courses in teaching to help graduate students become familiar with the literature on university teaching and to develop some basic skills in the practical aspects of teaching. We coordinate a T.A. Network to support T.A.s in their disciplines.

Workshops, Seminars and Conferences: A wide variety of events are offered, conducted by McMaster faculty, visiting resource people and CLL staff. Generally, the topics are requested by instructors or departments and typically include subjects such as teaching large classes, self-directed learning, research on learning and teaching methods, lecturing, small group discussion, simulations and the use of technology in education.

Refining a Course: This model of course consultation takes approximately 2.5 hours. The course instructor, the students in a particular course, and a consultant come together early in the term with the intention of modifying the course. Since the instructor has final responsibility, he or she initiates the process and sets the boundaries for what can be modified. All communications are confidential. The Centre provides experienced consultants to assist the process.

Library Resources: The CLL Library is a collection of over 6,000 books, articles and journals on university teaching and learning. It is an excellent way to find ideas for improving and promoting active learning.

The CLL Library in the office (T13, Room 124) between the hours of 9:00 a.m. and 5:00 p.m. Alternatively, you can use keywords to search much of our library from our web site.

CLL Home Page: A selection of teaching tips and other information related to the CLL are available at the following web site: http://www.mcmaster.ca/cll.

MCMASTER MEDIA PRODUCTION SERVICES

Web Address: http://www.media.mcmaster.ca
Email Address: mncr@mcmaster.ca

Media Production Services (MPS) provides complete media service to faculty, staff and students whether the project is for education, research or personal use.

PRINTING SERVICES DIVISION

DeGroote School of Business, Room B1111, ext. 24447 or Health Sciences Centre, Room 1T5, ext. 22348

Printing Services is equipped to provide all printing needs. The state-of-the-art facility allows for submission of both electronic and traditional hard copy. The services include pre-press and file manipulation services, electronic printing in black and white and full colour plus traditional offset and full bindery services.

CREATIVE DESIGN AND IMAGING DIVISION

Health Sciences Centre, Room 1G1, ext. 22301

MPS Creative Design team provides a full range of communication pieces from concept to completion. Custom brochures, logos, newsletters, annual reports, poster presentations can be enhanced with digital images and traditional prints photographed by
our team of photographers. We also provide lab services in-house for negatives, slides and custom black and white photography. Digital enhancement and photo editing can be achieved from slides, prints, negatives and electronic files. Output can be provided in either high or low resolution to produce large format posters, high quality prints as well as archival and web page content.

**VIDEOCONFERENCING**
- Health Sciences Centre, Room 1G1, ext. 22301

Videoconferencing is available in our in-house facility. Our completely interactive system is available for departmental, teaching or personal use. We provide archiving and streaming of conferences upon request.

**GERONTOLOGICAL STUDIES**

There are two Gerontology components at McMaster: the Centre for Gerontological Studies and the Department of Health, Aging and Society. (Further information can be obtained by contacting Gavin Andres in Kenneth Taylor Hall, Room 225, ext. 27961.)

**MCMASTER CENTRE FOR GERONTOLOGICAL STUDIES**
- Kenneth Taylor Hall, Room 204, ext. 24449

**Director**
Margaret A. Denton, B.A., M.A., Ph.D.

The McMaster Centre for Gerontological Studies is involved in the promotion and development of multidisciplinary research and educational programs within the University and the local community. The Centre also provides a forum for collaboration on education, research, and practice with other community organizations. The mandate of the Centre is to foster research and education in aging. The Centre's activities are partially supported by University funding. Specific projects are funded by public agencies, private foundations and user fees.

The Centre's objectives are as follows:
1. to serve as an information and referral centre regarding gerontological education and research activities at McMaster University. The newsletter Aging, Health and Society: News and Views and the Directory of Research on Aging at McMaster University provide information about research and new initiatives in the field of aging;
2. to coordinate and plan multidisciplinary initiatives in gerontology across Faculties and administrative units of the University. (Social Sciences, Health Sciences, Humanities, Science, Business, Engineering, Continuing Education);
3. to organize multidisciplinary educational events in gerontology for the university community, professionals and the general public, e.g. the McMaster Summer Institute On Gerontology Fall Symposium and spring workshop;
4. to advance gerontology at McMaster and in Canada by actively participating 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 actively support research, education, policy and practice for the benefit of older persons.

**OFFICE OF INTERNATIONAL AFFAIRS**
- Alumni Memorial Hall, Room 203, ext. 24700, 24211, 22916

**Web Address**
http://www.mcmaster.ca/oia

**International Admissions Inquiries Email Address**
inadin@mcmaster.ca

**Associate Vice-President, International Affairs**
Luke Chan

**Senior Project Manager/International Liaison Officer**
Ni Jadon

**Project Manager**
May Zhai

**Project Officers**
Tania Hakim
Yvonne Maidment

**Executive Assistant**
Laurine Mollinga

McMaster University has become increasingly involved around the world in exchange agreements, institutional linkages and externally funded international programs 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, engineering and technology development and transfer. The Office of International Affairs (OIA) has taken on an expanded international role that seeks to coordinate and facilitate McMaster's expertise in a highly complex and changing global environment. OIA participates in four broad areas including international student recruitment, development of international projects and linkages, international programs and international fund-raising and development. OIA facilitates and coordinates the development of international agreements with other institutions, research and education agencies, including government and non-government organizations.

The Office of International Affairs is situated within the Office of the Vice-President, Research and International Affairs.

**MCMASTER MUSEUM OF ART**
- University Avenue, ext. 23241

**Director**
Carol Podedworny, B.A., M.M.St., M.A.

**Email:** podedwo@mcmaster.ca

**Collections and Operations Manager**
G. Loveys, B.A., M.M.St., M.A.

**Email:** loveys@mcmaster.ca

**Installation/Preservation Officer**
J. Petteplace, B.A.

**Email:** jpette@mcmaster.ca

**Administrative Secretary**
Jude Levett

**Email:** levettje@mcmaster.ca

**Education Officer**
Gregory Rennick, B.A.

**Email:** rennick@mcmaster.ca

**Communications Officer**
R.A. Prevec, B.A.

**Email:** prevecr@mcmaster.ca

Located across the plaza from the University Student Centre, on the corner of Sterling and University Avenue, the Museum contains five Exhibition Galleries, a Paper Centre and an Educational Access Gallery. The Museum offers a year-round program 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 National Gallery of Canada. A regular program of public events including lunchtime talks, Visiting Artist talks, seminars and concerts is offered.

McMaster's permanent art collection contains more than 7,000 art works with a specialized collection of over 250 German Expressionist prints and the Levy Collection of Impressionist and Post Impressionist paintings.

Contact the Museum for exhibition listings. Hours: Tuesday/ Wednesday/Friday, 11:00 a.m. - 5:00 p.m.; Thursday, 11:00 a.m. - 7:00 p.m.; and Saturday, 12:00 p.m. - 5:00 p.m. Voluntary admission fee of $2.00; free for students and seniors. Museum Memberships available. Wheelchair accessible.
The Centre assists students with issues concerning the accessibility of campus facilities, the provision of special equipment and alternative media formats and other issues. It provides support for students with chronic medical and mental health disabilities and students who are deaf or hard of hearing, and for students with learning disabilities, ADD, ADHD, or a mobility/functional disability. For students with a learning disability or ADHD, CSD offers the ATLAS Program. It also offers counselling, advice, support, and workshops to help students meet their educational objectives. For more information visit http://csd.mcmaster.ca/sswd.

**Assistive Technology Learning and Academic Support (ATLAS)**

The ATLAS Program which is located in the Commons Building Room B104, offers assistive technology training and support for software packages to help students with learning disabilities or ADHD with their reading, writing, and organizational skills. In addition, computer stations with assistive technology software are available in the lab for students to use.

Students can learn various reading, writing, time management, test preparation and study strategies from our Learning Strategist. Support is also offered to assist students to understand the nature of their learning disability. Students can meet with the LD Coordinator to determine eligibility for the service, or to receive information if they are wondering if they have a learning disability. Information, drop by our lab in Commons Building Room B104, call (905) 525-9140, ext. 24354, or visit http://csd.mcmaster.ca/atlas.

**English as a Second Language (ESL) Support @ Mac**

If their native language is not English, students may wish to use one or more of the following services: daytime courses in listening and speaking, academic reading, academic writing, presentation skills, and English pronunciation; evening conversation classes in English; Speakeasy (one-on-one conversation) and the Conversation Circle (group-based); Opening Doors: Preparation for Employment; or The Writing Clinic. Evening classes are also offered during the academic term. All classes are non-credit and free to all McMaster students. For more information on any of the ESL programs, please visit our web site at http://csd.mcmaster.ca/esl, or contact the ESLS coordinators at csdesl@mcmaster.ca.

**The Dr. Mary E. Keyes Leadership Program**

The goal of the Dr. Mary E. Keyes Leadership Program is to assist students in developing personal and professional skills necessary to become responsible community leaders and role models. The focus of the program is on becoming a collaborative, cooperative leader and the Certificate courses and workshops aim to introduce and teach students some of those skills.

The Certificate is comprised of a series of required and elective courses and workshops, community service and a short written component. Additional resources are available on the Leadership web site and events such as a Poster and Speaker Series are offered during the year. Please note that the certificate does not qualify for credit towards a McMaster degree. For more information and to register for courses and workshops, please visit our web site at: http://csd.mcmaster.ca/leadership.

**Peer Helper Program**

Peer Helpers are full or part-time undergraduate and graduate student volunteers who play an integral role in delivering programs and services at the Centre for Student Development and Career Services at McMaster. All faculties and levels of study are represented within the Peer Helper Program.

Peers are trained and supervised by professional staff and assist students with academic, disability, personal and career needs. The Peer Helper Program represents one of the premier student personal and professional development opportunities at the University. For more information, please visit our web site at http://csd.mcmaster.ca/peerhelper.

**International Student Services (ISS)**

The major purpose of the office is to assist international students, visiting scholars, post-doctoral fellows and faculty. ISS provides a number of services such as:

- reception and orientation for newly arriving students,
- providing information concerning immigration requirements,
- an exchange and student mobility program, where students can apply to work, study, volunteer, intern, or teach abroad,
Events and Volunteer Opportunities

Throughout the academic year, the Centre holds various workshops, events and groups relating to its wide range of services. Visit http://csd.mcmaster.ca/events for current offerings.

There are many ways for students to use their special skills to help someone else. Some of the many volunteer opportunities are:

1. Spokeaskey/conversation Circle
2. Note taking Program (volunteer or one-on-one)
3. Volunteer (Students with Disabilities)
4. Peer Helper Program

THE OFFICE OF HUMAN RIGHTS AND EQUITY SERVICES (HRES)

> McMaster University Student Centre, Room 211, ext. 24303

Web Address
http://www.mcmaster.ca/hres

Email Address
hres@mcmaster.ca

Academic Integrity Officer
Andrea Thyret-Kidd

The Office of Academic Integrity serves as the primary resource to students, faculty and staff on all matters related to academic integrity. Please visit the web site to find information on plagiarism, inappropriate collaboration and to test your knowledge of academic integrity.

ATHLETICS AND RECREATION

Web Address
http://www.athrec.mcmaster.ca

Email Address
iwynne@mcmaster.ca (Customer Service)

Director of Athletics and Recreation
Thérèse A. 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, instructional and outdoor recreation programs. A diverse program of recreational opportunities is available for those who wish to keep fit, compete at their own individual level and enjoy sports and active living opportunities of their choice.

Access to the Athletic Facilities on campus is open to all McMaster students.

In the fall of 2006, McMaster opened the new David Braley Athletic Centre. The facility features one of the largest fitness centres in Canada (17,006 square feet), a cycling studio, fitness studio, two multipurpose studios, new locker rooms, two additional gymnasiums (seven gymnasiaums in total), a 200-metre indoor track, international squash courts and an indoor climbing wall. McMaster Athletics and Recreation facilities also include a 50-metre pool, an outdoor 400-metre track, four natural grass field surfaces, one artificial field surface, dance studio, activity studio and seven North American squash courts.

This spring, McMaster will open the new Ron Joyce stadium. The 6,000 seat facility will provide a venue for varsity football and soccer as well as a whole host of student activities from welcome week to frost week.

McMaster Athletics and Recreation facilities also include a 50-metre pool, an outdoor 400-metre track, dance studio, activity studio and seven North American squash courts.

The Department of Athletics and Recreation ALTITUDE program utilizes the 50-foot Alpine Tower and Team Development Course. The first of its kind in Canada, it includes over 30 climbing routes, rope ladders, swinging logs, a giant swing and low ropes elements. 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 program is a very popular outlet for student activity. Intramurals run from early fall until late spring and provide students with a competitive environment that fosters social interaction.

The varsity program at McMaster fields 41 teams competing at the club, provincial (OUA) and national (CIS) level. Highly skilled coaches help McMaster student-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 even is a major source of school spirit for competitors and spectators alike.

The Department of Athletics and Recreation takes pride in the quality programs and services provided to the McMaster community, and urges all members of the community to take advantage of its facilities and programs.
BOOKSTORE
- Gilmour Hall, Room B101, ext. 24751

Web Address
http://titles.mcmaster.ca

Email Address
bookstr@mcmaster.ca

Director
Donna Shapiro

Titles, McMaster University Bookstore, is owned and operated by the University. Titles is dedicated to assisting the learning process and proceeds from bookstore sales fund student services. Titles offers a wide range of course materials that have been selected by professors for use in their courses. With three permanent and two temporary bookstores we strive to meet the needs of McMaster students.

Titles offers a buyback program and purchases used books back from students at the end of term. For more details regarding this program visit http://buyback.mcmaster.ca. Bookstore charge accounts may be set up using a student ID card once a valid registration sticker has been obtained. The current credit limit is $1,500.

MAIN BOOKSTORE
- Gilmour Hall, Room B101

The main bookstore is located in the basement of Gilmour Hall and features an extensive general book and magazine selection. Our giftware, clothing and stationery departments feature McMaster memorabilia. Our computer centre, Mac Micro, has an extensive selection of electronic hardware, software and peripherals. A full service Post Office is on site and Copiers for the library may be purchased here. During the first few weeks of September and January a selection of first year course materials are temporarily located in this location.

THE TANK
- Togo Salmon Hall, Room B203

This store contains all course materials, new and used, that are required. In order to save students money the bookstore actively seeks out as many used textbooks as possible. During peak periods some of the course materials will be relocated to temporary stores in order to reduce line-ups.

HEALTH SCIENCES BOOKSTORE, MEDIASHOP.COM
- Health Sciences Centre, Room 1G1

This store specializes in Medical, Nursing and Health Sciences titles. This store also features an extensive selection of current reference books in all health related fields. Stethoscopes and diagnostic instruments are also available here.

SUBTITLES
- Downtown Centre

Located inside McMaster's Downtown Centre, Subtitles carries all course materials for the certificate classes held at the Downtown campus, 50 Main Street East, Hamilton. This is a temporary bookstore that operates at the start of term in September, January and May.

In addition, at the end of August and beginning of September a temporary bookstore is opened to house a portion of Level I course materials. The location of this store changes depending on room availability and students will need to check the web site or visit the store for more details.

CAREER SERVICES
- Gilmour Hall, Room 110, ext. 24254

Web Address
http://careers.mcmaster.ca/

Email Address
careers@mcmaster.ca

Manager
Gina Robinson

For a complete listing of Career Services staff, please access our web site at: http://careers.mcmaster.ca/

At Career Services our purpose is to help you manage your career. Whether you are a current student or alumni, we can help you get where you want to go. From career planning to job search, we have a wealth of resources and services available to you.

Our staff is made up of experienced, knowledgeable professionals with a strong track record of assisting students and alumni in pursuing their career and educational goals. Our programs and services include:
- Career and employment counselling
- Drop-in career advising
- Job postings and On-Campus Recruitment (OCR) through McMaster's online job posting system, OSCAR
- Career and education resources and information
- Resume critiques and workshops
- Interview skills and job search workshops
- Personality and interest testing
- Educational planning, including workshops on applying to professional schools (law, teaching, medicine, etc.)
- CareerLINKS mentoring program
- Events such as Career Fair, Continuing Education Fair and Virtual Summer Job Fair

The office hours are 9:00 a.m. to 4:30 p.m. Monday, Wednesday, Thursday, Friday and 9:00 a.m. to 7:00 p.m. Tuesday. For further information, please phone (905) 525-9140, ext. 24254 or fax (905) 529-8972.

OFFICE OF STUDENT FINANCIAL AID & SCHOLARSHIPS
- Gilmour Hall, Room 120, ext. 24319

Web Address
http://sfas.mcmaster.ca

Email Address
awards@mcmaster.ca or osap@mcmaster.ca

Director
E. Seymour

The office administers a variety of programs which are accessed by more than half of all full-time students as well as a large number of part-time students attending McMaster. These programs include the OSAP (Canada-Ontario integrated student loans and grants), out-of-province government financial aid, U.S. Loans, Part-Time Canada Student Loan and Canada Study Grants, Ontario Work Study Program, Ontario Special Bursary Program, University Bursary and Emergency Loan Program, and Undergraduate Scholarships. In addition, the office provides administrative support to outside agencies offering scholarships and bursaries to students attending McMaster.

The office offers financial advice, budget counselling and information service to current and potential students designed to help identify, plan and cover post-secondary education expenses. All discussions with students are voluntary, private and confidential. Drop-in style counselling is available.

For more detailed profiles of program offerings, please refer to Undergraduate Academic Awards and Student Financial Aid sections in this Calendar.

CAMPUS HEALTH CENTRE
- Medical Clinic, McMaster University Student Centre, Room B101, ext. 27700

- Health Education, McMaster University Student Centre, Room B106, ext. 27619

Web Address
http://www.mcmaster.ca/health

Medical Director
Jan Young

Clinic Director
Julie Fairservice
Health care is available to all university students year-round at the Campus Health Centre (CHC). Appointments can be made by calling (905) 525-9140 ext. 27700.

Staffed by family physicians, registered nurses, health educators and administrative staff, the Campus Health Centre provides medical care similar to a family physician. Services include medical assessment and treatment; annual health examinations; birth control counselling and low cost sale of the birth control products and emergency contraception; allergy injections; immunization; on-site laboratory; pregnancy tests; screening for sexually transmitted diseases; HIV prevention, testing and counselling; and information or counselling for any personal health concerns. A specialist in sports medicine is available for physical injuries. Our health centre provides on-site access to complementary medical services including a Naturopathic Medicine Doctor.

Our health education staff are available in the Health and Wellness Centre at (905) 525-9140, ext. 27619 in the McMaster University Student Centre, Room B106. They are available to individuals or groups to address questions or concerns about health and lifestyle issues or academic studies. Popular topics are disease prevention, healthy relationships, sexuality, contraception options, nutrition and body image, stress and emotional health and alcohol/drug use. A smoking cessation service is offered during the academic year. Free access is available to educational pamphlets, videos, computer programs and a lending library of books, reference material and information-packages. Further information and an update on services can be obtained by calling the Campus Health Centre office at (905) 525-9140, ext. 27700 or visit our web site at http://www.mcmaster.ca/health/.

HOSPITALITY SERVICES

- Commons Building, Room 116, ext. 24422
  Web Address
  http://hospitality.mcmaster.ca
  Director, Hospitality Services
  Albert Y. Ng

McMaster Hospitality Services is a self-supporting department dedicated to providing students with healthy, nutritious and flavourful food. We offer vegetarian choices, international food menus, healthy options, as well as quick snacks and made to order entrées. Our goal is to make the university dining experience exciting and fun, while providing high quality food services, variety and good value.

All students are required to purchase a meal plan. The MAC Express Meal Plan works on a debit system and offers a variety of meal plan options for residence and off-campus students. Depending on the meal plan chosen, this allows students to use one card at all Hospitality Services locations and at our off-campus vendors. For 2007-2008 the off-campus vendors included Boston Pizza, Basiliki, East Side Mario's, Gino's Pizza, Kelsey's, Mahal Pit, Pizza Pizza and Quarters Pub.

At students and other members of the University community may purchase a meal plan option at the MAC Express Centre located in the Commons Building, Room 128. For more information on meal plans, contact us at ext. 27448, via email at express@mcmaster.ca or visit our web site. McMaster Hospitality Services has seventeen dining facilities conveniently located across campus:

- Commons Marketplace provides students with a varied dining experience and is home to Your Healthy Choice, Pacific Rim, Chef's Table, Piller's Deli and Pizza+++. It is our fine dining facility located in the Mary E. Keyes Residence Building. This restaurant is set in a two story glass atrium and features Asian and Continental cuisine. The Bistro offers gourmet pizza, rotisserie and fresh fry menus. Located nearby, My Mini Mac offers Needa Pita and Tim Hortons in addition to a selection of convenience store products.
- La Piazza, an open 'Marché Style' marketplace is located in the McMaster University Student Centre and features Pizza Pizza, Tim Hortons, Piller's Deli and Creation X International Grill. You will also find Made in Japan, Tim Hortons and Williams Coffee Pub located in the Centre.
- MAC Express locations are conveniently found in the John Hodgins Engineering Building and Chester New Hall.
- Made in Japan prepares healthy meals with only water and fresh ingredients. Cooks prepare wholesome dishes in the McMaster University Student Centre.
- Math Café in Hamilton Hall provides fair trade coffee from regular coffee to a gourmet cappuccino with a variety of ready to eat items.
- Tech Wave Café located in the Information Technology Building, provides Starbucks coffee in addition to a variety of delicious desserts.
- Tim Hortons is a staple of Canadian culture; the Student Centre and other five locations of Tim Hortons serve fresh brewed coffee as well as donuts and muffins baked right on campus.
- Williams Coffee Pub in the McMaster University Student Centre has gourmet coffees and specialty beverages which are perfectly complemented by pastries, desserts and sandwiches to suit every taste.
- The Wokery in Kenneth Taylor Hall, is a popular lunch destination for Chinese food prepared fresh to order.

Visit our web site at http://hospitality.mcmaster.ca for our Dining on Campus menus, hours of operation, special events, meal plan information and more.

HOUSING AND CONFERENCE SERVICES

- Commons Marketplace provides students with a varied dining experience and house to Your Healthy Choice, Pacific Rim, Chef's Table, Piller's Deli and Pizza+++
- East Meets West Bistro is our fine dining facility located in the Mary E. Keyes Residence Building.
- La Piazza, an open 'Marché Style' marketplace is located in the McMaster University Student Centre and features Pizza Pizza, Tim Hortons, Piller's Deli and Creation X International Grill.
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RESIDENCES

The University owns and operates 12 on-campus residence buildings, accommodating a total of 3,683 students. The ten traditional-style residences offer a variety of theme and lifestyle options: International House and La Maison Française for those interested in learning about other cultures; Halcyon (Quiet) House and quiet floors; Wellness House for those wishing to balance healthy living with academic studies and all-female environments.

In addition, an apartment-style residence (Bates Residence) accommodates 503 male and female students and a suite-style residence building (Mary E. Keyes Residence) houses 280 students. All apartments and suites are furnished (except for a television). Eighty percent of the spaces in residence are reserved for incoming first-year students. Admission offers to residence are based on a student's admission average to his/her academic program. The academic average required to receive a guaranteed seat in residence may change from year to year. An applicant's residence status (guaranteed or wait list) will be clearly noted on his/her offer of admission.

Level I students will receive instructions regarding application procedures with their offer of admission to the University. To accept the offer of residence, a student's Residence Application and deposit must be received by the Residence Admissions Office before the specified deadline. Applications are completed on-line. Deposit payments are only accepted by credit card on-line (VISA/MasterCard).
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or by money order received in the Residence Admissions Office. No other payment methods are accepted. This deposit will then be applied to the student's residence fees. Students who do not receive an offer of residence with their offer of admission to the University may apply to the residence waiting list. The waiting list is ordered by academic average for applications received in the Residence Admissions Office by the deadline date. After this date, students will be added to the waiting list in order of date received. No deposit is required from students who apply to be on the waiting list. If a student is guaranteed a residence space but no longer requires it, the student is responsible for advising Housing and Conference Services in writing by the specified deadline. Failure to do so by the specified deadline will result in forfeiture of the full amount of the deposit. Students who receive an offer of residence with their offer of admission to McMaster will be provided with information regarding the on-line residence application process.

The Residence Meal Plan is an integral component of living in any of the McMaster University residences and all students living in residence must purchase a mandatory meal plan. Residents use their ID cards as a debit card for food purchases made at Hospitality Services locations on campus. (Note: Residence Fees and Meal Plans do not include the December holiday break).

Please go to http://hospitality.mcmaster.ca for specific Meal Plan information.

The Director of Housing and Conference Services is responsible for policy, budget and the overall administration of McMaster's Residence system. The department has five distinct functional units: Admissions, Residence Life, Facilities, Conference Services and the Off-Campus Resource Centre.

Visit our web site to learn more about each Residence, the Residence Code of Conduct, and the other services available to McMaster's Residence students.

RESIDENCE ADMISSIONS

This area is responsible for residence admission policies and procedures, including: the Residence Agreement/Contract; residence applications, deposits and room assignments; the waiting list and withdrawal procedures; medical and grade appeals; and various Housing publications. Enquiries about residence should be directed to Residence Admissions, Housing and Conference Services, Commons Building, Room 101, (905) 525-9140 ext. 24342; email: housing@mcmaster.ca.

RESIDENCE LIFE

This area is responsible for programs designed to provide students with a positive living and learning environment and to assist them with the transition to university. Living in residence provides students with the opportunity to participate in educational and personal development interest programs, and positive and inclusive social activities. Residence Life also provides leadership opportunities including student staff, peer helper and elected residence council positions.

Residence students and student staff are supported by six full-time Residence Managers, all of whom live in residence. The staff are available to answer questions, ensure community standards are followed and coordinate programs and activities. All students agree to be bound by the Residence Agreement/ Contract and the Residence Code of Conduct as a condition of applying to residence at McMaster University.

RESIDENCE FACILITIES

The Residence Facilities team objective is to provide safe, comfortable and well-maintained residences that contribute to a positive "living and learning" experience and ultimately, student success.

The Residence Facilities team is comprised of sixty staff members who are responsible for:

• providing custodial and maintenance services;
• operating the heating, air conditioning and ventilation systems;
• undertaking capital renovations and improvements;
• managing the collection and removal of waste and recycling;
• ensuring that the building safety and security systems are always functioning optimally.

The Team operates two, twenty-four hour Service Centres located in the main level of the Mary E. Keyes Residence and the Commons Building. The Service Centre staff is there to:

• issue keys/access cards;
• coordinate maintenance and work requests;
• distribute mail and packages;
• provide information about the residences, residence policies, campus resources and the Hamilton community.

CONFERENCE SERVICES

 McKay Hall, Room 124, ext. 24781/24783

Web Address
http://conference.mcmaster.ca

Conference Services is responsible for booking all indoor and outdoor non-academic events on campus. During the summer months, Conference Services arranges accommodation, food and meeting facilities on campus for conferences, conventions, and touring groups. Residence accommodation is also available for summer students and casual guests. For more information, please visit our web site.

OFF-CAMPUS RESOURCE CENTRE

McMaster University Student Centre, Room B112, ext. 24086

Web Address
http://www.maccampus.ca

Email Address
maccampus@mcmaster.ca

The Off-Campus Resource Centre (OCRC) maintains up-to-date lists of available rental accommodation in Hamilton and the surrounding area. Among other services, it also provides free bus route maps, city zone maps, free use of telephones for students to contact landlords; information on housing by-law and The Residential Tenancies Act, and personal assistance with the housing search. OCRC is operated on a year-round basis. Visit our web site to see all the listings of available rental units by zone and category.

TRANSPORTATION, PARKING AND SECURITY

ALL MODES COMMUTING AND TRANSPORTATION OFFICE (ACT OFFICE)

E.T. Clarke Centre, ext. 24772

Web Address
http://act.mcmaster.ca

Travel to and from the University on foot, bicycle, by transit and in campus is encouraged.

Full-time undergraduate students benefit from a U-pass program where they have unlimited access to the city of Hamilton transit by simply showing their student card to the bus operators. GO Transit provides frequent and direct services to campus from the Lakeshore corridor and the Highway 407 corridor. The University continually monitors the bike rack supply on campus to provide convenient facilities for cyclists and SWHAT (Studnet Walk Home Attendant Team) is a student program offering escort service from campus. The University subscribes to a web based ride matching program to assist people to find carpool partners to share the costs of driving and reduce the demand for parking on campus.

PARKING SERVICES

E.T. Clarke Centre, ext. 24232

Web Address
http://parking.mcmaster.ca

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 carpools is encouraged.

Students wishing to park a motor vehicle or motorcycle on campus are required to complete and submit a parking application. Applications from undergraduates are accepted between June 1 and the close of the last business day of July. It is now possible
to apply electronically using the following web address: http://parking.mcmaster.ca. Completed application forms, accompanied by a Visa or MasterCard number and authorizing signature, or a cheque or money order payable to McMaster University, in the amount required for the full period must be forwarded to: Security and Parking Services, E.T. Clarke Centre, Room 102, McMaster University, Hamilton, Ontario L8S 4K1. Parking applications and/or parking permits will be withdrawn and additional fees applied for NSF cheques or declined credit cards. If undergraduate parking is oversubscribed, there may be a lottery draw.

Undergraduate students not in residence may apply for available spaces in Zone 5 only. Applications may be made on-line at http://parking.mcmaster.ca.

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 Security and Parking Services Office or on the web at: http://parking.mcmaster.ca/

The Security and Parking Services 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, Room 102, (905) 525-9140 ext. 24232 or 27416 and is open Monday to Friday from 9:00 a.m. to 4:00 p.m.

SECURITY SERVICES

E.T. Clarke Centre, ext. 24281

Web Address
http://mcmaster.ca/security

The Security Services Division of Security and Parking Services coordinates with other University services to make McMaster a safe and secure environment. Uniformed Special Constables patrol the campus on foot, bike and car. Security Services works under an agreement with the Hamilton Police Service to provide both security and police services on the campus. Telephone calls are always answered personally for emergencies or general information. Please visit our web site for more information.

McMaster Security Services primary responsibility is the protection of persons and property within the McMaster community. This office is open 24 hours daily. Security utilizes CCTV cameras on campus to enhance safety and security. These cameras are monitored by Security Services.

Security Services also offers the assistance of a Crime Prevention Sergeant, available for any questions or concerns on safety and security issues on the campus. Crime Prevention can be reached at ext 26060.

MCMASTER UNIVERSITY CHAPLAINCY CENTRE

McMaster University Student Centre, Room 231, ext. 24207

Web Address
http://www.mcmaster.ca/chaplain

Email Address
chaplain@mcmaster.ca

The McMaster Chaplaincy Centre is open to all students and members of the campus community. The Chaplaincy Centre is staffed by Carol Wood, Ecumenical Chaplain; Michael Fallon, Christian Reformed Chaplain; Father Peter Nguyen, Roman Catholic Chaplain and the Assistant to the Chaplains. Regular office hours are Tuesday, Wednesday and Friday, 9:00 a.m. to 4:30 p.m. and Thursday 10:00 a.m. to 7:00 p.m. Appointments outside of these hours can be arranged.

The Centre offers personal and confidential counseling for a wide range of concerns; groups to deal with topics such as bereavement support; and an experience of community through suppers, Christian worship and discussion groups. In addition, the Chaplaincy Centre provides advocacy for students in need; works cooperatively with a variety of student groups; and promotes interfaith events and dialogue on campus.

STUDENT GOVERNMENT

ACADEMIC FACILITIES, STUDENT SERVICES AND ORGANIZATIONS

MCMASTER STUDENTS UNION

McMaster University Student Centre, Room 201, ext. 22003

Web Address
http://www.msu.mcmaster.ca

Purpose: The McMaster Students Union is a student-operated corporation with a cash flow exceeding 3.5 million dollars and extensive operations spanning over 30 unique departments. More than 18,000 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 one of the most extensive student unions in Canada, the MSU offers an array of services as well as employment and volunteer opportunities for students at McMaster. These services include the campus restaurant/night club (Quarters), a convenience store (The Union Market), a games room (House of Games), the Underground Media and Design Centre, an information centre (Compass), the Queer Students Community Centre, a yearbook (The Marmor), a consignment used bookstore (Undercovers), a sports store (Shoestop), the Student Health Insurance and Dental Plans, a campus events department (which organizes much of Welcome Week, Homecoming and other special events), MSU Childcare Centre, and a jointly funded Ombuds Office. The MSU offers volunteer opportunities through the Emergency First Response Team (EFR), a radio station (93.3 CFMU FM), a newspaper (The Silhouetted), a Student Work Home Attendant Team (SWHAT), a Student Health Education Centre (SHEC), the Maroons, a foodbank, and more than 200 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 and is the governing body of the MSU. The President is elected by the entire student body while the Vice-Presidents Administration, Education and Finance are elected by the SRA. The MSU also offers a First Year Council made up of first year students which deals with issues specific to first year students.

Student Centre: The MSU is the major stakeholder in the McMaster University Student Centre. Most of the mentioned services are located here, including the President and student representatives offices. For further information, visit the MSU Main Office, MUSC Room 201, or call (905) 525-9140, ext. 22003.

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

McMaster University Student Centre, Room 210, ext. 24151

Web Address
http://www.mcmaster.ca/ombuds

Email Address
ombuds@mcmaster.ca

Ombudspersons
Shelley Lancaster
Carolyn Brendan

The Ombuds Office provides information and advice to the McMaster community to assist in the resolution of University-related complaints and concerns. The Ombuds Office handles academic and non-academic matters as well as issues arising out of the provision of services. Students come to the Office with questions about such issues as grade appeals, petitions, codes of conduct and employment on campus.

The Ombuds Office is a neutral, confidential service provided by the McMaster Students Union in conjunction with the University.
MCMASTER ASSOCIATION OF
PART-TIME STUDENTS (MAPS)

- McMaster University Student Centre, Room 234, ext 22021

Web Address
http://www.mcmaster.ca/maps/

Email Address
maps@mcmaster.ca

Executive Director
Sam Minniti

Office Administrator
Josephine Taylor

MAPS is an association focused on meeting the distinct needs of part-time students. Established in 1979, MAPS serves all students registered in certificate/diploma courses and undergraduate degree students who are enrolled in 17 units or less (in any academic session). The MAPS logo - three chevrons - symbolizes the balance of family, work and education that is central to the part-time student experience. MAPS works to strengthen the quality and accessibility of education and related services by engaging the University as a partner in strategic planning and service delivery discussions. The Association has formal observer status at Senate and the Board of Governors, is invited to attend meetings of Undergraduate Council and the Associate Deans Group, and is a member of the Student Government-Administration Consultation Committee.

MAPS is governed by a volunteer board of directors elected at the Association’s annual general meeting. The board elects an executive committee led by a president. In addition, MAPS employs a full-time executive director and an office administrator, along with several part-time staff members who implement the advocacy and service agenda approved by the board.

MAPS provides a part-time student office and lounge in the student centre (MUSC 234). The office is a resource for students seeking information or assistance with navigating the University and also provides photocopying, computer stations, and information about awards and bursaries. Office Hours are Monday through Thursday, 9:30 a.m. until 8:30 p.m., and Friday, 9:30 a.m. until 2:00 p.m. The MAPS newsletter, The Link, is mailed to all members three times a year (fall, winter and spring/summer). Copies are also available in the MAPS Office (MUSC 234).

MAPS recognizes academic excellence and commitment to part-time studies through its participation in the Centre for Continuing Education (CCE) graduation ceremony and convocations for the conferral of degrees. Academic excellence is also celebrated at the annual MAPS awards dinner in the Fall term. The Association has established several awards to recognize academic excellence and contribution to the well-being of part-time students at McMaster University. MAPS also supports students’ pursuit of part-time studies through an active bursary program, administered through the Student Financial Aid & Scholarship Office. In 1988, 1999, 2004 and 2006, MAPS made contributions totalling $650,000 ($550,000 of which was matched by the provincial government) to bursary endowments at McMaster. The income from these funds provides more than $50,000 in bursaries per year which are distributed to MAPS members. Further information, eligibility requirements, and nomination/application forms for awards and bursaries is available on-line at http://www.mcmaster.ca/maps/awards.htm.

MCMASTER UNIVERSITY ALUMNI ASSOCIATION

- President’s Residence, ext 23900
  or 1-888-217-6003 (Toll-free)

Web Address
http://www.mcmaster.ca/ua/alumni

Email Address
alumni@mcmaster.ca

Following convocation, all graduates of McMaster University automatically become members of the McMaster Alumni Association (MAA) and join our over 130,000 alumni living in 125 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.
Canada Access Grants/Millennium Ontario Access Grants

The Canada Access Grants for Low-Income Families and the Millennium Ontario Access Grants assist eligible first-time first-year students from low-income families with their tuition costs by a maximum of $3000. The Canada Access Grants for students with Permanent Disabilities replaces the first $2000 of eligible federal loan funding with non-repayable grant funding for students who self-identify and prove that they have a permanent disability. The Ontario Access Grants assist eligible second-year students from low-income families with their tuition costs to a maximum of $3000. These grants do not have to be repaid. See detailed eligibility requirements at http://osap.gov.on.ca.

Ontario Special Bursary Plan

This plan helps students who demonstrate exceptional levels of financial need who are unable to attend school full-time. Bursaries are available to eligible part-time students enrolled in approved programs at recognized post-secondary institutions in Ontario only. Students must be working towards their first post-secondary degree, diploma or certificate. This bursary does not require repayment.

Ontario Work-Study

The Work-Study Program provides part-time jobs during the school year to students who demonstrate financial need in order to help them meet their education-related costs. It also helps students who lack the resources expected under OSAP or, who have an assessed need under OSAP which 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 shared by the provincial government and McMaster University.

Child Care Bursary

This plan is intended to assist full-time students who have applied and qualified for OSAP and who demonstrate financial need. Eligible students must have three or more dependent children, 11 years of age and under living with the student full-time throughout the study period. This bursary does not require repayment.

Bursaries for Students with Disabilities/

Canada Study Grant for the Accommodation of Students with Permanent Disabilities

This plan is intended to assist students with disabilities, who demonstrate financial need, to meet disability-related costs related to their participation in post-secondary education. A single application is used to be considered for this funding. For more information, contact the Centre for Student Development at http://csd.mcmaster.ca.

Canada Study Grants

Canada Study Grants are funded by the federal government and administered by the provincial government, through the Ontario Student Assistance Program (OSAP). Policies regarding eligibility and amounts are established by the federal government and procedures on how to apply are established by the province of Ontario.

- Canada Study Grants include the following:
  - Canada Study Grant for Students with Dependents
  - Canada Study Grant for High-Need Part-time Students
  - Canada Study Grant for Women in Doctoral Studies
  - All Canada Study Grants are non-repayable.

Queen Elizabeth II (Aiming for the Top) Scholarship

The Queen Elizabeth II (Aiming for the Top) Scholarship is designed to recognize students who have shown academic excellence at the high school level and to assist students with financial need. The value of the scholarship varies between $100 and $3,500 per academic year. You may be considered for a Queen Elizabeth II (Aiming for the Top) Scholarship if you:

- attend an Ontario high school in 2007/2008 and achieve academic excellence;
- are an Ontario resident (as defined by OSAP);
- apply to attend an Ontario university through the Ontario Universities' Application Centre, or a college of applied arts and technology through the Ontario College Application Service, or apply to attend another Ontario post-secondary institution (e.g. a private career college) that is approved for the purposes of this scholarship;
- will be a full-time post-secondary student in the 2008/2009 academic year; and
- meet all other application requirements/deadlines.

Ontario Student Assistance Program (OSAP)

The various components of OSAP are:

- Canada-Ontario Integrated Student Loans
- Canada Access Grants/Millennium Ontario Access Grants
- Ontario Study Grants
- Ontario Special Bursary Plan
- Ontario Work-Study Plan
- Child Care Bursary
- Bursaries for Students with Disabilities/Canada Study Grant for the Accommodation of Students with Permanent Disabilities
- Queen Elizabeth II (Aiming for the Top) Scholarship
- Millennium Bursary
- Part-time Canada Student Loans/Canada Study Grants for High-Need Part-time Students

To be eligible to consider assistance under these OSAP programs, a student must be a Canadian citizen, permanent resident of Canada or a protected person; meet Ontario residency requirements and must meet the specific application requirements of the program. The amount of financial aid awarded is based on financial need. It is strongly recommended that students apply for OSAP at http://osap.gov.on.ca by July 15 to ensure that their applications are processed by the start of classes.

All of the government programs described in this text are modified and restructured annually to reflect the changing needs of students from the Province of Ontario. It is, therefore, recommended that you discuss your specific financial requirements with a Student Loan Officer in the Office of Student Financial Aid & Scholarships as early as possible and review program details and eligibility criteria at http://osap.gov.on.ca.

Canada-Ontario Integrated Student Loans

Eligible students demonstrating financial need, who are enrolled in at least 60% of a full course load (students with permanent disabilities may enrol in 40% of a full course load) per term in an approved degree, diploma or certificate program of at least 12 weeks in length at a Ministry approved educational institution and have passed a credit check may be eligible for loan funding. Loans are interest-free while the student is studying full-time.

Part-Time Canada Student Loans

The federal government also provides Canada Student Loans for eligible part-time students demonstrating financial need, who are enrolled in 20-59% of a full course load (students with permanent disabilities may enrol in 20-59% of a full course load; per term in courses leading to a degree, diploma or certificate in an approved program at a Ministry approved educational institution. Part-time Canada Student Loans assist with a student's allowable costs for tuition, books, transportation, day care and incidenitals and are interest-bearing after 30 days. Repayment responsibilities begin within 30 days of negotiating the loan.

Canada Study Grants are available to high need part-time students who are studying part-time for very specific reasons (inability to attend full-time). Students submitting part-time loan applications will be assessed for grant eligibility.
Millennium Bursary

The Canada Millennium Scholarship Foundation Bursary is available for full-time students who have the highest assessed need, as determined by the Province of Ontario and who meet all of the program’s eligibility requirements. Details on the eligibility requirements are available on the Canada Millennium Scholarship Foundation web site at http://www.millenniumscholarships.ca. The value of the bursary is $3,000. The Millennium Bursary does not require repayment.

McMaster Summer Work Programs

McMaster Summer Work Programs offer part-time and full-time summer jobs to students demonstrating financial need to help them to meet costs not recognized under regular federal and provincial financial aid programs. In particular, these programs 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 Summer Work Programs identified below, students should see application and deadline information at http:// sfas.mcmaster.ca.

THE R. ROSS CRAIG MEMORIAL FUND WORK PROGRAM

Established in 1997 in memory of R. Ross Craig. A variable number of employment opportunities made available to students in any program who demonstrate financial need. To be eligible for consideration, students must be approved for the Summer Work Program through the Office of Student Financial Aid & Scholarships. (90763)

THE HAMLIN FAMILY FOUNDATION WORK PROGRAM

Established in 1996 by the Hamlin Family Foundation. A variable number of employment opportunities made available to students in any program who demonstrate financial need. Preference will be given to students in disciplines related to the fields of Health Sciences and Engineering. To be eligible for consideration, students must be approved for the Summer Work Program through the Office of Student Financial Aid & Scholarships. (90656)

THE SALLY HORSFALL WORK PROGRAM

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 the Summer Work Program through the Office of Student Financial Aid & Scholarships. (90657)

THE HUMANITIES COMMUNICATIONS CENTRE WORK ENDOWMENT

Established in 1997 by Edward and Margaret Lyons, McMaster alumni of the Class of ‘49 and later augmented by friends of The Edward and Margaret Lyons Humanities Communications Centre. A variable number of employment opportunities will be made available to students in any program who demonstrate financial need. Preference will be given to students in Humanities and Social Sciences. To be eligible for consideration, students must be approved for the Summer Work Program through the Office of Student Financial Aid & Scholarships. (90658)

THE McMaster “McWork” Program

Established in 1986 by the University with the goal of creating meaningful employment opportunities for current students who demonstrate financial need. To be eligible for consideration, students must be approved for the Summer Work Program through the Office of Student Financial Aid & Scholarships. (90659)

EMERGENCY FUNDING

EMERGENCY LOANS

Assistance in the form of short-term emergency 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 student’s study period. Students requesting a short-term loan must meet with a representative from the Office of Student Financial Aid & Scholarships to complete an application. A number of funds exist to provide assistance to students in financial need.

THE UNIVERSITY LOAN FUNDS

Small short-term emergency loans from the University funds are available to assist students in any program. These funds have been supported through contributions from a number of local Chapters, Imperial Order Daughters of the Empire, including the Emma Frances Pratt, Princess Marina and Sovereign Chapters.

THE IVOR WYNE MEMORIAL LOAN FUND

Established in 1971 in memory of Ivor Wyne, Dean of Students. To assist students in any program.

EMERGENCY BURSARIES

Assistance in the form of emergency bursaries is sometimes available to students who have dire need. Students with extreme circumstances must meet with a representative from the Office of Student Financial Aid & Scholarships to discuss their situation.

BURSARIES

Bursaries are granted on the basis of demonstrated financial need according to the principles of the Province of Ontario’s Student Access Guarantee. They are intended to supplement a student’s own financial contribution, parental assistance, government aid and personal loans/lines of credit to help the student to complete the academic year.

Application procedures and deadlines are available from the Office of Student Financial Aid & Scholarships, Gilmour Hall, Room 120 or on our web site at http://sfas.mcmaster.ca. Any government-sponsored student loan applicant who is registered as a student of McMaster University is eligible to apply. Bursaries are listed in alphabetical order.

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THE 4 WINDS BURSARIES (U)

Established in 1997 by John F. Evans, O.C. and Patricia Peacock-Evans in recognition of John’s long-standing association with McMaster as Chair of The President’s Club Executive Committee. The Bursary is named after the island where the family’s cottage is located. A variable number of bursaries are granted to undergraduate students who demonstrate financial need. (90708)

THE AINSWORTH BURSARIES (U)

Established in 1996. To be granted to undergraduate students in any program who demonstrate financial need. Preference to be given to female students. (90578)

THE PHYLLIS MAY AITKEN BURSARY FUND (U)

Established in 1997 by the bequest of Phyllis May Aitken. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90653)

THE G. RODGER ALLAN BURSARY (S)

Established in 2007 by M. Elizabeth Orr, B.A. (Class of ‘46) and her husband Robert Orr in memory of her brother G. Rodger Allan, B.A. (Class of ’46). To be granted to a student enrolled in the Faculty of Science who demonstrates financial need. (91074)

THE JAMES N. ALLAN FOUNDATION BURSARY (R)

Established in 1986 from funds donated by the James N. Allan Foundation, Dunnville, Ontario, in support of its belief that all students should have the opportunity to achieve their educational goals. To provide assistance to McMaster students who demonstrate financial need. Preference will be given to students from Haldimand Norfolk County. (90803)

THE GARY ALLEN MEMORIAL BURSARY (B)

Established in 1987 by friends and family of the late Gary Allen (Class of ’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)
THE ROSE (NÉE D’ALESSIO) AND PAUL ALLISON BURSARY (E)
Established in 2005 by Rose (née D’Alessio) Allison, B. Eng. (Class of ’81) and Paul Allison, B. Eng. Mgt. (Class of ’81), in support of their belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in the Faculty of Engineering who demonstrate financial need. (91023)

THE AMEX CANADA BURSARY (U)
Established in 1997 by AMEX Canada Inc. in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in any program who demonstrates financial need. (90805)

THE ANDREW FOUNDATION BURSARIES (E)
Established in 1997 by the Andrew Foundation under the McMaster Student Opportunity Fund Initiative. A variable number of bursaries to be granted to students enrolled in a program in Engineering who demonstrate financial need. Preference to be given to students who are studying Electrical Engineering or Mechanical Engineering. (90806)

THE ANTHROPOLOGY BURSARY (SS)
Established in 1996 by faculty, alumni and other friends of the Department of Anthropology. To be granted to students who have completed Level II of a program in Anthropology and who demonstrate financial need. Preference will be given to students entering Level III. (90579)

THE JENNIFER AND THEODORE ARCAND ENGLISH BURSARY (H)
Established in 1997 by Jennifer and Theodore Arcand, (Class of ’57), in memory of her wife. Jennifer, (Class of ’57), whose interest was Baroque English poetry. To be granted to an undergraduate or graduate student enrolled in a program in English, who demonstrates financial need. (90807)

THE FRED AND JEAN ARMER BURSARY (SS)
Established in 2006 by Jean Armer ’n memory of her husband Frederick B. Armer, B.A. (Class of ’75) and in support of her belief that all students should be able to pursue their educational goals. To be granted to a student enrolled in the Faculty of Social Sciences who demonstrates financial need. Preference will be given to students enrolled in Level II or Level III of a program in Anthropology. (91044)

THE ARTS AND SCIENCE CLASS OF ’97 BURSARY (AS)
Established in 1997 by The Arts and Science Class of ’97 under the McMaster Student Opportunity Fund Initiative. To be granted to a student in the Arts and Science program who demonstrates financial need. (90808)

THE A.H. ATKINSON BURSARIES (E)
Established in 1989 by the A.H. Atkinson Education Fund Inc. of Hamilton and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund Initiative. A variable number of bursaries to be awarded to undergraduate students in a full-time program in Engineering who demonstrate financial need. (90897)

THE ATKINSON CHARITABLE FOUNDATION BURSARY (SS)
Established in 1996 by The Atkinson Charitable Foundation. To be granted to students enrolled in the Faculty of Social Sciences who demonstrate financial need. Preference will be given to the recipient of The Atkinson Charitable Foundation Award. (90896)

THE AUBURN INDUSTRIAL SERVICES LTD BURSARY (U)
Established in 1997 by Auburn Industries Services Ltd. under the McMaster Student Opportunity Fund Initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Auburn Industrial Services Ltd. Award. (90897)

THE ANGELA DALZIEL AXELSON BURSARY IN NURSING (HS)
Established in 2006 by Angela (Bonnie) Dalziel Axelos, B.Sc.N. (Class of ’62) to mark the 45th anniversary of her graduation. To be awarded to a student enrolled in the Nursing program who demonstrates financial need. (91079)

THE JOY BÁBY BURSARY (U)
Established in 1997 by Joy Báby under the McMaster Student Opportunity Fund Initiative. To be granted to a student enrolled in any program who demonstrates financial need. (90809)

THE BACHELOR OF HEALTH SCIENCES (HONOURS) BURSARIES (HS)
Established in 2004 by the Bachelor of Health Sciences (Honours) Program in the Faculty of Health Sciences through the generosity of its alumni and friends under the McMaster Student Opportunity Fund Initiative. To be granted to a student in the Bachelor of Health Sciences (Honours) program who demonstrates financial need. (90895)

THE CHARLES MURRAY BALL BURSARIES (U)
Established in 1993 by bequest of May Alexandra Ball in memory of her brother Charles Murray Ball. To assist students in any program who demonstrate financial need. (90560)

THE BARTEK BURSARIES (E)
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 Deans’ Honour List. (90672)

THE BIRGIT AND ROBERT BATEMAN BURSARY (AS, SS)
Established in 1997 by Birgit and Robert Bateman under the McMaster Student Opportunity Fund Initiative. To be granted to a student who demonstrates financial need and is enrolled in the Arts and Science program, the Faculty of Social Sciences or the Faculty of Science. Preference to be given to students who are studying Environmental Studies or Environmental Science. (90810)

THE HELEN AND MORRIS BAUGHMAN BURSARY (S)
Established in 2005 by Marvin Ryder in honour of Helen and Morris Baughman. To be granted to students enrolled in the Faculty of Science who demonstrate financial need. Preference to be given to students in Level III or IV of a Biology program. (91025)

THE ESTELLE AND CHUB BAXTER BURSARY (HS)
Established in 2003 by Estelle and Chub Baxter under the McMaster Student Opportunity Fund Initiative. To be granted to a student in the Faculty of Humanities who demonstrates financial need. Preference will be given to a student enrolled in an Art History program in the School of the Arts. (90991)

THE BEALE-LINCOLN-HALL EXCHANGE PROGRAM BURSARIES (EX)
Established in 1996 by Arnold A. Beale in memory of his parents, F. Arnold Beale and Margaret S. Beale and, Mr. and Mrs. Walter Gould Lincoln and Commander Harley H. Hall, U.S.N. To be granted to a student who demonstrates financial need and is enrolled in a program in Commerce, Biochemistry, Biology, English, Chemistry, Earth Sciences, History, Materials Science, Mathematics, Physics, Engineering Physics or Religious Studies who is participating in one of McMaster’s formal exchange programs. Preference will be given to students who have demonstrated a lively interest in the humanities and the human and social implications of scientific developments. (90677)

THE MARJORIE E. (WATSON) BEATTIE BURSARY (H)
Established in 1997 by William W. Beattie (Class of ’68) in honour of his mother, Marjorie E. (Watson) Beattie (Class of ’33), under the McMaster Student Opportunity Fund Initiative. To be granted to a student enrolled in any program who demonstrates financial need. Preference to be given to students enrolled in the Faculty of Humanities. (90811)

THE DR. C. HOWARD AND DR. SHIRLEY F. BENTALL BURSARIES (U)
Established in 1999 by Dr. C. Howard Bentall (Class of ’37) and, Dr. Shirley F. Bentall (Class of ’46) under the McMaster Student Opportunity Fund Initiative. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90855)

THE NORMA BERTI BURSARIES (SS)
Established in 1996 under the McMaster Student Opportunity Fund Initiative by Norma Berti, active Stelco employee for 34 years and recognized by the Hamilton Council of Women as Woman of the Year for her charitable community contributions. To be granted to a student who demonstrates financial need and is enrolled in a program in Labour Studies. (90812)

THE BETZNER FAMILY MEMORIAL BURSARIES (U)
Established in 1986 by the Betzner Family of Dundas, Ontario. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90580)

THE FRED AND NORMA BIDWELL BURSARY (H)
Established in 2007 by Norma Bidwell, B.A. (Class of ’38). To be granted to a student enrolled in Level III or IV in the Faculty of Humanities who demonstrates financial need. Preference will be given to a student in the Department of Communication Studies and Multimedia. (91076)

THE BIRKS FAMILY FOUNDATION BURSARY FUND (U)
Established in 1987 by The Birks Family Foundation 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 annually who demonstrate financial need. (90500)

THE SYDNEY L. BLUM BURSARY (SS)
Established in 1989 by friends and associates in memory of Sidney L. Blum. To be granted to one undergraduate and one graduate student enrolled in a program in Social Work who demonstrate financial need. Preference will be given to the undergraduate students registered in the summer term in SOC WORK 3006. (90506)
THE SYLVIA BOWERBANK MEMORIAL BURSARY (H)
Established in 2005 by family and friends in memory of Dr. Sylvia Bowerbank. To be granted to female students enrolled in the Department of English and Cultural Studies who demonstrate financial need. Preference will be given to a student who demonstrates financial need. Preference will be given to a female student who resides in a native community in Canada. (91059)

THE BOWES FAMILY BURSARIES (U)
Established in 1996 by Eleanor and Terrence Aurini of Cambridge. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. Preference will be given to female students. (90581)

THE BRANTFORD ALUMNI BRANCH BURSARY (U)
Established in 2000 by the Brantford Alumni Branch of the McMaster Alumni Association under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Brantford Alumni Branch Award. (90969)

THE LOUILA BRAYFORD MEMORIAL BURSARY (AS)
Established in 1998 by Mrs. Janet Leenaars in memory of her late mother, Louila Brayford (nee Bingham, Class of ‘34). To be granted to a student enrolled in the Arts and Science Program who demonstrates financial need. Preference will be given to a student enrolled in a course in Mathematics. (90839)

THE ERIC JOHN BRETZLER BURSARY (CS)
Established in 1997 by family and friends in memory of Eric John Breitzler (Class of ’92). To be granted to a student enrolled in any program who demonstrates financial need. Preference will be given to students associated with the McMaster Students Union. (90514)

THE WILLIAM DAVID BROADHEAD MEMORIAL BURSARY (H)
Established in 2003 by family in memory of William David Broadhead (Class of ’39) under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Humanities who demonstrates financial need. Preference will be given to a student enrolled in a program in the Department of English and Cultural Studies. (90992)

THE DOUGLAS IAN BROWN BURSARY (HS)
Established in 1997 by Douglas A. and Lois Aileen Brown in honour of their son Douglas Ian Brown. To be granted to a McMaster student enrolled in the Faculty of Health Sciences who demonstrates financial need. (90815)

THE DR. RICHARD A. BRYMER MEMORIAL BURSARY (SS)
Established in 1998, under the McMaster Student Opportunity Fund initiative, by Mrs. Isabelle Brymer in memory of her husband, Dr. Richard Brymer, who served as a faculty member in the Departments of Sociology at McMaster University from 1969 to 1996. To be granted to a student enrolled in a program in Sociology or Anthropology who demonstrates financial need. (90845)

THE ED BUFFETT BURSARY (HS)
Established in 1997 under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in a program in Health Sciences who demonstrate financial need. Preference will be given to students who have demonstrated leadership in their school and community. (90816)

THE JODIE ANNE BULL MEMORIAL BURSARIES (SS)
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. (90762)

BURSARIES FOR IN-COURSE VISA STUDENTS (U)
Established in 1982 by the University to assist visa students in any program. (90457)

BURSARIES FOR VISA STUDENTS (U)
Established in 1999. A variable number of bursaries to be granted to visa students in any program who demonstrate financial need. (90933)

THE MARIE IRELAND BUSH MEMORIAL BURSARIES (H)
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 program in English who demonstrate financial need. (90583)

THE BUSINESS MANAGEMENT SERVICES BURSARIES (U)
Established in 1996 by staff of McMaster’s Business Management Services who through their leadership, guidance and support, enabled the University community to deploy its financial resources to the greatest advantage. A variable number of bursaries to be granted to students in any program who demonstrate financial need. (90584)

THE HELEN CALDWELL BURSARY (H)
Established in 2000 by Helen Caldwell (Class of ’42, Faculty of Humanities.) To be granted to a student enrolled in Level III or IV of the Women’s Studies Program who demonstrates financial need. (90940)

THE JAMES CALVIN BURSARIES (U)
Established in 1997 by bequest of James Calvin. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90831)

THE CAMCO INC. BURSARIES (U)
Established in 1997 by Camco 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 program who demonstrate financial need. (90817)

THE BETTY TAYLOR CAMPBELL BURSARIES (U)
Established in 1998 by William F. Campbell of Ottawa, Ontario in memory of his wife Betty Taylor Campbell, a 1937 McMaster graduate, an Olympic medalist in 1936 and a 1990 inductee to the Athletics Hall-of Fame. To be granted to students who demonstrate financial need. Preference will be given to the recipient of the Betty Taylor Campbell Scholarship. (90832)

THE CANADA DIRECT SALES DIVISION BURSARY (E, S, SS)
Established in 1997 by Canon Canada Inc. - OE Division, and augmented in 2005, in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries will be granted annually to McMaster students who demonstrate financial need and are enrolled in an Earth and Environmental Sciences program, the Honours Geography and Environmental Studies program or an Engineering and Society program. (90820)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (BURLINGTON) ELEANOR EWING BURSARY (U)
Established in 1997 by the Canadian Federation of University Women (Burlington) under the McMaster Student Opportunity Fund initiative, in honour of Eleanor Ewing, who was instrumental in establishing the Burlington Chapter of the Canadian Federation of University Women. To be granted to a full-time student in any program who demonstrates financial need. Preference to be given to a mature female student. (90704)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (HAMILTON) BURSARY (U)
Established in 1997 by the Canadian Federation of University Women (Hamilton) in support of the McMaster Student Opportunity Fund Initiative. To be granted to a student in any academic program who demonstrates financial need. (90828)

THE CANADIAN SOCIETY FOR MECHANICAL ENGINEERING BURSARY (E)
Established in 1997 by The Canadian Society for Mechanical Engineering in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. Preference will be given to a student enrolled in Mechanical Engineering. (90819)

THE ELEANOR TURNER CARMENT BURSARY (SS)
Established in 1997 under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need. Preference will be given to a student enrolled in a program in Women’s Studies. (90884)

THE ELVA CARROL BURSARY (AT)
Established in 1996 by Elva Carrol under the McMaster Student Opportunity Fund initiative. To be awarded to a female athlete who participates on an inter-university team and demonstrates financial need. Preference will be given to the recipient of The Elva Carrol Award. (90899)

THE JENNIFER CARTER BURSARY (SS)
Established in 2006 by Jennifer Carter, B.A. (Class of ’98). To be granted to students enrolled in a program in the Faculty of Social Sciences who have graduated from a high school in Northern Ontario and who demonstrate financial need. (91066)

THE MATT CASEY BURSARY (B)
Established in 1997 by Mr. Matthias Casey (Class of ’83) under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in the Faculty of Business. Preference will be given to students enrolled in the M.B.A. program in the Finance stream. (90861)

THE NORMAN NATHANIEL CASKEY BURSARIES (H)
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 program in Music who demonstrate financial need. (90585)
THE CHAN YIN CHAK BURSARY (EX)
Established in 1997 by Tak Chan in honour of his great-grandfather, Mr. Chan Yin Chak. This bursary will be used to help defray expenses of Level III Commerce students or M.B.A. students, who demonstrate financial need, and are participating in one of the international exchange programs at the DeGroote School of Business. (90682)

THE ANNE AND HAROLD CHALK MEMORIAL BURSARIES (U)
Established by Anne Marie Luise Chalk and Harold Henry Chalk of Ottawa. A variable number of bursaries to be granted to students in any program who demonstrate financial need. (90586)

THE CAWKERS FUNDATION BURSARIES (U)
Established in 1996 by The Cawkers Foundation, Ottawa, Ontario in support of its belief that all students should be able to pursue their educational goals. To provide assistance to students who demonstrate financial need. Value: $1,800 (90587)

THE CHUNG FAMILY BURSARY (U)
Established in 2007 by Dr. Wilfred Chung, B.Sc. (Class of ‘75) and family. To be granted to a student in any program who demonstrates financial need. (91073)

THE CIBC BURSARIES (U)
Established in 1997 by the Canadian Imperial Bank of Commerce under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90863)

THE CITY OF HAMILTON BURSARIES (R)
Established in 1997 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. (90684)

THE DAVID CLARK BURSARIES (B)
Established in 1997 by David I. Clark and Marilyn D. Eustace. A variable number of bursaries to be granted to students enrolled in a program in Commerce who demonstrate financial need. Preference to be given to students demonstrating interest in Asian Studies. (90595)

THE HUGH CLARK BURSARIES (U)
Established in 1997 by Hugh Clark in support of McMaster students. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of the Hugh Clark Scholarship. (90685)

THE CLASS OF ’35 BURSARIES (U)
Established in 1985 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)

THE CLASS OF ’46 BURSARIES (SS)
Established by the Year ‘46 in honour of their 40th class reunion. To be granted to a student in a program in Gerontology. (90821)

THE CLASS OF ’46 GOLDEN ANNIVERSARY BURSARIES (U)
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 program at McMaster who demonstrate financial need and are in good academic standing. (90564)

THE CLASS OF ’47 GOLDEN ANNIVERSARY BURSARIES (U)
Established in 1997 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 program who demonstrate financial need. (90590)

THE CLASS OF ’49 GOLDEN ANNIVERSARY BURSARIES (U)
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 program who demonstrate financial need. (90590)

THE CLASS OF ’51 GOLDEN ANNIVERSARY BURSARIES (U)
Established by the Class of ’51 in honour of their 50th Anniversary Reunion in 2001. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90591)

THE CLASS OF ’53 BURSARY FOR PART-TIME STUDENTS (U)
Established in 2004 by the Class of ’53. A variable number of bursaries to be granted to part-time students enrolled in any program who demonstrate financial need. (90686)

THE CLASS OF ’57 BURSARIES (U)
Established in 1997 by the Class of ’57 in honour of their 40th Anniversary Reunion. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90687)

THE CLASS OF ’59, 50TH ANNIVERSARY BURSARY (U)
Established by the Class of ’59 in honour of their 50th Anniversary. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (91021)

THE CLASS OF 1960 GOLDEN ANNIVERSARY BURSARIES (U)
Established by the Class of 1960 in honour of its 50th reunion. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90942)

THE JANET HOLDER AND NEAL COCKSHUTT BURSARY (U)
Established in 2004 by Janet Holder, M.B.A. (Class of ’83) and Neal Cockshutt in honour of Ignatius Cockshutt, founder of Cockshutt Farm Equipment Co. Ltd. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students from Brant County. (91020)

THE DOUGLAS AND BEVERLY COLEMAN BURSARY (S)
Established in 2005 by Douglas and Beverly Coleman, both of Class of ’54. To be granted to students enrolled in the Department of Biochemistry and Biomedical Sciences in the Faculty of Science who demonstrate financial need. (91043)

COMMUNITY NURSING REGISTRY - HAMILTON BURSARIES (HS)
Established in 2000 by the Community Nursing Registry - Hamilton in support of students pursuing a professional career in nursing. A variable number of bursaries to be granted to students enrolled in Level II in the School of Nursing in the Faculty of Health Sciences who demonstrate financial need. Preference will be given to students who demonstrate volunteer service in the area of health care. (90943)

THE COMPUSMART BURSARIES FUND (E, S)
Established in 1997 by JMG Compusmart in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted annually to students who demonstrate financial need. Preference will be given to McMaster students enrolled in a program in Computer Science or Computer Engineering. (90741)

THE CONNOR, CLARK & LUNN BURSARY (U)
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 program who demonstrates financial need. (90665)

THE GERALDINE LOTRETTA COSFORD BURSARIES (H)
Established in 1997 by Geraldine Loretta Cosford under the McMaster Student Opportunity Fund initiative. A variable number to be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. Preference to be given to students who have completed Level I. (90682)

THE IAN AND JILL COWAN BURSARY (U)
Established in 1997 by Ian Cowan (Class of ’71) and Jill (nee Robinson) Cowan (Class of ’74) in support of McMaster students. To be granted to a student enrolled in any program who demonstrates financial need. (90693)

THE SUZANNE E. CRAVEN BURSARY (H)
Established in 1997 by Mrs. Suzanne Craven in support of McMaster students. To be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. (90684)

THE CREATIVE IMPACT COMMUNICATIONS BURSARY (SS)
Established in 2005 by Natalie Muryn (Class of ’91) under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in the Faculty of Social Sciences who demonstrates financial need. (90996)

THE CROSS COUNTRY BURSARY (AT, R)
Established in 1997 by coaches, former team members and supporters of the Men’s and Women’s Varsity Cross Country running teams under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and who is a member of the university men’s or women’s cross country program. (90685)

THE ARCHIBALD R. CROZIER BURSARIES (CS)
Established in 1992 in memory of Archibald (Archie) Crozier (Class of ’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. (90685)
THE CRS ROBOTICS CORPORATION BURSARIES (E)
Established in 1997 by CRS Robotics Corporation 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 the Faculty of Engineering who demonstrate financial need. (90969)

THE MRS. MARGARET CUDMORE BURSARY (SS)
Established in 2005 under the Ontario Trust for Student Support Initiative. To be granted to students enrolled in the Faculty of Social Sciences who demonstrate financial need. Preference will be given to students enrolled in an Economics or Political Science program. (901034)

THE THOMAS DALY BURSARIES (U)
Established in 1996 by family, friends and colleagues of Thomas Daly. A variable number of bursaries to be granted to students in any undergraduate program who demonstrate financial need. (90592)

THE EARL FRANKLIN DAMUDE BURSARY (H)
Established in 1993 by Dr. Christa Saas, in memory of Earl Franklin Damudef (Class of '36). To be granted to a student who demonstrates financial need and has completed Level II of a program in English or History. (90570)

THE SAM DARRAGH GENERAL ATHLETIC BURSARY (AT)
Established in 1997 by friends of Sam Darragh under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any academic program who demonstrates financial need and who is a member of any inter university team at McMaster. (90987)

THE SAM DARRAGH MEMORIAL BURSARY (AT)
Established in 1997 by friends of Sam Darragh under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any program who demonstrates financial need and who has demonstrated outstanding athletic achievement in inter-varsity football. (90827)

THE DARVILLE BURSARY (H)
Established in 2004 by Jack S. Darville (Class of '68) under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Humanities who demonstrates financial need. Preference will be given to a student enrolled in a music or art program in the School of the Arts. (90867)

THE DAUGHTERS OF THE EMPIRE CLUB, HAMILTON LTD. BURSARIES (B)
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 will be given to women enrolled in the Faculty of Business. (90983)

THE EDWARD FRANK DAVIS MEMORIAL BURSARIES (U)
Established in 1996 by bequest in memory of Edward Frank Davis under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in Level I who demonstrate financial need and a commitment to community involvement. (90900)

THE GORDON H. DEAN BURSARIES (AS, H)
Established in 1996 by Gordon H. Dean of Stoney Creek. To be granted to a student who demonstrates financial need. Preference will be given to a student enrolled in Level III of a program in Arts and Science or Level III of a program in the Faculty of Humanities. (90954)

THE DR. RUDOLF DE BUDA BURSARY (E, U)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, to the recipient of The Dr. Rudolf de Buda Scholarship. (90880)

THE JOHN DEERE BURSARIES (U)
Established in 1997 by John Deere in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in any program who demonstrate financial need. (90989)

THE DEGROOTE SCHOOL OF BUSINESS BUSINESS ADVISORY COUNCIL BURSARY (B)
Established in 1997 by the DeGroote School of Business Business Advisory Council under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in Business I or in the first year of the M.B.A. program at the DeGroote School of Business. (90969)

THE DEBORAH AND TERENCE DEMPSEY BURSARY (U)
Established in 2005 under the Ontario Trust for Student Support program to ensure that all students have the opportunity to pursue their educational goals. To be granted to students in any Faculty who demonstrate financial need. (91049)

THE BEN F. DESROCHES BURSARIES (SS)
Established in 1996 as a tribute to Ben F. Desroches, Stelco employee from 1949 to 1966 and elected Municipal Councillor for Sattlestreet 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 program in Labour Studies who demonstrate financial need. The value of this award shall be not less than $300. (90550)

THE DETENBECK FAMILY BURSARIES (U)
Established in 2005 by bequest of Patricia Detenbeck (Class of '32). To be granted to students enrolled in any program who demonstrate financial need. (91031)

THE WILLIAM A. DETENBECK BURSARIES (R)
Established in 1996 by William Detenbeck in honour of the Detenbeck Family. A variable number of bursaries to be granted to students who demonstrate that they are residents of an Aboriginal community in Canada and who demonstrate financial need. (90510)

THE MARGERY E. DIXON MEMORIAL BURSARY (H)
Established in 1996 in loving memory of Margery E. Dixon (Class of '35) by Geraldine Phoenix under the McMaster Student Opportunity Fund II initiative. A variable number of bursaries to be granted to students in the Faculty of Humanities who demonstrate financial need. Preference will be given to students enrolled in a program in the Department of English and Cultural Studies. (90994)

THE DOFASCO INC. BURSARIES (U)
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 program who demonstrate financial need. (90958)

THE JEAN, MARTHA AND LAURIE DOUCET MEMORIAL BURSARIES (HS)
Established in 1998 by the family in memory of Jean, Martha and Laurie Doucet for their years of service and commitment to the nursing profession. A variable number of bursaries to be granted to students enrolled in the School of Nursing at both the undergraduate and graduate level and who demonstrate financial need. Preference will be given to students from the Regional Municipality of Niagara. (90861)

THE STEPHEN DULMAGE BURSARY (B)
Established in 2005 by Stephen Dulmaging, B.A. (Class of '94), To be granted to students enrolled in the Bachelor of Commerce program in the DeGroote School of Business who demonstrate financial need. (91048)

THE MARGARET E. DUNCAN BURSARY (SS)
Established in 1998 by Mr. and Mrs. J. Bruce Duncan in honour of his late mother who was a long-term volunteer in McMaster's Gerontology Program as a Tutor and, subsequently, a Senior Class Assistant. A variable number of bursaries to be granted annually to students enrolled in a Gerontology course who demonstrate financial need. (90846)

THE DUNDAS BURSARIES (R)
Established in 1996 from funds donated anonymously for the purpose of providing students with an opportunity to achieve their educational goals. To provide assistance to McMaster students in financial need. Preference will be given to students from the Dundas area. (90999)

THE MICHAEL EARL MEMORIAL BURSARY (S, SS)
Established in 1991 by family and friends in memory of Michael Earl. In 1997, the Graduating Class in Psychology further augmented this bursary as part of the McMaster Student Opportunity Fund initiative. This bursary is granted to a student enrolled in a psychology program who demonstrates financial need. (90563)

THE ALAN AND CLAIRE EATOCK BURSARIES (H)
Established in 1999 by Alan Eatock (Class of '47) and Claire Eatock under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students in the Faculty of Humanities who demonstrate financial need. (90866)

THE CYRUS EATON FOUNDATION BURSARY (R)
Established in 2000 by the Cyrus Eaton Foundation of Cleveland, Ohi0, in support of McMaster students. To be granted to a student in any program who demonstrates financial need. Preference will be given to students from Nova Scotia. (90944)
THE GEORGE AND MARGARET EDRUPT BURSARY (B, S)
Established in 1997 by Sandra Edrupt in honour of her parents George and Margaret Edrupt under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in either the Faculty of Business or the Computer Science program in the Faculty of Science. (90701)

THE ENERSYSTEM INSULATION LTD. BURSARY (H)
Established in 1997 by Enersystem Insulation Ltd., in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in a program in French who demonstrates financial need. (90702)

THE ENGINEERING CLASS OF '97 LEGACY BURSARY (E)
Established in 1997 by the graduating class in Engineering under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. (90666)

THE ENGINEERING AND SOCIETY TRAVEL BURSARY (T)
Established in 1994 by the Department of Engineering and Society. To assist students with travel costs associated with their summer placement in the Engineering and Society program. To be granted to a student who demonstrates financial need and is enrolled in the Faculty of Engineering. Applications will be reviewed by the Director, Engineering and Society and the Office of Student Financial Aid & Scholarships. (90693)

THE EVANS, PHILP BURSARIES (U)
Established in 1997 by the partners of Evans, Philip in support of McMaster students. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90671)

THE FACULTY OF BUSINESS BURSARIES (B)
Established in 1997 by the Department of Engineering and Society. To assist students with travel costs associated with their summer placement in the Engineering and Society program. To be granted to a student who demonstrates financial need and is enrolled in the Faculty of Engineering. Applications will be reviewed by the Director, Engineering and Society and the Office of Student Financial Aid & Scholarships. (90693)

THE EILEEN GRAY FARLEY BURSARY (U)
Established in 1998 by Eileen Gray Farley (Class of '43) and winner of the D.E. Thompson Scholarship in grateful memory of Mr. D.E. Thompson who established the D.E. Thompson Scholarship of 1909. To be granted to students enrolled in any program who demonstrate financial need. (90833)

THE DONALD A. FEATHER BURSARY (U)
Established in 2003 by family in memory of Donald A. Feather, B.A. (Class of '64') under the McMaster Student Opportunity Fund II initiative in support of his belief that all students should have the opportunity to pursue their educational goals. To be granted to a student in any Faculty who demonstrates financial need. (90100)

THE MARGO AND FRASER FELL BURSARIES (HS)
Established in 1999 by Margot (Class of '52') and Fraser Fell (Class of '49'). A variable number of bursaries to be granted to students enrolled in the School of Nursing in the Faculty of Health Sciences who demonstrate financial need. (90945)

THE EDITH E. FERRIE BURSARIES (U)
Established in 1995 by the late Edith E. Ferrie. To be granted to students enrolled in any program who demonstrate financial need. (90511)

THE FESTITALIA CORPORATION BURSARY (H)
Established in 1997 by the Festitalia Corporation under the McMaster Student Opportunity Fund initiative. To be granted, in alternating years, to a student who demonstrates financial need and is enrolled in the Department of Linguistics and Languages, specializing in Italian, or is enrolled in the School of the Arts. (90706)

THE FINANCIAL EXECUTIVES INSTITUTE BURSARY (B)
Established in 1997 by the Hamilton Chapter of the Financial Executives Institute in support of its belief that all students should have the opportunity to achieve their educational goals. To be granted to a student enrolled in Level II of the Commerce program who demonstrates financial need, has attained a minimum CA of 6.0 and who plans to major in Accounting and/or Finance. The bursary is renewable for up to two additional years on condition that the student continues to demonstrate financial need and maintains a minimum CA of 6.0 in the Commerce program. (90829)

FIRSTONTARIO CREDIT UNION (R)
Established in 1986 by members in celebration of 50 years of service in the Hamilton area. Two or three bursaries to be granted to students in any program who, are from the Regional Municipality of Hamilton-Wentworth, City of Burlington or Town of Haldimand-Norfolk, who have demonstrated financial need. Value: $700 each (90504)

THE W.H. FLEMING BURSARIES (U)
Established in 2005 by bequest of W.H. Fleming. To be granted to graduate or undergraduate students in any program who demonstrate financial need. (91045)

THE FORRESTER/GREGORY BURSARY (U)
Established in 1997 by Shelley Forrester and Douglas Gregory in support of McMaster students. To be granted to a student in any program who demonstrates financial need. (90707)

THE JOHN C. FORSTER BURSARIES (U)
Established by bequest of John Clifton Henry Forster of Windsor, Ontario. A variable number of bursaries to be granted to students in any program who demonstrate financial need. (90600)

THE EMMA FOX BURSARIES (U)
Established in 1981 by the Wallingford Hall Committee of which Emma Fox was treasurer from 1918 to 1958. To assist female students in any program. (90512)

THE WAYNE C. FOX BURSARIES (B, H, SS)
Established in 1999 by Wayne C. Fox in support of his belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries will be granted to students who demonstrate financial need and are enrolled in the Faculty of Humanities or the Faculty of Social Sciences or the Commerce program at the DeGroote School of Business. (90857)

THE FREEMAN FAMILY FOUNDATION BURSARY FUND FOR STUDY AT THE HEBREW UNIVERSITY OF JERUSALEM (T)
Established in 1997 under the McMaster Student Opportunity Fund initiative in the belief that all students should have the opportunity to pursue their educational goals. To be granted, on the recommendation of the Religious Studies Selection Committee, to graduate and undergraduate students who demonstrate financial need and have enrolled in session(s) of study at the Hebrew University of Jerusalem. Applicants must have lived in Ontario for 12 consecutive months directly prior to commencing full-time post-secondary studies. Students should contact the Department of Religious Studies. (90818)

THE BILL FULLER BURSARY (SS)
Established in 1996 in commemoration of the 50th anniversary of the historic 1946 Steeles 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 Community Foundation Board from 1990-96, Chairman of the Finance Committee of the Holy Family Church and Hamilton's Citizen of the Year in 1991. To be granted to students enrolled in any program who demonstrate financial need. Preference to be given to students enrolled in a Labour Studies program. (90601)

THE IRENE AND DAVID FUNG BUSINESS BURSARY (B)
Established in 2007 by Irene Fung, B.A. (Class of '73) and David Fung, B.Sc. (Class of '75), M.B.A. (Class of '77) in support of their belief that all students should have the opportunity to pursue their educational goals. To be granted to a student who has completed Business I or is in the first year of the M.B.A. program at the DeGroote School of Business, and who demonstrates financial need. (91087)

THE DAVID FUNG SCIENCE BURSARY (S)
Established in 2007 by David Fung, B.Sc. (Class of '75), M.B.A. (Class of '77) in support of their belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in the Faculty of Sciences who demonstrates financial need. (91086)

THE GENERAL CONTRACTORS ASSOCIATION OF HAMILTON BURSARIES (E)
Established in 1997 by the General Contractors Association of Hamilton under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in the Faculty of Engineering who demonstrate financial need. (90710)

THE GENERAL ELECTRIC CANADA INC. BURSARY (U)
Established in 1997 by General Electric Canada Inc. under the McMaster Student Opportunity Fund Initiative. To be granted to a student enrolled in any program who demonstrates financial need. (90711)

THE GENNUM CORPORATION BURSARIES (E)
Established in 1997 by the Gennum Corporation 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 who are enrolled in the Faculty of Engineering and who demonstrate financial need. (90712)
THE GWEN GEORGE UNDERGRADUATE BURSARIES (CS)
Established in 1997 in loving memory of Gwen George by her family and friends under the McMaster Student Opportunity Fund initiative. To be granted to students in any undergraduate program who have demonstrated financial need. Preference to be given to students who have demonstrated leadership and service to McMaster University and/or the Hamilton-Wentworth, surrounding or world communities. (90713)

THE GEORGE P. GILMOUR MEMORIAL BURSARY (AS)
Established in 1997 by the Class of ’82 in support of McMaster students. To be granted to a student enrolled in the Arts and Science Program who has demonstrated financial need. Preference will be given to the student who wins the George P. Gilmour Memorial Scholarship. (90714)

THE DR. GEORGE P. GILMOUR ’21 MEMORIAL BURSARY (U)
Established in 2006 by the families of Marnie Gilmour-Fisher (Class of ’50) and Gwen Gilmour-Laurie (Class of ’54) to honour their father’s achievements as Chancellor of McMaster University from 1941 to 1950 and President and Vice Chancellor from 1950 to 1961. To be granted to students in any Faculty who demonstrate financial need. (91066)

THE ALLEN AND MILLI GOULD FAMILY FOUNDATION BURSARIES (B)
Established in 1997 from funds donated by the Allen and Milli Gould Family Foundation, 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 McMaster students enrolled in the Faculty of Business who demonstrate financial need. Preference to be given to M.B.A. Co-op students. (90716)

THE JAMES EDWARD GRADE MEMORIAL BURSARY (S)
Established in 1964 by his sister. To be granted to a student enrolled in the Faculty of Science specializing in Earth Sciences who demonstrates financial need. (90513)

THE GARY GRAHAM BURSARY (B)
Established in 1997 by Gary Graham under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in Business I, or in the first year of the M.B.A. program at the DeGroote School of Business. (90717)

THE GRAND & TOY BURSARIES (U)
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 program who demonstrate financial need. (90602)

THE GRAY FAMILY BURSARY (E)
Established in 1997 by Donald Gray (Class of ’70) and Glenn Gray (Class of ’73) and Kerry Gray (Class of ’77 and ’82 (M.B.A.)) under the McMaster Student Opportunity Fund initiative. To be granted to a third year student enrolled in the Engineering and Management program who demonstrates financial need. Preference to be given to students who permanently reside in the Hamilton-Wentworth Region. (90718)

THE LELAND GREGORY BURSARIES (U)
Established in 1997 by the bequest of Leland Andrew Gregory. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90719)

THE JAMES R. (JAMIE) GREILICH MEMORIAL BURSARY (D)
Established in 1991 in memory of Jamie Greilich (Class of ’88) by the Operating Committee on the Disabled through its Awareness Week Activities. To be granted to a disabled student in any program who demonstrates financial need. Students should have registered with the Centre for Student Development. (90553)

THE GUARDIAN CAPITAL INC. BURSARIES (U)
Established in 1996 by Guardian Capital 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 in any program who demonstrate financial need. (90674)

THE BILL AND HELEN HAIGHT BURSARY (H)
Established in 2004 by Helen (Class of ’49) and Bill Haight under the McMaster Student Opportunity Fund II initiative. To be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. Preference to be given to students in Level II or III of a Music program. (91007)

THE HALL FAMILY BURSARY (H)
Established in 2004 by Frederick A. Hall under the McMaster Student Opportunity Fund II initiative. To be granted to a student enrolled in any program who demonstrates financial need. Preference to be given to a student in residence at Halcyon House. (90859)

THE GRAND & TOY BURSARIES (U)
Established in 1997 by the bequest of Leland Andrew Gregory. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90719)

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THE HALL FAMILY BURSARY (H)
Established in 2004 by Frederick A. Hall under the McMaster Student Opportunity Fund II initiative. To be granted to a student enrolled in any program who demonstrates financial need. Preference to be given to a student in residence at Halcyon House. (90859)

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Established in 1997 by the bequest of Leland Andrew Gregory. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90719)

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THE JAMES R. (JAMIE) GREILICH MEMORIAL BURSARY (D)
Established in 1991 in memory of Jamie Greilich (Class of ’88) by the Operating Committee on the Disabled through its Awareness Week Activities. To be granted to a disabled student in any program who demonstrates financial need. Students should have registered with the Centre for Student Development. (90553)

THE GUARDIAN CAPITAL INC. BURSARIES (U)
Established in 1996 by Guardian Capital 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 in any program who demonstrate financial need. (90674)
THE MARGARET HARGREAVES BURSARIES (H, SS)
Established in 1997 by Susan Hargreaves Walker in loving memory of her mother, Margaret Hargreaves. A variable number of bursaries to be granted to Social Sciences and Humanities students who demonstrate financial need. Preference will be given to mature, female students. (90729)

THE HARWOOD BURSARIES (H)
Established in 1990 by bequest of Dr. William Harwood of Hamilton in memory of his beloved wife Grace and devoted daughter Willa Ruth Laurie (Class of ’50). A variable number of bursaries to be granted to students studying Music who demonstrate financial need. Value: Not to exceed $1,000 (30517)

THE M.A. (JACK) HASSAL BURSARY (B)
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)

THE HATCH ASSOCIATES BURSARY (E)
Established in 1997 by Hatch Associates in support of their belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. (90730)

THE MEL AND MARYLIN HAWKRIGG PART-TIME STUDENT BURSARIES (U)
Established in 2007 by the McMaster Association of Part-Time Students in honour of Dr. Melvin and Mrs. Marilyn Hawkridge to mark his retirement as Chancellor of the University (1998-2007). To be granted to students currently enrolled, on a part-time basis, in a degree, diploma or certificate program who demonstrate financial need. (91080)

THE DAMIAN MIGUEL HEADLEY BURSARY (U)
Established in 1997 by family and friends in memory of Damian Miguel Headley (Class of ’89) under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Damian Miguel Headley Award. (90902)

THE JACK AND THELMA HEATH MEMORIAL BURSARIES (HS)
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. program (basic and/or post-diploma stream). (90519)

THE MIKE AND MURIEL HEDDEN BURSARIES (U)
Established in 1996 by Muriel Hedden in memory of her husband, D.M. (Mike) Hedden, 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 program who demonstrate financial need. (90603)

THE RUDY HEINZL BURSARY (U)
Established in 1998 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 program who demonstrate financial need. Preference will be given to the recipient of The Rudy Heinzl Award. (90577)

THE EDWIN W. HILBORN BURSARY (U)
Established in 1965 by bequest of Edwin W. Hilborn. To be granted to a student in any program. (90520)

THE MARY A. HILL BURSARY (R)
Established in 1976 by bequest of Mary A. Hill. To be granted to a female student in any program who demonstrates financial need. Preference to be given to one who has graduated from a secondary school in Hamilton. (90521)

THE LLOYD AND ANDREW HILLGARTNER BURSARIES (U)
Established in 1997 by bequest of Lloyd Andrew Hillgartner. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90834)

THE HAZEL MAY HINKS BURSARIES (HS)
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 program in Nursing who demonstrate financial need. Preference will be given to students who have graduated from a high school located in the City of Burlington. (90604)

THE JANIZTA HITCHEN BURSARY (U)
Established in 2006 by Alan Hitchen in memory of his wife, Janitza. To be granted to students enrolled in any program who demonstrate financial need. (91068)

THE JOHANNES MICHAEL HOLMBOE MEMORIAL BURSARY (B)
Established in 2004 by bequest of Ruth Anna Holmboe in memory of her husband, Johannes Michael Holmboe. To be granted to students enrolled in the Faculty of Business who demonstrate financial need. (91006)

THE WILLIAM NEIL HOTRUM BURSARIES (R, U)
Established in 2004 by Mr. William Neil Hotrum under the McMaster Student Opportunity Trust Fund II initiative in support of his belief that all students should have the opportunity to pursue their educational goals. To be granted to students who demonstrate financial need. Preference will be given to (i) students from the Hamilton area and (ii) students from a single parent family. (91026)

THE GENERAL HUMANITIES BURSARY FUND (H)
The General Humanities Bursary Fund, established in 1997 by Humanities alumni, will be granted to undergraduate students at McMaster registered in any Humanities program who demonstrate financial need. (90734)

THE DONALD W. HURD BURSARY (S)
Established in 2006 by Alice Hurd in honour of her husband Donald W. Hurd, M.Sc. (Class of ’50). To be granted to students registered in the Earth and Environmental Sciences program in the Faculty of Science who demonstrate financial need. (91053)

THE JULIA HURTIG BURSARY (H)
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)

THE IODE JEAN HENDERSON NURSING BURSARY (HS)
Established in 2007 by the Imperial Order of the Daughters of the Empire (IODE)-Angela Bruce Chapter in memory of Jean Henderson. To be granted to a student enrolled in the B.Sc.N. program who demonstrates financial need. Preference will be given to a student from Oakville. (91071)

THE IODE JIM THOMSON ENGINEERING BURSARY (E)
Established in 2007 by the Imperial Order of the Daughters of the Empire (IODE)-Angela Bruce Chapter in memory of Jim Thomson. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. Preference will be given to students from Oakville. (91088)

THE INGLIS BURSARIES (B, E)
Established in 1996 by Paul F. Inglis of Mississauga. A variable number of bursaries to be granted to students enrolled in a program in Commerce or Engineering Management who demonstrate financial need. Preference to be given to students enrolled in Engineering Management. (90606)

THE INTER-RESIDENCE COUNCIL BURSARIES (U)
Established in 1996 by the Inter-Residence Council in support of McMaster students. To be granted to a student in any program who demonstrates financial need. (90680)

INTERNATIONAL SCIENCE AND ENGINEERING FAIR 1995 BURSARY (E, S)
Established in 2005 by the Board of the International Science and Engineering Fair 1995 under the Ontario Trust for Student Support initiative. A variable number of bursaries to be granted to students enrolled in Level I in the Faculties of Science or Engineering who demonstrate financial need. Preference will be given to students who have participated in local science fairs. (91036)

THE JOHN B. ISBISTER BURSARY (SS)
Established in 1996 under the McMaster Student Opportunity Fund initiative, by John B. Isbister of Stoney Creek, valued member of the United Steelworkers of America for 39 years and honoured war veteran by Canada and the navy on four occasions. To be granted to a student enrolled in a program in Labour Studies who demonstrates financial need. (90605)

THE IVESY BURSARY (H)
Established in 1997 under the McMaster Student Opportunity Fund-Initiative. Preference will be given to students whose financial need is demonstrated, to the recipient of The Ivesy Scholarship. (90872)

THE IVISON FAMILY BURSARY FUND (B, E, HS)
Established in 1998 by Don and Betty Ivison in support of McMaster students under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in the Faculty of Engineering, the Faculty of Business or the Schools of Medicine and Rehabilitation Science in the Faculty of Health Sciences who demonstrate financial need. (90841)
THE STUART AND MARJORIE IVISON BURSARIES (H)
Established in 1997 by Donald Ivison (Class of '53) and Betty Ivison (Class of '52) in honour of his parents. Stuart and Marjorie Ivison (Class of '28 Arts). To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to recipients of The Stuart and Marjorie Ivison Scholarship. (90739)

THE CLIFFORD JACKSON MEMORIAL BURSARIES (R)
Established in 1997 by family and friends in memory of Clifford Jackson. A variable number of bursaries to be granted annually to students in any program who demonstrate financial need. Preference will be given to children and grandchildren of employees and retirees of The Hamilton-Wentworth Regional Police. (90737)

THE JADDCO ANDERSON BURSARY (U)
Established in 1997 by Jadddco Anderson Limited in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in any program who demonstrates financial need. (90738)

THE MARK JANTZI MEMORIAL BURSARY (B)
Established in 2004 by Paul and Hanne Jantzi under the McMaster Student Opportunity Fund initiative, in memory of their son Mark Jantzi, an Opportunity Fund 11 initiative, in memory of their son Mark Jantzi, an Honours Commerce 2002 graduate who passed away tragically in a car accident at the age of 25. This bursary is in support of the belief that all students should have the opportunity to pursue their educational goals. To be granted to a student who demonstrates financial need and are enrolled in the DeGroote School of Business. (91004)

THE JENSEN BURSARY (S)
Established in 1997 by Dr. Doris E.N. Jensen in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to a student in the Faculty of Science, Level II or higher, who demonstrates financial need. Preference to be given to a student registered in a co-op program in the Faculty of Science. (90740)

THE JOHNS FAMILY BURSARIES (AS)
Established by Martin W. Johns and family. A variable number of bursaries to be granted to students enrolled in the Arts and Science Program who demonstrate financial need. (90568)

THE JAMES A. JOHNSON CLASS OF '97 BURSARIES (SS)
Established by the Economics graduating Class of '97, faculty of the Department of Economics, and friends, under the McMaster Student Opportunity Fund initiative, in honour of Dr. James A. Johnson, to recognize his nine years as Dean of Social Sciences and his thirty-five years of dedicated service to the Department of Economics and McMaster University. A variable number of bursaries to be granted to students in a degree program in Economics who demonstrate financial need. Preference will be given to the recipient of The James A. Johnson Community Contribution Award. (90742)

THE ANDREW JOHNSTONE MEMORIAL BURSARY (SS)
Established in 2002 by colleagues, family and friends in memory of Andrew Johnstone. To be granted to a Level III student enrolled in the Faculty of Social Sciences who demonstrates financial need. Preference to be given to a student enrolled in an Economics program. (90972)

THE JONES-TURNER BURSARY (U)
Established in 1997 by Sheila Lang (Class of '53) in honour of her family’s long-standing association with the University. To be granted to a student enrolled in any program who demonstrates financial need. (90743)

THE DR. RONALD V. JOYCE BURSARIES (U)
Established in 2002 by Dr. Ronald V. Joyce (Class of '98) to support students at McMaster. A variable number of bursaries to be granted to undergraduate students in any program who demonstrate financial need. (90977)

THE JUNIOR LEAGUE OF HAMILTON/BURLINGTON, INC. BURSARY (U)
Established in 1997 by the Junior League of Hamilton-Burlington, Inc. under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Junior League of Hamilton-Burlington, Inc. Award. (90905)

THE MURIEL McBRIEN KAUFFMAN BURSARIES (U)
Established in 1997 by the Muriel McBrien Kauffman Foundation 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 annually to students enrolled in any program who demonstrate financial need. (90744)

THE JAN KELLEY MARKETING BURSARY (B)
Established in 1997 by Kelley Advertising Inc., founded in Hamilton in 1913. This bursary to be granted to a student enrolled in Business I, or in the first year of the M.B.A. program at the DeGroote School of Business who demonstrates financial need. (90745)

THE ROBERT ALAN KENNEDY BURSARIES (U)
Established in 1997 by Robert Alan Kennedy under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90746)

THE KENTS FAMILY BURSARY (H)
Established in 1997 by the Kents Family under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in the School of Medicine, the School of Nursing or the School of Rehabilitation Science. (90747)

THE PHILLIP GORDON KETTLE BURSARY (HS)
Established in 1996 in memory of Phillip Gordon Kettle. To be granted to a student enrolled in a Nursing program who demonstrates financial need. Preference to be given to a student studying herbal medicine as alternative therapies. (90678)

THE MARY KEYES MEMORIAL BURSARY (U)
Established in 2002 by family and friends as a tribute to Dr. Mary E. Keyes, long-time teacher, coach, administrator and mentor at McMaster University. To be granted to a student who demonstrates financial need with a minimum 8.0 Cumulative Average in any program. Preference to be given to students who show leadership and participation in McMaster student life. (90794)

THE KHAKI UNIVERSITY AND YOUNG MEN’S CHRISTIAN ASSOCIATION MEMORIAL BURSARIES (U)
Established in 1921 by the Khaki University of Canada and the Young Men’s Christian Association. A variable number of students in any program who demonstrate financial need. (90523)

THE DAVID KINSLEY MEMORIAL BURSARY (H, SS)
Established in 2000 by family, friends, colleagues and former students of David Kinsley, Professor of Religious Studies at McMaster University from 1969 to 2000. To be granted to part-time students who have completed at least Level I of an undergraduate program in either the Faculty of Social Sciences or the Faculty of Humanities. Preference to be given to students who have attained a minimum Cumulative Average of 7.0. (90762)

THE KIWANIS CLUB OF HAMILTON EAST BURSARY (R)
Established in 1997 by the Kiwanis Club of Hamilton East under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any program who demonstrates financial need. Preference to be given to members and former members of the Hamilton East Kiwanis Boys’ and Girls’ Club. (90749)

THE KNP MARSHALL BURSARY (AT, B)
Established in 2005 under the Ontario Trust for Student Support initiative. To be granted to students enrolled in the DeGroote School of Business who demonstrate financial need and who have demonstrated outstanding athletic achievement in an intersport activity. (91032)

THE RICHARD KONRAD BURSARIES (D)
Established in 1997 by Richard Konrad under the McMaster Student Opportunity Fund initiative in the belief that all students should have the opportunity to achieve their academic goals. A variable number of bursaries to be granted based upon demonstrated financial need in each of the following areas:
   a) The Richard Konrad Bursaries for students enrolled in any program.
   b) The Richard Konrad Bursaries for physically challenged students registered with the Centre for Student Development, who are enrolled in any program. (90750)

THE KPMG BURSARIES (B)
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. (90607)

THE HAROLD J.L. KRUGEL BURSARY (H)
Established in 2000 by Mrs. J. Beverly Krugel (Class of '53) in honour of her husband, Harold J.L. Krugel. To be granted to a student enrolled in the Faculty of Humanities who demonstrates financial need. Preference will be given to a student in the Department of Linguistics and Languages. (90947)

THE RAYMOND C. LABARGE MEMORIAL BURSARIES (U)
Established in 1973 by friends and associates in memory of Raymond C. Labarge (Class of ’36) of Ottawa. A variable number of bursaries to be granted to students enrolled in Level III or IV of any program who demonstrate financial need. A minimum Cumulative Average of 8.0 is required. (90524)

THE LAIDLAW INC. BURSARIES (U)
Established in 1996 by Laidlaw Inc., a major provider of transportation services to school boards, municipalities and the general public 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 program who demonstrate financial need. (90669)
THE BETTY MAY LAMB MEMORIAL BURSARY (U)
Established in 1997 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 program who demonstrate financial need. (90553)

THE EWAN MACINTYRE BURSARIES (SS)
Established in 1997 by The Leflar Foundation in recognition of Ewan Macintyre's contribution to the McMaster School of Social Work as a tribute to Dr. Ewan Macintyre for his 29 years of service as McMaster employee from 1957 to 1977, and an outstanding athlete who was a McMaster student athlete from 1971 to 1977. To be granted to a student enrolled in the School's Director. A variable number of bursaries to be granted to students who demonstrate financial need. (90661)

THE BERTRAM LEGGAT MEMORIAL BURSARIES (U)
Established in 1996 by his family and friends in memory of Bertram Leggat, Q.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 KENNETH LYNCH MEMORIAL BURSARIES (E)
Established in 2006 by Kevin Lengyell, B.Com. (Class of '82). To be granted to students who have completed Level II or Level III of the Bachelor of Commerce program who demonstrate financial need. Preference will be given to students from the Region of Waterloo. (91506)

THE LIBURDI ENGINEERING LIMITED BURSARY (E)
Established in 1997 by Liburdi Engineering Limited under the McMaster Student Opportunity Fund Initiative. To be granted to a student enrolled in an Engineering program who demonstrates financial need. (90754)

THE LINDLENG MANAGEMENT BURSARIES (U)
Established in 1997 by Linnclden Management Ltd. under the McMaster Student Opportunity Fund Initiative. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90755)

THE RUSSELL AND ELIZABETH LINNLEY BURSARIES (U)
Established in 2001 in memory of Russell and Elizabeth Lindley. To be granted to students enrolled in any program who demonstrate financial need. (91081)

THE LIONS CLUB OF ANCASTER RAY JOHNSON MEMORIAL BURSARY (R)
Established in 1997 by the Ancaster Lions Club under the McMaster Student Opportunity Fund Initiative to exemplify the Lions international objective to take an active interest in the civic, cultural, social and moral welfare of the community. To be granted to a student enrolled in any program who demonstrates financial need. Preference to be given to students who currently reside in the town of Ancaster. (90804)

THE SADIE LUDLOW BURSARIES (AT)
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 McMaster University varsity sports. (90615)

THE LVIV POLYTECHNIE STATE UNIVERSITY EXCHANGE PROGRAM BURSARY (EX)
Established in 2000 by the Hamilton Ukrainian Community. To be granted to students who have demonstrated financial need and who are attending McMaster as participants in the Lviv Polytechnie State University Exchange Program. (90654)

THE LYNDEN LIONS CLUB BURSARY (CS)
Established in 1997 by the Lynden Lions Club under the McMaster Student Opportunity Fund Initiative to exemplify the Lions international objective to take an active interest in the civic, cultural, social and moral welfare of the community. To be granted to students enrolled in any program who have demonstrated financial need and involvement in extracurricular or community activities. (90616)

THE JOHN A. 'JACK' MACDONALD BURSARIES (SS)
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 program who demonstrate financial need and interest in extracurricular or community activities. (90616)

THE EWAN MACINTYRE BURSARIES (SS)
Established in 1999 by the Social Work Alumni Branch, the Citizen Antion Group, the Social Work Students Association, faculty (past and present), staff, friends, alumni, and various organizations associated with McMaster's School of Social Work as a tribute to Dr. Ewan Macintyre for his 29 years of service to the School, including 12 years of service as the School's Director. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in a Bachelor of Social Work program. (90681)
**THE DIANNE MacISAAC MEMORIAL BURSARY (SS)**
Established in 1994 by friends and family of 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 program in Sociology who demonstrate financial need. Preference will be given to students with disabilities. (90571)

**THE BOB MacKENZIE BURSARY (SS)**
Established in 1996 under the McMaster Student Opportunity Fund initiative, by Bob MacKenzie, political organizer for the United Steelworkers Union and valued MPP for Hamilton East for twenty years. To be granted to a student enrolled in a program in Labour Studies who demonstrates financial need. (90617)

**THE ALEC JOHN ROYSTON MacMILLAN MEMORIAL BURSARY (U)**
Established in 1996 by his family in memory of Alec John Royston MacMillan under the McMaster Student Opportunity Fund Initiative. To be granted to students in any program who demonstrate financial need. Preference will be given to the recipients of The Alec John Royston MacMillan Memorial Awards. (90907)

**THE PAUL R. MacPHERSON BURSARY (R)**
Established in 1998 by Paul R. MacPherson (Class of ’57) and augmented in 2003 under the McMaster Student Opportunity Fund II initiative in support of his belief that all students should be able to pursue their educational goals. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to (i) students from Bracebridge and Muskoka Lakes Secondary School and (ii) Aboriginal students from a First Nations community in Ontario. (90838)

**THE MAKSTEEL BURSARY (U)**
Established in 1997 by Maksteel Inc. in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in any program who demonstrate financial need. (93761)

**THE MALLOCH FOUNDATION BURSARIES (R)**
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 program who demonstrate financial need. Preference to be given to students from the Hamilton area. (90618)

**THE ENRICO HENRY Mancinielli BURSARIES (SS)**
Established in 1996 by the Labourers’ International Union of North America, Local 837 in honour of Enrico Henry Mancinielli, LIUNA Canadian Director and Vice President and Local 837 President. Two bursaries to be granted to students enrolled in a program 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 MANULIFE FINANCIAL BURSARIES (B, HS)**
Established in 1997 by Manulife Financial under the McMaster Student Opportunity Fund Initiative. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in the Faculty of Business or the Faculty of Health Sciences. (90762)

**THE DR. ALBERT MARTIN BURSARIES (H)**
Established in 1996 as a tribute to Professor R. Craig McIlvor by his family, friends, colleagues and students. A variable number of bursaries to be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. Preference will be given to students enrolled in the Department of Linguistics and Languages. (90620)

**THE RONALD E. MATERICK/TISHMAN BURSARY (E)**
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. (90665)

**THE DOROTHY DEAN MATHESON MEMORIAL BURSARY (U)**
Established in 2004 by bequest of Kenneth Matheson, in memory of Dorothy Dean Matheson (Class of ’34). To be granted to female part-time students who demonstrate financial need. (91028)

**THE LINDA MATTHEWS BURSARIES (U)**
Established in 1996 by Linda Matthews (Class of ’69). A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. Preference to be given to female students. (90664)

**THE JOHN AND HELEN MAXWELL BURSARIES (S)**
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 program in Earth Sciences or Chemistry. (90621)

**THE HARRISON MAYNARD MEMORIAL BURSARY IN MIDWFERY (HS)**
Established in 2005 in memory of Harrison Maynard by his family and friends. To be granted to students enrolled in Level II or above of the Midwifery Education Program who demonstrate financial need. (91030)

**THE J. B. McARTHUR BURSARY (H)**
Established in 2005 by Joseph B. McArthur, son of J. B. McArthur, a 1905 graduate of McMaster University, who conscientiously served his alma mater for forty years as President of the McMaster Alumni Association (1911), member of McMaster’s Senate (1911-1931) and member of McMaster’s Board of Governors (1931-1953). To be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. (91039)

**THE NEIL D. McARTHUR BURSARIES (E, S)**
Established in 1997 by the Anne and Neil McArthur Foundation in memory of Mrs. McArthur’s parents, Joseph and Josephine Hrynszik. To be granted to students in any program who demonstrate financial need. Preference to be given to students enrolled in either the Faculty of Science or the Faculty of Engineering. (90765)

**THE LAWRENCE McBREARTY BURSARY (SS)**
Established in 1996 under the McMaster Student Opportunity Fund Initiative by Lawrence McBrearty, current National Director of the United Steelworkers of America and President of the Steelworkers’ Humanity Fund, the Union’s third world aid and development arm. To be granted to a student enrolled in a program in Labour Studies who demonstrates financial need. The value of this award shall be no less than $300. (90766)

**THE JOHN McCaILL Memorial BURSARY (AT)**
Established in 2001 in loving memory of John (Jack) Woodhouse McCaill by his family and friends. To be granted to a student who demonstrates financial need and who demonstrates outstanding athletic achievement in men’s basketball, golf, football, hockey or tennis. (90968)

**THE KATHLEEN AND DENNIS McCalla BURSARIES (AS, H, S)**
Established in 2003 by Kathleen and Dennis McCalla, former Dean, Faculty of Science and later Vice-President, Faculty of Health Sciences at McMaster. To be granted to students who demonstrate financial need and are enrolled in a program in Science, Humanities, or Arts and Science. Preference will be given to students with a minimum admission average of 80% and who are from Grey or Bruce Counties. Value: Minimum $1,000. (90970)

**THE DR. BRIAN McCANN MEMORIAL BURSARY (S)**
Established in 2004 by friends, colleagues and former students in memory of Dr. Brian McCann. To be granted to a student in the School of Geography and Earth Sciences who demonstrates financial need and is enrolled in a course offered by the School with an additional cost for a field component. (91015)

**THE ANDREW McFARLANE BURSARIES (U)**
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. (90526)

**THE R. CRAIG MelyVOR BURSARIES (SS)**
Established in 1996 as a tribute to Professor R. Craig Melvor by his family, friends, colleagues and students. A variable number of bursaries to be granted to students enrolled in the Faculty of Social Sciences who demonstrate financial need. Preference will be given to students enrolled in an Honours program in Economics. (90622)

**THE JANET McKnight Memorial BURSARIES (HS)**
Established in 1996 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 program who demonstrate financial need. (90623)

**THE MCLAY BURSARY (EX)**
Established in 1997 by Barry and Jean McLean under the McMaster Student Opportunity Fund initiative. To be granted to students who demonstrates financial need and who is participating in one of McMaster’s formal exchange programs. Preference to be given to students who have been active in international clubs and associations. (90767)

**THE McLEAN FAMILY EXCHANGE BURSARIES (EX)**
Established in 1997 by the McLean Family under the McMaster Student Opportunity Fund initiative, in gratitude for the learning and relationship enrichment which they obtained first at McMaster University, and subsequently through international travel. To be granted to students who wish to participate in exchange programs, who demonstrate financial need and who are enrolled in Level II or III of a program. Preference to be given to international exchanges, for students from the Faculty of Engineering or the Faculty of Humanities with a CA above 7.0 at the most recent review and who have shown leadership and involvement in university and/or community activities. (90649)
THE McMaster Alumnae Centennial Bursary (U)
Established in 1988 by the McMaster Women's Alumnae, Hamilton Branch. To be granted to a student in her or his graduating year who is a Canadian citizen or permanent resident and who exhibits financial need. Preference will be given to a single parent. (90528)

THE McMaster Alumni Association Bursary (U)
Established in 1997 by the McMaster Alumni Association in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries will be granted annually to McMaster students who demonstrate financial need. (90862)

THE McMaster Association of Part-Time Students Bursaries (U)
Established in 1999 in celebration of McMaster's Centennial to assist students currently enrolled in a degree or certificate program 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 Awards Committee. (90529)

THE McMaster Association of Part-Time Students 20th Anniversary Bursaries (U)
Established in 1999 by the McMaster Association of Part-Time students to commemorate its 20th anniversary. The bursary was further augmented by friends and colleagues of Helen Barton, MAPS' first President and founding member, in recognition of her 27 years of service and retirement as Senior Associate Registrar at McMaster. To be granted to students currently enrolled, on a part-time basis, in a degree, diploma or certificate program, who demonstrate financial need. Applications will be reviewed by the MAPS Awards Committee. (90835)

THE McMaster Athletic Council (MAC) Bursary (AT)
Established in 1997 by the Men's Athletic Council and the Women's Intercollegiate Athletics Council under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any program who demonstrates financial need and who is a member of any inter-university team at McMaster. (90988)

THE McMaster Bursaries (U)
Established in 1980 by the University to assist undergraduate students in any program. (90527)

THE McMaster Engineering Society Bursary (E)
Established in 1999 by the McMaster Engineering Society. To be granted to a student in the Faculty of Engineering who demonstrates financial need. (90863)

THE McMaster General Bursaries (U)
Established in 1996 by the University to assist undergraduate students in any program who demonstrate financial need. (90624)

THE McMaster Hispanic Society Bursary (H)
Established in 1999 by the McMaster Hispanic Society under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in a Linguistics and Languages program and enrolled in Hispanic Studies courses who demonstrates financial need. Preference will be given to students who demonstrate a lively interest in the University and community through their involvement in extracurricular activities. (90864)

THE McMaster M.B.A. Alumni Association Bursaries (S)
Established in 1996 by the McMaster M.B.A. Alumni Association. A variable number of bursaries to be granted to students enrolled in the first year of the DeGroote School of Business M.B.A. program who demonstrate financial need. (90626)

THE McMaster Men's Athletics Bursary (AT)
Established by past and present student-athletes and friends of McMaster Interuniversity Athletics to assist students in any academic program who demonstrate financial need and who demonstrate outstanding athletic participation in men's interuniversity athletics. (90625)

THE McMaster Men's Basketball Bursary (AT)
Established by past and present student-athletes and friends of McMaster Men's Basketball to assist students in any academic program who demonstrate financial need and who demonstrate outstanding athletic participation in the sport of men's basketball. (90770)

THE McMaster Savings and Credit Union Limited Bursary (U)
Established in 1997 by McMaster Savings and Credit Union Limited in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted annually to McMaster students enrolled in any program who demonstrate financial need. (90561)

THE McMaster Squash and Golf Bursary (AT)
Established by past and present student-athletes and friends of McMaster Golf and Squash to assist a student in any academic program who demonstrates financial need and who demonstrates outstanding athletic participation in the sport of golf or squash. (90771)

THE McMaster Student Opportunity Fund Bursaries (U)
Established in 1996 by McMaster University from general donations to the University bursary program 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 program who demonstrate financial need. (90835)

THE McMaster Student Opportunity Fund II Bursaries (U)
Established in 2002 by McMaster University from general donations to the University bursary program and matching funding provided through the Ontario Student Opportunity Trust Fund II initiative. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90778)

THE McMaster Women's Basketball Bursary (AT)
Established by past and present student-athletes and friends of McMaster Women's Basketball to assist a student in any academic program who demonstrates financial need and who demonstrates outstanding athletic participation in the sport of women's basketball. (90772)

THE McMaster Women's Club Bursary (HS)
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 Bachelor of Science in Nursing program. (90531)

THE MDS Inc. Bursary (HS)
Established in 1997 by MDS Inc., under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in the Faculty of Health Sciences who demonstrates financial need. (90775)

THE A.J. Melloni Memorial Fund (U)
To be granted to a student in any program. (90532)

THE Mélocé Monnex Inc. Bursary (U)
Established in 1997 by Mélocé Monnex Inc. under the McMaster Student Opportunity Fund initiative in the belief that students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in any program who demonstrates financial need. (90776)

THE Meritor Automotive Inc. Bursary (E)
Established in 1989 by Meritor Automotive Inc. under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in a Mechanical Engineering program who demonstrates financial need. (90865)

THE Edna C. and Frank Charles Miller Bursary (U)
Established in 1997 by Frank C. Miller in memory of his parents, Edna C. and Frank Charles Miller, in support of McMaster students. To be granted to a student enrolled in any program who demonstrates financial need. (90778)
THE ANN MINER MEMORIAL BURSARY (E)
Established in 2005 in memory of Ann Miner by her brother Jim Sweetman (Class of ‘77) and his wife Sheila. To be granted to students enrolled in a program in Chemical Engineering in the Faculty of Engineering who demonstrate financial need. (91033)

THE MINICH FAMILY BURSARIES (B)
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 GARY JAMES MINNETT BURSARY (SS)
Established in 1999 in memory of Gary James Minnett, B.A./B.P.E. (Class of ‘72) by his wife, Barbara, and daughter, Samantha and Erin. To be awarded to a student enrolled in a Kinesiology program who demonstrates financial need. Preference will be given to a student enrolled in Kinesiology I from a high school in the Hamilton area. (90866)

THE DR. F. A. MIRZA BURSARY (E)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, to the recipient of The Dr. F.A. Mirza Scholarship. (90895)

THE CAROL R. MITCHELL BURSARY (B)
Established in 2005 by Carol R. Mitchell, M.B.A. (Class of ’82). To be granted to students enrolled in the Bachelor of Commerce program in the DeGroote School of Business who demonstrate financial need. (91051)

THE JAMES C. MOORE MEMORIAL BURSARY (H, SS)
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. (90566)

THE THERESE E. MOORE BURSARY (H)
Established in 2003 by David M. Moore (Class of ‘00) in honour of his mother, Therese E. Moore. To be granted to a student enrolled in a program in History who demonstrates financial need. (91000)

THE ROBERT JOHN MORRIS BURSARIES (E)
Established in 1996 by Robert John Morris. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in the Faculty of Engineering. Preference will be given to in-course recipients and/or entrance level recipients of The Robert John Morris Awards in the year they receive the award. (90630)

THE WALLACE R. MORRIS BURSARY FUND (U)
Established in 1997 by bequest of Wallace Ronald Morris. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90780)

THE ARCHIE MOUGHLALIAN BURSARIES (E)
Established by bequest in 1998. A variable number of bursaries to be granted to students enrolled in the Faculty of Engineering who demonstrate financial need. (90852)

THE JOHN DOUGLAS MOYER BURSARY (U)
Established in 1986 by bequest of John Douglas Moyer to assist needy students. (90534)

THE HONOURABLE JOHN C. MUNRO BURSARIES (SS)
Established in 1998 by family, friends and colleagues of the Honourable John C. Munro for his outstanding years of service and commitment to the political life of Canada and to the Regional Municipality of Hamilton-Wentworth. A variable number of bursaries to be granted to students enrolled in a program in Political Science who demonstrate financial need. (90846)

THE SAMMON MUNROE BURSARY (H)
Established in 2002 by Robert Munroe (Class of ‘72) and Sheila Sammon under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Humanities who demonstrates financial need. Preference will be given to a student enrolled in a program in History. (90892)

THE HELEN K. MUSSALLEM BURSARY (U)
Established in 1996 by Dr. Helen K. Mussallem (C.C., B.N., Ed.D., L.L.D (Queen’s), D.Sc., D.S.J., F.R.C.N., M.R.S.H.) under the McMaster Student Opportunity Fund Initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Helen K. Mussallem Award. (90928)

THE CAROLE AND ALEXANDER NAKKE BURSARIES (SS)
Established in 2000 by Carole Anne Nakeff (Class of ’69) and Dr. Alexander Nakeff. A variable number of bursaries to be granted to students enrolled in a Political Science or Environmental Studies program who demonstrate financial need. (90946)

THE NCR (WATERLOO) BURSARY (E)
Established in 1996 by NCR (Waterloo) under the McMaster Student Opportunity Fund Initiative. To be granted to a student enrolled in an Engineering and MBA program who demonstrates financial need. (90842)

THE MILLICORE AND BILL NELSON BURSARY (U)
Established in 1997 by MilliCore and Bill Nelson under the McMaster Student Opportunity Fund initiative in support of the Hamilton community, and in support of the efforts of McMaster University to ensure that all students have the opportunity to achieve their educational goals. To be granted to a student enrolled in any program who demonstrates financial need. (90781)

THE NELSON STEEL BURSARY (U)
Established in 1997 by Nelson Steel in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in any program who demonstrate financial need. (90782)

THE NHLA-NY RANGEr ALUMNI ASSOCIATIONS (PAT Hickey and HARRY HOWELL) BURSARY (AT)
Established in 1999 by The NHL Players’ Association Alumni. To be granted to a student enrolled in any program who demonstrates financial need and who has demonstrated outstanding athletic achievement in an inter varsity sport. (90869)

THE HAROLD NOLAN MEMORIAL FOOTBALL BURSARY (AT)
Established in 2003 by Els and John Swart. To be granted to a student enrolled in any program who demonstrates financial need and who has demonstrated outstanding athletic achievement in inter university football. (90978)

THE PERC AND JOAN NORMAN NURSING BURSARY (HS)
Established in 2005 by Perc and Joan Norman in support of students pursuing a career in healthcare. To be granted to students who demonstrate financial need and are enrolled in the Nursing program. (91019)

THE NORTHWATER CAPITAL MANAGEMENT BURSARY (SS)
Established in 1997 by Northwater Capital Management in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries will be granted annually to McMaster students enrolled in the Gerontology program who demonstrate financial need. Preference is given to students who have participated in a conference or workshop on Gerontology. (90783)

THE CLAIRE AND JOHN NOVAK BURSARY (B)
Established in 1997 by Bruce Cumming (Class of ’73) and Marie Cumming in honour of Claire and John Novak. To be granted to a student enrolled in the Faculty of Business who demonstrates financial need. (90784)

THE NURSING CLASS OF ’86 BURSARY FUND (HS)
Established in 2006 by the Nursing Class of 1986 in honour of their 20th reunion. To be granted to students enrolled in the School of Nursing who demonstrate financial need. (91010)

THE DR. ALFRED AND LAURA OAKIE BURSARIES (B)
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. (90631)

OAKRUN FARM BAKERY BURSARY (HS)
Established in 2004 by Oakrun Farm Bakery, under the McMaster Student Opportunity Trust Fund II initiative. To be granted to students enrolled in the Faculty of Health Sciences who demonstrate financial need. (91013)

THE ONCOLOGY NURSING PROGRAM BURSARY (U)
Established in 1997 in recognition of the contribution of McMaster students under the McMaster Student Opportunity Fund Initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Oncology Nursing Program Award. (90910)

THE ORLICK INDUSTRIES LIMITED BURSARIES (E)
Established in 1997 by Orlick Industries 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 Mechanical Engineering program who demonstrate financial need. (90785)

THE O’SHAUGHNESSY BURSARY (HS)
Established in 1986 by the family and friends of the late Margaret O’Shaughnessy, RN, this bursary is 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. (90935)
THE OTIS CANADA BURSARIES IN ENGINEERING AND MANAGEMENT (E)
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 are granted to students enrolled in Level I of a program in Engineering and Management who demonstrate financial need. Preference will be given to students who demonstrate a lively interest in the university and community through their involvement in extracurricular activities. (90632)

THE LILLIAN AND LEROY PAGE BURSARIES (R)
Established in 1997 by the Lillian and Leroy Page Foundation to enable students to pursue their educational goals. A variable number of bursaries to be granted to students from the Hamilton-Wentworth Region who demonstrate financial need. Preference to be given to students in the Faculty of Science. (90777)

THE THOMAS ALEXANDER PAIN BURSARY (AT)
Established by past and present student-athletes and friends of McMaster Football to assist students in any academic program who demonstrate financial need and who demonstrate outstanding participation in the sport of football. (90777)

THE BARBARA PARKE BURSARY (S)
Established in 2007 by Barbara Parke, B.Sc. (Class of ’72). To be granted to a student who has completed Mathematics and Statistics I, demonstrates financial need and has attained a minimum Cumulative Average of 8.0. (91085)

THE DR. JOHN H. PASSMORE BURSARY (S, SS)
Established in 2004 by Dr. John H. Passmore (Class of ’33) under the McMaster Student Opportunity Trust Fund II initiative. To be granted to students enrolled in the Faculty of Science or the Faculty of Social Sciences who demonstrate financial need. Preference will be given to students who are studying Environmental Studies. (91011)

THE PATRIOT FORGE INC. BURSARY (E)
Established in 1997 by Patriot Forge Inc. in support of McMaster students. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. Preference will be given to a student enrolled in Mechanical, Chemical or Materials Engineering. (90789)

THE PATTERNSON-WILSON BURSARIES (H)
Established in 2003 by the bequest of Laurence Cholwill Patterson under the McMaster Student Opportunity Fund II initiative. To be granted to students in the Faculty of Humanities who demonstrate financial need. (90995)

THE MARION PEARCE BURSARIES (SS)
Established in 1990 by Dr. Sally Palmer in memory of her aunt Marion Pearce (Class of ’20). Miss Pearce worked with New Canadians at the Beverly Street Baptist Church in Toronto. A variable number of bursaries are to be granted to students enrolled in the Social Work program who have demonstrated financial need. (90536)

THE DR. HOLLAND AND MRS. ELVIRA PETERSON BURSARY (H)
Established in 1980 by Dr. Holland and Mrs. Elvira Peterson under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in Level II or higher of a Hispanic Studies or German program in the Department of Linguistics and Languages. (90789)

THE ELVIRA AND HOLLAND PETERSON BURSARY (H)
Established in 2000 by Mrs. Elvira Peterson (Class of ’69) and Dr. Holland Peterson. To be granted to a Level III student enrolled in the Honours Art History or Combined Honours Art History Program who demonstrates financial need. (90948)

THE PETRO-CANADA BURSARIES (U)
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 program who demonstrate financial need. (90634)

THE PEVENSING BURSARIES (SS)
Established in 1996 by David Hannaford (Class of ’84). A variable number of bursaries to be granted to students enrolled in the penultimate year of an Honours program in Economics who demonstrate financial need. (90676)

THE ROBERT AND RUTH PHILIP STUDENT BURSARIES (U)
Established in 1996 by Robert and Ruth Philip of Hamilton, Ontario. A variable number of bursaries to be granted to students in any program who demonstrate financial need. (90635)

THE BETH PHINNEY BURSARY (SS)
Established in 2005 by Beth Phinney, B.A. (Class of ’78), and Member of Parliament for Hamilton Mountain for 18 years. To be granted to a student enrolled in the Faculty of Social Sciences who demonstrates financial need. (91039)

THE PHYSICAL EDUCATION CLASS OF 80 25TH ANNIVERSARY BURSARY (SS)
Established by the Bachelor of Physical Education Class of ’80 in honour of their 25th Anniversary. To be granted to students in Level II or above of a program in Kinesiology who demonstrate financial need. (91040)

THE MARC ANDRE ADRIEN PINEAULT BURSARY (E)
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 program 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. (90576)

THE PIONEER GROUP LTD. BURSARY (U)
Established in 1997 by the Pioneer Group of Companies Inc. under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Pioneer Group Inc. Award. (90911)

THE PITCHER-RATFORD BURSARIES (S)
Established in 2004 by Bruce Ratfod (Class of ’71) and Eda Ratfod (Pitcher) (Class of ’71) under the McMaster Student Opportunity Fund II initiative. A variable number of bursaries to be granted to students enrolled in the School of Geography and Earth Sciences who demonstrate financial need. Preference will be given to students who have completed Level II of an Honours Geography program with a Cumulative Average of 8.0 at the most recent review. (90983)

THE DR. SUSAN BEVERLEY PLANK MEMORIAL BURSARY (HS)
Established in 1997 by Mr. William J. Plank, family and friends, in memory of Dr. Susan Beverley Plank (Class of ’90). To be granted to a student who demonstrates financial need and is enrolled in the Faculty of Health Sciences, School of Medicine. (90791)

THE GEORGE PLUM BURSARY (SS)
Established in 1996 by David Plumb in memory of his father George Plumb. To be granted to a student enrolled in a program in Gerontology who demonstrates financial need. Preference to be given to a mature student. (90636)

THE LILLIAN PLUMB BURSARY (H)
Established in 1998 by David Plumb in honour of his mother, Lillian Plumb. To be granted to a student enrolled in a program in the Department of English and Cultural Studies and who demonstrates financial need. (90853)

THE GORDON AND JANE PRICE BURSARY (U)
Established in 1997 by their sons in honour of Gordon and Jane Price under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Gordon and Jane Price Award. (90912)

THE LES PRINCE BURSARIES (AT)
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 the community through programs such as The Marauder Outreach program and Community Service. (90637)

THE PROCOR BURSARIES (B, E)
Established in 1997 by Procort 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. (90669)

THE WALLACE M. RANKIN BURSARY IN THE SCHOOL OF NURSING (HS)
Established in 2006 by an anonymous donor. To be granted to students in the School of Nursing who demonstrate financial need. (91055)

THE GORDON RAYMOND BURSARY (U)
Established in 1996 by the McMaster Association of Part-time Students and other friends and colleagues of the McMaster Student Opportunity Fund initiative. To be granted to part-time students in any program who demonstrate financial need. Preference will be granted to the recipient of The Gordon Raymond Award. (90638)
THE RICAH CANADA INC. BURSARIES (B, SS)
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 will be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students who demonstrate financial need and are enrolled in the Faculty of Business or the Faculty of Engineering. (90639)

THE JAMES AND ELIZABETH ROBERTS BURSARIES (U)
Established in 1957 by R.H. Roberts in memory of his parents to assist any male student of good academic standing. (90538)

THE HUGH AND ALICE ROBERTSON MEMORIAL BURSARIES (U)
Established in 1997 by R. G. Hamish Robertson in honour of his parents, Hugh and Alice Robertson under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90705)

THE ROBERTSON-YATES CORPORATION BURSARIES (B, E)
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 any program who demonstrate financial need. (90694)

THE MARY ROMEO BURSARY IN ART HISTORY (H)
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 program in Art History. (90688)

THE RANDOLPH E. ROSS MEMORIAL BURSARY (EX)
Established in 1998 by family and friends in memory of Dr. Randolph E. Ross, who was a dedicated and beloved faculty member for over 25 years at McMaster University. To be granted to a student enrolled in the School of Business or the Engineering and Management Program. Preference will be given to a McMaster student participating in an international exchange program. (90854)

THE HELEN SANSONE BURSARIES (U)
Established in 2005 by Harry A. Rothmann, B.Sc. (Class of '58). To be granted to students enrolled in any program who demonstrate financial need. (90641)

THE SATURN OF HAMILTON EAST BURSARY (U)
Established in 1996 by SATURN of Hamilton East under the McMaster Student Opportunity Fund initiative to support the City of Hamilton and Regional programs in the city. To be granted to a student enrolled in a program in the Faculty of Business or the Faculty of Social Sciences who demonstrates financial need. (90845)

THE SALENA FAMILY BURSARY (HS)
Established in 2004 by Gino Scapillati (Class of '81) and Roberta Scapillati (Class of '79) in memory of Dr. Gino Scapillati (Class of '81), full-time faculty member in the Faculty of Mathematics. (90801)

THE HELEN SANSONE BURSARIES (U)
Established in 1997 by bequest of Helen Sansone of Hamilton, Ontario. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90641)

THE TERRY M. BURSARY (U)
Established in 1999 by Terry M. in memory of his parents to assist McMaster students who demonstrate financial need. (90795)

THE W. H. BURSARY (U)
Established in 1999 by W. H. in memory of his parents to assist McMaster students who demonstrate financial need. Preference will be given to students enrolled in the Faculty of Science who demonstrate financial need. Preference will be given to a student enrolled in the Faculty of Social Sciences who demonstrates financial need. (90641)

THE GINO AND ROBERTA SCAPILLATI BURSARY (B, SS)
Established in 2004 by Gino Scapillati (Class of '81) and Roberta Scapillati (Class of '79) under the McMaster Student Opportunity Fund II initiative. To be granted to students enrolled in the Faculty of Business or the Faculty of Social Sciences who demonstrates financial need. (90642)

THE ERIC SCHLICHTING MEMORIAL BURSARY (S)
Established in 1966 by his family, classmates and friends. To assist a student in a program in the Faculty of Science who demonstrates financial need. Preference will be given to a student enrolled in Earth Sciences. (90539)

THE SCHOOL OF NURSING BURSARY (HS)
Established in 2004 by the School of Nursing through the generosity of its alumni and friends under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the School of Nursing who demonstrates financial need. (90102)
THE SCIENCE ALUMNI BURSARY (S)
Established in 2004 by the Faculty of Science through the generosity of its alumni and friends under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Science who demonstrates financial need. Preference to be given to a student who has attained a minimum Cumulative Average of 7.0 at the most recent review. (90984)

THE SCIENCE CLASS OF '97 LEGACY BURSARY (U)
Established in 1997 by the Science Class of '97 under the McMaster Student Opportunity Fund initiative. To be granted to students in any program who demonstrate financial need. Preference will be given to the recipient of The Science Class of '97 Legacy Award. (90920)

THE SCOTIAMCLEOD BURSARIES (B)
Established in 1997 by ScotiaMcLeod 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 program who demonstrate financial need. Preference to be given to students enrolled in the Faculty of Business. (90802)

THE TERRY SEAWRIGHT BURSARY (B)
Established in 1997 by Terry Seawright, Lecturer in the Faculty of Business. To be granted to a student in the Commerce Program who demonstrates financial need. Preference to be given to the student who has completed Commerce 2MA3 and attained a grade of at least B. (90643)

THE MYKOLA SEMENIUK BURSARIES (U)
Established in 1991 by bequest of Mykola Semeniuk to assist students who demonstrate financial need and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative. (90551)

THE LOUIS SR. AND ROSITA SERAFINI BURSARY (U)
Established in 2004 by Louis Jr. and Lori Ann Serafini, graduates of McMaster University, in honour of Louis Sr. and Rosita Serafini under the McMaster Student Opportunity Fund II initiative. To be granted to a student enrolled in any program who demonstrates financial need. (91024)

THE LEO W. SETO BURSARY (U)
Established in 2003 by Leo W. Seto, B.Eng.Mgt. (Class of '87) and M.Eng. (Class of '98) under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Engineering who demonstrates financial need. (90999)

THE ROSA MAUDE SHEARDOWN BURSARY (R, U)
Established in 1997 by Gordon R. Baker, Q. C. in honour of his foster mother, Rosa Maude Sheardown, and her belief in the importance of education and providing a helping hand to others. To be granted to students in any Faculty who demonstrate financial need. Preference to be given to students from single-parent families, foster or group homes, disadvantaged backgrounds or King Township. (90967)

THE LESLIE W. AND ELIZABETH SHEMILT BURSARY (E)
Established in 1997 under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and is enrolled in an Engineering program. (90663)

THE GERALD AND Verna Simpson Bursary (SS)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, to the recipient of The Gerald and Verna Simpson Scholarship. (90886)

THE MEENA AND NARESH SINHA BURSARY (U)
Established in 1996 by Meena and Narish Sinha under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of the Meena and Narish Sinha Award. (90921)

THE ALBERT EDWARD SMITH AND JEAN MCTAVISH SMITH BURSARY (U)
Established in 1998 by Mrs. Jean McTavish Smith (Class of '31), in memory of Albert Edward Smith (Class of '29) under the McMaster Student Opportunity Fund initiative. To be granted to a student in any program who demonstrates financial need. (90836)

THE SAM SMURLICK BURSARY (U)
Established in 1978 by the Smurlick family in memory of Sam Smurlick (Class of 38). To be granted to a student in any program who demonstrates financial need. (90541)

THE SMYRNIS BURSARY (H)
Established in 1996 by Dr. and Mrs. W. Smyrnis. 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 program of the Faculty of Humanities above Level I. (90661)

THE SOCIAL SCIENCES BURSARY (SS)
Established in 2004 by the Dean of the Faculty of Social Sciences through the generosity of its alumni and friends under the McMaster Student Opportunity Fund II initiative. To be granted to students enrolled in the Faculty of Social Sciences who demonstrate financial need. (91009)

THE SOCIAL SCIENCES SOCIETY BURSARIES (SS)
Established in 1990 by the Social Sciences Society Executive 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 a Social Sciences program involving Anthropology, Economics, Geography, Gerontology, Labour Studies, Political Science, Psychology, Religious Studies, Social Work or Sociology and who demonstrate financial need. (90542)

THE LORNA AND DAVID SOMERS BURSARY (U)
Established in 1997 by Lorna Somers (Class of '81) and David Somers (Class of '88) under the McMaster Student Opportunity Fund initiative. To be granted to students in any program who demonstrate financial need. Preference will be given to the recipient of The Lorna and David Somers Award. (90822)

THE SOMERVILLE BURSARY (U)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given if financial need is demonstrated, to a recipient of The Somerville Scholarships. (90881)

THE GEORGE SORGER BURSARY IN BIOLOGY (CS, S)
Established by the friends of Dr. George Sorgo. To be granted to a student in Level IV of a Biology program who demonstrates financial need. Preference will be given to students who have attained a Cumulative Average of at least 9.0 at the most recent review. (91029)

THE DR. IAN SPENSER BURSARY (S)
Established in 2007 by Steven G. Kelman, B.Sc. (Class of '67) in honour of Professor Emeritus, Dr. Ian D. Spenser, who recognized his true talents. To be granted to a student enrolled in Level III or IV of anHonours Chemistry program who demonstrates financial need. (91072)

THE SALVATORE SPITALE MEMORIAL BURSARY (H)
Established in 1994 by Salvatore Spirale in conjunction with the McMaster Student Opportunity Fund Initiative. To be granted to a student in the Department of Linguistics and Languages, Level III or above, who demonstrates financial need and has completed a minimum of nine units of Italian courses. Preference to be given to a student who has demonstrated active involvement in community life. (90703)

THE LILLIAN R. STEGNE MEMORIAL BURSARIES (D)
Established in 1990 in memory of Lillian Rose Stegne (Class of '28) by family, friends and colleagues. Two or three bursaries to be granted to handicapped students in any program who demonstrate financial need. (90543)

THE STELCO UNDERGRADUATE BURSARIES (B, E, S)
Established in 1996 by Stelco- a market-driven, technologically advanced group of businesses committed to maintaining leadership roles as steel producers and leading fabricators-in support of students who, without financial aid, would be unable to pursue their educational goals. To be granted to students who demonstrate financial need and are enrolled in the Faculties of Business, Engineering or Science. Preference will be given to students who are enrolled in the Department of Materials Science and Engineering. (90644)

THE FRANK STERN/STERN LABORATORIES BURSARY (E)
Established in 2005 in memory of Frank Stern, Chairman and CEO of Stern Laboratories Inc. To be granted to students enrolled in a program in Mechanical Engineering who demonstrate financial need. (91054)

THE ADAM SUDAR PRINTMAKING BURSARY (U)
Established in 1997 in memory of Adam Sudar by his friends under the McMaster Student Opportunity Fund initiative. To be granted to students in any program who demonstrate financial need. Preference will be given to the recipient of The Adam Sudar Printmaking Award. (90923)

THE SWYTCH DELIVERY SOLUTIONS INC. BURSARY (U)
Established in 2006 by Swytch Delivery Solutions Inc. in support of students attending McMaster University. To be granted to students enrolled in any program who demonstrate financial need. (91082)

THE THOMAS H.B. SYMONS BURSARY (SS)
Established in 2006 by Thomas H.B. Symons in support of the Faculty of Social Sciences with a minimum Cumulative Average of 8.0 at the most recent review who demonstrate financial need. Preference will be given to students studying Canadian Politics. (90882)
THE TD BANK FINANCIAL GROUP BURSARIES (E, S, SS)  
Established in 1999 by the TD Bank Financial Group in support of its commitment to helping students succeed in their post-secondary studies. A variable number of bursaries to be granted to students in any program who demonstrate financial need. Preference to be given to students enrolled in the Earth and Environmental Sciences, the Honours Geography and Environment program, the Honours Engineering and Society program. (90939)

THE 5M CANADA INC. BURSARIES (B, S)  
Established in 1980. To be granted to two students in their final year of studies who demonstrate financial need. One to an M.B.A. student who has attained at least a 6 point average and one to a Science student who has attained a Cumulative Average of at least 9.0 at the most recent review. (90525)

THE TARBUTT CONSTRUCTION LTD. BURSARY (U)  
Established in 1997 by Tarbutt Construction Ltd. under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any program who demonstrates financial need. (90732)

THE EDWIN A. TAYLOR BURSARY (SS)  
Established in 2005 by Edwin A. Taylor, B.A. (Class of '54) and M.B.A. (Class of '63). To be granted to a student in the Faculty of Social Sciences who demonstrates financial need. (91046)

THE RUBY TEDDER BURSARY (U)  
Established in 2006 by the bequest of Ruby Tedder as a memorial to Victor Tedder, Lilian Ruby Tedder, Thomas Tedder and Robert Tedder. To be granted to students enrolled in any program who demonstrate financial need. (91067)

THE HERMAN TEN CATE MEMORIAL BURSARY (SS)  
Established in 2007 by friends and colleagues under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students enrolled in the Social Sciences who demonstrate financial need. (90735)

THE DONALD W. THOMAS BURSARIES (H)  
Established in 1996 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 DONALD WILLIAM THOMAS MEMORIAL BURSARY (H)  
Established in 2005 by Jack Craig in memory of Donald William Thomas, B.A. (Class of '70). To be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. Preference will be given to students enrolled in a program in the School of the Arts. (91050)

THE JANICE THOMSON SOBOT MEMORIAL BURSARY (E)  
Established in 2007 by June Thomson in memory of her daughter Janice, B.Eng.Mgt. (Class of '85). To be granted to a student enrolled in Level III or IV of the Engineering and Management program who demonstrates financial need. Preference will be given to a Civil Engineering and Management student who demonstrates a commitment to community involvement. (91075)

THE STEPHEN F.H. THRELKELD BURSARY (U)  
Established in 1997 by friends and colleagues of Stephen F.H. Threlkeld under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Stephen F.H. Threlkeld Award. (90924)

THE MARJORIE (COCHRANE) TICE BURSARY (U)  
Established in 2006 by Peggy, B.A. (Class of '75 and '95) and Bob, M.B.A. (Class of '81) Savage to honour the memory of Marjorie (Cochrane) Tice. To be granted to students in any program who demonstrate financial need. (91064)

THE GUY TRIMACCO MEMORIAL BURSARY (U)  
Established in 2007 by Terri, Sarah and Jessica in memory of Guy, B.A. (Class of '81), a loving husband and father, a great role model, mentor, teacher, coach, musician and avid golfer. To be granted to students enrolled in any Faculty who demonstrate financial need. Preference will be given to students from Hamilton. (91084)

THE TTK INC. BURSARY (U)  
Established in 1997 by TTK Inc. under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The TTK Inc. Awards. (90925)

THE GRAHAM RONALD TOOP BURSARY (H)  
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given to a student who demonstrates financial need. Preference will be given to the recipient of The Graham Ronald Toop Scholarship. (90883)

THE BROOKE P. TOWNSEND BURSARY (S)  
Established in 1996 by Brooke P. 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 TOWNSHIPS OF NORTH DUMFRIES AND WOOLWICH IN WATERLOO REGION AND TOWNSHIP OF CENTRE WELLINGTON AND CITY OF GUELPH IN WELLINGTON COUNTY BURSARY (R)  
Established in 2005 under the Ontario Trust for Student Support program to ensure that all students have the opportunity to pursue their educational goals. To be granted to students in any Faculty who demonstrate financial need. Preference will be given to students residing in the Townships of North Dumfries and Woolwich in Waterloo Region and Township of Centre Wellington and City of Guelph in Wellington County. (91037)

THE TRAVELLERS GUARANTEE COMPANY OF CANADA BURSARY (U)  
Established in 1997 by London Guarantee Insurance 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 annually to McMaster students who demonstrate financial need. (90757)

THE TRILLIUM NON PROFIT VENTURES FOR YOUTH BURSARY (SS)  
Established in 2004 by Trillium Non Profit Ventures for Youth. To be granted to students who demonstrate financial need. Preference will be given to students enrolled in the School of Social Work. (91014)

THE ROBERTA GRAY TROXEL BURSARY (H)  
Established in 1997 by Roberta Gray Troxel under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. Preference will be given to a female undergraduate student enrolled in the History program. (90735)

THE TRESSILA TRUBY MEMORIAL BURSARY (H)  
Established in 1992 from the bequest of Tressila 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)

THE RAY AND JOYCE TRULL BURSARY (U)  
Established in 1998 by Roger and Janet Trull and their children in honour of Ray and Joyce Trull. To be granted to a student in any program who demonstrates financial need. (90837)

THE ROGER TRULL BURSARY (U)  
Established in 1997 by friends and colleagues under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Roger Trull Award. (90826)

THE GEORGE ELIAS TUCKETT BURSARIES (U)  
Established in 2005 in memory of George Elias Tucket, a prominent Hamilton businessman and community leader who founded the oldest tobacco manufacturing company in Canada - a company that has been part of Imperial Tobacco since 1930. To be granted to students in any Faculty who demonstrate financial need. (91047)

THE TURKSTRA LUMBER BURSARY (E)  
Established in 1996 by the Turkstra Lumber Company Limited. A variable number of bursaries to be granted to students enrolled in an Engineering and Society program who demonstrate financial need. Preference will be given to students who attain a Sessional Average of at least 7.0 at the most recent review. (90647)

THE EDITH H. TURNER FOUNDATION BURSARIES (U)  
Established in 1996 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 TURNER FAMILY BURSARY (S)  
Established in 2005 by Mary Turner, B.Sc. (Class of '74) and Graham Turner, Ph.D. (Class of '76) in memory of Dr. Colin J.L. Lock, Professor of Chemistry and Pathology. To be granted to students enrolled in the Faculty of Science who demonstrate financial need. (91058)

THE TYNOWSKI BURSARY (U)  
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, to the recipient of The Tynowski Scholarship. (90953)

THE UBS GLOBAL ASSETS MANAGEMENT (CANADA) COMPANY BURSARY (U)  
Established in 1997 by the UBS Global Assets Management (Canada) Company under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The UBS Global Assets Management (Canada) Company Award. (90989)
THE UNITED STEELWORKERS OF AMERICA BURSARY (SS)
Established in 1997 by the United Steelworkers of America. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students enrolled in a program in Labour Studies. (91042)

THE VALLEY CITY BURSARY (U)
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 JOHN AND JOAN VAN DUZER BURSARY (H)
Established in 2003 by John (Class of ’50) and Joan Van Duzer under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Humanities who demonstrates financial need. (90994)

THE CATHERINE VASAS-BROWN BURSARIES (H)
Established in 1996 by J. Allan Brown in honour of Catherine Vasas-Brown. A variable number of bursaries to be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. (90649)

THE FILOMENA AND FERDINANDO VISOCCHI BURSARY (U)
Established in 2003 by their children and family in honour of Filomena and Ferdinando Visocchi under the McMaster Student Opportunity Fund II initiative. To be granted to a student in any program who demonstrates financial need. (90997)

THE SYLVIA AND BRIAN WALKER BURSARIES (H, HS)
Established in 1996 by Sylvia (Hunt) and Brian Walker. To be granted to a student enrolled in Humanities I or Nursing I who demonstrates financial need. Preference will be given to students who have demonstrated leadership and involvement in university and community activities. (90850)

THE WALLINGFORD HALL BURSARIES (U)
Established through anonymous donations to assist students in any program who demonstrate financial need. (90548)

THE G.S. WARK LTD. BURSARY (U)
Established in 1996 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. (90587)

THE SAM WATSON MEMORIAL BURSARY (U)
Established in 1996 by his wife Irene M. Watson and friends of Samuel Watson under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Sam Watson Memorial Award. (90928)

THE SAM AND IRENE WATSON BURSARY FUND (AS, B, E, H, S, SS)
Established in 1996 by the estate of Irene Mary Watson. To be granted to students who demonstrate financial need and who have completed their second year with a Cumulative Average of at least 8.0 in the Arts and Science Program or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences.
Value: $2,000 (90840)

5 THE AUDREY AND BOB WAUGH BURSARY (HS)
Established in 1997 by Audrey and Bob Waugh under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in the Faculty of Health Sciences who demonstrates financial need. Preference to be given to a student involved in Gerontological research. (90786)

THE ROSS FAWCETT WEBB BURSARY FUND (U)
Established in 1983 by the Hamilton Community Foundation in memory of Ross Fawcett Webb. To be granted in the second term of study (any level) to a student who demonstrates financial need and is enrolled in any program at McMaster. Applicants must be Canadian Citizens or hold permanent resident status in Canada. (90971)

THE CLIFFORD JOHNSTON WEBSTER MEMORIAL BURSARIES (H)
Established in 1993 by Viola Webster in memory of her brother Clifford Johnston Webster (Class of ’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 good 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 program. (90559)

THE ARTHUR AND MARGARET WEIZS BURSARY (U)
Established in 2004 by Arthur Weizs (LL.D. 2004) and Margaret Weizs under the McMaster Student Opportunity Fund II initiative. To be granted to students enrolled in any program who demonstrate financial need. (91008)

THE DR. JANET WEIZS BURSARY (HS)
Established in 2004 by Dr. Janet Weizs, under the McMaster Student Opportunity Trust Fund II initiative. To be granted to students enrolled in the Faculty of Health Sciences who demonstrate financial need. (91012)

THE LLOYD WERDEN MEMORIAL BURSARIES (U)
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 students enrolled in any program who demonstrate financial need. (90851)

THE WESCAST INDUSTRIES BURSARY (U)
Established in 1997 by Wescast Industries Inc. under the McMaster Student Opportunity Fund Initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Wescast Industries Continuous Learning Award. (90929)

THE WESTINGHOUSE CANADA INC. BURSARIES (B, E)
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 ALLAN AND JOY WILLIAMS BURSARY (U)
Established in 1996 by Mary Williams (Class of ’97), Anne Williams (Class of ’89) and Ellen and Dan Walker under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Allan and Joy Williams Award. (90877)

THE LYNN R. WILLIAMS BURSARY (SS)
Established in 1997 as a tribute to Lynn R. Williams (Class of ’44), International President of the United Steelworkers of America from 1983-1994, in recognition of his outstanding contributions to labour and labour studies. To be granted to a student who demonstrates financial need and is enrolled in a program in Labour Studies. The value of this bursary shall be no less than $300. (90795)

THE MARY DRYDEN WILLIS BURSARY (HS)
Established in 1997, in memory of Mary Willis (Class of ’26), by her daughter, Mary Lou Dingie and son-in-law Alan (both Class of ’58), under the McMaster Student Opportunity Trust Fund initiative. To be granted to students enrolled in Level II or higher in the Faculty of Humanities who have attained a minimum CA of 7.0 and who demonstrate financial need. (90869)

THE KATHRYN A. WILSON BURSARIES (H)
Established in 2000 by bequest of Kathryn A. Wilson. A variable number of bursaries to be granted to students enrolled in the Faculty of Humanities who demonstrate financial need. (90949)

THE FRIDA AND JOACHIM WOLTER BURSARIES (B, SS)
Established in 1997 under the McMaster Student Opportunity Fund initiative by Claus Wolter (Class of ’89) in honour of his parents, Frida and Joachim Wolter. To be granted to a student enrolled in the Kinesiology program who demonstrates financial need. (90790)

THE WRIGHT FAMILY BURSARY (B, S)
Established in 2003 by Thomas C. Wright, M.B.A. (Class of ’72) under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Business or the Faculty of Science who demonstrates financial need. (90999)

THE JOHN YARWOOD MEMORIAL BURSARY (S)
Established in 1998 by family and friends in memory of Dr. A.J. Yarwood. To be granted to a Level II student enrolled in an Honours Chemistry program who demonstrates financial need. (90844)

THE YATES BURSARIES (H)
Established in 1963 by bequest of William Henry Yates of Hamilton. To assist students in any program. (90549)

THE GLADYS A. YOUNG BURSARY (U)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, to the recipient of The Gladys A. Young Scholarship. (90878)
THE JAMES MASON YOUNG BURSARY (EX)
Established in 1996 by James Mason Young in honour of his family’s long-standing 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 Program. (90779)

THE SHEILA ZACK MEMORIAL BURSARY (H)
The Sheila Zack Memorial bursary established by the 45th Annual Bnai Brith Sports Celebrity Dinner, to be awarded to a student with financial need enrolled in a program in Theatre & Film Studies at McMaster University. (90784)

THE ZENON ENVIRONMENTAL BURSARY (U)
Established in 1997 by Zenon Environmental Inc. under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Zenon Environmental Award. (90931)

THE ZONTA CLUB OF HAMILTON BURSARIES (B, E, SS)
Established in 1997 by the Zonta Club of Hamilton in support of the McMaster Student Opportunity Fund initiative and in the belief that all students, particularly women in non-traditional fields, should have the opportunity to pursue their educational goals. To be granted to a student who demonstrates financial need and is enrolled in the Faculty of Engineering, or in Business or is enrolled in a course in Indigenous Studies. Preference to be given to female students. (90550)

THE ZOOM MEDIA INC. BURSARY (U)
Established in 1997 by Zoom Media Inc. in support of McMaster students under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Zoom Media Award. (90932)

SUPPLEMENTARY BURSARY AID FOR AWARD RECIPIENTS
Several donors to McMaster’s Undergraduate Scholarships Program, 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 bursary support, scholarship and award recipients are required to demonstrate financial need in accordance with that required of applicants to the general McMaster Bursary Program:

- The Betty Taylor Campbell Scholarship
- The George P. Gilmour Memorial Scholarship
- The Dundas Scholarships
- The Gary Lautens Memorial Scholarship
- The Somerville Scholarships
THE COMMUNITY CONTRIBUTION AWARDS

The Community Contribution Awards represent recognition for contribution to the University or the community-at-large. To be eligible for consideration for a Community Contribution Award, full-time and part-time students must be registered in Level II, III, IV or V of a first or second baccalaureate program. Eligible candidates must be registered and in good standing as a student of McMaster University.

A student may receive only one Community Contribution Award per year, but may be considered for the same or a different award the following year. These awards have no monetary benefit but a notation will appear on the student's transcript. The recipient of a Community Contribution Award may be eligible to receive the corresponding donor bursary if financial need is demonstrated. Further information on our bursary program can be found at http://sfas.mcmaster.ca/bursary/macbur.html.

The Community Contribution Awards are awarded by a Selection Committee based on an application. The Community Contribution Application cover page will be available from the Office of Student Financial Aid & Scholarships' web site after February 1. Completed applications are to be received by the Student Financial Aid Office, by April 15.

THE ATKINSON CHARITABLE FOUNDATION AWARD
Established in 1995 by The Atkinson Charitable Foundation. To be awarded to a student enrolled in any program who participates in activities displaying superior leadership or innovative skills and demonstrates service to the community-at-large. Preference to be given to a student enrolled in the Faculty of Social Sciences. (80022)

THE AUBURN INDUSTRIAL SERVICES LTD. AWARDS
Established in 1997 by Auburn Industrial Services Ltd. To be awarded to students enrolled in any program who display superior leadership or innovative skills. (80037)

BRANTFORD ALUMNI BRANCH COMMUNITY CONTRIBUTION AWARDS
Established in 2000 by the Brantford Alumni Branch of the McMaster Alumni Association. A variable number of awards to be granted to students enrolled in any program who demonstrate leadership and innovative skills through participation in either university or community activities. Preference will be given to students from the Brant County area high schools. (80052)

THE ELVA CARROL AWARD
Established in 1996 by Elva Carrol. To be awarded to a student enrolled in any program who demonstrates outstanding athletic participation. Preference to be given to an athlete who participates on an inter-university women's team and has demonstrated leadership and fair play. (80028)

THE EDWARD FRANK DAVIS MEMORIAL AWARD
Established in 1996 by bequest in memory of Edward Frank Davis. A variable number of awards to be granted to students entering any program who have shown commitment and contribution to their community through volunteer work. (80060)

THE DAMIAN MIGUEL HEADLEY AWARDS
Established in 1997 by family and friends in memory of Damian Miguel Headley (Class of '89). To be awarded to students enrolled in any program who demonstrate one or more of the following: service to McMaster University or the community-at-large; outstanding athletic or artistic participation; or display superior leadership or innovative skills. (80050)

THE RUDY HEINZL AWARD
Established in 1996 by family, friends and colleagues upon the retirement of Rudy Heinzl as Dean of Student Affairs, in recognition of 32 years of dedicated service to students and to the McMaster University community. To be awarded to a student enrolled in any program who, in the judgment of a selection committee, has made a significant contribution to the university life of his/her fellow students. (80004)

THE STUART AND MARJORIE IVISON AWARDS
Established in 1998 by Donald Ivison Class of '53 and Betty Ivison (Class of '52) in honour of his parents Stuart and Marjorie Ivison (Class of '28 (Arts)). A variable number of awards to be granted to students enrolled in a program in the Department of English and Cultural Studies who demonstrate a lively interest in English/Cultural Studies, involvement in extra-curricular activities and service to the University or community-at-large. (80061)

THE JAMES A. JOHNSON COMMUNITY CONTRIBUTION AWARD
Established in 1997 by the McMaster Social Sciences Society Executive Committee to recognize Dr. James A. Johnson, Dean of Social Sciences (1989-97), for his outstanding service to the Faculty of Social Sciences and the broader campus community. One award to be granted annually to a Social Sciences student enrolled in a program involving Anthropology, Economics, Geography, Gerontology, Labour Studies, Political Science, Psychology, Religious Studies, Social Work or Sociology who, in the judgment of the appropriate selection committee in the Faculty of Social Sciences, has provided outstanding service to McMaster University or the community-at-large. Preference will be given to students whose service has been undertaken within the Faculty of Social Sciences at McMaster University. (80023)

THE JUNIOR LEAGUE OF HAMILTON-BURLINGTON, INC. COMMUNITY CONTRIBUTION AWARD
Established in 1997 by the Junior League of Hamilton-Burlington, Inc. under the McMaster Student Opportunity Fund initiative. To be awarded to a student in any program who has demonstrated service to the community-at-large. (80032)

THE ALEC JOHN ROYSTON MACMILLAN MEMORIAL AWARDS
Established in 1996 by his family in memory of Alec John Royston MacMillan. Three awards to be granted upon completion of Level I: a) one to a student in any program; b) one to a student enrolled in the Faculty of Business, Humanities or Social Sciences; and, c) one to a student enrolled in the Faculty of Engineering, Health Sciences or Science who, in the judgment of a selection committee, demonstrate qualities of innovation, leadership and service to the community through participation in campus and community programs including athletics. (80012)

THE McMaster ATHLETIC COUNCIL AWARD
Established in 1997 by the Men's Athletic Council and the Women's Intercollegiate Athletics Council under the McMaster Student Opportunity Fund initiative. To be awarded to a student enrolled in any program who demonstrates outstanding athletic participation. Preference will be given to students in Level II or higher who exhibit leadership and dedication to sport and prove to be an overall asset to their team(s). (80033)

THE ROBERT JOHN MORRIS AWARDS
Established in 1996 by family, friends and colleagues of Robert John Morris. Six awards: three to be granted to students upon completion of Level I or higher of a program in Engineering, and three to be granted to students upon completion of Level II or higher of a program in Engineering Physics who, in the judgment of the appropriate selection committee in the Faculty of Engineering, have demonstrated leadership or innovative skills in the field of Engineering or, through their participation in campus and community activities, have had a significant influence on the lives of Engineering students at McMaster University. (80024)

THE HELEN K. MUSSALLEM AWARD
Established in 1996 by Dr. Helen K. Mussaleem (C.C., B.N., Ed.D., LL.D (Queen's), D.Sc., D.S.J., F.R.C.N., M.R.S.H.) to stimulate interest in professional nursing affairs through participation in meetings, conferences, professional associations and societies related to the field of nursing. A variable number of awards granted to students who have completed Nursing I and who, in the judgment of the School of Nursing, have demonstrated notable involvement in extracurricular activities. (80009)

THE ONCOLOGY NURSING PROGRAM AWARDS
Established in 1997 in recognition of the contribution of McMaster students. To be awarded to students enrolled in the Oncology Nursing Program who display superior leadership or innovative skills. Preference to be given to students who are working in under-resourced communities and who must travel long distances to participate in the program. (80040)

THE PIONEER GROUP INC. LEADERSHIP AWARDS
Established in 1997 by the Pioneer Group of Companies inc. in recognition of the community contributions of McMaster students. A variable number of awards to be granted to students enrolled in any program who, in the judgment of a selection committee, have demonstrated leadership and community service. (80025)

THE GORDON AND JANE PRICE AWARDS
Established in 1997 by their sons in honour of Gordon and Jane Price. To be awarded to students enrolled in the Arts and Science Program or in the Faculty of Health Sciences who demonstrate service to the community-at-large outstanding athletic participation or who display superior leadership and innovative skills. (80048)
COMMUNITY CONTRIBUTION AWARDS

THE GORDON RAYMOND AWARD
Established in 1995 by the McMaster Association of Part-time Students and other friends and colleagues in honour of Gordon Raymond in recognition of his 27 years of service to McMaster University including 15 years as Coordinator of Part-time Degree Studies. To be awarded to a part-time student who, in the judgment of a selection committee, demonstrates enthusiasm for lifelong learning and/or had an influence on the lives of part-time students. (80011)

THE ROTARY CLUB OF ANCASTER COMMUNITY CONTRIBUTION AWARD
Established in 1997 by the Rotary Club of Ancaster in keeping with Rotary's mission to foster the ideal of service within the community. To be awarded to a student enrolled in any program who demonstrates commendable service to the community-at-large. Preference will be given to a student enrolled in an Environmental-Science Program. (80044)

THE ROTARY CLUB OF BURLINGTON CENTRAL COMMUNITY CONTRIBUTION AWARD
Established in 1997 by the Rotary Club of Burlington Central in keeping with Rotary's mission to foster the ideal of service within the community. To be granted to a student enrolled in any program who demonstrates involvement in extra-curricular or community activities. Preference will be given to a student from the Burlington area. (80041)

THE ROTARY CLUB OF HAMILTON A.M. COMMUNITY CONTRIBUTION AWARD
Established in 1997 by the Rotary Club of Hamilton A.M. in keeping with Rotary's mission to foster the ideal of service within the community. To be awarded to a student enrolled in any program who demonstrates outstanding service to the community-at-large. (80042)

THE ROTARY CLUB OF HAMILTON COMMUNITY CONTRIBUTION AWARD
Established in 1997 by the Rotary Club of Hamilton in keeping with Rotary's mission to foster the ideal of service within the community. To be awarded to a student enrolled in any program who demonstrates outstanding service to the community-at-large. (80043)

THE SATURN OF HAMILTON EAST ACHIEVEMENT AWARDS
Established in 1996 by SATURN of Hamilton East. To be awarded to McMaster students who promote the ideals of leadership and community service. One award to be granted in each Faculty. (80020)

THE SCIENCE CLASS OF '97 LEGACY AWARD
Established in 1997 by the Science Class of '97. To be awarded to a student enrolled in the Faculty of Science who, in the judgment of a selection committee, has demonstrated leadership, innovativeness and/or community service. Preference will be given to students entering Level III or IV. (80030)

THE MEENA AND NARESH SINHA AWARD
Established in 1996 by Meena and Naresh Sinha. To be awarded to a student enrolled in the Faculty of Humanities who, in the judgment of the Department of Electrical and Computer Engineering, has demonstrated superior leadership or innovative skills through participation in either University and/or community activities. (80014)

THE LORNA AND DAVID SOMERS AWARD
Established in 1997 by Lorna Somers (Class of '81) and David Somers (Class of '88) under the McMaster Student Opportunity Fund initiative. To be awarded to a student enrolled in the Faculty of Humanities who, in the judgment of a selection committee, has demonstrated one or more of the following: service to McMaster or the community-at-large; superior leadership or innovative skills; outstanding athletic or artistic participation. Preference will be given to a student enrolled in Art and Art History. (80030)

THE ADAM SUDAR PRINTMAKING AWARD
Established in 1997 in memory of Adam Sudar by his friends, this award fund will be used to assist students entering Level III or IV of the Honours Art Program at McMaster who, in the judgment of the School of the Arts, have demonstrated outstanding achievement or promise in the area of printmaking, and who have contributed significantly to the School's cultural presentations within the community. (80054)

THE STEPHEN F. H. THRELKELD AWARD
Established in 1997 by friends and colleagues of Stephen F. H. Threlkeld. To be awarded to a student entering Level IV of an Honours program in Biology who has demonstrated leadership or innovative skills through participation in either university and/or community activities. Preference will be given to students who have taken at least nine units of Genetics courses. (80029)

THE TKK INC. AWARDS
Established in 1997 by TKK Inc. in recognition of the contributions of McMaster students. To be awarded to students enrolled in the Faculty of Engineering who demonstrate outstanding athletic participation and display superior leadership or innovative skills. (80046)

THE ROGER TRULL AWARD
Established in 1997 by friends and colleagues in recognition of Roger Trull's ten years of outstanding service and commitment to the Advancement area and the McMaster University community in general. The award will be granted annually to a student who demonstrates solid academic standing and superior leadership in extra-curricular activities in the McMaster community. (80053)

THE UBS GLOBAL ASSETS MANAGEMENT (CANADA) COMPANY AWARDS
Established in 1997 by Brinson Partners Inc. under the McMaster Student Opportunity Fund initiative. To be awarded to a student enrolled in any program who demonstrates one or all of the following: service to McMaster University or the community-at-large; superior leadership or innovative skills; outstanding athletic or artistic participation. (80036)

THE SAM WATSON MEMORIAL AWARD
Established in 1996 by his wife Irene M. Watson and friends of Samuel Watson. One or two awards to be granted to students enrolled in a program in Arts and Science who, in the judgment of the Arts and Science Program Admissions, Awards and Review Committee, have made a notable contribution in the community-at-large through participation in extra-curricular activities. (80002)

THE WESCRAFT INDUSTRIES CONTINUOUS LEARNING AWARD
Established in 1997 by Wescraft Industries Inc. in recognition of the contributions of McMaster students. To be awarded to a student enrolled in the Faculty of Engineering who is involved in activities displaying superior leadership or innovative skills. Preference will be given to a student enrolled in Materials Engineering. (80047)

THE ALLAN AND JOY WILLIAMS AWARD
Established in 1996 by Mary Williams (Class of '87), Anne Williams (Class of '88) and Ellen and Dan Walker in honour of their parents. To be awarded to a student enrolled in any program who, in the judgment of the Department of English and Cultural Studies, has made a notable contribution to campus and community life and demonstrates a lively interest in English studies. (80019)

THE ZEON ENVIRONMENTAL AWARDS
Established in 1997 by Zeon Environmental Inc. in recognition of the contributions of McMaster students. To be awarded to students enrolled in the Faculty of Engineering who display superior leadership or innovative skills. (80051)

THE ZOOM MEDIA AWARDS
Established in 1997 by Zoom Media Inc. in support of McMaster students. A variable number of awards to be granted to students enrolled in any program who, in the judgment of a selection committee, have demonstrated superior leadership and innovative skills through participation in either university and/or community activities. (80029)
 UNDERGRADUATE ACADEMIC AWARDS

WEB ADDRESS: http://sfas.mcmaster.ca
EMAIL ADDRESS: awards@mcmaster.ca

Director, Student Financial Aid & Scholarships

Elizabeth Seymour

For information, please contact:
Office of Student Financial Aid & Scholarships
Gilmour Hall, Room 120
McMaster University
Hamilton, Ontario, L8S 4L8

Telephone: (905) 525-9140, ext. 24319

The University Senate, acting on behalf of generous benefactors and donors to the University, bestows academic awards on entering, in-course and graduating students to encourage and recognize high levels of scholarship.

In recognizing such scholastic achievement, the University requires all recipients of academic awards to fulfill a set of general conditions, in addition to meeting the particular terms attached to individual academic awards. The general conditions and terms have been established to ensure equity in competition and a high academic standing. Any interpretation of the conditions attaching to academic awards is solely the prerogative of the Undergraduate Council.

In accordance with the Freedom of Information and Protection of Privacy Act and McMaster University's Statement on the Collection of Personal Information and the Protection of Privacy, where notice is given, the University is permitted to publish an individual’s name, Faculty, program and award information. McMaster University publishes the names of recipients of scholarships listed in the Undergraduate Calendar. In the University’s Convocation program and other award publications, Further information can be found in the General Academic Regulations section of this Calendar.

To view the undergraduate Awards Policy, go to http://www.mcmaster.ca/universe/policy/UG_Awards.pdf.

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, Post-Degree Students, Review and Reviewing Period.

Baccalaureate Degrees are those listed in the Degrees and Programs 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-time Student for academic purposes is an undergraduate student who is registered in at least 2 units in the Fall/Winter session, including Extra Courses.

Graduating Student is a student who is registered in at least 24 units in the Fall/Winter session or during the Spring/Summer term.

Graduating or Graduating and Continuing Students are students who are enrolled in at least 24 units in the Fall/Winter session, including Extra courses.

Graduating and Continuing Students are granted an undergraduate award which is 100% of the value of the award.

In-Course Awards are granted to eligible students, based on academic achievement in other than their graduating session.

Part-time Students Awards are referred to under 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.

Reviewing Period for scholarship purposes, normally refers to work completed during the Fall/Winter session. Please refer to 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.

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.

GENERAL CONDITIONS FOR ACADEMIC AWARDS

1. The University Academic Awards listed below are provided exclusively for students entering, registered in, or graduating from baccalaureate degree programs at McMaster University. Continuing Students, Post-degree Students, and students registered in the McMaster Medical program are not eligible for these awards.

2. To ensure a wide distribution of the limited number of awards, there are restrictions on the number of awards that a student may receive. An eligible student may be granted:

- travel scholarships and non-monetary awards such as books and medals; and
- an award granted on the basis of an application; and
- an award continued from a previous year (including entrance scholarships), except as provided by the particular terms of an award; and
- either one (major) award greater than or equal to the value of a Senate Scholarship ($800 in 2006-2007) and one (minor) award of less than the value of a Scholarship; or two awards of less than the value of a Scholarship; and
- an academic grant.

When a student is named the winner of an award but may not receive it because of the conditions listed above, the next eligible student will be granted the award.

3. The monetary benefits of travel scholarships, awards won by graduating students, and awards such as books and medals will be disbursed directly to the student.

4. The monetary benefits of awards, other than those listed in 3, above will be disbursed only if the recipient is registered in a baccalaureate degree program, or a specific program when explicitly required by the terms of the award, at McMaster University in the next Fall/Winter session after the award was earned and will be credited to the student's University account. Amounts in excess of the student's monetary obligation to the University will be disbursed directly to the student in November or December.

5. Awards credited to the student's University account are not refundable in cash if there is an outstanding balance.

6. Students wishing to defer the benefits of an award to a later session (other than an award for entering students) should apply to the Office of Student Financial Aid & Scholarships. Approval of applications is not automatic, and deferments are not normally granted for more than one calendar year.

7. Students holding four-year, full-fees scholarships who choose to accelerate their program and to complete their degree earlier than normal by completing Spring/Summer session courses and who wish to employ the benefits of their award to defray the academic fees for such courses should apply to the Office of Student Financial Aid & Scholarships. Approval of applications is not automatic.

8. The University reserves the right not to grant an award in the absence of a suitable candidate, and to limit the number of awards when there are too few suitable candidates. The University also reserves the right to withdraw, or amend the terms of, any award, and suspend granting of an award or to adjust the stated value of an award in years in which insufficient investment income is available due to fluctuations in investment markets.

9. Appeals on the basis of exceptional circumstances must be submitted in writing to the Office of Student Financial Aid & Scholarships. To submit an appeal, students must provide a covering letter outlining the situation and include relevant documentation which might include a letter of support from the Graduate/Dean/Director of the program and medical documentation if appropriate. The appeal must be submitted to the Undergraduate Council Awards Committee c/o the Office of Student Financial Aid & Scholarships. Approval of applications is not automatic.

10. The particular terms for University Academic Awards are listed in AWARDS FOR ENTERING STUDENTS, AWARDS FOR IN-COURSE, GRADUATING, PART-TIME AND SECOND DEGREE STUDENTS and ACADEMIC GRANTS.

CATEGORIES OF AWARDS

1. Awards for Entering Students (page 385)
2. Awards for In-Course, Graduating, Part-Time and Second Degree Students (page 386)
3. Academic Grants (page 407)

LISTING OF AWARDS AND ACADEMIC GRANTS BY FACULTY (page 408)
To find awards offered to students in a specific Faculty or program.

INDEX OF AWARDS, ACADEMIC GRANTS AND COMMUNITY CONTRIBUTION AWARDS (page 417)
To find a specific award, use the Index of Awards.
Awards for Entering Students (A)

The award numbers in this group begin with a "2" (e.g. 20056).

1. These awards are provided exclusively for those qualifying for admission as full-time students to Level I of a first baccalaureate degree in the Fall/Winter session.

2. A student who has registered at any post-secondary institution after graduation from secondary school will not be considered for an entrance award.

3. Canadian citizens and permanent residents are eligible for an entrance award regardless of where they complete their secondary school education.

4. Students completing their final year of secondary school in Canada are also eligible. International students studying outside Canada are not eligible for these entrance awards.

5. To be considered for an entrance award, students must obtain a minimum final average of 80% or equivalent in the secondary school credits required for University admission to their program of study and must apply for admission to the University not more than two years after completing their secondary school studies.

6. Final admission average for entrance awards is calculated using the prerequisites for program of study plus the next best Grade 12 U or M courses to a total of six final grades.

7. Registration in, or transfer to, another program of study at any time may result in forfeiture, or adjustment in the value, of the award. Students are advised to consult with the Office of Student Financial Aid & Scholarships and their Faculty Advisors prior to making any changes to their program of study or course load.

8. Students who withdraw or drop below 24 units on or before December 31 will lose their entrance award.

9. Recipients of a renewable entrance award must complete a minimum of 24 units in the Fall/Winter session, obtain a Sessional Average of at least 9.5 (or no failures), and register as a full-time student in the subsequent Fall/Winter session in order to retain the next installment of the award.

10. Co-op/Internship students are eligible to retain their entrance award provided they meet the minimum course load requirement for their program of study as defined in the Calendar; however, funding will be deferred until they return to full-time study.

11. Once an entrance award is lost, it will not be reinstated.

12. In addition to meeting the General Conditions, entrance award recipients will begin their studies in the next Fall/Winter session. Students wishing to defer the benefits of an award to a later session should apply to the Office of the Registrar (Admissions) for deferral of both admission and scholarship. Approval of applications is not automatic, and deferrals are not normally granted for more than one calendar year.

Awards for Full-Time, In-Course Students (B)

These awards are based on competition across the University or within a Faculty or program. The award numbers in this group begin with a "3" (e.g. 30056).

1. These awards, which are granted in June or November, are provided exclusively for first baccalaureate degree students registered full-time qualifying on the basis of work included at the May review (or deferred examinations resulting therefrom) in other than their graduating session.

2. Students choosing to graduate at the subsequent Fall Convocation will retain the transcript notation and monetary value of any donor-funded awards (e.g. The Accenture Inc. Scholarship). Recipients of University awards (e.g. Dr. H. L. Hooker Scholarships) will retain the transcript notation but forfeit the monetary benefit of the awards.

3. Students choosing to withdraw after the May review will retain the transcript notation but forfeit the monetary benefit of all awards.

4. In addition to meeting the General Conditions, a student must remain registered as a full-time student during the Fall/Winter session immediately prior to the May review and obtain a Sessional Average of 9.5 and no failures. These awards are not refundable.

5. For students who remain full-time in the Fall/Winter session, a Sessional Average will be computed, which is the weighted average of the grades in all courses taken during that session. The Sessional Average will be used to determine academic standing for the awards listed below, unless otherwise stated in the terms of a particular award.

6. The Sessional Average will be used to determine academic standing for the awards listed below, unless otherwise stated in the terms of a particular award.

7. Co-op/Internship students are eligible for full-time awards provided they meet the minimum course load requirement for their program of study as defined in the Calendar.

8. Students who participate in a formal exchange program are eligible for full-time, in-course awards on the basis of 15 units completed in one term at McMaster. In order to be considered, students should identify themselves to their Faculty by October 15 when they return to full-time study the following Fall/Winter session. Students on exchange for the full year may not be eligible. See Awards for Travel/ Formal Exchange (H) for additional conditions related to travel and exchange awards.

Awards for Part-Time, In-Course Students (Part-Time Studies) (C)

The following awards are based on competition across the University or within a Faculty or program. The award numbers in this group begin with a "6" (e.g. 60056).

1. These awards, which are granted in November, are provided exclusively for part-time first baccalaureate degree students who have completed a minimum of 18 units and 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, 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 which are based on another criterion.

Specific Achievement Awards for Full-Time and Part-Time Students (D)

The following awards are based on competition across the University or within a Faculty or program. The award numbers in this group begin with a "4" (e.g. 40056).

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). Students must have completed a minimum of 18 units to be reviewed. 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, 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 which are based on another criterion.

4. An award name ending with an * indicates that the award is open to both full-time and part-time second baccalaureate degree students.

Awards for Graduating Students (E)

The following awards are based on competition across the University or within a Faculty or program. The award numbers in this group begin with a "5" (e.g. 50056).

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 program.

2. In addition to meeting the General Conditions, 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 program;
      ii) or, if the Calendar does not specify the program work by individual levels, the final 24 units of work.

Awards for Second Baccalaureate Degree Students (F)

The following awards are granted based on competition across the University or within a Faculty or program. The award numbers in this group begin with a "5" (e.g. 50056).

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, 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 which are based on another criterion.

4. A number of awards in this category are also listed in Category D - Specific Achievement Awards, and are indicated by an asterisk after the award name.
Academic Grants for Full-Time Students (G)

The following awards are granted based on competition within a Faculty or program. The award numbers in this group begin with an “85” (e.g. 85001).

1. Academic Grants are provided exclusively for students registered full-time in a baccalaureate degree program at McMaster University.
2. Students must be taking 24 units or more.
3. The entrance grants will be awarded to students with high admission averages of 80% or greater, and who demonstrated financial need. The greater financial need will be used to break any tie.
4. The in-course will be awarded to students with high Sessional Averages of 9.5 or greater with no failures and demonstrated financial need. The greater financial need will be used to break any tie.
5. Entrance and in-course grants are awarded in November based on the previous Fall/Winter Sessional Average for students entering or continuing as full-time students and who have a complete OSSAP file in the current Fall/Winter session.
6. A student may receive only one academic grant per Fall/Winter session and will remain eligible for bursaries and scholarships.

Awards for Travel/Formal Exchange (H)

These awards are based on competition across the University or within a Faculty or program. See Awards for Full-Time, In-Course Students (B) for additional conditions.

1. Students normally participate in exchange programs in their third year. Approval of their Associate Dean/Director is required.
2. Students must be registered as a full-time student at the time of application and must normally remain registered as full-time during the Fall/Winter session immediately following the travel or exchange for which the award was given.
3. Students must have obtained a Sessional Average of 9.5 as a full-time student and had no failures in the previous Fall/Winter session to be considered.
4. Students choosing to withdraw after the May review will retain the transcript notation but forfeit the monetary benefit of all awards.
5. Students are required to submit a report of their travel experience by November 1st following their return to study.

AWARDS FOR ENTERING STUDENTS

The McMaster President’s Awards

McMaster University will reward students with the highest academic standing in their final year of secondary school. Students must obtain a final admission average of 95% or higher to their program of study. No application is required.

Value: $3,000 per year*

*The President’s Award is renewable in the second year at the same value provided that students remain full-time (24 units or greater) and achieve a Sessional Average of 9.5 (approximately 80%) with no failures.

McMaster Honour Awards

McMaster University will reward students with high academic standing in their final year of secondary school. Honour Awards are based on the final admission average to the program of study. No application is required.

- 90 - 94.99%, $2,000 per year*
- 85 - 89.99%, $1,000 per year*
- 80 - 84.99%, $750 per year*

*The Honour Awards are renewable in the second year at the same value provided that students remain full-time (24 units or greater) and achieve a Sessional Average of 9.5 (approximately 80%) with no failures.

The Ashbaugh Scholarships

Established in 1989 by bequest of Frederick K. Ashbaugh of St. Petersburg, Florida, in memory of Mary Eliza Kingston. (20140)

The A.H. Atkinson Education Fund Scholarship

Established in 2001 by the A.H. Atkinson Education Fund. To be awarded to a student entering the Faculty of Engineering. (20141)

The Class of 1952 Mel Hawkrigg Honour Awards

Established in 2001 by the Class of 1952 in honour of its 50th reunion. A maximum number of four entrance scholarships to be awarded each year to students entering any Level I program. (20116)

The Class of 1955 50th Anniversary Entrance Scholarships

Established in 2006 by the Class of 1956 in honour of its 50th anniversary. Two scholarships to be awarded to students entering any Level I program. (20116)

The Coca-Cola Scholarships

Established in 1998 by Coca-Cola Bottling Ltd. A variable number of scholarships to be awarded to students entering a full-time program of study. (20145)

The Helen M. Currey Scholarship

Established in 1941 by bequest of Helen Maud Currey of Drumbo, Ontario. To be awarded every four years. (20146)

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 Ingelheim, 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 program of study; and (b) one to a student entering full-time study in Science I or Music I. Preference will be given to women students. (20130)

The Dundas Scholarships

Established in 1964 from funds donated anonymously. A variable number of scholarships to be awarded to students from Dundas and surrounding area entering a full-time program of study. (20147)

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 George and Nora Elwin Scholarships

Established in 1979 by bequest of George and Nora Elwin of Hamilton. (20148)

The Eileen Gray Farley Scholarship

Established in 1998 by Eileen Gray Farley (Class of ‘43 and winner of the D.E. Thomson Scholarship) in memory of Mr. D. E. Thomson who exemplified a generous spirit of giving throughout his life and established the D.E. Thomson Scholarship in 1909. A variable number of scholarships to be awarded to students entering the Faculty of Humanities. (20134)

The Fortinos Scholarship

Established in 1990 by John Fortino. To be awarded to an outstanding full-time student entering the School of Business. (20137)

The H.P. Frid Scholarship

Established in 1982 by the family of H.P. Frid in memory of the D.E. Thomson Scholarship. To be awarded to promising students entering a full-time program of study. (20136)

The General Motors Entrance Scholarships

Established in 1989 by General Motors of Canada Limited. A variable number to be awarded to female students entering the Faculty of Engineering. (20131)

The John Hodgins Memorial Scholarship

Established in 1985 by his 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. (20123)

The Nellie P. Hogg Scholarship

Established in 1965 by bequest of Nellie P. Hogg of Hamilton. One scholarship to be awarded to a woman student entering a full-time program of study. (20150)

The Dr. Harry Lyman Hooker Entrance Scholarships

Established in 1981, and resulting from the bequest of Dr. H.L. Hooker. (20151)

The Cathryn E. Kaake Merit Award

Established in 1988 in memory of Cathryn E. Kaake (Class of ’78) by family and friends. (20125)

The Raymond C. Labarge Merit Awards

Established in 1990 in memory of Raymond C. Labarge (Class of ’36) of Ottawa. (20127)

The Marion Laing-Knox Entrance Scholarship

Established in 2000 by bequest of Marion Laing-Knox. To be awarded to a student entering the Faculty of Humanities in a full-time program of study who presents an outstanding final admission average. (20126)
THE LLOYD MEMORIAL SCHOLARSHIP
Established in 1956 in memory of Henry Hoyes and Lizzie Lloyd by their children. Grade 12 U or M subjects to be included are: Physics, Chemistry, two credits of Mathematics, and either Biology or a third credit of Mathematics. (20152)

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. (20153)

THE ALBERT MATTHEWS SCHOLARSHIP
Established in 1920. Grade 12 U or M subjects to be included are Latin and a language other than English. (20154)

THE HAROLD MATTHEWS MEMORIAL SCHOLARSHIP
Established in 1917. Grade 12 U or M subjects to be included are French and either German or Spanish. (20155)

THE ISABELLA CAMPBELL McNEE SCHOLARSHIP
Established in 1926. Grade 12 U or M subjects to be included are three credits of Mathematics and Physics. (20156)

THE MOULTON COLLEGE ENTRANCE SCHOLARSHIP
Established in 1980 from funds originally subscribed by the Alumnae of Moulton College during the years 1946 to 1949. To be awarded to a woman student entering a full-time program of study. (20157)

THE ALVIN I. OGLIVIE SCHOLARSHIPS
Established in 1984 by bequest of Alvin I. Oglivie of Hamilton. Five scholarships to be awarded to students entering a full-time program of study. (20158)

THE LILLIAN AND LEROY PAGE SCHOLARSHIP
Established in 1982 by donation of the Lillian and Leroy Page Foundation for a student from the Hamilton area entering the Faculty of Science. (20159)

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. (20160)

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 program of study. (20161)

THE D.E. THOMSON SCHOLARSHIP
Established in 1909 and augmented in 1915. Grade 12 U or M subjects to be included are English and either Latin or French. (20162)

THE TYNOWSKI SCHOLARSHIP
Established in 1989 by the University, friends and colleagues of Olga Tynowski, for her outstanding contributions to McMaster University during 46 years of service. To be awarded to an outstanding student entering a full-time program of study. (20163)

THE WALLINGFORD HALL ENTRANCE SCHOLARSHIP
Established in 1993. To be awarded to a student entering a full-time program of study. (20164)

THE WHEELER SCHOLARSHIP
Established in 1915. Grade 12 U or M subjects to be included are: History, English and a language other than English. (20165)

Music Awards
The Music awards are for one year.

THE JOAN FRANCES BOWLING ENTRANCE SCHOLARSHIPS
Established in 1997 from the estate of Marie Bowling in memory of her daughter, Joan Frances Bowling. Two scholarships to be awarded to students entering Music I, who in the judgment of the School of the Arts, have demonstrated excellence in classical music. Value: $1,600 each (20166)

THE 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 the Arts, has attained outstanding musical proficiency. Value: $900 (20167)

THE FRANK THORLIFSON MEMORIAL SCHOLARSHIPS
Established in 1978 in memory of Professor Frank Thorlifson, first Chair of the Department of Music. Two scholarships to be awarded to students entering Music I who, in the judgment of the School of the Arts, have attained high scholastic achievement and musical proficiency. Value: $1,000 each (20168)

Other Awards

THE ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION ENTRANCE SCHOLARSHIP
Established in 1981 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded, one to a female student and one to a male student, entering the Faculty of Engineering. Value: $1,000 each (20169)

THE DOMINIC ROSART SCHOLARSHIP
Established in 2002 by Mrs. Patsy Rosart in loving memory of her husband Dominic Rosart. To be awarded to the student entering Level I of a full-time program of study in the Faculty of Health Sciences who has the highest final admission average and is eligible for OSAP or an equivalent provincial student assistance program. Award is tenable for up to four years provided the recipient maintains a Sessional Average of 9.5. Value: $20,000 ($5,000 per year) (20170)

THE TRANSPORTATION ASSOCIATION OF CANADA FOUNDATION SCHOLARSHIP
Established in 2006. To be awarded each year to an outstanding full-time student entering the Faculty of Engineering. Value: $1,000 (20171)

International Awards

THE JOSEPHINE MAGEE SCHOLARSHIP
Established in 1997 from the estate of Josephine Magee of Hamilton. Value: $500 (20172)

THE JOSEPHINE MAGEE SCHOLARSHIP
Established in 1998 from the estate of Josephine Magee of Hamilton. Value: $500 (20173)

THE LLOYD MEMORIAL SCHOLARSHIP
Established in 1917. Value: $500 (20174)

Internation Awards

THE UNIVERSITY INTERNATIONAL SCHOLARSHIP
Established in 1975. (20175)

INTERNATIONAL ENTRANCE SCHOLARSHIPS
Established in 1950. Established in 1961 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded, one to a female student and one to a male student, entering the Faculty of Engineering. (20176)

INTERNATIONAL STUDENTS

AWARDS FOR IN-COURSE, GRADUAND, PART-TIME AND SECOND DEGREE STUDENTS

No application is required for any award unless noted in the listing of Undergraduate Awards and Academic Grants by Faculty. An award name ending with an * indicates that the award is open to both full-time and part-time second baccalaureate degree students.

THE ACCENTURE INC. SCHOLARSHIP
Established in 1998 by Andersen Consulting. To be awarded to a student entering the final year of study in Engineering, Science or Commerce who, in the judgment of a Selection Committee, demonstrates a strong interest in Management Information Systems and qualities of leadership through service to McMaster University and/or the community in athletic, professional or social organizations. Value: $850 (30248)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.
THE ACHIEVEMENT AWARDS OF EXCELLENCE*
Established in 1998. A variable number of scholarships to be awarded to students who, in the judgment of the Centre for Student Development, demonstrate outstanding academic achievement. Preference will be given to first-degree students.
Value: $800 (40085)

Students who wish to be considered for this award must be registered with the Centre for Student Development, Disability Services. The application cover page can be downloaded from the Office of Student Financial Aid & Scholarships web site at http://sfas.mcmaster.ca/downloadcentral.html. Completed applications should be submitted to the Office of Student Financial Aid & Scholarships by April 15th.

THE ACHIEVEMENT AWARDS OF EXCELLENCE
Established in 1998. A variable number of scholarships to be awarded to students who, in the judgment of the Centre for Student Development, demonstrate outstanding academic achievement. Preference will be given to first-degree students.
Value: $500 (30215)

THE AIR LIQUIDE CANADA INC. SCHOLARSHIPS
Established in 1999 by Air Liquide Canada. One scholarship to be awarded to a student in a Level II or III program in Chemical Engineering, Materials Science and Engineering and/or Mechanical Engineering who, in the judgment of the Faculty of Engineering, has demonstrated outstanding academic achievement. The recipient must have completed Level II (A Stream) or Level IV (B and C Streams) and, in the judgment of the School of Nursing, has demonstrated exceptional achievement in required science courses.
Value: $3,150 each (30287)

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. A variable number of scholarships to be awarded to students who have completed Level I and an additional 30-75 units on the basis of excellence in an Honours program in the Faculty of Humanities. The purpose of the scholarships is to enable the recipients to study outside Canada during the twelve months prior to the final Fall/Winter session.
Value: $5,500 each (30174)
Travel Scholarship applications are due February 15th.

THE W.K. ALLAN MEMORIAL SCHOLARSHIP
Established in 1994 in memory of William Kellock Allan (Class of '31) by his wife, Yvonne and augmented in 2002 by his family. To be awarded to a student entering the final level of a program in Mathematics or Physics who attains the highest Sessional Average.
Value: $1,100 (30221)

THE CAMERON D. ALLEN BOOK PRIZE
Established in 1976 in memory of Cameron D. Allen. To be awarded to a student in an Honours program in the School of Geography and Earth Sciences in which the student has demonstrated outstanding academic achievement in studies in a fourth year climatology course. Preference will be given to a graduating student.
Value: $150 for books (40115)

THE ALUMNI ASSOCIATION SCHOLARSHIP
Established in 1974 by the McMaster University Alumni Association and later augmented by bequest of Harold E. Amy. One scholarship to be awarded to a full-time student who has attained the highest Cumulative Average at the most recent review.
Value: $375 (60000)

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 GEO 2HC3 (or GEOG 2RC3) (Canada).
Value: $300 (40001)

THE AMBASSADOR OF SPAIN BOOK PRIZE
Established in 1982. To be awarded to a graduating student in a program in the Department of Linguistics and Languages who, in the judgment of the Department, has achieved notable proficiency in Spanish.
Value: Book (50002)

THE E.H. AMBROSE GOLD MEDAL
Established in 1971 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 its 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 program in Commerce who, on the basis of scholarship and leadership, is judged to be the outstanding member of the class.
Value: $1,000 and a medal (40088)

THE ANATOMY PRIZE
Established in 1992. To be awarded every other year to a student who has completed Level III (or equivalent), has studied biological structure and who, in the judgment of the Education Program in Anatomy, has demonstrated excellence in Anatomy.
Value: $1,000 and a medal (40088)

THE ANTHROPOLOGY PRIZE
Established in 1997 in memory of Herbert S. Armstrong. To be awarded to a student who has completed at least 30 units beyond Level I who, in the judgment of the School of Geography and Earth Sciences, has achieved notable academic standing and who has made a significant contribution to university life through extra-curricular activities.
Value: $75 for books (30234)

THE ARTS AND SCIENCE EXPERIENTIAL LEARNING TRAVEL SCHOLARSHIP
Established in 2002 by Arts and Science alumni. To be awarded to a student who has completed at least Level II of the Honours Arts and Science Program, is currently registered in an Arts and Science Experiential Learning course, and who, in the judgment of the Arts and Science Program, has achieved notable academic standing.
Value: $1,000 (30290)
Travel Scholarship applications are due February 15th.

THE ARTS AND SCIENCE PROGRAM BOOK AWARD
Established in 1995. To be awarded from time to time to an Arts and Science student who, in the judgment of the Arts and Science Program Awards Committee, has demonstrated outstanding academic achievement in both arts and science.
Value: $75 (40078)

THE EDGAR R. ASHALL SCHOLARSHIP
Established in 1965 by bequest of his wife, Edith M. Ashall.
Value: $200 for books (30162)

THE A.H. ATKINSON PRIZE
Established in 1980 by Atkinson Engineering Consultants Limited. To be awarded to the student in a Civil Engineering program who achieves the highest average in CIV ENG 3G03 and 3J04, taken in one session.
Value: $200 (30001)

THE ATOMIC ENERGY OF CANADA LIMITED SCHOLARSHIPS
Established in 2001 by Atomic Energy of Canada Limited (AECL). Four scholarships to be awarded to students who have completed Level I in the Faculty of Engineering and who, in the judgment of the Faculty of Engineering, have demonstrated outstanding academic achievement and qualities of leadership at McMaster or in the community.
Value: $2,500 each (30276)

THE AUDCOMP COMPUTER SYSTEMS SCHOLARSHIPS
Established in 2005 by Audcomp computer Systems to support the dreams and aspirations of students attending university. To be awarded to a student who has completed Level II or above and who has attained the highest Sessional Average.
Value: $2,000 (30305)
Note: Facilities and programs vary. This year the award will go to a student registered with the Department of Electrical and Computer Engineering.

THE MAQBOOL AZIZ MEMORIAL SCHOLARSHIP
Established in 2001 by family, friends and colleagues in memory of Maqbool Aziz, Professor of English from 1969 to 2000. To be awarded to a student in an English program who attains the highest grade in ENGLISH 2106 (Modern British Literature).
Value: $425 (40105)
THE LAURA BALDWIN SCHOLARSHIP
Established in 2005 from the bequest of Laura Baldwin. To be awarded to a student registered in a program in English who, in the judgment of the Department of English and Cultural Studies, has submitted an original literary work or poem that demonstrates the highest degree of literary excellence.
Value: $500 (30543)

THE CHARLES MURRAY BALL SCHOLARSHIPS IN EARTH SCIENCES
Established in 1991 by May A. Ball in memory of her brother Murray Ball. Four scholarships to be awarded to students entering Level I, II, III, IV or V of A.B.Sc. program in the School of Geography and Earth Sciences who, in the judgment of the School of Geography and Earth Sciences, have attained notable standing. Ordinarily, not more than one scholarship will be awarded to any one student.
Value: $2,300 each (30182)

THE BANK OF MONTREAL HUMANITIES MULTIMEDIA SCHOLARSHIPS
Established in 1999 by the Bank of Montreal. A variable number of scholarships to be awarded to students entering Level II, III or IV of the Humanities Combined Honours Multimedia program who, in the judgment of the Department of Communication Studies and Multimedia, demonstrate outstanding academic achievement in the Humanities Multimedia program or great promise in the area of Humanities multimedia.
Value: $1,000 each (30259)

THE J. DOUGLAS BANKIER MEMORIAL SCHOLARSHIP
Established in 1977 in memory of Professor J. Douglas Bankier by his friends, colleagues, and former students. To be awarded to the student who has completed Level I and at least 60 units of an Honours program in the Department of Mathematics and Statistics, who attains the highest Sessional Average and who in that session achieves a grade of at least B in STAT3 D03 and D0D3.
Value: $375 (30076)

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 graduate who, in the judgment of the Department of History, has attained notable standing in an Honours History program.
Value: $150 (50050)

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 an additional 60 - 75 units of the Honours Commerce Program and who, in the judgment of the Faculty of Business, has achieved high standing in COMMERCE F3A3 and F3B3, taken in one session.
Value: $200 (30134)

THE BASU MEDAL
Established in 1984 in memory of Professor Sanjoy Basu by friends, colleagues, and organizing members of the McMaster Alumni Association in honour of Marion Bates, Dean of the School of Humanities at McMaster University from 1947 to 1965. To be awarded to a student graduating from the Department of History, who, in the judgment of the Department of History, has displayed outstanding achievement in Canadian history courses consistently throughout the degree program.
Value: $1,400 (30102)

THE M. BANKER BATES SCHOLARSHIP
Established in 1975 by Dr. M. Banker Bates and augmented in 1978 by his memory; his family, friends, and colleagues. To be awarded to the student who has completed Level I and an additional 60 - 75 units of a program in Commerce and who attains the highest Sessional Average.
Value: $1,400 (30102)

THE MARION BATES BOOK PRIZE
Established in 1967, Centennial Year, by the Alumnae members of the McMaster Alumni Association in honour of Marion Bates, Dean of the School of Humanities from 1947 to 1965. To be awarded to a student graduating from an Honours program in History who, in the judgment of the Department of History, has displayed outstanding achievement in Canadian history courses consistently throughout the degree program.
Value: $85 for books (50004)

THE BATES RESIDENCE SCHOLARSHIP
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.
Value: $750 (30155)

THE STANLEY T. BAYLEY SCHOLARSHIP IN BIOLOGY
Established in 2007 by the friends; former students and colleagues of Stanley T. Bayley in recognition of contributions to research and leadership in the Department of Biology. To be awarded to a student who has completed Level I and an additional 30 - 70 units of an Honours Biology program who, in the judgment of the Department of Biology, has demonstrated outstanding academic achievement and has focused on studies in Cell Biology.
Value: $800 (30330)

THE BARBARA AND RONALD BAYNE GERONTOLOGY INTERNSHIP AWARD
Established in 2001 by Barbara and Ronald Bayne to provide practical learning experience for Gerontology students. To be awarded to a student who has completed at least Level II in a program in Gerontology and who, in the judgment of the Department of Health, Aging and Society, has indicated a clear internship plan and demonstrated notable academic achievement and qualities of leadership at McMaster or in the community.
Value: $450 (40106)

THE BEALE-LINCOLN-HALL TRAVEL SCHOLARSHIP
Established in 1996 by Arnold A. Beale in memory of his parents F. Arnold Beale and Margaret S. Beale and Mr. and Mrs. Walter Gould Lincoln and Commander Harley H. Hall, U.S.N. To be awarded to students who demonstrate high academic standing and are participating in one of McMaster’s formal exchange programs. Preference will be given to students enrolled in a program in Biochemistry, Biology, Chemistry, Commerce, Cultural Studies and Critical Theory, Earth and Environmental Sciences, Engineering Physics, English, French, Geography, History, Materials Science, Mathematics, Modern Languages, Physics or Religious Studies and who demonstrate a lively interest in the humanities and the human and social implications of scientific developments.
Value: $2,200 (30236)

Travel Scholarship applications are due February 15th.

THE BEAUTY COUNSELORS OF CANADA SCHOLARSHIP
Established in 1956 by Beauty Counselors of Canada Limited. To be awarded to the student who has completed Science I with the highest Sessional Average and who is entering Level II of the Honours Biochemistry, or Honours Chemistry program.
Value: $350 (30088)

THE BENTALL SCHOLARSHIPS
Established in 2001 by Dr. C. Howard Bentall (Class of '37) and Dr. Shirley F. Bentall (Class of '46). A variable number of scholarships to be awarded to students in any Faculty who demonstrate outstanding academic achievement.
Value: $1,500 each (30281)

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 program in Music who, in the judgment of the School of the Arts, are outstanding: (a) one in the area of choral or vocal music to a student who has completed Music I or 30 - 75 units; (b) one to a keyboard student who has completed Level I and an additional 30 - 75 units; and (c) one to a student who has completed Music I and who has demonstrated overall musical excellence.
Value: $450 each (30097)

THE J.P. BICKELL FOUNDATION MINING SCHOLARSHIP
Established in 2002 by the J.P. Bickell Foundation. A variable number of scholarships to be awarded to students who, in the judgment of the School of Geography and Earth Sciences, demonstrate an interest in the field of mining and have completed Level II of an Honours Earth and Environmental Sciences, Honours Environmental Science (formerly Honours Geoscience) or B.Sc. Environmental and Earth Sciences (formerly Geoscience) program.
Value: $2,000 minimum (30291)

THE BINKLEY MEDAL
Established in 2000 by the University, friends and colleagues of Margaret Beale and Margaret S. Beale and Mr. and Mrs. Walter Gould Lincoln and former students. To be awarded to the student who has completed at least Level II in a program in Gerontology and who has demonstrated outstanding achievement in Canadian history courses consistently throughout the degree program.
Value: $350 and a medal (50056)

THE BIOLOGY ACHIEVEMENT AWARD
Established in 2004 by the Department of Biology. A variable number to be awarded to students registered in Science I who, in the judgment of the Department of Biology, have achieved the highest standing in BIOLOGY 1A03 or the highest standing in BIOLOGY 1M03.
Value: $400 (40113)

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, Neuroscience and Behaviour from 1958 to 1978. To be awarded to the student who, in the judgment of the Department of Psychology, Neuroscience and Behaviour, has demonstrated outstanding achievement in PSYCH 4D09 (Senior Honours Thesis), or PSYCH 4D09 (Senior Honours Thesis).
Value: $600 (40079)
THE ABE BLACK MEMORIAL PRIZES
Established in 1982 by friends and colleagues of Dr. A.H. Black in memory of a distinguished member of the Department of Psychology, Neuroscience and Behaviour from 1958 to 1978. Three prizes to be awarded: (a) to the student who attains the highest Cumulative Average in an Honours B.A. program in Psychology or Psychology, Neuroscience and Behaviour; (b) to the student who attains the highest Cumulative Average in the Honours B.Sc. program in Psychology or Psychology, Neuroscience and Behaviour; (c) to the student who attains the highest Cumulative Average in the Honours Biology and Psychology (Life Science) program.
Value: $200 each (50000)

THE LEONE BETTY BLACKWELL MEMORIAL BOOK PRIZE
Established in 1990 by Mrs. Bonnie Blackwell in memory of her mother, Leone Betty Blackwell. To be awarded to a graduating student with the highest grade in GEO 3P03 (or EARTH SC 3P33).
Value: $85 for books (50096)

THE BRIAN BLAGEY 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 Sessional Average on completion of the first year of study in the Honours B.A. program in French.
Value: $1,050 (30245)

THE DR. GARTH BOULTER MEMORIAL AWARD
Established in 2007 by G. Stanley Boulter, B.A. (Class of '49) and Irma E. Boulter in memory of their son, Garth E. Boulter, Associate Professor of Obstetrics and Gynecology in the School of Medicine. A variable number to be awarded to full-time students who have completed an overseas clinical experience in Level II and above of the Midwifery Program and who, in the judgment of the Midwifery Program, have demonstrated academic excellence, leadership and social awareness. Preference will be given to students who have completed their electives in Africa.
Value: $1,000 (30326)

THE JOAN FRANCES BOWLING SCHOLARSHIPS
Established in 1997 from the estate of Marie Bowling in memory of her daughter, Joan F. Bowling. Two scholarships to be awarded to outstanding classical music students registered in Level II and above of a Music program and who, in the judgment of the School of the Arts, have demonstrated excellence in Music.
Value: $1500 each (30235)

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 an additional 30 - 45 units of an Honours program in Philosophy and who, in the judgment of the Department of Philosophy, shows the most academic promise.
Value: $475 (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: $350 for books (30091)
Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

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 an additional 29 - 45 units of an Honours program in Mathematical Sciences who attains the highest Sessional Average. Tenable in Levels III and IV provided the student maintains satisfactory standing in an Honours program in which mathematics, pure or applied, is the major subject of study.
Value: $1,200 ($600 each year) (30051)

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 an additional 30 - 75 units of an Honours Program in Philosophy who, in the judgment of the Department of Philosophy, has demonstrated outstanding academic achievement.
Value: $1,000 (30195)

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 5.Sc. program who is named to the Deans' Honour List and who has made the most outstanding contribution to undergraduate activities. (50007)

THE CAE SCHOLARSHIPS IN COMPUTING AND SOFTWARE ENGINEERING
Established in 2001 by CAE Inc. To be awarded to a student who has completed Level II of a Software Engineering program who, in the judgment of the Department of Computing and Software, has achieved notable academic standing and demonstrated qualities of leadership at McMaster or in the community.
Value: $3,400 (30013)

THE CRISPIN CALVO SCHOLARSHIPS
Established in 1992 by Dr. J.S. Kirkaldy and Dr. W.W. Smetzer. Two scholarships to be awarded, one to a student with the highest combined average in CHEM 2PD3 and 3PA3, the other to a student with the highest combined average in MATL3 2B03 and 2P03.
Value: $1,700 each (30211)

THE BETTY TAYLOR CAMPBELL SCHOLARSHIP
Established in 1998 by William F. Campbell of Ottawa, Ontario in memory of his wife Betty Taylor Campbell, a 1937 McMaster graduate, an Olympic medallist in 1936 and 1939 inductee into the Athletics Hall of Fame. To be awarded to a student who has completed Level I in a program in Kinesiology and who, in the judgment of the Department of Kinesiology, demonstrates academic excellence and outstanding athletic ability. The award is renewable for up to three years provided the recipient maintains a Cumulative Average of 5.0.
Value: $4,500 ($1,500 each year) (30246)
Students who wish to be considered for this award are encouraged to submit a resume to the Department of Kinesiology by April 15th.

THE ELLA HALSTEAD CAMPBELL PRIZE
Established in 1978 by Mrs.-Verna 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 the Arts.
Value: $200 (30048)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (HAMILTON) MEMORIAL PRIZE
Established in 1992 by current and past members of the Canadian Federation of University Women (Hamilton), formerly known as the University Women's Club of Hamilton. To be awarded to the graduating student from a program in Women's Studies who, in the judgment of the Committee of Instructors for Women's Studies, has demonstrated outstanding academic achievement in the Women's Studies component of the program.
Value: $175 (50062)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (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 an additional 60 - 85 units of a program in Engineering with the highest Cumulative Average.
Value: $300 (30149)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (HAMILTON) RUBY BROWN BOOK PRIZE
Established in 1970 by bequest of Mrs. Edgar Brown. To be awarded to a student in any Level I program for the most creative essay in a Level I English course.
Value: $200 (40046)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (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 Sessional Average in the penultimate level of any program.
Value: $1,500 (30150)

THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION (CISC) AWARD
Established in 2005 by The Canadian Institute of Steel Construction (CISC). To be awarded to a student who attains high standing in CIV ENG 3503 and who, in the judgment of the Department of Civil Engineering, has an interest in steel structure research.
Value: $2,000 (40116)
THE CANADIAN INTERNATIONAL COUNCIL 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 an additional 30 units of a program 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)

THE CANADIAN SOCIETY FOR CHEMICAL ENGINEERING (CSCHE) SCHOLARSHIP
Established in 2004 by the organizing committee of the 2003 CSChE Annual Meeting. To be awarded to a student entering Level II of a program in Chemical Engineering who has attained the highest academic standing in Level I.
Value: $500 (30016)

THE CANADIAN SOCIETY FOR CHEMISTRY PRIZES
Established in 1947 by the Chemical Institute of Canada. Two awards to be made to students who are entering their final year of study: (a) one to a student in an Honours program in Chemistry or Honours Applied Chemistry who attained high standing in Chemistry; (b) one to a student in the Honours Biochemistry or Honours Biochemistry and Chemistry programs who attained high standing in biochemistry and organic chemistry.
Value: Medal and certificate (30017)

THE CANADIAN SOCIETY OF CIVIL ENGINEERS (HAMILTON SECTION) PRIZE
Established in 1987. To be awarded to a student entering the final level of a program in Civil Engineering who, in the judgment of the Department of Civil Engineering and Engineering Mechanics, has demonstrated participation in extracurricular activities and has attained high academic standing.
Value: Plaque (30018)

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 program in History who, in the judgment of the Department of History, has displayed outstanding achievement and has contributed to the Department's activities.
Value: Medal (50018)

THE NANCY CAR MEMORIAL SCHOLARSHIP IN KINESIOLOGY
Established in 2001 in loving memory of Kinesiology student Nancy Car. To be awarded to a student entering Level IV of Kinesiology who, in the judgment of the Faculty of Social Sciences, has attained notable academic standing and demonstrated leadership at McMaster University or in the community.
Value: $400 (30277)

Students who wish to be considered for this award are encouraged to submit a resume to the Department of Kinesiology by April 15th.

THE GRACE DOROTHY AND WILLIAM P. CARPENTER AWARD
Established in 2001 by the Hamilton Community Foundation. To be awarded to a student entering Level II in Mechanical Engineering who, in the judgment of the Department of Mechanical Engineering, demonstrates outstanding academic achievement. Preference will be given to a student who has graduated from a publicly funded secondary school in the Hamilton or Burlington area.
Value: $1,500 (30284)

THE JAMES ROBERTSON CARRUTHERS MEMORIAL PRIZE
Established in 1984 in memory of James Robertson Carruthers (Class of 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 HIS-TORY 2R03 or 2R04 (United States History).
Value: $425 (40025)

THE WILLIAM G. CARTER SCHOLARSHIP IN GOLF
Established in 2006 by William G. Carter (Class of '50). To be awarded to a student who has completed Level I or above in any program with notable academic achievement and who demonstrates outstanding athletic achievement in men's or women's golf. The recipient must meet the eligibility requirements of the Ontario University Athletics (OUA). Not open to students in their graduating year.
Value: $800 (40121)

THE NORMAN N. CASKEY MEMORIAL PRIZE
Established in 1983 by Mrs. Verna Caskey and Miss June Caskey in memory of husband and father. To be awarded to a student who has completed Music I or Level I and an additional 30 - 75 units of an Honours program in Music and who, in the judgment of the School of the Arts, has demonstrated musical excellence.
Value: $150 (30115)

THE CGA ONT. AWARD FOR EXCELLENCE
Established in 1982 by Certified General Accountants of Ontario. To be awarded to the graduating student who, in the judgment of the School of Business, displayed outstanding achievement in accounting and has attained an average of at least 10.0 in COMMERCE 2AB3, 3AB3, 3AC3 and 4AA3.
Value: $150 (50012)

THE MARIA CHAN SCHOLARSHIPS FOR INTERNATIONAL STUDIES IN BUSINESS
Established in 1999 by Professor Luke Chan and his family in support of students in the School of Business who wish to pursue academic studies abroad. A variable number of scholarships to be awarded to students participating in one of McMaster's formal exchange programs who, in the judgment of the Faculty of Business, demonstrate notable academic achievement.
Value: $1,000 each (30283)

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 program at the most recent spring review, and who ranks highest in scholarship, leadership and influence.
Value: Medal (30002)

THE CHEMICAL INSTITUTE OF CANADA (HAMILTON SECTION) PRIZES
Established in 1947 by the Hamilton Section. Two prizes to be awarded to students who have completed Level I and an additional 29 - 36 units: (a) one to a student in an Honours program in Chemistry who, in the judgment of the Department, shows particular promise in Chemistry; and (b) one to a student in a program in Chemical Engineering who, in the judgment of the Department, shows particular promise in Chemical Engineering.
Value: $1,500 each (30023)

THE CIM INTERNATIONAL OUTREACH TRAVEL AWARD
Established in 2006 by Michael P. Smith and CIM Limited. To be awarded to a student in the Bachelor of Health Sciences (Honours) program who will be taking HTH SCI 3H03 in the following summer or in the following Fall/Winter session, and who will be travelling and working in underdeveloped, disadvantaged areas outside of Canada. The student must demonstrate contributions to the betterment of life through special initiatives.
Value: $1,000 (30316)

Travel Scholarship applications are due February 15th. A 500-word essay on the value of the experience in meeting the stated personal learning goals established by the student is required. Students should build into their learning goals a presentation to an external group after the travel is completed.

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 program in Social Work who submits an essay or report based on the student's field work experience that best addresses the need for innovative or non-traditional social work practice.
Value: $500 (40006)

THE CITY OF HAMILTON ECONOMIC DEVELOPMENT DEPARTMENT SCHOLARSHIPS
Established in 1976. (a) Two scholarships to be awarded on the basis of Sessional Average to students entering Level II of a Commerce program: (b) Four scholarships to be awarded on the basis of Sessional Average: two to students who have completed Level I and an additional 30 - 45 units, and two to students who have completed Level I and an additional 60 - 75 units of a program in Commerce. Recipients must have obtained all their secondary school education in the Hamilton-Wentworth Region.
Value: $775 each (30064)

THE HUGH CLARK SCHOLARSHIP
Established in 1989 by Hugh Clark in celebration of McMaster's fiftieth year since moving to Hamilton. To be awarded to the student who has completed Level I and an additional 60 - 75 units of an Honours program in Social Sciences and attains the highest Sessional Average.
Value: $1,950 (30068)
THE CLASS OF '37 TRAVEL SCHOLARSHIP IN ARTS AND SCIENCE
Established in 1989 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 an additional 30 - 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: $1,300 (30175)

THE CLASS OF '38 SCHOLARSHIP IN HONOUR OF AMELIA HALL
Established in 1985 to mark the fiftieth anniversary of the graduation of the Class of '38 and to commemorate the contribution of Amelia Hall, the distinguished actress, to theatre in Canada. To be awarded to one or two students in Theatre & Film Studies who, in the judgment of the School of the Arts, have attained notable academic achievement and demonstrated the ability to make a strong contribution to the study of dramatic performance.
Value: $1,500 each (30322)

THE CLASS OF '43 GOLDEN ANNIVERSARY SCHOLARSHIP
Established by the Class of '43 in celebration of their 50th anniversary. To be awarded to the student who has completed Level I and at least an additional 60 units of an Honours program in Theatre & Film Studies who, in the judgment of the School of the Arts, has achieved notable academic standing and has made a significant contribution to theatre on campus.
Value: $850 (30214)

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 program who has attained the highest Sessional Average.
Value: $1,500 (30224)

THE CLASS OF '50 SCHOLARSHIP IN HONOURS ECONOMICS
Established in 1982 by members of the Class of 1950 who graduated in Honours Economics. To be awarded to the student who has completed at least Level II of an Honours program in Economics, and who, in the judgment of the Department of Economics, has attained a high Sessional Average and has demonstrated leadership in undergraduate extracurricular activities.
Value: $700 (30027)

THE CLASS OF 1953 50TH ANNIVERSARY SCHOLARSHIP
Established by the Class of 1953 in honour of its 50th reunion. A variable number of scholarships to be awarded to students in Level II and above in a program in Arts and Science who, in the judgment of the Arts and Science Program, have attained high academic standing and demonstrated community involvement.
Value: $1,500 (30264)

THE CLASSICS PRIZE
Established in 1978 by Professor D.M. Shepherd. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours program in Classics and who, in the judgment of the Department of Classics, shows most promise.
Value: $100 (30003)

THE DENTON COATES MEMORIAL SCHOLARSHIP
Established in 1982 in memory of Denton E. Coates (Class of '70) by his friends. To be awarded to the graduate 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: $275 (50013)

THE COMPARATIVE LITERATURE PRIZE *
Established in 1988. To be awarded to a student in an Honours program in Comparative Literature who, in the judgment of the Comparative Literature Program, has achieved notable standing in Level II.
Value: $250 (40008)

THE CONSUL GENERAL OF ITALY BOOK PRIZE IN ITALIAN *
Established in 2003 by the Istituto Italiano di Cultura as Cultural Section of the Consul General of Italy. To be awarded to a student in an Honours program in the Department of Linguistics and Languages who attains the highest grade in a Level I course in Italian.
Value: $150 for books (40110)

THE ELIZABETH PETRA COOKE MEMORIAL SCHOLARSHIP
Established in 2006 in memory of Elizabeth Petra Cooke, B.Sc.N. (Class of '03). To be awarded to a student in a Post R.N. or Post R.P.N. program who, in the judgment of the School of Nursing, has demonstrated a commitment to the advancement of the nursing profession and/or to mentoring nurses as they further their education.
Value: $1,000 (40120)

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 has completed at least nine units beyond Level I and who, in the judgment of the Department of Linguistics and Languages, has achieved notable standing in Italian.
Value: $125 (40004)

THE CRANSTON PRIZES *
Established in 1958 by William H. Cranston of Midland in honour of his parents, J. Herbert Cranston (Class of '05) and Eva Wilkins Cranston (Class of '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: $175 each (40011)

THE CSEP/SCPE UNDERGRADUATE STUDENT AWARD
Established in 1993 by the Canadian Society for Exercise Physiology. To be awarded to the student from the Kinesiology program who, in the judgment of the Department of Kinesiology, shows high standing in KINESIOL 2C03 (Exercise Physiology) and either KINESIOL 4C03 or 4C03.
Value: Medal and Certificate (50068)

THE EDWIN MARWIN DALLEY MEMORIAL SCHOLARSHIPS
Established in 1965 by bequest of Edwin Marwin Dalley of Hamilton. Value: $800 each (30164)

THE DOUGLAS DAVIDSON SCHOLARSHIP IN GENETICS
Established in 2006 by the friends and colleagues of Dr. D. Davidson in recognition of his many years of contributions to research and undergraduate teaching. To be awarded to a student registered in Honours Biology (Genetics Specialization) who obtains the highest grade in BIOLOGY 2C03.
Value: $400 (40119)

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 an additional 60 units of an Honours program in Biology who, in the judgment of the Department of Biology, attains a grade of at least A- IN BIOLOGY 2F03 and who registers in BIOLOGY 3R03, 4J03 or 4JJ3 (Field Biology) in the following summer session.
Value: $575 (40099)

THE DEAN'S MEDAL FOR EXCELLENCE IN THE HUMANITIES
Established in 2000 by Donald T. Betzner (Class of '52). Three prizes to be awarded to the graduating students who, in the judgment of the Faculty of Humanities, have demonstrated outstanding academic achievement.
Value: $5,000 (1st and a medal (50083))
$3,000 (2nd and a medal (50093))
$2,000 (3rd and a medal (50094))

THE DR. RUDOLF DE BUDA SCHOLARSHIP
Established in 1989 in memory of Professors de Buda by family, friends and colleagues. To be awarded to a student who has achieved high standing after completion of Level I and an additional 69 - 80 units of an Electrical or Computer Engineering program and who elects to do a fourth-year thesis or project on a topic related to the field of Information Theory, * Coding or Digital Communications.
Value: $1,900 (30041)

THE JOHN DEERE LIMITED SCHOLARSHIP
Established in 1992 by John Deere Limited. To be awarded to the student who has completed Level I and an additional 60 - 75 units of the Honours program in Agriculture who, in the judgment of the Faculty 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)

THE DEGROOTE SCHOOL OF BUSINESS ALUMNI UNDERGRADUATE SCHOLARSHIP
Established in 2004 through the generosity of the DeGroote School of Business alumni and friends. To be awarded to a student who has completed Level I in the Faculty of Business who, in the judgment of the Faculty of Business, has achieved academic excellence in COMMERC 1E03, ECON 1B03 and 1BB3, and has demonstrated leadership ability through school activities, work and/or community involvement.
Value: $800 (30309)
THE DELOITTE & TOUCHE SCHOLARSHIP
Established in 2000 by Deloitte & Touche. A variable number of scholarships to be awarded to students who have completed Level I and an additional 60 - 75 units of the Honours Commerce program who, in the judgment of the Faculty of Business, have achieved notable academic standing in COM- MERC 3AB3 and 3ACC (taken in one session), and have demonstrated qualities of leadership at McMaster University or in the community.
Value: $1,500 each (30268)

THE AUDREY DIEMERT MEMORIAL BOOK PRIZE
Established in 1991 by family, friends and colleagues in memory of Audrey Diemert. To be awarded to a part-time student who attains the highest standing in ENGLISH 2G06 or 2G06.
Value: $100 for books (2005)

THE MARGERY E. DIXON MEMORIAL SCHOLARSHIP
Established in 2003 in loving memory of Margery E. Dixon (Class of '35') by Geraldine Phenix. To be awarded to a student who has completed Level II of an Honours English program and who attains the highest Sessional Average.
Value: $2,000 (30301)

THE LAURA DODSON PRIZE
Established in 1985 by Laura Dodson (Class of '56'). To be awarded to the student graduating from the Honours Arts and Science Program who has displayed outstanding achievement in both arts and sciences.
Value: $200 (50031)

THE ROSEMARIE DOUGLAS-MERCER MEMORIAL PRIZE
Established in 1989. To be awarded to a student who has completed Level I and an additional 30 - 45 units of an Honours program in French and who has attained the highest average in FRENCH 2B83 and one of FRENCH 2U33 or 2U34.
Value: $175 (30132)

THE DUBECK BIOCHEMISTRY AWARD
Established in 2004 by Dr. Michael Dubeck, B.Sc. (Class of '51) and M.Sc. (Class of '52). To be awarded to a student who has completed Level I and an additional 58 - 75 units of an Honours program in Biochemistry who, in the judgment of the Department of Biochemistry and Biomedical Sciences, has achieved notable academic standing and has an interest in pursuing an academic career in basic biochemical research.
Value: $1,000 (30303)

THE DUBECK CHEMISTRY AWARD
Established in 2004 by Dr. Michael Dubeck, B.Sc. (Class of '51) and M.Sc. (Class of '52). To be awarded to a student who has completed Level I and an additional 58 - 75 units of an Honours program in Chemistry who, in the judgment of the Department of Chemistry, has achieved notable academic standing and has an interest in pursuing an academic career in basic chemical research.
Value: $1,000 (30304)

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 full-time student in Level II of an Honours program in Philosophy who attained the most notable standing in his or her Level I program.
Value: $200 (30006)

THE JOAN JACKSON DUNBAR TRAVEL SCHOLARSHIP
Established in 1960 by Mayor Lloyd D. Jackson (Class of '09), LLD (Class of '55') and Mrs. Jackson of Hamilton in memory of their daughter, Joan (Class of '40). To be awarded to a woman student who has completed Level I and an additional 60 - 75 units of an Honours program in English for excellence in the work of 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: $3,675 (30177)

Travel Scholarship applications are due February 15th.

THE EDOUARDS HALL RESIDENCE SCHOLARSHIP
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.
Value: $750. (30156)

THE CLARA I. ELMAN SCHOLARSHIPS
Established in 2002 by Clara I. (Graham) Elman (Class of '46), faculty member of the School of Nursing from 1949 to 1953. A variable number of scholarships to be awarded to students who have completed Level II in a program in Nursing who, in the judgment of the School of Nursing, demonstrate academic excellence and a commitment to the patient-nurse relationship.
Value: $1,000 each (30289)

THE CLARA I. ELMAN TRAVEL SCHOLARSHIPS
Established in 2006 by Clara I. (Graham) Elman (Class of '46), faculty member in the School of Nursing from 1949 to 1953. To be awarded to students who are registered in Level III of a B.Sc.N. program and who will be completing a Level IV clinical course in a Canadian outpost placement.
Value: $1,000 each (30317)

Travel Scholarship applications are due February 15th.

THE HELEN EMERY SCHOLARSHIPS IN ENVIRONMENTAL SCIENCE
Established in 1990 by Miss Helen Emery of Barrie, Ontario. Two scholarships to be awarded to students in Level II, III, IV or V of a B.Sc. program in the School of Geography and Earth Sciences who, in the judgment of the School of Geography and Earth Sciences, demonstrate leadership and influence in addressing environmental matters. Recipients must have attained a Sessional Average of 9.5 or greater.
Value: $1,650 each (30184)

THE MURRAY AND ELEANOR ENKIN MIDWIFERY AWARD
Established in 2005 by the Mr. Murray Enkin and his wife, Eleanor Enkin to reflect their belief in the importance of midwifery within Canadian matern- ity care. One scholarship to be awarded to a graduating student in the Midwifery program who, in the judgment of the Midwifery program, exemplifies superior achievement in the humanitarian, professional and academic domains of midwifery practice.
Value: $5000 (50098)

THE ENVIRONMENTAL ISSUES PRIZE
Established in 1993 by the Regional Municipality of Hamilton-Wentworth in recognition of Metcalf 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 GEO 4R06 (or GEOG 4MT6).
Value: $100 (40070)

THE GABRIELE ERASMI TRAVEL SCHOLARSHIP TO ITALY
Established in 2003 by the Dante Alighieri Society of Hamilton, the Department of Linguistics and Languages, the Julian-Dalmatians of Hamilton, and friends, in honour of Dr. Gabriele Erasmi, distinguished Faculty member of the Depart- ment of Linguistics and Languages. To be awarded to an outstanding student who has completed level II of a Honours program. The purpose of the scholarship is to assist with the expenses of travel and study in Italy for academic credit at McMaster University. The applicant must submit a plan of study for approval by the Department of Linguistics and Languages.
Value: $900 (30292)

THE EUROPEAN HISTORY PRIZE
Established in 1986 by Professor Ezio Cappodocia, 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 program in History who, in the judgment of the Depart- ment of History, has displayed outstanding achievement in European history courses consistently throughout the degree program.
Value: $1,500 (30193)

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 Secre- tary 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 program 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: $1,500 (30193)

Travel Scholarship applications are due February 15th.

THE FACULTY OF SOCIAL SCIENCES INQUIRY AWARD
Established in 2000 by the Faculty of Social Sciences INQUIRY 1SS3 instructors, recipients of the President's Awards of Excellence in course design 2000-2001. To be awarded to the student who attains the highest standing in INQUIRY 1SS3.
Value: $500 (40091)

THE FEDERATION OF CHINESE CANADIAN PROFESSIONALS EDUCATION FOUNDATION SCHOLARSHIPS
Established in 1988 by the Foundation. Two scholarships to be awarded: (a) one to a student in a program in Arts and Science, and (b) one, on a rotating basis, to a student in a program in Chemistry, Mechanical Engineering, and Physics.
Value: $1,000 each (30163)
THE BARBARA M. FERRIER SCHOLARSHIP IN ARTS AND SCIENCE
Established in 2000 by students in the Arts and Science Program, on the occasion of Dr. B.M. Ferrier's retirement. One scholarship be awarded to a graduating student in a B.Arts Sc. (Honours) program who, in the judgment of the Arts and Science Program, has demonstrated outstanding achievement in both the Arts and Sciences as well as exceptional leadership and service to the University community.
Value: $500 (50089)

THE JIMMY FONG INTERNATIONAL OUTREACH TRAVEL AWARD IN ENGINEERING
Established in 2006 by Jimmy Fong, B.Eng. Mgmt. (Class of '82). To be awarded to a student in the Faculty of Engineering who, in the judgment of a selection committee, demonstrates high academic achievement, and is pursuing an international relief and development project under the auspices of Engineers Without Borders in an underdeveloped, disadvantaged area outside of North America. Preference to be given to a project in China.
Value: $2,500 (30232)

Travel Scholarship applications are due February 15th. The application should include a proposal for an Engineers Without Borders' project and two letters of reference (one academic; one from Engineers Without Borders confirming membership in the McMaster Chapter). Upon completion of travel, a report is required from the student about the project.

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 steelcastings industry. To be awarded to the student who attains the highest grade in MATLS 3E04.
Value: $120 (40067)

THE FRENCH SCHOLARSHIP
Established in 2006 by James McCollum, M.A., (Class of '67). To be awarded to a student who is registered in a program in French and who, in the judgment of the Department of French, demonstrates high academic achievement.
Value: $1,000 (30035)

THE BARBARA FRANCIS SCHOLARSHIP
Established in 1985 by Laura Dodson (Class of '56) in memory of her sister. To be awarded to the student who has completed Level I and at least an additional 30 units of an Arts and Science program and who has demonstrated outstanding achievement in both arts and science.
Value: $400 (30007)

THE HAROLD AND GERTRUDE FREEMAN SCHOLARSHIP IN FRENCH
Established in 1981 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 Program and entering the final session of an Honours program 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 prior term and must enter the Fall/Winter session immediately prior to entering the Humanities Study Abroad Program.
Value: $1,000 (30054)

THE FRENCH GOVERNMENT BOOK PRIZES
To be awarded from time to time to in-course students for proficiency in Level I French.
Value: Book (40017)

THE KLAUS FRITZE MEMORIAL PRIZE
Established in 1980 by friends of Professor K. Fritze. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours Chemistry program with the highest Sessional Average.
Value: $350 (30096)

THE MERRILL FRANCIS GAGE SCHOLARSHIPS
Established in 1892 from the estate of Merrill Francis Gage of Hamilton. Two scholarships to be awarded to a student who has completed Level I and an additional 30 - 75 units of an Honours program in Music and who, in the judgment of the School of the Arts, has demonstrated excellence in performance on a keyboard or orchestral instrument.
Value: $450 each (30110)

THE SAMUEL GELLER MEMORIAL BOOK PRIZE
Established in 1999 by Libby Geller in memory of her husband Samuel Geller (Class of '33). To be awarded to a student who has completed Level III of an Honours Program in History and who, in the judgment of the Department of History, has attained notable academic standing.
Value: $425 for books (30281)

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 program in the School of Geography and Earth Sciences who, in the judgment of the School, has demonstrated exceptional achievement in historical-cultural geography.
Value: $550 (40062)

THE GWEN GEORGE AWARD
Established in 1997 in loving memory of Gwen George by her family and friends. To be awarded to a student who has completed any Level I program who, in the judgment of a Selection Committee, has achieved notable academic standing and has demonstrated qualities of leadership and service to McMaster University and/or the Hamilton-Wentworth, surrounding or world communities. The scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 8.0.
Value: $4,500 ($1,500 each year) (30240)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE GWEN GEORGE MEDAL
Established in 2001 in loving memory of Gwen George by her family. To be awarded to a part-time student who has completed at least Level I of any program and who, in the judgment of the McMaster Association of Part-time Students, has achieved notable academic standing and has demonstrated qualities of leadership and service to McMaster University and/or the Hamilton-Wentworth, surrounding or world communities.
Value: $400 and a medal (60011)

Students who wish to be considered for this award must submit an application to the McMaster Association of Part-time Students by September 15th.

THE GERMAN EMBASSY BOOK PRIZE
To be awarded from time to time for in-course students for proficiency in Level II or III German.
Value: Book (40018)

THE J.L.W. GILL PRIZES
Established in 1944 by bequest of J.L.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 an additional 50 - 75 units of Honours B.Sc. programs. Ordinarily, not more than one scholarship will be awarded in any one discipline.
Value: $325 each (30079)

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 the student who attains the highest standing in RELIG ST 2GG3 or 2HH3.
Value: $125 (40019)

THE GEORGE R. GILMOUR MEMORIAL SCHOLARSHIP
Established in 1987 by the Graduating Class of 1962 in honour of Dr. G.P. Gilmour (Class of '21), Chancellor of McMaster University from 1941 to 1950 and President and Vice-Chancellor from 1950 to 1961. To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours program in the Arts and Science Program and who, in the judgment of the Arts and Science Program 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: $325 (30056)

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 GOVERNOR GENERAL'S ACADEMIC MEDAL
Given by Her Excellency the Governor General of Canada. To be awarded to the student graduating from a first baccalaureate degree program who has attained the highest standing throughout the program.
Value: Medal (50022)

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, all taken in the same session, with an average standing of at least 92%, provided that the recipient is not the holder of another scholarship of equal or greater value.
Value: $975 (30034)
THE DAPHNE ETHERINGTON GRAHAM MEMORIAL SCHOLARSHIP IN HISTORY
Established in 1997 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 15 units of History, all taken in the same session, with an average of at least A-.
Value: $1,000 (30231)

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 over 32 years of service. To be awarded on the recommendation of the Faculty of Social Sciences to a student in the graduating class who, on the basis of scholarship, is judged to be an outstanding member of the class of Social Sciences graduates, and who has completed the program primarily on a part-time basis. (50029)

THE GREEK COMMUNITY OF BURLINGTON AND DISTRICT SCHOLARSHIP
Established in 1983. To be awarded to the student who obtains the highest average in GREEK 1203 and 1223.
Value: $250 (40020)

THE H.B. GREENING BOOK PRIZE
Established in 1969 by bequest of Glacies Powis Greening in memory of her husband, Harold Benjamin Greening. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours program in Music and who, in the judgment of the School of the Arts, has demonstrated excellence in Music.
Value: $100 for books (30062)

THE GROUP EIGHT ENGINEERING LIMITED L.F. EULL PRIZE
Established in 1980 by Group Eight Engineering Limited. To be awarded to the student in a program in Electrical Engineering who attains the highest average in ELEC ENG 3P14.
Value: $1,000 (30098)

THE GUPTA FAMILY INTERNATIONAL SCHOLARSHIPS
Established in 2005 by Kulbushan (Joe) Gupta and family. A variable number of scholarships to be awarded to international students who have completed Level I and an additional 29 - 40 units with the highest Sessional Averages.
Value: $1,500 (30311)

THE AMELIA HALL GOLD MEDAL
Established in 1985 by members of the Class of '38 in recognition of Amelia Hall (Class of '38), D. Litt. (Class of '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 judgement of the School of the Arts, has made a significant contribution to drama during the student’s University career. (50003)

THE ROSS HUME HALL MEMORIAL SCHOLARSHIP
Established in 2007 by family, friends and colleagues in memory of Ross Hume Hall, the first chair of the Department of Biochemistry and Biomedical Sciences. To be awarded to a student enrolled in a Biochemistry program who, in the judgment of the Department of Biochemistry and Biomedical Sciences, demonstrates research excellence and a passion for promoting human and environmental health.
Value: $800 (30328)

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 an additional 60 - 75 units of an Honours program in Computer Science, or Level I and an additional 60 - 90 units of a program in Computer Engineering, and who attains the highest Sessional Average.
Value: $225 (30131)

THE RONALD K. HAM MEMORIAL PRIZE
Established in 1971 in memory of Professor R.K. Ham by his friends and former colleagues. Awarded to the student who has completed Level I and at least an additional 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: $125 (30128)

THE HAMILTON AND DISTRICT HEAVY CONSTRUCTION ASSOCIATION SCHOLARSHIPS
Established in 2003 by the Hamilton and District Heavy Construction Association. A maximum of two scholarships to be awarded to students who, in the judgment of the Department of Civil Engineering, have demonstrated outstanding academic achievement and who have attained a grade of at least A- in CIV ENG 3M03.
Value: $500 (30294)

THE BRUCE M. HAMILTON AWARD
Established in 1999 by Bruce M. Hamilton. To be awarded to a student graduating from a Commerce program who, in the judgment of the Faculty of Business, has made a significant contribution through extra-curricular activities to the benefit of McMaster University or the local community.
Value: $500 (5008)

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 an additional 30 - 45 units of an Honours program in Chemistry and who attains the highest Cumulative Average.
Value: $140 (30063)

THE HAMILTON INDUSTRIAL SCHOLARSHIPS
Established in 1958.
Value: $800 each (30165)

THE HAMILTON PORT AUTHORITY 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 an additional 60 - 75 units of a program in Commerce who, in the judgment of the Faculty of Business, has demonstrated outstanding academic achievement and involvement in the local community.
Value: $1,275 (30227)

THE DONALD HART SCHOLARSHIP
Established in 1985 by Mrs. Pamela Hart and Joel Jordan in honour of Donald Neil Hart (Class of ’70). To be awarded to a student who has completed Level I and an additional 30 - 45 units of a program 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: $400 (30037)

THE ALISE ALEXIAN HASSEL MEMORIAL SCHOLARSHIP
Established in 2007 by family and friends in memory of Alise Alexian Hassel, B.A. (Class of ’98). A gifted young artist and graduate of the Studio Art Program who did not live to fulfill her potential. To be awarded to a student who has completed Level I and at least an additional 30 units in an Honours Art program who, in the judgment of the School of the Arts, has demonstrated outstanding achievement in Studio Arts.
Value: $800 (30329)

THE HAWKRIGG FAMILY SCHOLARSHIPS IN BUSINESS
Established in 1999 by the Hawkrigg Family. To be awarded to a student who, in the judgment of the Faculty of Business, has attained notable academic standing and demonstrated involvement in University or community activities, and outstanding athletic ability. This scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 8.0.
Value: $7,500 ($2,500 each year) (30256)

THE HAWKRIGG FAMILY SCHOLARSHIPS IN KINESIOLOGY
Established in 1999 by the Hawkrigg Family. To be awarded to a student who, in the judgment of the Department of Kinesiology, has attained notable academic standing and demonstrated involvement in University or community activities and outstanding athletic ability. This scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 8.0.
Value: $7,500 ($2,500 each year) (30255)

THE HEDDEN HALL RESIDENCE SCHOLARSHIP
Awarded to the student who resides in the residence with the highest Sessional Average (at least 5.5) in an undergraduate program, with the exception of those in their graduating session.
Value: $750 (30198)

THE HELLENIC PRIZE
Established in 1995 by the Greek communities of Hamilton and district and the Greek Community of Burlington and district. 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)

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 Sessional Average. The recipient may not hold another scholarship of equal or greater value.
Value: $1,550 (30208)
THE ROSE HILL SCHOLARSHIPS
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. Two scholarships to be awarded to students who have completed 60 units of the Kinesiology program and who, in the judgment of the Department of Kinesiology, best demonstrate 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 each (30130)

Students who wish to be considered for this award are encouraged to submit a resume to the Department of Kinesiology by April 15th.

THE DR. SHIGEAKI HINOHARA SCHOLARSHIP
Established in 2003 by Dr. Shigeaki Hinohara and the School of Nursing. To be awarded every three years to a student who has completed Level I in the B.Sc.N. Program and who, in the judgment of the School of Nursing, has demonstrated outstanding academic achievement in health sciences and behavioural science courses. The scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 9.5.

Value: $2,400 ($800 each year) (30293)

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 Sessional Average obtained in the penultimate level of a program in Economics or Political Science.

Value: $300 (30042)

THE DR. HARRY LYM AN HOOKER SCHOLARSHIPS
Established in 1981, and resulting from the bequest of Dr. H.L. Hooker, awarded for overall academic excellence (Sessional Average of at least 9.5) to students in undergraduate programs, 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 Sessional Average of 9.5 or greater.

Value: $1,500 each (30043)

THE BERTRAM OSME R HOO PER SCHOLARSHIP
Established in 1957 by bequest of Isobel F. Hooper. To be awarded in Arts.

Value: $250 (30161)

THE NINA LOUISE HOOPER SCHOLARSHIP
Established in 1959 by bequest of Bertram O. Hooper.

Value: $500 (30200)

THE HUGHES SCHOLARSHIP
Established in 1983 by Heidi Dickensen-Hughes in memory of her husband Peter Hughes (Class of '69). To be awarded to a student who has completed Level I and an additional 30 - 75 units of the Music Program who, in the judgment of the School of the Arts, has displayed outstanding achievement in Music Education.

Value: $200 (40069)

THE HUMAN RIGHTS AWARD
Established in 1998 by the Theme School on International Justice and Human Rights. To be awarded to the student who attains the highest grade in POL SCI 3Y03 or 4O66.

Value: $275 (40087)

THE HUMANITIES MEDALS FOR SPECIAL ACHIEVEMENT
Established by the University in 1982. Up to five medals are to be awarded to graduating students in the Faculty of Humanities in recognition of outstanding achievement in scholarship and contributions to the cultural and intellectual life of the University including such areas as the creative and performing arts and faculty government.

Value: Medal (50026)

THE WILLIAM D.G. HUNTER PRIZE
Established in 1995 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 achieved the highest standing in ECON 3LL3.

Value: $500 (40080)

THE HURD MEDAL
Established in 1955 by Donald W. Hurd (Class of '49) in memory of his father, Dean William Burton Hurd and augmented in 2003 in his memory by his wife Alice Hurd. To be awarded to a student at graduation for distinguished achievement in an Honours program in which economics is a major field of study.

Value: Medal (50027)

THE PAUL HYPER PRIZE
Established in 1988 in memory of Paul F. Hypher by his friends and classmates. To be awarded to the student in a program in Commerce who attains the highest standing in COMMERCE 2MA3.

Value: $250 for books (40039)

THE INCO SCHOLARSHIP IN ENVIRONMENTAL SCIENCE
Established in 2000 by Inco Limited. To be awarded to a student entering Level II, IV (or Year V of a Co-op program) in the Honours Earth and Environmental Sciences program who, in the judgment of the School of Geography and Earth Sciences has achieved notable academic standing and demonstrated qualities of leadership at McMaster or in the community.

Value: $2,000 (30277)

THE INCO SCHOLARSHIP IN MATERIALS ENGINEERING
Established in 2003 by Inco Limited. To be awarded to a student entering Level II of the Materials Engineering, Materials Engineering and Management or Materials Engineering and Society program who, in the judgment of the Department of Materials Science and Engineering has achieved notable academic standing and demonstrated qualities of leadership at McMaster or in the community.

Value: $1,500 (30274)

THE INTERMETCO LIMITED SCHOLARSHIP
Established in 1977. To be awarded to the student who has completed Level I and an additional 60 - 90 units of a program in Mechanical Engineering and who, in the judgment of the Department of Mechanical Engineering, has attained notable standing.

Value: $600 (30072)

THE INTER NATIONS (BONN) BOOK PRIZE *
To be awarded to students who have completed at least Level I of any program who, in the judgment of an Awards Selection Committee of Undergraduate Council, has demonstrated notable academic achievement and has demonstrated leadership and influence in residence life.

Value: $400 (30228)

THE MUNICIPAL CHAPTER OF HAMILTON, IODE, MURIEL E. SKE LTON AWARD
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 (40036)

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.

Value: (50028)

THE ITCA COMMUNITY INVOLVEMENT PRIZE
Established in 1992 by Italian Canadian Community Involved incorporated. To be awarded to the student who has completed at least 3C units beyond Level I of a program in the Department of Linguistics and Languages and who, in the judgment of the Department, has attained notable standing in at least six units of Italian courses above Level I. The recipient must have graduated from a secondary school in the Hamilton area.

Value: $125 (30070)

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 an additional 60 - 75 units of an Honours program in Music and who, in the judgment of the School of the Arts, has attained notable standing.

Value: $125 (30074)

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 an additional 60 units of an Honours program in the Department of Mathematics and Statistics, who in the judgment of the department has demonstrated achievement in MATH 5A03 and 3X03 taken in the same session.

Value: $425 (40021)
THE BURTON R. JAMES MEMORIAL PRIZE — Established in 1974 by his friends and colleagues in honour of Burton R. James (Class of ’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 program in Commerce. Value: $200 (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 graduate of an Honours program in French who, in the judgment of the Department of French, has demonstrated outstanding academic achievement in the French component of the program. Value: $475 (50052)

THE HERBERT M. JENKINS PRIZE — Established in 1990 as a tribute to Dr. Herbert M. Jenkins, first Director of the Arts and Science Program, 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 program whose work, in the judgment of the Arts and Science Program Awards and Review Committee, best reflects scholarship and the spirit of inquiry. Value: $150 (40096)

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 Programs 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) Program who, in the judgment of the Committee of Instruction, demonstrates outstanding academic achievement and excellence in co-op placements. (50075)

THE A.J. JOHNSON SCHOLARSHIP — Established in 1977 in memory of Dr. A.J. Johnson by his friends and former colleagues. To be awarded to a student who has completed Level I and an additional 90 - 130 units of a program 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: $800 and certificate (30002)

THE LAWRENCE AND KATHLEEN MARY JOHNSTON MEMORIAL PRIZE — Established in 1983. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours program in Religious Studies and who attains the highest Sessional Average. Value: $175 (30094)

THE ROBERT H. JOHNSTON UNDERGRADUATE SCHOLARSHIP IN HISTOLOGY — To honour Bob Johnston's contribution to undergraduate teaching in histology. To be awarded to a student entering Level II of an Honours History program who, in the judgment of the Faculty of Humanities, has achieved the highest Sessional Average in a Level I program. Value: $750 (30318)

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 program in Sociology. Value: $100 (50020)

THE DR. JEAN JONES MEMORIAL SCHOLARSHIP — Established in 2005 by family and friends in memory of Dr. Jean Jones. To be awarded to a full-time graduating student who attains the highest cumulative average in either the Bachelor of Arts/Bachelor of Social Work or Bachelor of Social Work post-degree program. Value: $800 (50099)

THE DR. RONALD V. JOYCE "AMAZING" GRACE AWARDS — Established in 2003 by Dr. Ronald V. Joyce ’88 in honour of his mother, Grace Joyce. A variable number to be awarded to students in Level II or above of any program who, in the judgment of the selection committee, demonstrate a commitment to community service by volunteering during the academic year with children who have special needs. Preference will be given to those students who volunteer with underprivileged children. Value: $2,500 each (30295)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE DR. RONALD V. JOYCE AWARDS FOR ATHLETES — Established in 2003 by Dr. Ronald V. Joyce ’88. A variable number to be awarded to students who have completed Level I of any program who, in the judgment of a selection committee, have demonstrated outstanding athletic ability as members of a McMaster varsity team which competes in a Canadian Interuniversity Sports (CIS) competition. Students must meet the eligibility requirements of the CIS and Ontario University Athletics (OUA). Not open to students in their graduating year. Value: $2,500 each (40117)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th. Students should submit two reference letters, one academic letter and one non-academic letter from the coach of their varsity team.

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 an additional 30 - 45 units of the Honours History program and who attains the highest Sessional Average. Value: $1,500 (30093)

THE STANFORD N. KATAMBALA EARTH SCIENCES 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 an additional 60 - 75 units of the Honours Earth and Environmental Sciences program and who attains high standing. Value: $75 (30143)

THE ERNEST ROBERT MacKENZIE KAY SCHOLARSHIPS — Established in 1999 by Ernest Robert MacKenzie Kay. A variable number to be awarded to students in a program in Biology, Biochemistry or Chemistry who, in the judgment of the Faculty, show outstanding academic achievement. Preference will be given to students who plan to continue in the field of medical research. Value: $800 each (30224)

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 program in Computer Science who attains the highest Cumulative Average. (50069)

THE ROBERT ALAN KENNEDY SCHOLARSHIP — Established in 1998 by Robert Alan Kennedy. To be awarded to any student entering a Level II, III or IV program in the Faculty of Business who, in the judgment of the Faculty, demonstrates outstanding academic achievement. Value: $475. (30243)

THE MARY E. KEYES RESIDENCE SCHOLARSHIP — Awarded to the student with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session, who resides in the residence. Value: $750 (30299)

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 Computing and Software, and of Mathematics and Statistics, have demonstrated outstanding achievement in Honours programs in those Departments: (a) one to a student who has completed Level I and an additional 36 - 75 units of the Computer Science program; (b) one to a student who has completed Level I and an additional 60 - 75 units of a program in Mathematics; and (c) one to a student who has completed Level I and an additional 60 - 75 units of a program in Mathematics and Statistics. Value: $500 each (30057)

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 program in Gerontology who, in the judgment of the Department of Health, Aging and Society, has demonstrated high academic achievement and leadership in community activities. Value: $50 (50064)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.

THE HERBERT M. JENKINS PRIZE — Established in 1963. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours program in Religious Studies and who attains the highest Sessional Average. Value: $175 (50094)

THE STANFORD N. KATAMBALA EARTH SCIENCES 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 an additional 60 - 75 units of the Honours Earth and Environmental Sciences program and who attains high standing. Value: $75 (30143)

THE ERNEST ROBERT MacKENZIE KAY SCHOLARSHIPS — Established in 1999 by Ernest Robert MacKenzie Kay. A variable number to be awarded to students in a program in Biology, Biochemistry or Chemistry who, in the judgment of the Faculty, show outstanding academic achievement. Preference will be given to students who plan to continue in the field of medical research. Value: $800 each (30224)

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 program in Computer Science who attains the highest Cumulative Average. (50069)

THE ROBERT ALAN KENNEDY SCHOLARSHIP — Established in 1998 by Robert Alan Kennedy. To be awarded to any student entering a Level II, III or IV program in the Faculty of Business who, in the judgment of the Faculty, demonstrates outstanding academic achievement. Value: $475. (30243)

THE MARY E. KEYES RESIDENCE SCHOLARSHIP — Awarded to the student with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session, who resides in the residence. Value: $750 (30299)

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 Computing and Software, and of Mathematics and Statistics, have demonstrated outstanding achievement in Honours programs in those Departments: (a) one to a student who has completed Level I and an additional 36 - 75 units of the Computer Science program; (b) one to a student who has completed Level I and an additional 60 - 75 units of a program in Mathematics; and (c) one to a student who has completed Level I and an additional 60 - 75 units of a program in Mathematics and Statistics. Value: $500 each (30057)

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 program in Gerontology who, in the judgment of the Department of Health, Aging and Society, has demonstrated high academic achievement and leadership in community activities. Value: $50 (50064)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.
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: $100 (50058)

THE KINESIOLOGY PRIZES
Established in 1982. Two prizes to be awarded to students who have completed the courses in Level III of the Kinesiology program: (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 has attained the highest average in Kinesiology courses taken in Levels I, II and III.
Value: $100 each (40041)

THE LORNA AND ALVIN KINNEAR SCHOLARSHIP
Established in 2007 by Scott Kinneer, B.Eng. (Class of '88) and Betty Ann Kinneer in honour of their parents, Lorna and Alvin Kinneer. To be awarded to a student entering Level II of a program in the Department of Chemical Engineering who attained the highest Sessional Average in Level I. The scholarship is tenable for up to three years. (To be awarded every three years.)
Value: $3,000 ($1,000 per year) (30324)

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 or at least an additional 30 units on the basis of journalistic ability or on completion of Level I and an additional 60 - 75 units of an Honours program In English on the basis of Sessional Average.
Value: $200 (30095)

THE KP&MG 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 an additional 60 - 75 units of a program in Commerce. Preference will be given to students who plan to continue their studies after graduation with a practising firm of chartered accountants.
Value: $150 (40090)

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 program in Anthropology who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement.
Value: $100 (50048)

Students who wish to be considered for this award are encouraged to submit a resume to the Department of Anthropology by April 15th.

THE LATIN PRIZE *
Established in 1987 by Dr. John B. Cliariid. To be awarded to a student who, in the judgment of the Department of Classics, has demonstrated notable entering Level II of a program in LATIN 1203 and 1223
Value: $150 (40031)

THE GARY LAUTENS MEMORIAL SCHOLARSHIP
Established in 1992 by family, friends and colleagues in memory of Gary Lautens (Class of '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. To be awarded to a student who has completed any Level I program 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 two years provided the recipient maintains a Cumulative Average of 8.0. Students who wish to be considered for this award should consult the Office of Student Financial Aid & Scholarships.
Value: $4,000 ($2,000 each year) (30212)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th. A 500 word essay and two examples of published material are required.

THE DONALD LAVIGNE MEMORIAL SCHOLARSHIP
Established in 2007 by Willis McConnell and Ray Skelton in memory of Donald Lavigne to honour his dedication as a registered practical nurse at Chedoke Hospital ('65-'89). A variable number to be awarded to students in their first year of study who, in the judgment of the School of Nursing, have demonstrated academic excellence in a Post Registered Nursing or Post Registered Practical Nursing program.
Value: $800 (40123)

THE E. DORIS LAWRENCE SCHOLARSHIP
Established in 1999 in memory of E. Doris Lawrence (Class of '47). To be awarded to a student who, in the judgment of the Department of French, has demonstrated academic excellence in French.
Value: $2,200 (30253)

THE MEGAN LAWRENCE SCHOLARSHIP
Established in 1988 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 program and who, in the judgment of the Department of Kinesiology, demonstrates excellence in scholarship, leadership and participation in sport, dance and fitness.
Value: $700 (30199)

Students who wish to be considered for this award are encouraged to submit a resume to the Department of Kinesiology by April 15th.

THE SAM LAWRENCE PRIZE *
Established in 1957 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: $175 (40048)

THE JAMES B. LAWSON SCHOLARSHIP
Established in 1999 by a grateful student and friend of Professor Lawson. To be awarded to a student who has completed either GERMAN 1206 or IBB3 in Level I or to a student who has completed GERMAN 2223 in Level II and who, in the judgment of the Department of Linguistics and Languages, has demonstrated progress and interest in German. Eligibility for this award is restricted to non-native speakers of German. The award may be used for travel and study in a German-speaking country and/or for other expenses associated with the student's German studies.
Value: $150 (40090)

THE RAY LAWSON SCHOLARSHIPS
Established in 1975 by the Honourable Ray Lawson, O.B.E., D.C.L., D.Ch., LL.D., K.G.S.L., Lieutenant-Governor of Ontario from 1946 to 1952. Two scholarships to be awarded for the highest Sessional Averages in an Engineering and Management program: (a) one to a student who has completed Level I and an additional 70 - 90 units, and (b) one to a student who has completed Level I and at least an additional 109 units beyond Level I.
Value: $275 each (30120)

THE SAKARKHANU K. LILA MEMORIAL SCHOLARSHIP *
Established in 2000 by the children and grandchildren of the late Sakarkhangu K. Lila, mother of ten. To be awarded to a full-time student who has completed Level II of the Midwifery Program and who, in the judgment of the Midwifery Program, has demonstrated academic excellence, leadership and social awareness. Preference will be given to students who have registered for or completed an overseas clinical placement in a developing country.
Value: $1,000 (40093)

THE LINGUISTICS AND LANGUAGES TRAVEL SCHOLARSHIP
Established in 1991 by the Department of Modern Languages and Linguistics. To be awarded to a student who has completed at least 30 units beyond Level I in a program in Linguistics and Languages and who, in the judgment of the Department of Linguistics and 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: $325 (30188)

Travel Scholarship applications are due February 15th.

THE LINGUISTICS PRIZE
Established in 1988. To be awarded to a student in an Honours program in Modern Languages and Linguistics who, in the judgment of the Department of Linguistics and Languages, has achieved notable standing in Level II courses in Linguistics.
Value: $250 (40033)
THE CLAUDE G. LISTER SCHOLARSHIP
Established in 1990 by bequest of Pauline Dettwiler Lister in memory of her husband. To be awarded to a student in a program in the School of Business. Value: $625 (30199)

THE FELIKS LITKOWSKI MEMORIAL PRIZE IN POLITICAL SCIENCE
Established in 1987 by Albert Litkowski (Class of '78) and Richard Litkowski (Class of '66) in honour of their father. To be awarded to a full-time student graduating from an Honours program in Political Science who, in the judgment of the Department of Political Science, has demonstrated outstanding academic achievement. Value: $750 (60032)

THE JOHN N.A. LOTT SCHOLARSHIP IN BIOLOGY
Established in 2007 by the friends and colleagues of John N.A. Lott in recognition of his many years of contributions to the Department of Biology. To be awarded to a student who has completed Level I and an additional 30 - 70 units of an Honours Biology program who, in the judgment of the Department of Biology, has demonstrated outstanding academic achievement and shows an interest in biological structure (sub-cellular to ecosystem) and function. Preference to be given to a student who demonstrates an interest in plants. Value: $500 (30321)

THE ALLAN LUDBROOK MEMORIAL SCHOLARSHIP
Established in 2004 by the family and friends of Allan Ludbrook ('04). To be awarded to a mature student enrolled in a Music program who, in the judgment of the School of the Arts, has attained notable standing. Value: $1,000 (40114)

THE MacGIBBON SCHOLARSHIP *
Established in 1970 by bequest of Professor Duncan A. MacGibbon (Class of '08). To be awarded to a student in a program in Economics who, in the judgment of the Department of Economics, stands highest in courses in economic history. Value: $475 (40034)

THE BERT MacKINNON MEMORIAL SCHOLARSHIP
Established in 1995 in memory of Bert Mackinnon, B.A. (Class of '43), LL.D. (Class of '77), first Associate Chief Justice of Ontario (1978 to 1986). One scholarship to be awarded to a graduating student who enrols in a Bachelor of Laws degree program in the academic session immediately following graduation. The student selected will have demonstrated high academic achievement and leadership in extracurricular activities. Value: $1,200 (40109)

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 ST03 (Economic Development: Agriculture and Population) or ECON 2F03 (Globalization and Economic Development) or, in exceptional circumstances, for work in a related area. Value: $425 (40053)

THE BETTY MacMILLAN PRIZE
Established in 1960 by her classmates in memory of Elizabeth Johnstone MacMillan (Class of '50). To be awarded to the student who has completed Level I and an additional 60 - 75 units in an Honours program in Sociology and who, in the judgment of the Department of Sociology, is the most promising student. Value: $150 (30010)

THE AGNES AND JOHN MacNEILL MEMORIAL PRIZE
Established in 1946 by bequest of Annie May MacNeill (Class of '03). To be awarded to the student graduating from an Honours program in English who has attained the most notable standing in English throughout the degree program. Value: $200 (50001)

THE CATHERINE MacNEILL PRIZE
Established in 1948 by bequest of Annie May MacNeill (Class of '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: $175 (50011)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE MAPS GOLD MEDAL
Established in 1996 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. (50079)

THE LIANNE MARKS SCHOLARSHIP
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 an additional 60 - 75 units of an Honours program 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. Value: $800 (30100)

Students who wish to be considered for this award are encouraged to submit a resume to the Department of Sociology by April 15th.

THE JOHN N. McCARTHY SCHOLARSHIP
Established in 1984 in memory of Charon Burke McCain by family, friends, colleagues and students. To be awarded to an Honours Arts and Science student who has completed Level II or III of a program in Chemical Engineering, Mechanical Engineering or Materials Engineering who, in the judgment of the Faculty of Engineering, have attained notable academic standing. Preference, for two of the scholarships, is to be given to students in the penultimate year of a Civil Engineering program. Value: $2,000 each (30127)

THE MATTHEWS HALL RESIDENCE SCHOLARSHIP
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session. Value: $750 (30157)

THE JOHN MAYBERRY SCHOLARSHIPS
Established in 2004 in memory of Charlie Burke McCain by family, friends, colleagues and students. To be awarded to an Honours Arts and Science student who has completed Level III and who, in the judgment of the Faculty of Engineering, have attained notable academic achievement. The recipients must attain a minimum Sessional Average of 9.5 at the most recent Fall/Winter session. Value: $1,000 (30200)

THE EDWARD McALLION SCHOLARSHIPS
Established in 1980 in memory of Professor Edward T. McAllion, B.A. (Class of '43), M.A. (Class of '46), first Dean of the School of Adult Education from 1970 to 1978, in recognition of his outstanding contribution to adult education and to the Department of Mathematical Sciences during 41 years of service. A variable number to be awarded to part-time students who have attained the highest Cumulative Average at the most recent review. Value: $250 each (60004)

THE RONALD E. MATERICK SCHOLARSHIPS
Established in 1987 by Ronald E. Mateick (Class of '70). Four scholarships to be awarded to students who have completed at least Level II of a program in Computer Science who, in the judgment of the Department of Computer Science, have attained notable academic standing. Preference, for two of the scholarships, is to be given to students in the penultimate year of a Computer Science program. Value: $1,000 (30201)

THE JOHN R. McCARTHY SCHOLARSHIP
Established in 1987 by John R. McCarthy, LL.D. (Class of '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 program in Arts and Social Sciences (Humanities, Science, 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 sportsmanship in athletic endeavours. Value: $700 (50030)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE JOHN M. McCALLION SCHOLARSHIPS
Established in 1984 in honour of Professor McCallion, B.A. (Class of '43), M.A. (Class of '46), first Dean of the School of Adult Education from 1970 to 1978, in recognition of his outstanding contribution to adult education and to the Department of Mathematical Sciences during 41 years of service. A variable number to be awarded to part-time students who have attained the highest Cumulative Average in an Honours program in Biology. Value: $300 (50016)

THE ELEANOR DORNBUSCH MARPLES MEMORIAL SCHOLARSHIP
Established in 1987 by Vaughan W. Marples in memory of his wife. To be awarded to the student who attains the highest grade in THTR&FLM 2C03. Value: $125 (40016)

THE ELEANOR DORNBUSCH MARPLES PRIZE IN ART HISTORY *
Established in 1985 by Mrs. Barbara Niedermeyer and her family in memory of her sister. To be awarded to a student who, in the judgment of the School of the Arts, has demonstrated outstanding achievement. Value: $175 (40015)

THE ALLAN LUDBROOK MEMORIAL SCHOLARSHIP
Established in 2004 by the family and friends of Allan Ludbrook ('04). To be awarded to a mature student enrolled in a Music program who, in the judgment of the School of the Arts, has attained notable standing. Value: $1,000 (40114)
THE H.W. McCREADY PRIZE IN BRITISH HISTORY *
Established in 1981 in memory of Professor H.W. McCready, a member of the Department of History from 1943 to 1975, by former students, colleagues, and friends. To be awarded to the Level II student who, in the judgment of the Department of History, attains notable standing in HISTORY 2M03, 2MM3 or 3V03.
Value: $100 (40022)

THE MCGREGOR-SMITH-BURR MEMORIAL SCHOLARSHIP
Established in 1910 by the Class of 1912 in Arts, in memory of their classmates, Percy Neil 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 an additional 60 - 75 units of the Honours English and History program and who has the highest Sessional Average.
Value: $525 (30105)

THE R.C. Mclvor MEDAL
Established by the Faculty of Social Sciences in 1982 in recognition of Professor R.C. McIvor, 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. (50043)

THE MCKAY HALL RESIDENCE SCHOLARSHIP
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.
Value: $750 (30201)

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 program in Classics who, in the judgment of the Department of Classics, has demonstrated outstanding academic achievement and leadership.
Value: $100 (50054)

THE ALEXANDER GORDON Mckay SCHOLARSHIP
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 an additional 60 - 75 units of an Honours Classics program 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.
Value: $350 (30180)

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 program 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: $600 (40077)

THE A.B. McLAY SCHOLARSHIP IN PHYSICS
Established in 1991 by C. Lucy McLay in memory of her late husband, A. Boyd McLay (Ph.D., F.R.S.C.), a member of the Department of Physics from 1930 to 1967. To be awarded to a student who has completed Level I and an additional 30 - 45 units of an Honours program in Physics and who, in the judgment of the Department of Physics and Astronomy, has attained notable standing.
Value: $500 (30186)

THE BOYD MCCLAY SCHOLARSHIP IN PHYSICS
Established in 1977 to commemorate the contributions of Dr. A. Boyd McLay (Class of '22) to teaching and research in optics and spectroscopy at McMaster University from 1940 to 1967. To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours program in Physics with a high Sessional Average.
Value: $575 (30011)

THE WALTER SCOTT McLAY PRIZE
Established in 1958 in honour of Dean McLay, by his daughter, Mrs. R.R. McLay, for the student who, in the judgment of the Department of Physics, has demonstrated outstanding academic achievement and leadership in Physics with a high Sessional Average.
Value: $250 (50057)

THE MCMASTER NURSING ALUMNI MEMORIAL PRIZE *
Established in 1984 and augmented in 2001 by the McMaster Nursing Alumni Branch to recognize graduates from the McMaster University School of Nursing. To be awarded to a student who, in the judgment of the School of Nursing, has demonstrated leadership while participating in undergraduate activities.
Value: $300 (50092)

THE MCMASTER UNIVERSITY FUTURES FUND GRADUAND AWARD
Established in 2000. To be awarded to the child of a member of McMaster University's salaried pension plan who has demonstrated outstanding academic achievement. Recipient must obtain a Sessional Average of 9.5 or greater.
Value: $1,000 (50084)

THE MCMASTER UNIVERSITY FUTURES FUND IN-COURSE AWARDS
Established in 2000. Four scholarships to be awarded to the children of members of the McMaster University salaried pension plan who have demonstrated outstanding academic achievement. Recipient must obtain a Sessional Average of 9.5 or greater.
Value: $1,800 each (30207)

THE MCMASTER UNIVERSITY RETIREES ASSOCIATION PRIZE
Established in 1992 by the McMaster University Retirees Association. To be awarded to the part-time student enrolled in a program in Gerontology who attains the highest Cumulative Average.
Value: $250 for books (60007)

THE McMASTER UNIVERSITY RETIREES ASSOCIATION SCHOLARSHIP
Established in 1991 by the McMaster University Retirees Association. To be awarded to the student who has completed Level I and at least an additional 30 units of a program in Gerontology and who attains the highest Sessional Average. The student must enrol in a program in Gerontology in the subsequent Fall/Winter session.
Value: $1,000 (30187)

THE DONALD G. McNABB SCHOLARSHIP
Established in 1989 in memory of Donald G. McNabb (Class of '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 program in Chemistry who, in the judgment of the Department of Chemistry, has achieved 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.
Value: $925 (30108)

THE SIMON McNALLY SCHOLARSHIP
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 an additional 30 - 75 units of a program in Civil Engineering. Awards are based on scholarship and evidence of practical engineering experience and background.
Value: $650 each (30139)

THE JOHN D. McNIE ACHIEVEMENT AWARD OF EXCELLENCE
Established in 2001 by David O. Davis in honour of John D. McNie. To be awarded to a student with a visual impairment who, in the judgment of the Centre for Student Development, demonstrates notable academic achievement.
Value: $400 (40107)

THE MCSHAFER MEMORIAL SCHOLARSHIP
Established in 1988 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 an additional 60 - 75 units of a program in Honours Art or Honours Art History and who, in the judgment of the School of the Arts, is outstanding.
Value: $450 (30119)

THE MEDICAL-SURGICAL EXCELLENCE IN CLINICAL NURSING AWARD

UNDERGRADUATE AWARDS — IN-COURSE, GRADUAND, PART-TIME AND SECOND DEGREE
Established in 1998 by Professor Gerry Benson. To be awarded every two years to a student who has completed at least Level II of the Nursing Program who, in the judgment of the School of Nursing, demonstrates academic excellence in medical-surgical nursing. Students who wish to be considered for this award should consult the School of Nursing for terms and conditions.

Value: $250 (40086)

THE AUDREY EVELYN MEPHAM AWARD IN GERONTOLOGY
Established in 2001 by Gordon W. Mepham in loving memory of his wife Audrey Evelyn Mepham. To be awarded to a student graduating from an Honours program in Gerontology who, in the judgment of the Department of Health, Aging and Society, has demonstrated notable academic achievement. Preference will be given to a student who has completed a thesis or course paper on issues relating to Alzheimer’s disease.

Value: $1,200 (50090)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.

THE MERRIAM SCHOOL OF MUSIC SCHOLARSHIP
Established in 2003 by the Merriam School of Music. To be awarded to an Honours Music student who has completed at least 60 units of work and who, in the judgment of the School of the Arts, has demonstrated good academic standing, excellent musicianship skills, a strong commitment to teaching and community service.

Value: $1,000 (30298)

THE J.J. MILLER PRIZE
Established in 1984 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 in an Honours Biology program with an outstanding Sessional Average and a minimum grade of A in BIOLOGY 2EE3.

Value: $575 (30077)

THE DR. F.A. MIRZA SCHOLARSHIP
Established in 1997 in memory of Farocho Mirza by family, friends and colleagues. To be awarded to a student enrolled in a Civil Engineering program who achieves the highest average in CIV ENG 2C04 and ENGINEER 2P04 taken in one session.

Value: $250 (40100)

THE MMG-NEOSID CANADA LIMITED CERAMIC ENGINEERING PRIZE
Established in 1976 by MMG-Neosid Canada Limited. To be awarded to the student who has completed Level I and at least an additional 75 units of the Materials Engineering program and who attains the highest standing in MATLS 3B03.

Value: $100 (40037)

THE MOFFAT FAMILY PRIZES
Established in 1990 by Moffat Kinoshita Associates Inc. Two prizes to be awarded to: (a) the student who attains the highest grade in GEO 4HY3 (or GEOG 4UT3); and (b) the student who attains the highest grade in GEO 4HZ3 (or GEOG 4UH3).

Value: $150 each (40060)

THE MOLSON SCHOLARSHIP IN ENVIRONMENTAL STUDIES
Established in 1992 by the Molson Companies Donations Fund. To be awarded to the student entering the final level of a program in Geography and Environmental Studies, Earth and Environmental Sciences or Engineering and Society, who attains the highest Sessional Average.

Value: $1,100 (30213)

THE E.S. MOORE PRIZE
Established in 1956 by Elwood S. Moore, LL.D. (Class of '55). To be awarded to the student graduating in an Honours program in Geography who, in the judgment of the School of Geography and Earth Sciences, has attained the most notable standing in Geo (or Earth Science, Environmental Science or Geography).

Value: $225 (50015)

THE JOHN F. MOORE PRIZE
Established in 1980 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 MATLS 4C03.

Value: $125 (40061)

THE MICHAEL J. MORTON MEMORIAL BOOK PRIZE
Established in 1979 in memory of Dr. M.J. Morton. To be awarded to a student who has completed Level I and an additional 60 - 75 units in an Honours program in Chemistry and who, in the judgment of the Department of Chemistry, is outstanding in the field of inorganic chemistry.

Value: $175 for books (30111)

THE ELIZABETH MOSGROVE SCHOLARSHIP
Established in 1959 by bequest of John W. Mosgrove in memory of his mother. To be awarded to descendants of members of Her Majesty’s Canadian Armed Forces on the basis of Sessional Average.

Value: $1,500 (30047)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE MOTOROLA SOFTWARE ENGINEERING SCHOLARSHIP
Established in 1999 by the Motorola Foundation. To be awarded to a student entering Level III in a Software Engineering program who, in the judgment of the Department of Computing and Software, has achieved notable academic standing, displayed strong communication skills, demonstrated leadership and involvement in extra-curricular activities.

Value: $1,500 (30222)

THE MOUTON COLLEGE SCHOLARSHIPS
Established in 1989 by the Toronto Section of the National Association of Engineering Deans. Two scholarships to be awarded to students with a strong interest in computer skills as applied to the Humanities.

Value: $750 (30239)

THE ANNE MURRAY SCHOLARSHIP
Established in 1985 in memory of Anne M. Murray (Class of ’82) by her family. To be awarded to a student who has completed at least 30 units beyond Level I in a program in the Department of Linguistics and Languages and who, in the judgment of the Department, has attained notable standing in at least nine units of German courses above Level I.

Value: $300 (30005)

THE ELAINE NARDOCCHIO MEMORIAL SCHOLARSHIP FUND
Established in 1998 by family, colleagues and many friends in memory of Dr. Elaine Nardocchio, a professor for over 23 years at McMaster University, Chair of the Department of French from 1990 to 1993 and President of the Canadian Federation for the Humanities from 1994 to 1996. To be awarded to an undergraduate student enrolled in a French program who, in the judgment of, the Department of French, has shown a strong interest in computer skills as applied to the Humanities.

Value: $250 (40101)

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 graduand who, in the judgment of the Department of Materials Science and Engineering, has submitted an outstanding thesis or project 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 standing in MATLS 4D03 (Corrosion).

Value: $100 (50036)

THE P.L. NEWBIGGING PRIZES
Established in 1982 in recognition of Dr. Lynn Newbigging for his outstanding contributions to the Department of Psychology, Neuroscience and Behaviour. 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. program in Psychology; (b) one to a student in a B.A. program in Psychology who has completed the program primarily on a part-time basis; (c) one to a full-time student in the three-level B.Sc. program in Life Science with a concentration in Psychology; and (d) one to a student in a B.Sc. program in Life Science with a concentration in Psychology who has completed the program primarily on a part-time basis.

Value: $100 each (50040)

THE P.L. NEWBIGGING SCHOLARSHIP

400 UNDERGRADUATE AWARDS — IN-COURSE, GRADUAND, PART-TIME AND SECOND DEGREE
Established in 1994 by family, friends and colleagues in memory of Dr. P.L. Newbigging, founding Chair of the Department of Psychology, Neuroscience and Behaviour 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 program in Psychology, Neuroscience and Behaviour who has attained the highest average in PSYCH 1X03 and 1XX3.

Value: $375 (40072)

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 - Dundas. 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.

Value: $300 (40064)

THE NIEMEIER SCHOLARSHIP
Established in 1938 and augmented in 1952 by Dr. O.W. Niemeier. To be awarded to the student who attains the highest Sessional Average at the completion of Level I and an additional 31 - 55 units of the Nursing program.

Value: $1,100 (30114)

THE ROBERT NIXON SCHOLARSHIP
Established in 1991 by the Brant-Haldimand Liberal Association in honour of Dr. Robert Nixon (Class of '50, LL.D. '76). 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.

Value: $575 (30203)

THE NORTEL NETWORKS SCHOLARSHIPS IN INFORMATION TECHNOLOGY
Established in 1999 by Nortel Networks. Ten scholarships to be awarded to students entering a program in Electrical Engineering, Computer Engineering, Software Engineering, Engineering Physics or Computer Science.

Value: $1,000 each (30257)

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 program 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: $650 (40012)

THE FREDRICK P. OLSEN BOOK PRIZE
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 an additional 60 - 75 units of an Honours program in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise as an experimental scientist.

Value: $150 for books (30053)

THE ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION GOLD MEDAL
Established in 1961 by the Ontario Professional Engineers Foundation for Education. To be awarded to the graduate of a program in Engineering who attains the highest Cumulative Average.

Value: $50 (50005)

THE ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION IN-COURSE SCHOLARSHIPS
Established in 1961 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded to students with the highest Sessional Average in the Faculty of Engineering: one to be awarded to a student after completion of Engineering I, and one to be awarded to a student after completion of Engineering I and 35 - 90 units.

Value: $1,000 each (30006)

THE ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION UNDERGRADUATE SCHOLARSHIPS
Established in 1961 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded to students in the Faculty of Engineering who, in the judgment of the Faculty of Engineering, have demonstrated leadership and involvement in extracurricular activities and high academic achievement.

Value: $1,000 each (40109)

THE CONNIE O'SHAUGHNESSY MEMORIAL PRIZE
Established in 1988 by family, friends and associates of Connie O'Shaughnessy (Class of '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 at least Level I and 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: $425 (40009)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE GLADYS BALLANTYNE PARKER PRIZE
Established in 1953 in memory of Gladys Ballantyne Parter by her father, Harry Ballantyne. To be awarded to the student enrolled in a program in Classics who, in the judgment of the Department of Classics, demonstrates outstanding achievement in Greek or Latin.

Value: $50 (30060)

THE F.W. PAULIN SCHOLARSHIP
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 an additional 73 - 85 units of the Civil Engineering program, or Level I and an additional 110 - 130 units of the Civil Engineering and Management program. Award is based on scholarship Sessional Average of at least 9.5 and evidence of leadership, self-motivation, and practical aptitude appropriate for a future in the construction industry.

Value: $1,500 (30052)

THE IRENE PEARCE SCHOLARSHIP
Established in 1984 by Centenary United Church of Hamilton in honour of Irene Pearce, organist and choir director for fifty-four years. To be awarded to a student who has completed Music I or 30-78 units of an Honours Music Program who, in the judgment of the School of the Arts, has attained notable academic standing and demonstrated excellence in keyboard performance.

Value: $675 (30222)

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 program.

Value: $100 (50023)

THE PEVENSING SCHOLARSHIP
Established in 1987 by David C. Hannaford (Class of '64). To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours program in Economics and who, in the judgment of the Department of Economics, has attained notable academic standing.

Value: $600 (30120)

THE TONY PICKARD MEMORIAL SCHOLARSHIP
Established in 1973 by his wife and family, in honour of Captain Antony F. Pickard, O.B.E., C.D., R.C.N. (Ret'd).

Value: $425 (30172)

THE PIONEER GROUP INC. GERONTOLgy 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 program in Gerontology who, in the judgment of the Department of Health, Aging and Society, have demonstrated high academic achievement and leadership in extracurricular activities.

Value: $45 each (50021)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.

THE PIONEER GROUP INC. PRIZE
Established in 1990. To be awarded to a student in a Gerontology program who, in the judgment of the Department of Health, Aging and Society, has achieved notable academic standing, and demonstrates practical aptitude for a career in health care of the elderly.

Value: $400 (40058)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.

THE PIONEER GROUP INC. PRIZES 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 six students graduating from the Nursing program who, in the judgment of the School of Nursing, have achieved notable standing and demonstrated practical aptitude for a career in the health care of the elderly.

Value: $150 (50056)

THE PIONEER GROUP INC. SCHOLARSHIP
Established in 1988. To be awarded to students who have completed Level I and at least an additional 30 units of a program in Gerontology and who, in the judgment of the Department of Health, Aging and Society, have achieved high standing in 12 units of Gerontology courses (excluding GERONTOL 1A03) and who demonstrate leadership in the field of Gerontology.

Value: $1,000 each (30121)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.

THE PITCHER-RATFORD AWARDS
Established in 2000 by Bruce Ratford (Class of '71) and Elda Ratford (Pitcher) Harding Rand, to encourage original literary work. To be awarded to the student who has completed Level I and an additional 60 - 75 units and who, in the judgment of the Department of English and Cultural Studies, has made the most notable original contribution to student publications.

Value: $250 (40045)

THE POLITICAL SCIENCE PRIZE
Established in 1982. To be awarded to the student who has completed the program on a full-time basis, and (b) one to the student who has completed the program with the highest Sessional Average in any Level I program.

Value: $100 (50059)

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 academic achievement in POL SCI 4206.

Value: $200 (50042)

THE BILL PRESTWICH SCHOLARSHIP
Established in 2003 by friends, colleagues and students in recognition of Bill Prestwich and his career as a teacher and researcher. To be awarded to a student entering Level II of the Medical and Health Physics program with the highest Sessional Average in any Level I program.

Value: $500 (30300)

THE PIVOCWATERHOUSECOOPER SCHOLARSHIPS
Established in 2000 by PivocwaterhouseCoopers. Two scholarships to be awarded to students entering Level III of the Honours Commerce program enrolled in COMMERCE 3AB3 and 3AC3 who, in the judgment of the School of Business, have achieved notable academic standing in COMMERCE 2AA3 and 2AB3, and demonstrated qualities of leadership at McMaster or in the community.

Value: $2,500 each (30271)

THE LES PRINCE RESIDENCE SCHOLARSHIP
Awarded to the student with the highest Sessional Average in an undergraduate program, with the exception of those in their graduating session, who resides in the residence.

Value: $750 (30325)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE PROVOST'S HONOUR ROLL MEDAL
Established in 2005. To be awarded to students named to the Provost's Honour Roll.

Value: Medal (30314)

THE PSYCHOLOGY SOCIETY PRIZES
Established in 1985 by the Psychology Society and the Faculty and Alumni of the Department of Psychology, Neuroscience and Behaviour. Three prizes to be awarded to students who have completed Level I and an additional 60 - 75 units with the highest Sessional Average: (a) one in an Honours Psychology or Honours Psychology, Neuroscience and Behaviour B.A. program; (b) one in an Honours Psychology or Honours Psychology, Neuroscience and Behaviour B.Sc. program; and (c) one in a combined Honours program in Psychology.

Value: $70 each (30123)

THE DR. JOHN A. PYLYPIUK SCHOLARSHIP
Established in 1967 in memory of Dr. John A. Pylypiuk and in recognition of Canada's Centennial Year. To be awarded to the student who has completed Level II of an Honours program in History with the highest Sessional Average and who in that session achieves a grade of at least A- in HISTORY 2703 and 2TT3.

Value: $700 (30015)

THE RAND MEMORIAL PRIZE OF CLASS '98
Established by the Class of 1898 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 an additional 60 - 75 units and who, in the judgment of the Department of English and Cultural Studies, has made the most notable original contribution to student publications.

Value: $250 (40045)

THE BRIAN POCKELL MEMORIAL SCHOLARSHIP
Established in 2004 in memory of Brian Pocknell. To be awarded to an undergraduate student who has completed Level II in a French program and, in the judgment of the Department of French, has achieved notable academic standing and demonstrated qualities of leadership at McMaster or in the community.

Value: $500 each (90279)

THE MACDONALD H. TAYLOR SCHOLARSHIP
Established in 1983 by Mackenzie H. Taylor (Class of '31). To be awarded to a graduating student who has completed a program 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 FRANCIS L. TAYLOR SCHOLARSHIP
Established in 1983. To be awarded to students who have completed Level III of an Honours program in Earth and Environmental Sciences; (c) one to the student who has completed the highest Cumulative Average in a three-level B.A. program in Geography or B.Sc. program in Environmental and Earth Sciences (formerly Geoscience) with a concentration in Geol (or Earth Science, Environmental Science or Geography); and (d) one to the student who, in the judgment of the School of Geography and Earth Sciences, has demonstrated outstanding achievement in GEO 4006 (or GEOG 4MT6).

Value: $100 each (50033)

THE SHARON REEVES SCHOLARSHIP
Established in 1987 by Kevin W. Reeves (Class of '80) in memory of his wife, Sharon (Class of '79). To be awarded to a student entering Level III or IV of an Honours program in Music (Education) and who, in the judgment of the School of the Arts, has attained notable standing.

Value: $425 (30135)

THE TELEVISION STUDIES PRIZE
Established in 1982. Two prizes to be awarded to students who attain the highest Cumulative Average in a three- or four-level program in Religious Studies: (a) one to a student who has completed the program on a full-time basis, and (b) one to a student who has completed the program primarily on a part-time basis.

Value: $100 each (50045)

THE RAND MEMORIAL Prizes
Established in 1893 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 to students who have completed Level I and an additional 60 - 75 units and who, in the judgment of the Department of Geography during 35 years of service.

Value: $1,500 each (30371)

THE LLOYD REEDS PRIZES
Established in 1982. To be awarded to students who have completed Level III or IV of an Honours program in Music (Education) and who, in the judgment of the School of the Arts, has attained notable standing.

Value: $425 (30135)

THE TELEVISION STUDIES PRIZE
Established in 1982. To be awarded to students who have completed Level III of an Honours Geography program enrolled in COMMERCE 3AB3 and 3AC3 who, in the judgment of the School of Business, have achieved notable academic standing in COMMERCE 2AA3 and 2AB3, and demonstrated qualities of leadership at McMaster or in the community.

Value: $2,500 each (30271)

THE DEAN'S RESIDENCE SCHOLARSHIPS
Established in 1988. To be awarded to students who have completed Level III of an Honours History program who, in the judgment of the Departments, have demonstrated outstanding academic achievement.

Value: $2,500 each (30271)

THE RAND MEMORIAL PRIZE OF CLASS '98
Established by the Class of 1898 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 an additional 60 - 75 units and who, in the judgment of the Department of English and Cultural Studies, has made the most notable original contribution to student publications.

Value: $250 (40045)

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 to students who have completed Level I and an additional 60 - 75 units and who, in the judgment of the Department of Geography during 35 years of service.

Value: $1,500 each (30371)

THE TELEVISION STUDIES PRIZE
Established in 1982. To be awarded to students who have completed Level III or IV of an Honours program in Music (Education) and who, in the judgment of the School of the Arts, has attained notable standing.

Value: $425 (30135)

THE TELEVISION STUDIES PRIZE
Established in 1982. To be awarded to students who have completed Level III or IV of an Honours program in Music (Education) and who, in the judgment of the School of the Arts, has attained notable standing.

Value: $425 (30135)

THE TELEVISION STUDIES PRIZE
Established in 1982. To be awarded to students who have completed Level III or IV of an Honours program in Music (Education) and who, in the judgment of the School of the Arts, has attained notable standing.

Value: $425 (30135)
THE HERBERT A. RICKER SCHOLARSHIPS
Established in 1982 by bequest of Mrs. Edna Elizabeth Ross Reeves of Hamilton in memory of her husband, Herbert A. Ricker. Four scholarships are awarded on the basis of scholarship (Sessional Average of at least 9.5) and character to: (a) to students who have completed Engineering I, or Level I and an additional 35 - 90 units of a program in Engineering, and (b) to students who have completed Science I or Level I and an additional 30 - 75 units of a program in Science.

Value: $2,000 each (30065)

THE STANLEY ROBERTSON SCHOLARSHIP
Established in 2006 by颜氏 Labrina Donrine Robertson Macnab in memory of her father, Charles Stanley Robertson (Class of '11), a scholar, an athlete, and a volunteer. To be awarded to students who have completed Level I in any program who, in the judgment of a selection committee, shows outstanding achievement and demonstrates qualities of leadership, service and/or participation in athletics and/or music. Preference will be given to a student in the Faculty of Engineering.

Value: $2,500 (30319)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE CATHERINE AND ALBERT ROEDER MEMORIAL SCHOLARSHIP
Established in 2007 by Dr. Robert Roeder, B.Sc. (Class of '59), M.Sc. (Class of '60) in memory of his parents. To be awarded to the student in an Honours Physics program with the highest Cumulative Average.

Value: $1,200 (30039)

THE ROSART PROPERTIES INC. SCHOLARSHIP
Established in 1988 by John D. and Dominic J. Rosart of Burlington. To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours program in Geography and who, in the judgment of the School of Geography and Earth Sciences, has attained high academic standing.

Value: $325 (30129)

THE ABRAHAM ROSENBERG MEMORIAL PRIZE
Established in 1986 by bequest of Abraham I. Rosenberg (Class of '34) of Hamilton and Kitchener. To be awarded to the graduating student who attains the highest Cumulative Average in the Honours Philosophy program.

Value: $225 (50095)

THE MORRIS AND SARAH ROSENHEAD MEMORIAL PRIZE
Established in 1986 by bequest of Sarah Rosenhead of Hamilton. To be awarded to the student who attains the highest standing in ENGLISH 1A03 and 1AA3.

Value: $125 (40033)

THE ROTARY CLUB OF HAMILTON SCHOLARSHIP
Established in 1989.

Value: $575 (30168)

THE ELLEN BOUCHARD RYAN SCHOLARSHIP
Established in 2000 by the McMaster Centre for Gerontological Studies, and sustained by the Estate of Dr. Ellen Bouchard Ryan. To be awarded to a student who, in the judgment of the Department of Health, Aging and Society, has demonstrated high academic achievement and leadership in age-related community activities.

Value: $400 (40092)

Students who wish to be considered for this award are encouraged to submit a resume to the Chair of the Department of Health, Aging and Society by April 15th.

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 an additional 50 - 75 units of an Honours Classics or Honours History program, including at least 12 units of Ancient History and Archaeology, and who, in the judgment of a committee of two departments, 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 a statement of their aims and plans for study.

Value: $2,000 (30204)

Travel Scholarship applications are due February 15th.

THE E. TOGO SALMON PRIZE IN HISTORY
Established in 1973 by friends and colleagues of Professor E.T. Salmon on his retirement, in recognition of his outstanding contribution to the Department of History. To be awarded to the student who has completed Level I and an additional 30 - 75 units and who, in the judgment of the Department of History, attains notable standing in an Honours program in History.

Value: $175 for books (30045)

THE NOEL SANDUSKY MEMORIAL PRIZE
Established in 1994 by family and friends in memory of Noel Sandusky. To be awarded to a student who has completed Level I and an additional 30 - 45 units of a program in History who, in the judgment of the Department of History, attains notable academic standing in at least nine units of History courses.

Value: $150 for books (40075)

THE HILDA SAVAGE MEMORIAL SCHOLARSHIP
Established in 1960 by bequest of Bertha Savage.

Value: $500 (30166)

THE LARRY SAYERS PRIZE IN EAST ASIAN HISTORY
Established in 1983 in memory of Larry F. Sayers (Class of ’62) by his family. To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours program in History who, in the judgment of the Department of History, has demonstrated outstanding achievement in at least six units of courses work in East Asian history.

Value: $275 (40030)

THE DR. SINA SAZGAR MEMORIAL SCHOLARSHIP
Established in 1999 in memory of Dr. Sina Sazgar, Hon. B.Sc. (Class of ’93), a young, exceptionally gifted and caring medical doctor who tragically passed away on October 26, 1993. To be awarded to a student enrolled in an Honours Bachelor of Science program who, in the judgment of the Faculty of Science, has demonstrated outstanding academic performance.

Value: $1,000 (30263)

THE SB PARTNERS SCHOLARSHIP
Established in 2007 through the generosity of SB Partners. To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours Commerce program who, in the judgment of the School of Business, has achieved the highest Sessional Average in COMMERCE 1A03 and 3A3 taken in one session. Preference will be given to students who have worked, studied or lived in the Halton Region.

Value: $3,000 (30331)

THE FEDOR SCHNEIDER SCHOLARSHIP IN ITALIAN
Established in 2004 by bequest of Mary Anna Schneider. To be awarded to a student entering Level II of an Honours Italian or Honours Linguistics program with a concentration in Italian and who, in the judgment of the Department of Linguistics and Languages, has achieved notable academic standing. Open to non-native speakers of Italian only.

Value: $750 (30310)

THE SCHOOL OF THE ARTS SCHOLARSHIP IN MUSIC
Established in 1993 by the Department of Music which later became part of the School of the Arts. To be awarded to a student who, in the judgment of the Faculty of Science, has demonstrated academic excellence in Music.

Value: $950 (30216)

THE SCIENCE ALUMNI SCHOLARSHIPS
Established in 2001 by the Faculty of Science through the generosity of its alumni and friends. A variable number of scholarships are awarded to students entering a Level III program in Science who, in the judgment of the Faculty of Science, have demonstrated outstanding academic achievement and leadership.

Value: $500 each (30276)

THE SHEILA SCOTT SCHOLARSHIP FOR BRANDON HALL
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.

Value: $750 (30202)

THE SHEILA SCOTT SCHOLARSHIP IN ENGLISH
Established in 1983 by graduates of McMaster University and friends in honour of Sheila Scott, Dean of Women from 1965 to 1982, in recognition of her outstanding contribution to the University community during 25 years of service. To be awarded to the student who has completed Level I and an additional 60 - 75 units of the Honours English program, and who attains the highest Sessional Average.

Value: $1,500 (30136)

THE SHEILA SCOTT SCHOLARSHIP FOR WALLINGFORD HALL
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.

Value: $750 (30158)

THE LARRY SEFTON SCHOLARSHIPS
Established in 1985 by the Hamilton Steelworkers Area Council in memory of Larry Sefton, area supervisor (1975-1985) and director of District 6 (1953-73) of the United Steelworkers of America, to recognize his commitment to education, to working people, to unions and to the City of Hamilton. Three scholarships are to be awarded to students in the Labour Studies program who, in the judgment of the Committee of Instruction for Labour Studies, have achieved notable standing in any level.

Value: $500 each (40097)
THE GRACE SENRA-FONTEST MEMORIAL PRIZE *
Established in 1969 by the graduating class (Class of '88) in association with the McMaster University Nursing Society and the McMaster Alumni Executive in memory of Grace Senra-Fontest (Class of '88) of Toronto. To be awarded to a student in Level III or IV of the Nursing program 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. Preference will be given to students enrolled in Level IV of the Nursing Program.
Value: $250 (40103)

THE MAGRATET 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 1M03
Value: $120 for books (40059)

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, in the judgment of the Department of Philosophy, has demonstrated notable standing in a Russian language course.
Value: $375 (30189)

THE SHELL CANADA PRIZES IN ENGINEERING AND MANAGEMENT
Established in 1983. Three prizes to be awarded to students graduating from an Engineering and Management program. Awards will be based on scholarship and on the quality of and creativity shown in written communication.
Value: $300 each (50049)

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 an additional 110 units of a program in Engineering and Management. Awards will be based on scholarship and on the quality of and creativity shown in written and oral reports.
Value: $1,100 each (30137)

THE SHENSTONE PRIZE
Established in 1903 by J.N. Shenstone of Toronto, and continued by members of his family. To be awarded to the student who has completed Science I and who attains the highest average in any four of the Level I courses in Chemistry, Physics and Biology.
Value: $200 (30138)

THE GERALD AND Verna 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 an additional 30 - 45 units of the Honours Physics program with the highest Sessional Average.
Value: $450 (30059)

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 program, who, in the judgment of the Department, has demonstrated outstanding academic achievement.
Value: $100 (50046)

Students who wish to be considered for this award are encouraged to submit a resume to the Department of Anthropology by April 15th.

THE PATRICIA L. SMYE MEMORIAL PRIZES
Established in 1972 by the Patricia Smye Memorial Fund Committee. Two scholarships to be awarded to students who have completed Level I and an additional 30 - 45 units and who attain the highest Sessional Average: (a) one in the three-level English program and (b) one in the three-level Psychology B.A. program.
Value: $375 each (30119)

THE SOCIAL WORK PRIZE
Established in 1982. To be awarded to the student who attains the highest grade in SOC WORK 2A06.
Value: $100 (40050)

THE SOCIETY OF CHEMICAL INDUSTRY MERIT AWARDS
Established in 1961. Three plaques to be awarded: (a) one to a Chemical Engineering graduan, (b) one to an Honours Biochemistry or Honours Chemistry and Chemistry graduan, and (c) one to an Honours Chemistry graduan, who have attained the highest Cumulative Average (at least 9.5) and have completed the program in the normal number of years. Value: Plaque (50060)

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 program in Sociology on a full-time basis; and (b) one to a student who has completed a program in Sociology primarily on a part-time basis.
Value: $100 each (50051)

THE SOMERVILLE SCHOLARSHIPS
Established in 1966 by bequest of William L. Somerville, architect of the McMaster University buildings of 1930.
Value: $800 (30169)

Students who wish to be considered for this award should pick up an application form from the Department of Minesiology by April 15th.

THE SPORT COACHING PRIZE
Established in 2003 by Pauline McCulIagh, a former faculty member of the School of Physical Education, Athletics and Recreation. To be awarded to a Level III or IV Kinesiology student who, in the judgment of the Department of Kinesiology, attains notable standing in one of KINESIOL 3M03, 4EE3 or 4N03 and has demonstrated excellence in sport coaching.
Value: $500 (40112)

Students who wish to be considered for this award should submit a completed application form to the Department of Kinesiology by April 1 15th.
THE S.L. SQUIRE SCHOLARSHIPS
Established in 1938 by bequest of S.L. Squire of Toronto. Two scholarships to be awarded to students entering Level II of a Mathematics and Statistics program who, in the judgment of the Department of Mathematics and Statistics, attained notable standing in Mathematics and Statistics I. Value: $50 each (30132)

THE STANTEC CONSULTING LTD. ENGINEERING SCHOLARSHIP
Established in 2005 by Stantec Consulting Ltd. (Hamilton office). To be awarded to a student who has completed Level I with the highest Sessional Average and who is entering a Level II program in Civil Engineering. Value: $2,500 (30315)

THE CLARENCE L. STARR PRIZE
Established in 1946 in memory of 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 Sessional Average. Value: $150 (30025)

THE ANNE STEIN MEMORIAL PRIZE
Established in 1981. To be awarded to the part-time student who successfully completes SOC WORK 3D06 and attains the highest grade in SOC WORK 3D06 in the same session. Value: $125 (60001)

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 3D06 and attains the highest grade in SOC WORK 3D06 in the same session. Value: $125 (40003)

THE LEONA ALLERSTON RYAN AND GORDON HENRY STEVENS MEMORIAL SCHOLARSHIP
Established in 1995 by Elaine Keillor in memory of Leona and Gordon Stevens. To be awarded to a student who has completed Level I and an additional 30 - 45 units of any program and who gives evidence of outstanding academic achievement and leadership. Value: $425 for books (30103)

Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE STOBO SCHOLARSHIP
Established in 1957 by bequest of William Q. Stobo. Value: $355 (30075)

THE MARIE L. STOCK SCHOLARSHIP
Established in 1987 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 1965. To be awarded to the student who has completed Level I and an additional 60 - 75 units of an Honours program in French and who, in the judgment of the Department of French, has achieved notable academic standing. Value: $450 (30104)

THE MARK JOHN STOCJIC SCHOLARSHIPS
Established in 1997 by bequest of Mark John Stojic. Two scholarships to be awarded to students who have completed Level III of a Materials Science and Engineering program who, in the judgment of the Department of Materials Science and Engineering, demonstrate outstanding academic achievement. Value: $1,800 each (30242)

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. Value: Book (40051)

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 program with the highest Sessional Average. The recipient must be from the Hamilton-Wentworth Region. Value: $750 (30092)

THE T.H.B. SYMONS PRIZE IN CANADIAN STUDIES
Established in 1978. To be awarded to the student who has completed Level I and at least an additional 30 units of a program in Political Science who, in the judgment of the Department of Political Science, has achieved notable standing in at least six units of Level II and/or Level III Political Science courses in Canadian Politics. Value: $650 (40122)

THE DR. ANDREW SZENDROVITS MEMORIAL SCHOLARSHIP
Established in 1999 by family, friends and colleagues in memory of Dr. Andrew Szendrovits, a former professor of Production and Management Science since 1962 and Dean of the Faculty of Business from 1979 to 1984 at McMaster University. To be awarded to the student enrolled in a Commerce program who achieves the highest average in the operations management science courses (COMMERCE 3QC3 and 3QAC) taken in the same session. Value: $450 (30262)

THE KENNETH W. TAYLOR BOOK PRIZE
Established in 1976 by his children in memory of Dr. Kenneth W. Taylor (Class of ’21), LL.D. (Class of ’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 areas of monetary economics and financial institutions, and of public finance. Value: $100 for books (40029)

THE THEATRE & FILM STUDIES BOOK PRIZE
Established in 1974 by Professor Ronald W. Vince. To be awarded to the student who attains the highest standing in THTR&FLM 1A03 and 1B03. Value: Book (40014)

THE HUGH R. THOMPSON MEMORIAL PRIZE
Established in 1969 in memory of Dr. Hugh R. Thompson. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours program in the School of Geography and Earth Sciences with the highest Sessional Average. Value: $250 (30069)

THE DR. R.A. THOMPSON PRIZE IN MATHEMATICS
Established in 1954 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 an additional 60 - 75 units of an Honours program in Mathematics and/or Statistics, who attains a high Sessional Average. Value: $300 (30040)

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) to the student who attains the highest standing in GERMAN 1205 and (b) one to the student who attains the highest standing in RUSSIAN 3AA3. Value: $50 each for books (40035)

THE TINNERMAN PALNUT ENGINEERED PRODUCTS SCHOLARSHIP IN MECHANICAL ENGINEERING
Established in 2001 by Tinnerman Pulp Engineered Products. To be awarded to a student entering Level II of a Mechanical Engineering Program who, in the judgment of the Department of Mechanical Engineering, has achieved notable academic standing and demonstrated leadership at McMaster or in the community. Value: $2,800 (30279)

THE GRAHAM RONALD TOOP SCHOLARSHIP
Established in 1989 in memory of Graham Toop (Class of ’89) by family and friends. To be awarded to the student entering Level IV of an Honours Philosophy program 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: $500 (30190)

THE CORELENE HELEN TOSTEVIN SCHOLARSHIPS
Established in 1998 by bequest of Coreleine Tostevin. Five awards to be granted to students who are registered in a Post-RN degree program and who, in the judgment of the School of Nursing, have demonstrated notable academic achievement. Value: $250 each (40083)

THE JOHN TOHT 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)
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.
Value: $250 (50067)

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: $250 (40104)

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 program 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)

THE UNIVERSITY ACHIEVEMENT AWARDS
Established in 2006. Awarded for overall academic excellence to part-time students in undergraduate programs. Each year, quotas are established in proportion to the number of part-time undergraduate students who obtain a Cumulative Average of 8.0 or greater and who are named to the Deans’ Honour List.
Value: $150 each (40052)

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 UNIVERSITY (SENATE) SCHOLARSHIPS
Made available from by authorization of the Board of Governors of the University.
Value: $800 each (30173)

THE UNIVERSITY SCHOLARSHIPS
Established in 1978. Twenty scholarships to be awarded to part-time students who have attained the highest Cumulative Average at the most recent review.
Value: $250 each (60003)

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. program: one to the student entering Level II and one to the student entering Level III who attain the highest Sessional Average. Recipients may not hold another scholarship of equal or greater value.
Value: $1,157 each (30205)

THE VAREY SCHOLARSHIP
Established in 1978 by J.C. Varey, Dundas, in memory of Albert E. Varey. To be awarded to a student in an Honours Program in Classics who, in the judgment of the Department of Classics has achieved notable academic standing.
Value: $275 (30151)

THE JIM WADDINGTON PRIZE IN PHYSICS AND ASTRONOMY
Established in 2004 by friends, colleagues and students in recognition of Jim Waddington and his career as a teacher and researcher. To be awarded to a student entering Level II of an Honours program in the Department of Physics and Astronomy who has attained the highest grade in PHYSICS 1BA3.
Value: $700 (30312)

THE HARRY WAISGLASS BOOK PRIZE
Established in 1988 in honour of Harry Waisglass, the first Director of the Labour Studies Education Program at McMaster. To be awarded to a student graduating from a program in Labour Studies who, in the judgment of the Committee of Instruction for Labour Studies, has demonstrated outstanding achievement.
Value: $50 for books (50024)

THE MELINDA WAPSHAW ACHIEVEMENT AWARD
Established in 1993 by the Labour Studies Student Association and the Labour Studies Program. To be awarded to a student who has completed Level I and an additional 60 - 75 units of an Honours Program in Labour Studies and who, in the judgment of the Committee of Instruction, demonstrates outstanding achievement.
Value: $175 (40074)

THE F.W. WATERS SCHOLARSHIP IN PHILOSOPHY
Established in 1983 by two 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 an Honours Program in Philosophy who, in the judgment of the Department of Philosophy, shows the most academic promise.
Value: $750 (30197)

THE F.W. WATERS SCHOLARSHIP IN PHILOSOPHY FOR PART-TIME STUDENTS
Established in 1998 by former students, colleagues and friends of Dr. F. W. Waters, Professor from 1935 to 1959. To be awarded to a part-time student in a Philosophy program who, in the judgment of the Department of Philosophy, has demonstrated outstanding academic achievement. No student will be eligible to receive this award more than once.
Value: $250 (60008)

THE RALPH WEEKES SCHOLARSHIP
Established in 1994 by the Investors Group Financial Services to recognize the accomplishments of Ralph Weekes (Class of ‘73). To be awarded to a student enrolled in a program in Economics who, in the judgment of the Department of Economics, has attained outstanding standing. Preference will be given to a student pursuing studies on a part-time basis.
Value: $600 (40073)

THE WEISZ FAMILY FOUNDED SCHOLARSHIP
Established in 1982. To be awarded to the student who has completed Level I and an additional 60 - 75 units of the Honours Commerce program and who attains the highest Sessional Average (at least 9.5).
Value: $1,500 (30152)

THE HOWARD P. WHIDDEN SCHOLARSHIP
Established in 1984 by the Honourable Jacob Nicol (Class of '00) of Sherbrooke, Quebec, in honour of Chancellor Howard P. Whidden, with a view to fostering relations of friendship and understanding between French-speaking and English-speaking Canadians. To be awarded to a student who has completed six units of French and who shows ability and promise in the use of the French language. The recipient will study at a Quebec university during the summer.
Value: $800 (30176)

The Whidden Hall Residents Scholarship Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.
Value: $750 (30159)

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 and Cultural Studies, has written the best essay on a topic relating to English literature of the period 1660-1800.
Value: $250 for books (40044)

THE T. RUSSELL WILKINS MEMORIAL SCHOLARSHIPS
Established in 1963 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 (Class of ‘11). Two scholarships are to be awarded to students in their penultimate level of an Honours program in Arts and Science, Health Sciences or Science who have demonstrated outstanding academic achievement. In addition, the students should demonstrate 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 winners to spend the summer before the final Fall/Winter session in travel and study outside Canada.
Value: $4,600 each (30178)

Travel Scholarship applications are due February 15th.
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 in an Honours program 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: $450 (30191)

THE THOMAS E. WILLEY SCHOLARSHIP
Established in memory of Dr. Thomas E. Willey in 1996 by his family, colleagues and friends. To be awarded to an undergraduate student who, in the judgment of the History and the Linguistics and Languages departments, has demonstrated excellence in German studies.
Value: $375 (40082)

THE EMANUEL WILLIAMS SCHOLARSHIP IN PHYSICS
Established in 1948 by Arbelle M. Williams of Port Colborne as a memorial to her brother. To be awarded to the student who has completed Level I and an additional 30 - 45 units of an Honours program in Physics with the highest Sessional Average.
Value: $1,200 (30049)

THE DAVID WINCH MEMORIAL SCHOLARSHIP
Established in 2003 in memory of Professor David Winch by his family, friends and colleagues. To be awarded to a part-time student in the Faculty of Social Sciences who has completed at least Level II and who, in the judgment of the Faculty, has demonstrated notable academic achievement.
Value: $425 (60012)

THE WOMEN'S ART ASSOCIATION SCHOLARSHIPS
Established in 1969. 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 an additional 30 - 45 units of a program in Honours Art History with the highest Sessional Average. The recipients must be from the Hamilton-Wentworth Region.
Value: $750 each (30153)

THE WOODSTOCK HALL RESIDENCE SCHOLARSHIP
Awarded to the student who resides in the residence with the highest Sessional Average (at least 9.5) in an undergraduate program, with the exception of those in their graduating session.
Value: $750 (30163)

THE IVOR WYNNE MEMORIAL PRIZE
Established in 1971 in memory of Ivor Wynne, Dean of Students. To be awarded to a student who has completed Level III of the Kinesiology program and who attained the highest Cumulative Average.
Value: $250 (30075)

THE MARGUERITE Z. YATES SCHOLARSHIP
Established in 1960 by bequest of Mrs. W.H. Yates of Hamilton.
Value: $225 (30167)

THE YATES SCHOLARSHIPS
Value: $800 each (30171)

THE GLADYS A. YOUNG SCHOLARSHIP
Established in 1991 by T.G. Harvey in honour of his wife, Gladys B.Sc., (Class of '37), M.Sc., (Class of '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 an additional 30 - 65 units of an Honours program in Mathematics or Physics with the highest Sessional Average. The recipient must not hold another scholarship of equal or greater value.
Value: $1,600 (30206)

THE LILLIAN AND MANUEL ZACK SCHOLARSHIP
Established in 1964 by Lillian and Manuel Zack (Class of '40) of Hamilton. To be awarded to a student who has completed Level I and an additional 70 - 85 units of a program 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: $1,800 (30101)

ACADEMIC GRANTS FOR FULL-TIME, IN-COURSE STUDENTS

THE MARGARET ELIZABETH BURKE MEMORIAL ACADEMIC GRANT
Established in 2005 by Dr. Dennis Burke in memory of his wife, Margaret. To be awarded to a student who has completed Level I in the B.Sc.N. program and who, in the judgment of the School of Nursing, has attained the highest grade in the required Level I Anatomy/Physiology courses and demonstrates financial need.
Value: $2,900 (85004)

THE WILLIAM F. CAMPBELL ACADEMIC GRANT
Established in 2005 by Margaret Campbell, M.Sc. (Class of '72) and David F. Campbell in memory of their father William F. Campbell, B.A. (Class of '36) of Ottawa. To be awarded to students entering Level II in the Faculty of Engineering and the Faculty of Science who have completed Level I with high Sessional Averages and demonstrate financial need. Tenable in Levels III and IV provided that the recipients remain registered in their Faculty and maintain a minimum Sessional Average of 9.5. These awards will be divided equally between the Faculty of Engineering and the Faculty of Science.
Value: $6,000 ($2,000 each year) (85101)

THE MARGARET C. DIXON ACADEMIC GRANT
Established in 2006 by Mrs. Geraldine Phenix in memory of her mother, Margaret C. Dixon, to honour her love of music and the piano. To be awarded to a student in an Honours Music program who attains a high Sessional Average and demonstrates financial need.
Value: $800 (85161)

THE DUBECK ACADEMIC GRANT
Established in 2006 by Dr. Michael Dubec, B.Sc. (Class of '51) and M.Sc. (Class of '52). To be awarded to a student entering a full-time program of study in the Faculty of Science who has a high final admission average and demonstrates financial need. The grant is tenable for up to four years provided the recipient maintains a minimum Sessional Average of 9.5. (To be awarded every four years.)
Value: $4,000 ($1,000 per year) (85017)

THE P.J. FERGUSON ACADEMIC GRANT
Established in 2007 by P. J. Ferguson, B.A. (Class of '87), President of ABL Employment Inc. in support of her belief that all students should be able to pursue their educational goals. To be awarded to a student who has completed Level I and an additional 30 - 45 units in a History program, attains a high Sessional Average and demonstrates financial need.
Value: $800 (85022)

THE BURDEE GIBSON ACADEMIC GRANT
Established in 2007 by Scott Kinnear, B.Eng. (Class of '88) and Betty Ann Kinnear in memory of her mother, Burdee Gibson. To be awarded to a student entering Business I in a full-time program of study in the DeGroote School of Business who has a high final admission average and demonstrates financial need. Award is tenable for up to four years provided the recipient maintains a minimum Sessional Average of 9.5. (To be awarded every four years.)
Value: $4,000 ($1,000 per year) (85020)

THE CARL HALLER-ASSOCIATED MEDICAL SERVICES, INC. ACADEMIC GRANT
Established in 2006 by Associated Medical Services, Inc. in honour of Carl Haller, B.A., Economics and Business (Class of '55) for his dedication and years of service on its Board of Directors. To be awarded to a student entering Business I in a full-time program of study in the DeGroote School of Business who has a high final admission average and demonstrates financial need.
Value: $950 (85019)

THE HATCH ACADEMIC GRANT IN ENGINEERING
Established in 2005 by Hatch to celebrate their 50th anniversary and their success in providing engineering expertise to clients around the world. Two grants to be awarded to students in a program in Civil, Chemical, Materials or Mechanical Engineering who have a high Sessional Average and demonstrate financial need: a) one after the completion of Level I and an additional 33 - 45 units, and b) one after the completion of Level I and an additional 58-82 units.
Value: $1,000 each (85001)
THE JACK HOWETT ACADEMIC GRANT
Established in 2005 by the Organization of CANDU Industries in honour of Jack Howett, a founding member of OCI. To be awarded to a student who has completed Level I and an additional 74 - 79 units of an Engineering Physics program specializing in the Nuclear Engineering and Energy Systems Stream with a high Sessional Average, and who demonstrates financial need.
Value: $2,000 (85011)

THE KNEALE BROTHERS '37 ACADEMIC GRANT
Established in 2006 by brothers Verne and Graham Kneale (Class of '37) in honour of their family's belief in higher education. To be awarded to a student registered in the Faculty of Social Sciences or the Faculty of Humanities who has completed Level I and an additional 30-45 units, attains a high Sessional Average, and who demonstrates financial need.
Value: $20,000 ($5,000 per year) (85012)

THE TAYLOR LEIBOW ACADEMIC GRANT
Established in 2006 by Taylor Leibow LLP, a Hamilton-based firm established in 1947. To be awarded to a student who has completed Level II or III of the Bachelor of Commerce program, attains a high Sessional Average and demonstrates financial need.
Value: $200 (85013)

THE THOMPSON ACADEMIC GRANT
Established in 2006 by friends and family in memory of Barrie Reid, B.A. (Class of '75). To be awarded to a student in a Commerce program, who attains a high standing in either marketing course, COMMERC 2MA3 or 3MC3, and who demonstrates financial need.
Value: $800 (85018)

THE DOREEN MORRISON ACADEMIC GRANT
Established in 2007 in memory of Doreen O'Neill Morrison by her children, in honour of Anthony and Marie Troy in support of their belief that all students should have the opportunity to pursue their educational goals. To be awarded to a student who has completed Level I and an additional 30 B 63 units in an Honours Economics program, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85023)

THE TROY FAMILY ACADEMIC GRANT
Established in 2004 by Kenneth, B.Com. (Class of '75) and Drenda Troy in honour of Anthony and Marie Troy in support of their belief that all students should have the opportunity to pursue their educational goals. To be awarded to a student who has completed Level I, attains a high Sessional Average, and demonstrates financial need.
Value: $2,000 (85019)

THE BARRIE REID ACADEMIC GRANT
Established in 2006 by friends and family in memory of Barrie Reid, B.A. (Class of '75). To be awarded to a student in a Commerce program, who attains a high standing in either marketing course, COMMERC 2MA3 or 3MC3, and who demonstrates financial need.
Value: $800 (85015)

THE RICHARD C. NEUMANN ACADEMIC GRANT
Established in 2007 by the Newman family in memory of Richard Carson Newman, father of Mark Newman, B.Sc. (Class of '86) and Toni Newman, B.A. (Class of '93). To be awarded to a student in the Faculty of Engineering who has completed at least Level I, attains a high Sessional Average, and demonstrates financial need.
Value: $800 (85023)

THE MANSON OLSON ACADEMIC GRANT
Established in 2005 by Marguerite Olson (Class of '50) in honour of her father Gordon Manson (Class of '38), her brother John Manson (Class of '56) and her husband Theodore Olson (Class of '51). To be awarded to a student in the Faculty of Science who has attained a high Sessional Average and demonstrates financial need.
Value: $2,000 (85024)

THE RICHARD C. NEUMANN ACADEMIC GRANT
Established in 2007 by the Newman family in memory of Richard Carson Newman, father of Mark Newman, B.Sc. (Class of '86) and Toni Newman, B.A. (Class of '93). To be awarded to a student in the Faculty of Engineering who has completed at least Level I, attains a high Sessional Average, and demonstrates financial need.
Value: $800 (85023)

THE POLLOCK FAMILY ACADEMIC GRANT
Established in 2006 by Dr. Ken Pollock, Dr. Gary Pollock, Dr. Mark Pollock and Dr. Ted Pollock. To be awarded to a student in the Faculty of Engineering who has completed Level I, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85023)

THE NADINE M. THOMPSON ACADEMIC GRANT
Established in 2000 by family and friends in memory of Professor Robert Thompson (Economics) and his wife, Dorothy Thompson. To be awarded to a student who has completed Level I and an additional 30 B 63 units in an Honours Economics program, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85009)

THE WRIGLEY MILLER ACADEMIC GRANT
Established in 2005 by the Wrigley Miller family in memory of Dr. Alan Miller, B.Cmb. (Class of '75). To be awarded to a student in the Faculty of Social Sciences who has completed Level I and an additional 30-45 units, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85020)

THE THOMPSON ACADEMIC GRANT
Established in 2006 by friends and family in memory of Barrie Reid, B.A. (Class of '75). To be awarded to a student in a Commerce program, who attains a high standing in either marketing course, COMMERC 2MA3 or 3MC3, and who demonstrates financial need.
Value: $800 (85018)

THE ELEANOR MORRIS ACADEMIC GRANT
Established in 2005 by Sandra Morris, B.A. (Class of '82) in memory of her mother, Eleanor Morris. To be awarded to a student in the B.Sc.N. program in the School of Nursing who has completed Level I with a high final admission average and demonstrates financial need. Award is tenable for up to four years provided the recipient maintains a minimum Sessional Average of 9.5.
Value: $2,000 (85014)

THE TROY FAMILY ACADEMIC GRANT
Established in 2004 by Kenneth, B.Com. (Class of '75) and Drenda Troy in honour of Anthony and Marie Troy in support of their belief that all students should have the opportunity to pursue their educational goals. To be awarded to a student who has completed Level I and an additional 30 B 63 units in an Honours Economics program, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85019)

THE BARRE REID ACADEMIC GRANT
Established in 2006 by friends and family in memory of Barrie Reid, B.A. (Class of '75). To be awarded to a student in a Commerce program, who attains a high standing in either marketing course, COMMERC 2MA3 or 3MC3, and who demonstrates financial need.
Value: $800 (85015)

THE KNEALE BROTHERS '37 ACADEMIC GRANT
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Value: $200 (85013)

THE THOMPSON ACADEMIC GRANT
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Value: $2,000 (85024)

THE NEWMANN ACADEMIC GRANT
Established in 2007 by the Newman family in memory of Richard Carson Newman, father of Mark Newman, B.Sc. (Class of '86) and Toni Newman, B.A. (Class of '93). To be awarded to a student in the Faculty of Engineering who has completed at least Level I, attains a high Sessional Average, and demonstrates financial need.
Value: $800 (85023)

THE POLLOCK FAMILY ACADEMIC GRANT
Established in 2006 by Dr. Ken Pollock, Dr. Gary Pollock, Dr. Mark Pollock and Dr. Ted Pollock. To be awarded to a student in the Faculty of Engineering who has completed Level I, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85023)

THE RICHARD C. NEUMANN ACADEMIC GRANT
Established in 2007 by the Newman family in memory of Richard Carson Newman, father of Mark Newman, B.Sc. (Class of '86) and Toni Newman, B.A. (Class of '93). To be awarded to a student in the Faculty of Engineering who has completed at least Level I, attains a high Sessional Average, and demonstrates financial need.
Value: $800 (85023)

THE MANSON OLSON ACADEMIC GRANT
Established in 2005 by Marguerite Olson (Class of '50) in honour of her father Gordon Manson (Class of '38), her brother John Manson (Class of '56) and her husband Theodore Olson (Class of '51). To be awarded to a student in the Faculty of Science who has attained a high Sessional Average and demonstrates financial need.
Value: $2,000 (85024)

THE BARRIE REID ACADEMIC GRANT
Established in 2006 by friends and family in memory of Barrie Reid, B.A. (Class of '75). To be awarded to a student in a Commerce program, who attains a high standing in either marketing course, COMMERC 2MA3 or 3MC3, and who demonstrates financial need.
Value: $800 (85018)

THE THOMPSON ACADEMIC GRANT
Established in 2006 by friends and family in memory of Professor Robert Thompson (Economics) and his wife, Dorothy Thompson. To be awarded to a student who has completed Level I and an additional 30 B 63 units in an Honours Economics program, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85024)

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Established in 2007 by the Newman family in memory of Richard Carson Newman, father of Mark Newman, B.Sc. (Class of '86) and Toni Newman, B.A. (Class of '93). To be awarded to a student in the Faculty of Engineering who has completed at least Level I, attains a high Sessional Average, and demonstrates financial need.
Value: $800 (85023)

THE POLLOCK FAMILY ACADEMIC GRANT
Established in 2006 by Dr. Ken Pollock, Dr. Gary Pollock, Dr. Mark Pollock and Dr. Ted Pollock. To be awarded to a student in the Faculty of Engineering who has completed Level I, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85023)
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### Undergraduate Awards — Awards and Academic Grants by Faculty

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PRESIDENT AND VICE-CHANCELLOR
P.J. George, C.M., O.Ont., B.A., M.A., Ph.D., D.U. (Hon.), D.Hon. C., D.Litt. (Hon.), LL.D. (Hon.)

PROVOST AND VICE-PRESIDENT (ACADEMIC)
I.J. Busch-Vishniac, B.S./B.A., M.Sc., Ph.D.

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