2009-2010

McMASTER UNIVERSITY
Undergraduate Calendar

◆ This Calendar covers the period from September 2009 to August 2010.

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.

ARTS AND SCIENCE
BUSINESS
ENGINEERING
HEALTH SCIENCES
HUMANITIES
SCIENCE
SOCIAL SCIENCES
INDIGENOUS STUDIES

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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.

Student Recruitment and Admissions
Associate Registrar (Student Recruitment and Admissions): Patricia Harris

Admissions Office (Undergraduate Studies)
Gilmour Hall, Room 108, L8S 4L8, ext. 24796; Fax: (905) 527-1105

Student Recruitment
Gilmour Hall, Room 102, L8S 4L8, ext. 24786; Fax: (905) 524-3550

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

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

Student Financial Aid and Scholarships
Director: Elizabeth Seymour
Gilmour Hall, Room 120, L8S 4L8, ext. 24319

Office of the Associate Vice-President (Student Affairs) and Dean of Students
Associate Vice-President
(Student Affairs and Dean of Students): Philip Wood
Gilmour Hall, Room 207, L8S 4L8, ext. 27455

School of Graduate Studies
Associate Vice-President and
Dean of Graduate Studies: Allison Sekelur
Gilmour Hall, Room 212, L8S 4L8, ext. 23679

Centre for Continuing Education
Director: Tracey Taylor-O'Reilly
Downtown Centre, Second Floor, ext. 24321

Alumni Association
Director of Alumni Advancement: Karen McQuigge
Alumni House, L8S 4K1, ext. 23900

Housing and Conference Services
Director of Housing and Conference Services: Catherine Miller
Commons Building, Room 101, L8S 4K1, ext. 24342

Off-Campus Resource Centre
McMaster University Student Centre, Room B112, L8S 4S4, ext. 24086

Hospitality Services
Director: Albert Ng, ext. 23836
Commons Building, Room 116, L8S 4K1
Mac Express Inquiries: ext. 27448

Centre for Student Development
Director: Desmond Pouyat
McMaster University Student Centre, Room B107, L8S 4S4, ext. 24711

Services for Students with Disabilities
Manager, Disability Services and University Advisor
on Disability Issues: Tim Nolan
McMaster University Student Centre, Room B107, L8S 4S4, ext. 24711

Career Services
Director: Gina Robinson
Gilmour Hall, Room 110, L8S 4L8, ext. 24254

Advice for Overseas and Exchange Students
International Student Services Manager/Advisor: Marcos Costa
Gilmour Hall, Room 104, L8S 4L8, ext. 24748

Grievances
University Secretary: Bruce Frank
Gilmour Hall, Room 210, L8S 4L8, ext. 24337

Other Publications for McMaster Students

- **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) Course Catalogue which describes certificate and diploma programs and affiliated professional associations is available at http://www.mcmastercce.com/
- **Professional Development and Non-Credit Studies**
  - Brochures about non-credit programs, such as computer training, professional development workshops, managerial and leadership training, and corporate and custom training as well as the CCE Course Catalogue are available at http://www.mcmastercce.com/

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 over $346 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.

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 (Game Design).

Students may register in the Faculty of Engineering to take the five-level Engineering and Management program, which is offered jointly by the DeGroote School of Business and Faculty of Engineering, and the five-level programs in Engineering and International Studies and Engineering and Society. In addition, a Bachelor of Applied Science is offered in Honours Business Informatics and Honours Computer Science.

The Faculty of Engineering offers a five-year program in Chemical Engineering and Bioengineering leading to a Bachelor of Engineering and Biosciences degree.

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, Energy 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 offers 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) program (B.H.Sc. Hon.) is also offered.

The Faculty of Humanities offers programs in Art, Art History, Classics, Communication Studies, 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.

Bachelor of Science programs are available in the Faculty of Science at the B.Sc. and B.Sc. Honours levels. Programs are offered in Biochemistry, Biology, Biology and Environmental Sciences, Chemical Biology, Chemistry, Computational Biology, Earth and Environmental Sciences, Environmental Sciences, Integrated Science, Kinesiology, Life Sciences, Mathematical Science, Mathematics and Statistics, Medical and Health Physics, Medical Radiation Sciences, Molecular Biology and Genetics, Origins, Physical Sciences, Physics and Psychology, Neuroscience & 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 & Behaviour, Religious Studies and Sociology. The School of Social Work offers the combined B.A./B.S.W. degree, and the Department of Kinesiology (although residing in the Faculty of Science), the Hons.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 23,000 full-time students attend McMaster University, 2,800 of whom are pursuing advanced degrees offered through the School of Graduate Studies. In addition, over 3,500 part-time students are registered in the Fall/Winter session, from September to April, and 8,500 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, named the first Canadian recipient of the prestigious Excellence in Academic Libraries Award from the Association of College and Research Libraries is successfully transforming itself from a traditional research library to an innovative, user-centered library. Our collections include more than two million volumes and more than 50,000 electronic journal titles. The William Ready Division of Research Collections includes the Bertrand Russell Archives, 18th century materials, major Canadian collections, and emerging collections in Holocaust and Resistance. Our award winning facilities include the recently renovated Learning Commons @ Mills and the new Learning Commons @ Thode. 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 includes 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 400-metre outdoor track, 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 residence options 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

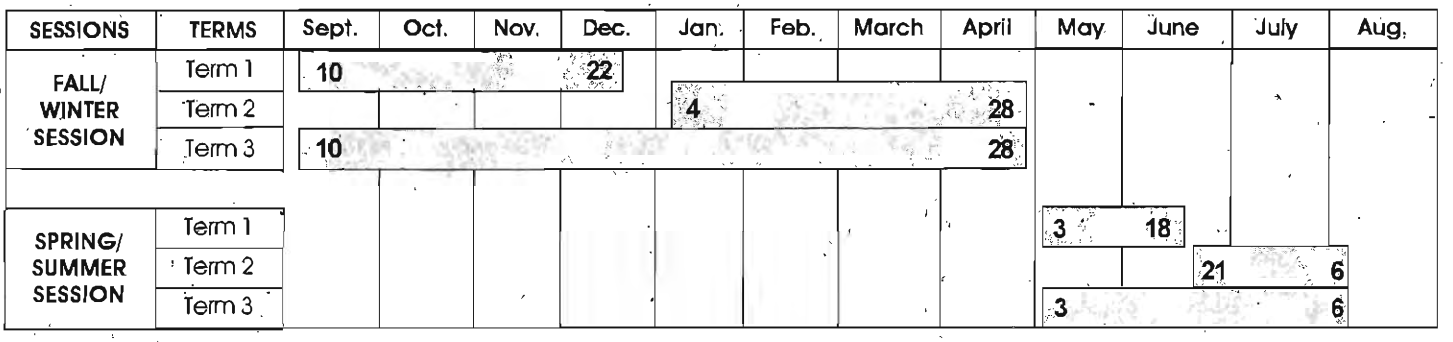
The academic year is divided into sessions, as shown on the chart below.

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 2009-2010 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.*



CONVOCATIONS

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

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)

Friday, February 26, 2010
- Last day to change programs for Spring 2010 Convocations

Friday, February 26, 2010
- Last day to file a Graduation Information Card and declare a minor for Spring 2010 Convocations

Friday, May 21, 2010
- Health Sciences Convocation (excluding Nursing)

Monday, June 7 to Friday, June 11, 2010
- Spring Convocations

Friday, July 30, 2010
- Last day to file a Graduation Information Card and declare a minor for Fall 2010 Convocations

Friday, November 19, 2010
- Fall 2010 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 2009-2010

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

Fall/Winter Session 2009-2010

	Term 1	Term 2	Term 3
➢ Registration (All Levels)	To Be Announced		
➢ Classes begin	Thursday, September 10	Monday, January 4	Thursday, September 10
➢ Last day for registration and adding or dropping courses	Monday, September 21	Wednesday, January 13	Monday, September 21
➢ Thanksgiving Day: No classes	Monday, October 12	—	Monday, October 12
➢ Mid-term recess	—	Monday, February 15 to Saturday, February 20	Monday, February 15 to Saturday, February 20
➢ Last day for cancelling courses without failure by default	Friday November 6	Friday, March 5	Friday, March 5
➢ Good Friday: No classes or examinations	—	Friday, April 2	Friday, April 2
➢ Test and Examination ban: No tests or examinations may be held	Monday, November 30 to Monday, December 7	Friday, April 2 to Friday, April 9	Friday, April 2 to Friday, April 9
➢ Classes end	Friday, December 4	Thursday, April 8	Thursday, April 8
➢ Mid-Session Tests (Level I)	—	—	Tuesday, December 8 to Tuesday, December 22
➢ Final Examinations	Tuesday, December 8 to Tuesday, December 22	Saturday, April 10 to Wednesday, April 28	Saturday, April 10 to Wednesday, April 28
➢ Deferred Examinations	Tuesday, February 16 to Friday, February 19	Monday, June 21 to Thursday, June 24	Monday, June 21 to Thursday, June 24

Spring/Summer Session 2010

	Term 1	Term 2	Term 3
➢ Classes begin	Monday, May 3	Monday, June 21	Monday, May 3
➢ Last day for registration and adding or dropping courses	Friday, May 7	Friday, June 25	Friday, May 7
➢ Victoria Day: No classes	Monday, May 24	—	Monday, May 24
➢ Last day for cancelling courses without failure by default	Wednesday, June 2	Wednesday, July 21	Monday, July 5
➢ Canada Day: No classes	—	Thursday, July 1	Thursday, July 1
➢ Civic Holiday: No classes	—	Monday, August 2	Monday, August 2
➢ Classes end	Friday, June 18	Friday, August 6	Friday, August 6
➢ Examinations	During class time, as arranged by instructor		
➢ Deferred Examinations	December 2010 Examination period	December 2010 Examination period	December 2010 Examination period

DEGREES, PROGRAMS AND COURSES

DEGREES AND PROGRAMS

McMaster University offers the following undergraduate degrees:

FACULTY AND DEGREE	DURATION IN YEARS
ARTS & SCIENCE PROGRAM	
B.Arts Sc.	3
B.Arts Sc. (Honours)	4
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.Biosciences	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
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.	**4
B.Sc.	3
B.Sc. (Honours)	4
B.Sc. (Honours)	⅄ 5
B.Sc. Kin.	3
B.Sc.Kin.(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, 1Z03
	ART HIST 1A03, 1AA3
★	ASTRON 1F03
★	BIOLOGY 1A03, 1M03, 1P03, 1X03
	CAYUGA 1Z03
★	CHEM 1A03, 1AA3, 1R03
	CLASSICS 1A03, 1B03, 1M03
	CMST 1A03
★	COMP SCI 1FC3, 1MA3, 1MD3, 1TA3
	CSCT 1B03, 1BB3
	ECON 1B03**, 1BB3
	ENGLISH 1A03, 1AA3, 1B03, 1BB3, 1C06
★	ENVIR SC 1A03, 1B03, 1G03
	FRENCH 1A06, 1K06, 1Z06
	GEOG 1HA3, 1HB3
	GERMAN 1B03, 1BB3, 1Z06
	GERONTOL 1A03
	GREEK 1Z03, 1ZZ3
★	HTH SCI 1G03
	HEALTHST 1A03
	HISTORY 1A03, 1AA3, 1B03, 1BB3, 1M03
	INDIG ST 1A03, 1AA3
	INQUIRY 1HU3, 1SS3, 2HS3
	ITALIAN 1A03, 1AA3, 1Z06
	JAPANESE 1Z06
★	KINESIOL 1Y03, 1YY3
	LABR ST 1A03, 1C03
	LATIN 1Z03, 1ZZ3
★	MATH 1A03, 1AA3, 1B03, 1C03, 1F03, 1K03, 1LS3, 1M03
★	MATLS 1M03
★	MED PHYS 1E03
★	MMEDIA 1A03, 1B03
	MOHAWK 1Z03
	MUSIC 1A03, 1AA3
	OJIBWE 1Z03
	PEACE ST 1A03, 1B03
	PHILOS 1A03, 1B03, 1C03, 1D03, 1E03
★	PHYSICS 1B03, 1BA3, 1BB3, 1F03, 1L03
	POLISH 1Z03, 1ZZ3
	POL SCI 1G06
	PSYCH 1X03, 1XX3
	RELIG ST 1B06, 1D06, 1J03
	RUSSIAN 1Z03, 1ZZ3
	SCIENCE 1E03
	SOC WORK 1A06
	SOCIOL 1A06
	SPANISH 1A03, 1AA3, 1Z06
★	STATS 1L03
	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 enrolment limitations and the prerequisites as specified for each list. (Engineering students should refer to the website at http://www.eng.mcmaster.ca/documents/Electives2008.pdf) 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

ANTHROP 2B03, 2D03, 2G03, 2H03, 2U03, 2VV3, 2W03, 2X03, 3R03, 3Y03, 4H03
GEOG 3RW3
INDIG ST 3J03
POL SCI 2BB3, 2D03, 2F03, 2H03, 2I03, 2J03, 2L03,2M03, 2N03, 2O06, 2XX3
RELIG ST 2B03, 2BB3, 2DD3, 2EE3, 2F03, 2G03, 2GG3, 2H03, 2HH3, 2I03, 2II3, 2J03, 2JJ3, 2K03, 2KK3, 2L03, 2LL3, 2MM3, 2NN3, 2P03, 2Q03, 2QQ3, 2TT3, 2U03, 2VV3, 2W03, 2WW3, 2X03, 2YY3, 2ZZ3, 3A03, 3AA3, 3B03, 3C03, 3CC3, 3D03, 3DD3, 3EE3, 3FF3, 3GG3, 3KK3, 3LL3, 3M03, 3N03, 3R03, 3UU3, 3Y03, 3ZZ3
SOC SCI 2O03, 2P03, 2Q03, 2R03
SOCIOL 3KK3

UPPER-LEVEL COURSES AVAILABLE TO STUDENTS REGISTERED IN LEVEL II OR ABOVE IN ANY PROGRAM

ART HIST 2A03, 2B03, 2F03, 2G03, 2H03, 2I03, 2Z03, 3D03, 3I03, 3S03
CLASSICS 2B03, 2D03, 2E03, 2K03, 2Y03, 2YY3
CMST 2E03, 2N03, 2O03, 2Q03, 2R03, 2T03, 3F03, 3U03
COMP LIT 2A03, 2AA3, 2BB3, 2CC3, 2G03, 2M03, 2S03, 2Y03, 2YY3, 3G03, 3H03, 3JJ3, 3K03, 3SS3
CSCT 2J03, 3D03, 3EE3, 3RR3, 3Y03, 3YY3
EARTH SC 2GG3, 2MM3, 2WW3
ECON 2CC3
ENGLISH 2C03, 2E03, 2F03, 2J03, 2L03, 2N03, 2R03, 3D03, 3DD3, 3EE3, 3F03, 3GG3, 3H03, 3RR3, 3S03, 3Y03
GEOG 2RC3, 2RU3
GERMAN ..... 2AA3, 2CC3, 2S03, 3C03, 3F03, 3H03 (All taught in English)
HEALTHST 2C03, 2D03, 2H03, 3Y03
HTH SCI 2A03, 2G03, 3G03, 3GG3, 3I03, 3Y03, 4II3, 4J03
HISTORY 2A03, 2AA3, 2CC3, 2DD3, 2EE3, 2G03, 2HH3, 2II3, 2J03, 2JJ3, 2K03, 2M03, 2MM3, 2N03, 2Q03, 2QQ3, 2R03, 2RR3, 2S03, 2T03, 2TT3, 2U03, 2UU3, 2X03, 3A03, 3CG3, 3CW3, 3DD3, 3FF3, 3G03, 3GG3, 3H03, 3I03, 3II3, 3J03, 3KK3, 3N03, 3NN3, 3O03, 3P03, 3QQ3, 3R03, 3SA3, 3U03, 3UU3, 3W03, 3WW3, 3XX3, 3Y03, 3YY3, 3ZZ3
HUMAN 2A03, 2C03
INQUIRY 3HS3
ITALIAN ..... 2B03, 2I03, 2M03, 3C03, 3I03, 3X03 (All taught in English)
JAPAN ST 2P03, 2TT3, 3E03, 3H03, 3UU3
LINGLANG 2A03
LINGUIST 2E03, 2FL3, 3G03, 3Y03, 3Z03
MMEDIA 2I03
MUSIC 2A03, 2F03, 2I03, 2II3, 3T03, 3U03
PEACE ST 2A03, 2AA3, 2F03, 2I03, 2II3, 2S03, 3B03, 3I03, 3O03, 3XX3, 3YY3
PHILOS 2B03, 2C06, 2D03, 2E03, 2F03, 2G03, 2H03, 2N03
RELIG ST 2C03, 2FF3, 2M03, 2N03, 3E03, 3J03, 3K03, 3RR3, 3T03, 3U03
SOC SCI 2J03
SOTA 3B03, 3C03
SPANISH ..... 2A03, 2B03, 2D03, 3A03, 3B03, 3C03 (All taught in English)
THTR&FLM 2F03, 2G03, 2I03, 2S03, 2T03, 3G03
WOMEN ST 2B03, 2BB3, 2H03, 2HH3, 2L03, 3DD3, 3FF3, 3G03, 3GG3

UPPER-LEVEL COURSES AVAILABLE TO STUDENTS REGISTERED IN LEVEL III OR ABOVE OF ANY PROGRAM

ANTHROP 3HI3
ART HIST 3B03
CMST 3QQ3
EARTH SC 3DD3
GEOG 3RJ3
HEALTHST 3D03, 3E03, 3Y03
HLTH AGE 3H03
HISTORY 3S03
HTH SCI 3K03, 4BB3, 4II3, 4J03, 4O03
JAPAN ST 3S03
KINESIOL 3DD3, 3M03, 3SS3, 3T03, 3Y03
POL SCI 3AA3, 3CC3, 3D03, 3E03, 3EE3, 3F03, 3FF3, 3GG3, 3I03, 3KK3, 3LL3, 3N06, 3NN6, 3Q03, 3S03, 3U03, 3V03, 3Y03, 3Z03
RELIG ST 3L03, 3S03

DEGREES BY PROGRAM

★ 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.

SUBJECT	BACHELOR'S DEGREE	HONOURS DEGREE	COMBINED HONOURS	PROFESSIONAL DEGREE
Anthropology	B.A.★	B.A.★	B.A.★	
Art		B.A.	B.A.	
Art History	B.A.	B.A.	B.A.	
Arts & Science		B.Arts Sc.	B.Arts Sc.	
Automotive and Vehicle Technology ▪	B.Tech			
Biochemistry •		B.Sc.	B.Sc.	
Biology •		B.Sc.	B.Sc.; B.A.	
Biology and Environmental Sciences		B.Sc.		
Biology & Pharmacology •			B.Sc.	
Biotechnology ▪	B.Tech.			
Business Informatics ▪		B.A.Sc.		
Chemical Biology		B.Sc.		
Chemical Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Chemical Engineering & Bioengineering ▪				B.Eng.Biosciences
Chemistry •		B.Sc.		
Civil Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Civil Engineering Infrastructure Technology ▪	B.Tech.			
Classics	B.A.★	B.A.	B.A.	
Commerce				B.Com.; B.Com. (Honours)
Communication Studies		B.A.★	B.A.★	
Computational Biology		B.Sc.		
Computer Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Computer Science ▪		B.A.Sc.	B.Sc.; B.A.	
Computing and Information Technology ▪	B.Tech.			
Cultural Studies and Critical Theory			B.A.★	
Earth & Environmental Sciences		B.Sc.		
Economics	B.A.★	B.A.★	B.A.	
Electrical and Biomedical Engineering ▪				B.Eng.
Electrical Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Energy Engineering Technologies ▪	B.Tech.			
Engineering Physics ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
English	B.A.★	B.A.★	B.A.★	
Environmental Sciences	B.Sc.	B.Sc.		
French	B.A.★	B.A.★	B.A.★	
Geography	B.A.★	B.A.★	B.A.★	
Geography & Environmental Studies		B.A.		
Gerontology	B.A.★	B.A.★	B.A.★	
Health Sciences		B.H.Sc.		
Health Studies	B.A.★	B.A.★	B.A.★	
History	B.A.★	B.A.★	B.A.★	
Indigenous Studies	B.A. (Combined)			
Integrated Science		B.Sc.	B.Sc.	
Kinesiology		B.Kin.; B.Sc.Kin.		
Labour Studies	B.A.★	B.A.★	B.A.★	
Life Sciences	B.Sc.★	B.Sc.		
Linguistic Cognitive Science		B.A.	B.A.	
Linguistics		B.A.	B.A.	
Manufacturing EngineeringTechnology ▪	B.Tech.			
Materials Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Mathematical Science	B.Sc.★			
Mathematics			B.A.	
Mathematics & Statistics •		B.Sc.		
Mechanical Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Mechatronics Engineering				B.Eng.; B.Eng.Mgt.; B.Eng. Society.
Medical & Health Physics •		B.Sc.		
Medical Radiation Sciences	B.M.R.Sc.			
Medicine				M.D.
Midwifery				B.H.Sc.
Molecular Biology and Genetics •		B.Sc.		
Multimedia		B.A.	B.A.	
Music	B.A.	B.Mus.	B.A.	
Music Cognition		B.A.; B.Mus.; B.Sc.		
Nursing				B.Sc.N.
Peace Studies			B.A.	
Philosophy	B.A.★	B.A.★	B.A.★	
Physical Sciences	B.Sc.			
Physician Assistant				B.H.Sc.
Physics •		B.Sc.		
Political Science	B.A.★	B.A.★	B.A.★	
Process Automation Technology ▪	B.Tech.			
Psychology, Neuroscience & Behaviour	B.A.★	B.A.★; B.Sc.	B.A.★; B.Sc.	
Religious Studies	B.A.★	B.A.★	B.A.★	
Social Work				B.A./B.S.W.; B.S.W.★
Sociology	B.A.★	B.A.★	B.A.★	
Software Engineering ▪				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Software Engineering (Embedded Systems) ▪				B.Eng.
Software Engineering (Game Design) ▪				B.Eng.
Theatre & Film Studies	B.A.	B.A.	B.A.	
Women's Studies			B.A.	

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 (for academic purposes), 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 fulfils 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 enrols in a program of study and/or courses and pays, or makes acceptable arrangements to pay, all fees.

Reinstatement See *Reinstatement* in the *General Academic Regulations* 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 graduand.

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

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

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

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

Tuition is fees paid in consideration for enrolment in a 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 one term in length. Six-unit courses are usually two terms, or one session.

Weighted Average is calculated by multiplying the grade points achieved in each course by the number of units in each course, 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 I 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 three requirements:

1. An Ontario Secondary School Diploma (OSSD) with acceptable standing;
   AND
2. An overall average in completed Grade 12 U and/or 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/or M courses including the subject requirements for your chosen program.

Music External (Conservatory) 4M is acceptable as a credit and the mark obtained can be included in the calculation of your admission average. Alternatively, you may submit certificates from a recognized conservatory of music in Grade 8 practical and Grade 2 theory to your secondary school for one Grade M credit.

Admission Average

The Admission Average is normally calculated using the best six Grade 12 U and/or M grades, including those for all of the required subjects. However, the number of grades included in the admission average will be a minimum of three and a maximum of six and will depend on the number of grades available on our Admissions database at the time of assessment. 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 March. Early **conditional** admission is based on:

1. six appropriate midterm/interim Grade 12 U and/or M grades,
   OR
2. at least three final Grade 12 U and/or M grades PLUS enrolment in the appropriate additional three Grade 12 U and/or M courses.
3. In some cases, Grade 11 marks may be considered in extending early conditional offers of admission.

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

Admission offers made in April and May will be based on updated Grade 12 U and/or M grades. Some Faculties may review information you have supplied 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 I Programs)* above.

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

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

Minimum Final Average

If you are a 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, Honours Integrated Science 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 average ranges in May. For further information refer to our web site at registrar.mcmaster.ca/future/hs-supp-apps.html.

In some cases, the university may request letters of recommendation, personal history or other additional information to aid in the admission process.

Final Admission

Applicants may be eligible for final admission if they have fulfilled the requirements for their OSSD and have final grades in six Grade 12 U and/or M courses. If you fulfill the requirements for your chosen program by the end of February, you may be granted an offer of **final admission**.

If you do not receive a conditional offer of admission by May 26th, you may still be considered for final admission, once final marks are received, depending on availability of space in your chosen program.

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/or M courses and achievement of the OSSD.

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

1. You do not respond to the Ontario Universities' Application Centre (OUAC) by the response deadline indicated on your offer letter;
   OR
2. 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, 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. McMaster does not normally grant a deferral of an offer of admission 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, 2009, 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 105D 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.

McMaster University offers 18 Level I programs: Arts & Science I, Business I, Computer Science I (regular and co-op), Engineering I (regular and co-op), Environmental and Earth Sciences I, Health Sciences I, Humanities I, Honours Integrated Science I, Honours Kinesiology I, Life Sciences I, Mathematics and Statistics I, Medical Radiation Sciences I, Midwifery I, Music I, Nursing I, Physical Sciences I, Social Sciences I and Technology I.

➢ 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/artsci/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 range in the upper 80's 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
4. It is **strongly recommended** that you take Grade 12 U Calculus and Vectors. The course may be taken in summer school.

➢ BUSINESS I {0725}

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

1. English U
2. Two of Advanced Functions U, Calculus and Vectors U, and Mathematics of Data Management U
3. Completion of three additional U or M courses to total six credits

Principles of Financial Accounting M is recommended.

In recent years an average range in the low to mid 80's has been 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
3. Two of Biology U, Chemistry U, Physics U, Earth and Space U, Computer and Information Science M, or Computer Engineering M
4. Completion of two additional U or M courses to total six credits

Students are also expected to have completed Advanced Functions U.

In recent years an average range in the high 70's to low 80's has been required for an offer of admission.

➢ 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

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

➢ ENVIRONMENTAL AND EARTH SCIENCES I {0211}

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

1. English U
2. Advanced Functions U or Calculus and Vectors U
3. One of Biology U, Chemistry U
4. One of Advanced Functions U, Biology U, Calculus and Vectors U, Chemistry U, Physics 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 range of 90% or higher 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, or 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-70's 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, francais, other languages, History and Music) in addition to Requirement 1 above.

Admission to Art:

When applying for admission using the OUAC application, applicants who wish to study Art should select the **MH** OUAC code and choose **Studio Art** for the Subject of Major Interest.

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.

- 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. 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 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}

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 must present a minimum average in the high 80's.

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 course to total six credits

➢ **HONOURS KINESIOLOGY I** **{0309}**

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

1. English U
2. Advanced Functions U or Calculus and Vectors U
3. Biology U
4. Completion of three additional U or M courses to total six credits. 4U courses strongly recommended include Calculus and Vectors U and Exercise Science U.

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

➢ **LIFE SCIENCES I** **{0312}**

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

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

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

➢ **MATHEMATICS AND STATISTICS I** **{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

In recent years an average range in the high 70's to low 80's has been required for an offer of admission.

➢ **MEDICAL RADIATION SCIENCES I** **{0345}**

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

1. English U
2. Advanced Functions U or Calculus and Vectors U
3. Biology
4. Chemistry U
5. One of Advanced Functions U, Calculus and Vectors U or Physics U (both Calculus and Vectors U and Physics U are recommended)
6. Completion of one additional U or M course to total six credits

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

➢ **MIDWIFERY I** **{6501}**

As places in the Midwifery program are very limited, the admission process is competitive. Admission into the Midwifery Education Program is by selection. **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 to apply students must obtain a minimum grade of 75% in each of the three required courses listed in points 1, 2, and 3 above AND an overall average, including the required courses, that is acceptable to the Program.

In recent years an average range in the mid to high 80's has been required to move forward to the admissions interview stage.

➢ **MUSIC I** **{0370}**

The academic requirements are the same as for Humanities I. In addition, applicants to Music I or to the B.A. in Music must successfully complete a music audition/examination consisting of:

1. Demonstration of technique (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 I** **{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. (A) (formerly (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.

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 to high 80's 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.

➢ **PHYSICAL SCIENCES I** **{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. Physics U
6. Completion of one additional U or M courses to total six credits

In recent years an average range in the high 70's to low 80's has been required for an offer of admission.

➢ **SOCIAL SCIENCES I** **{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

In recent years an average in the mid-high 70's has been required for an offer of admission. Advanced Functions U or Calculus and Vectors U is strongly recommended for students planning to enter programs in Economics or Psychology. Biology U is recommended for students planning to enter a program in Psychology.

➢ **TECHNOLOGY I** **{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 course to total six credits

In recent years a minimum overall average range of 75% or higher is required for an offer of admission.

B. Other Canadian Provinces and Territories

McMaster welcomes applications from other provinces and territories. Applicants are required to meet the following minimum requirements. Applicants must also include the specified subject requirements (not listed below) for their chosen program. For a complete listing of our specific course requirements by province and Level I program you may refer to our web site: 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 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.

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 completing Year II or III CEGEP who will or have achieved the DEC will be considered for advanced credit in their chosen program. The Côte de Rendement (R Score) is 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 *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. Applicants will be considered for admission if they meet or exceed the minimum average range 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 high school transcripts to be sent to McMaster University directly from their high school well in advance of the session to which they are applying. The equivalent of first-class standing will be required for some limited enrolment programs. Documents in a language other than English should be accompanied by notarized English translations.

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. Admission is competitive and many programs will require grades/averages above the minimum 80% for admission consideration. Refer to *Subject Requirements For Specific Level I Programs* listed under *Ontario* in this section.

American Curriculum applicants must also present results from the Critical Reading and Mathematics components of **SAT I** with a minimum combined score of 1200 (minimum 580 Critical Reading, 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 G.C.E. 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 Physical Sciences and Engineering programs, Mathematics and one of Physics or Chemistry must be offered at the Advanced Level; for all other Science programs, Mathematics and one of Biology, Chemistry or Physics will be required.
3. Grades of at least *C* must be presented in each of the Ordinary and Advanced Level subjects. Some programs may 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/oia/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 at an Ontario Ministry of Education inspected and approved school, or equivalent courses from another recognized academic jurisdiction may be considered for their program of choice providing they present the appropriate 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, evidence of appropriate intellectual maturity is expected.

3. Results of standardized tests such as SAT, ACT. For SAT I, a minimum 1200 combined score for the Critical Reading and Math Components of the SAT I Tests is required. Minimum scores of 580 in Critical Reading and 520 in Mathematics are required. For ACT, a minimum composite score of 27 is required.

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 *Subject Requirements For Specific Level I Programs* section in this calendar.

If you have attended a post-secondary institution after high school graduation, you would 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-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 amount of available transfer credits 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 Grade 12 English U and one of Advanced Functions or Calculus and Vectors U (or equivalent).
3. Admission is by selection upon review of the mandatory supplementary application and college and high school transcripts to determine eligibility.

Note: Exceptional grades are normally required for admission consideration.

➢ **BUSINESS**

1. Completion of a two or three-year diploma.
2. A cumulative GPA of 3.4 or better.
3. Successful completion of three Mathematics courses at the college level or a Grade 12 Mathematics U course (new Ontario curriculum) or equivalent.

➢ **COMPUTER SCIENCE (REGULAR AND CO-OP)**

1. Completion of a three-year diploma.
2. A minimum cumulative GPA of 3.2.
3. Successful completion of Grade 12 Calculus and Vectors U (or equivalent) and two of Grade 12 Biology U, Chemistry U or Physics U.

OR

1. Completion of a two-year diploma.
2. A minimum cumulative GPA of 3.0.
3. Successful completion of Grade 12 Calculus and Vectors U (or equivalent) and two of Grade 12 Biology U, Chemistry U or Physics U.

➢ **ENGINEERING (REGULAR AND CO-OP)**

1. Completion of a three-year technology diploma program.
2. A cumulative GPA of 3.2 or better.
3. Successful completion of Grade 12 Calculus and Vectors U (or equivalent), Chemistry U and Physics U.

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.
2. A minimum cumulative GPA of 3.2.
3. Completion of Grade 12 Advanced Functions U or Calculus and Vectors U; and Biology U or Chemistry U; and one of Advanced Functions U, Calculus and Vectors U, Biology U, Chemistry U or Physics U (or equivalent from other jurisdictions).
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

➢ **BACHELOR OF HEALTH SCIENCES (HONOURS)**

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.

➢ **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.

OR

1. Completion of a two-year or three-year diploma program.
2. A minimum cumulative GPA of 3.0.
3. Application will be reviewed for transfer credit.

➢ **HONOURS INTEGRATED 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* in this section of the Calendar. A mandatory supplementary application is required and admission is by selection.

➢ **HONOURS KINESIOLOGY**

1. Completion of a two or three-year diploma program.
2. A cumulative CPA of 3.5 or better.
3. Successful completion of Grade 12 courses in either Advanced Functions U, Calculus and Vectors U; and Biology U (or equivalent from other jurisdictions).
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

Note: All students accepted into this program will be required to complete the Level I required Kinesiology courses.

➢ **LIFE SCIENCES**

1. Completion of a minimum of a two-year or three-year diploma program.
2. A minimum cumulative GPA of 3.5.
3. Completion of Grade 12 Advanced Functions U or Calculus and Vectors U; and Biology U; and one of Advanced Functions U, Calculus and Vectors U, Chemistry U or Physics U (or equivalent from other jurisdictions).
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

➢ **MATHEMATICS AND STATISTICS**

1. Completion of a minimum of a two or three-year diploma program.
2. A minimum cumulative GPA of 3.0.
3. Completion of Grade 12 Advanced Functions U and Calculus and Vectors U (or equivalent from other jurisdictions).
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* in this section of the Calendar.

Note: All students accepted into this program will be required to complete the Level I required Medical Radiation Sciences courses.

➢ **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 Applied Music from Mohawk College.
2. A minimum cumulative GPA of 3.0. (Audition will be waived and, depending on grades achieved, applicants may receive up to 51 units of advanced credit.)

➢ **NURSING**

1. Completion of an Ontario one-year certificate in pre-health sciences.
2. A minimum cumulative GPA equivalent to the required high school admission average.
3. Completion of at least two semesters (two credits) of Biology, Chemistry, English and Mathematics.
4. Selection will be based on academic qualification and a rating obtained on a questionnaire completed by the applicant. An interview may also be required.

OR

1. Completion of a two-year Ontario diploma in Practical Nursing.
2. A minimum cumulative GPA of 3.0 or higher.
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 or three-year diploma program.
2. A minimum cumulative GPA of 3.2.
3. Completion of Grade 12 Advanced Functions U, Calculus and Vectors U, Chemistry U and Physics U.
4. Admission is by selection upon review of high school and college transcripts to determine eligibility.

➢ **SOCIAL SCIENCES**

1. Completion of a certificate or 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.

OR

1. Completion of a two-year or three-year diploma program.
2. A minimum cumulative GPA of 3.0.
3. Application will be reviewed for transfer credit.

➢ **TECHNOLOGY**

1. Completion of at least one year of work in a diploma program.
2. A minimum cumulative GPA of 2.8.
3. Completion of Grade 12 Calculus and Vectors U, Chemistry U and Physics U.

➢ **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 four exceptions: B.Com. (Bachelor of Commerce), B.Com. (Honours), B.H.Sc. (Bachelor of Health Sciences (Honours)) and any Honours Multimedia program 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 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 undergraduate degree program and wish to become a Continuing Student, you do not need to apply for admission. You may submit a registration. Registrants who have not attended courses for more than two years will need to contact the Office of the Registrar prior to attempting to register for courses.

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 in the School of Graduate Studies. If you plan to proceed to a graduate degree you should apply directly to the specific department of your 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 (AIHLJE) or institutions listed by 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 (CAATS). 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 3.2 (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:

Applicants 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 the daytime offerings in the Fall/Winter there is a wide selection of evening classes available in the Fall/Winter and Spring/Summer sessions. There is a limited number of daytime classes scheduled for the Spring/Summer session.

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.

Applicants who wish to pursue undergraduate studies on a part time basis at McMaster must meet one of the admissions 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.

In addition, students with questions about part-time studies may seek assistance through The McMaster Association of Part-time Students (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, provided both 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.

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 one Grade 12 U Mathematics course (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 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 grade of 70% in each course.
- **Physical Sciences I**: requires satisfactory standing in four Grade 12 U mathematics and science 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 Nursing 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.

Enrolment 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: Arts & Science I, Computer Science I, Engineering I, Health Sciences I, Honours Integrated Science 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. Seniors

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).

D. Visiting Students (Letter of Permission - For Credit At Another University)

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

You must initially apply through the Ontario Universities' Application Centre (OUAC) and send your Letter of Permission and an 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. 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 to the Office of the Associate Dean of the Faculty offering the course at McMaster. If you are attempting to register in courses offered by more than one Faculty, you must obtain approval from each Office of the Associate Dean.

E. 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 in which 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 enrolling 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, 2009 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 and required official documents.

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.

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 rigour. Insofar as possible, acceptance of transfer credit shall allow for the maximum recognition of previous learning experience in university-level courses;
2. Subject to degree, grade and 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.**

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;
4. your secondary school record.

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 a 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 (ie. 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 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:

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

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

iii. Attended, in full-time academic studies (non-ESL), an accredited English medium University for at least one year, OR

iv. 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.

APPLICATION PROCEDURES

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 105D 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/105/.**

D. University/College Transfer/Continuing 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/chs-retur.htm**.

3. **Reinstatement:** If you are a former McMaster student who was required to withdraw from studies at McMaster.

➢ Obtain the *Reinstatement Request Form* 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 from an undergraduate program 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-partt.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-partt.html**.

➢ 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/deptforms.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. An official transcript is a signed and sealed record of academic achievement issued and sent by an academic institution directly to McMaster University, Office of the Registrar, Admissions.

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

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 programs have enrolment limits and may become full prior to published deadlines. The University reserves the right, at its sole discretion, not to accept, process or adjudicate applications or amendments to applications to any program at any time.

A. FALL/WINTER SESSION (SEPTEMBER 2008 ENTRY)

Undergraduate programs which are not specified below: . (May 1)

- ➢ International Applications ..... (April 1)
- ➢ International Documentation ..... (April 1)
- ➢ Domestic Applications ..... (May 1)
- ➢ Domestic Documentation ..... (May 15)
- ➢ Optional Supplementary Application for Level I Programs ..... (April 30)
- ➢ Arts & Science Applications ..... (February 5)
  - Supplementary Applications ..... (February 5)
- ➢ Level III Science Cooperative programs ..... (February 1)
- ➢ Health Sciences (Honours) Applications ..... (February 5)
  - Supplementary Applications (Level I) ..... (February 5)
  - Supplementary Applications (Above Level I) ..... (April 23)
- ➢ Integrated Science (Honours) Applications ..... (February 5)
  - Supplementary Applications ..... (February 5)
- ➢ Medicine ..... (October 1)
- ➢ Midwifery Applications ..... (February 1)
  - Official Transcripts ..... (February 1)
  - Midwifery Application Forms** ..... (February 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+ ..... (February 5)
  - Supplementary Applications ..... (February 5)
- ➢ Social Work
  - McMaster Applicants ..... (March 1)
  - All Others ..... (December 1)
  - Supplementary Applications*** ..... (March 1)

* Nursing I applicants, with the exception of current secondary school students, need to complete the mandatory supplementary application. The form is available on-line 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.

\+ Further admission information and supplementary application information and instructions for the Physician Assistant program can be found at www.fhs.mcmaster.ca/physicianassistant/prospective_students.html

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 will attend the University. Your admission package will include information regarding acceptance procedures for the offer of admission and 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.macADMIT.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.

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 hold-back 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 Faculty 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. (Please 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 overload 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 nor write the final examinations. You will not be permitted to register for credit in the course after the registration deadline for the session has passed.

■ **Letters of Permission:** If you 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 that might apply, including the requirement of a grade of at least C- for transfer credit. You should note that the grades obtained in courses taken at another university will not be included in the Cumulative Average. Full-time students taking courses on a Letter of Permission must continue to carry a full load at McMaster during the Fall/Winter session if they wish to be considered for Undergraduate In-course Academic Awards; i.e. courses taken on a Letter of Permission do not count toward your load for purposes of academic awards.

■ **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 attempted the full load of Level I. Decisions will be made on an individual basis, according to the special circumstances that apply in the particular case.

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

At the review when you complete the Level I work, if you attain a CA of at least 3.0 and have not previously been on academic probation, but fail to meet the admission requirements of any 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 a program outside the Arts & Science Program. You may be on academic probation only once. (Potential graduands may not continue at the University.)

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

➢ SCHOOL OF BUSINESS

■ **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.

➢ FACULTIES 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, 1E03, 1F03, 1G03.

Upon completion of Kinesiology I, students who have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03 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, 1E03, 1F03, 1G03 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, 1E03, 1F03, 1G03 and whose CA is between 3.5 and 5.4 may register in Level II Kinesiology General for one reviewing period. Such students must attend a mandatory pre-registration counselling session with an Academic Advisor. Eligibility to be considered for transfer to Honours Kinesiology at the next review requires a CA of at least 6.0.

■ **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.

➢ FACULTY 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, 1E03, 1F03, 1G03.

If, upon completion of Honours Kinesiology I, you have achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03 and have a CA between 5.5 and 5.9, you may register in Level II Honours Kinesiology but will be placed on program probation for one reviewing period. You 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, 1E03, 1F03, 1G03 and have a CA between 3.5 and 5.4, you may register in Level II 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, 1E03, 1F03, 1G03 and your CA is at least 3.5, you may register in Level II Kinesiology General for one reviewing period. Such students must attend a mandatory pre-registration counselling session with an Academic Advisor. Eligibility to be considered for transfer to Honours Kinesiology at the next review requires a CA of at least 6.0. 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 5.0 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 session on 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.

If you wish to receive a Minor, you should check the information under the heading Minor in the appropriate department's listing. McMaster also offers Interdisciplinary Minors in Archaeology and Jewish Studies. (See *Interdisciplinary Minors and Thematic Areas* section.) You will be responsible for ensuring that you register in the required Minor courses. Normally, you must complete a minimum of 24 units in the Minor subject. No more than six of these units can be at Level I, unless otherwise stated in the specific requirements of the minor. At least 18 units must be completed at McMaster.

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

Minors cannot be revoked once approved. (See *Note 4* under *Second Bachelor's Degree Programs.*)

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.

- **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 take 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.
- **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.
- **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.
- **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.
- **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* in this section of the Calendar.))
4. Extra courses taken while you are registered in a first degree program, or courses completed as a Continuing Student, may, with the approval of the Faculty, be applied to the second degree program.
5. You must meet 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.
   If the petition is granted, the Faculty office will notify the instructor(s) recommending relief.
9. The student must contact the instructor promptly to discuss the appropriate relief.
10. 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 requesting a deferral of the examination to the Faculty office, normally within five working days of the missed examination. The petition must be based on compelling medical, personal or family reasons.

2. See steps **1.** - **6.** in *Petitions for Relief for Missed Term Work* above.
3. It is the student's responsibility to check with the Faculty office for a decision on the petition for a deferred examination.
4. If the deferred examination is granted, the student will be informed officially by means of the notation DEF which will appear against the relevant course on the student's academic record (available on MUGSI) and on the student's grade report.
5. Deferred examinations are written during the next official University deferred examination period. Default of the deferred examination will result in a failure for that examination except in the case of exceptional circumstances (see *Petitions for Missed Deferred Examinations* below).
6. Students who have been granted more than one deferred examination may be required by their Faculty/Progam 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.
7. At the discretion of the Faculty/Program office, students who have been granted one or more deferred examinations, may not be allowed to register in a subsequent session until all deferred examination(s) have been completed and the *Result of Session* calculated. Students will be notified of this decision by their Faculty/Program office or on their End of Session Grade Report.

Appeals of Petitions for Special Consideration

In accordance with the Student Appeal Procedures, decisions made on Petitions for Special Consideration are final and cannot be appealed except if a student feels his/her human rights have been violated, in which case there is an appeal to the Senate Board for Student Appeals.

4. EXAMINATIONS

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

Other instructor-scheduled tests and examinations may be held throughout each session but may not be scheduled during the last five days of the terms of the Fall/Winter session, or between the last day of classes for the term and the first day of the examination schedule, except as approved by the Undergraduate Council. Assignments worth more than ten percent of a final course grade cannot be assigned during this ban period, and take-home examinations worth more than ten percent of a final course grade cannot be due during the ban period. Tests that are exempt from the ban must:

a) be a part of a process of continuous or periodic assessment through the term; and
b) be held in the normally scheduled class or lab slot; and
c) be worth no more than ten percent of the final course grade.

See the *Sessional Dates* section of this Calendar.

Examinations Conducted by the Office of the Registrar

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

■ You may only use books, papers or instruments during an examination if they are specifically prescribed on the examination paper. 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, and it is still in progress, report immediately to the presider in your examination location.

■ 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.) This allows sufficient time 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.

Deferred 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.

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/Progam 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.

At the discretion of the Faculty/Program office, students who have been granted one or more deferred examinations, may not be allowed to register in a subsequent session until all deferred examination(s) have been completed and the Result of Session calculated. Students will be notified of this decision by their Faculty/Program office or on their End of Session Grade Report.

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:

Cours Grade	Grade Points		Cours Units		
A-	10	x	6	=	60
C+	6	x	3	=	18
B	8	x	6	=	48
B+	9	x	3	=	27
Total			18		153

To calculate Average: 153 / 18 = 8.5

◆ Since September 1982, the grading scale has been:

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

6. 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.Eng., B.Eng.Biosciences, B.Eng.Mgt., B.Eng.Society — 4.0
- 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 five years after the end of your enrolment at the University (regardless of whether you graduate).

COLLECTION AND DISCLOSURE OF PERSONAL INFORMATION

COLLECTION OF PERSONAL INFORMATION AND THE PROTECTION OF PRIVACY

McMaster University collects and retains personal information of students, alumni and other parties, including but not limited to professors, staff, visiting academics and private citizens using services provided by McMaster University, under the authority of the *McMaster University Act*, (1976). This information is used for the academic, administrative, employment-related, financial and statistical purposes of the University, including for the administration of admissions, registration, awards and scholarships, convocation, alumni relations and other fundamental activities related to being a member of the University community, a user of services provided by McMaster or an attendee of, or applicant to, a public post-secondary institution in the Province of Ontario. The information will be used, among other things, to admit, register and graduate students, record academic achievement, issue library cards and, where applicable, local transit passes, to provide access to information systems and to operate academic, financial, athletic, recreational, residence, alumni and other University programs. Information on admissions, registration and academic achievement may also be disclosed and used for statistical and research purposes by the University, other post-secondary educational institutions and the federal and provincial governments. The names of alumni, their Faculty and program, award information, degree(s) awarded and date of graduation is considered public information and may be published by McMaster University. In addition, student photographs posted by the University in the form of individual pictures or class pictures may be publicly displayed. Aside from the foregoing, the information you provide and any other information placed in a student record, or in a personnel record, will be protected and used in compliance with Ontario's *Freedom of Information and Protection of Privacy Act* and will be disclosed only in accordance with this Act. If you have any questions about the collection and use of this information, please contact the University Registrar, University Hall, Room 209; McMaster University Student Records, Gilmour Hall, Room 108; or the University Secretary, Gilmour Hall, Room 210, McMaster University.

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.

SENATE POLICY STATEMENTS

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
- 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 knowlingly 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. Students are encouraged to view: www.mcmaster.ca/academicintegrity for further information on academic integrity and how to avoid academic dishonesty.

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 in part or in full the cost of providing course materials, accommodation and transportation for field trips, and the costs of breakages.

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

Fees shown below are for 2008-2009. The fee schedules for 2009-2010 are available on the internet at http://www.mcmaster.ca/bms/student/ in the spring of 2009.

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

Base Per Unit Tuition Per Faculty

Faculty/Program	Canadian/ Permanent Resident Status	Visa Status
➢ Arts & Science Level I	157.22 per unit	457.50 per unit
➢ Arts & Science Level II	156.47	457.50
➢ Arts & Science Level III	155.72	457.50
➢ Arts & Science Level IV	154.97	457.50
➢ Business Level I	190.07	475.09
➢ Commerce Level II	183.03	475.09
➢ Commerce Level III	176.25	475.09
➢ Commerce Level IV	169.72	475.09
➢ Engineering Level I	205.03	571.92
➢ Engineering Level II	197.43	571.92
➢ Engineering Level III	190.12	571.92
➢ Engineering Level IV	183.08	571.92
➢ Eng. Mgt. Levels II, IV	185.43	629.11
➢ Eng. Mgt. Levels III, V	183.08	571.92
➢ Eng. B.Tech. Level I	162.00	515.16
➢ Eng. B.Tech. Levels II, III, IV	156.00	515.16
➢ Eng. Computer Science Level I	162.49	457.50
➢ Eng. Computer Science Level II	156.47	457.50
➢ Health Sciences (Honours) Level I	157.22	481.85
➢ Health Sciences (Honours) Level II	156.47	481.85
➢ Health Sciences (Honours) Level III	155.72	481.85
➢ Health Sciences (Honours) Level IV	154.97	481.85
➢ Humanities Level I	157.22	402.38
➢ Humanities Level II	156.47	402.38
➢ Humanities Level III	155.72	402.38
➢ Humanities Level IV	154.97	402.38
➢ Honours Kinesiology I	157.22	402.38
➢ Nursing Level I	157.22	481.85
➢ Nursing Level II	156.47	481.85
➢ Nursing Level III	155.72	481.85
➢ Nursing Level IV	154.97	481.85
➢ All Science Level I programs	157.22	457.50
➢ Science Level II	156.47	457.50
➢ Science Level III	155.72	457.50
➢ Science Level IV	154.97	457.50
➢ Social Sciences Level I	157.22	402.38
➢ Social Sciences Level II	156.47	402.38
➢ Social Sciences Level III	155.72	402.38
➢ Social Sciences Level IV	154.97	402.38

Supplementary Fees

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

Athletics and Recreation Activity Fee	$4.53
Administrative Services Fee	1.06
McMaster Association of Part-Time Students Fees:	
Organization Fee	$5.00
Total Charge per unit	$10.59
Nursing Students Add:	
Learning Resource Fee	$7.79
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	$101.99
Student Health Service	$52.19
SOLAR Car	$1.00
Ontario Public Interest Research Group (OPIRG)	$6.88

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	$108.55
Health Plan Premium*	45.00
Dental Plan Premium*	95.00
H.S.R. Bus Pass	94.80
WUSC Student Refugee Fee	1.34
Ancillary Fee for CFMU-FM	15.93
Ancillary Fee for MARMOR Yearbook	8.29
Incite Publication	0.86
Sub Total	**$531.83**

***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 ($2.92 per unit), to a maximum of $87.60
- Student Services Fee ($3.98 per unit), to a maximum of $119.40
- Administrative Services Fee ($1.06 per unit), to a maximum of $31.80
- Athletics and Recreation Building Fee ($2.65 per unit), to a maximum of $79.50

And Faculty Specific Society/Support Fees as Follows:

Arts & Science	28.00
Bachelor of Health Sciences (Honours)	26.00
Commerce	184.53
Engineering	132.00
Humanities	15.62
Medical Radiation Science Collaborative Fee	119.73
Nursing	215.82
Science	35.00
Social Sciences	50.60

Canadian Citizens, Landed Immigrant Students and Visa Students

The fee schedules for 2008-2009 are available on the internet at http://www.mcmaster.ca/bms/student/SAC_students_fees.htm. The 2009-2010 schedules will be available in the spring of 2009.

Student Health Services Fees

The supplementary student health services fee of $52.19 supports the on-campus clinic facilities, which provide the services of doctors and nurses. The McMaster Students Union Health Plan Premium fee of $45.00 includes reimbursement of expenses resulting from an accident incurred during the academic year, where such expenses are not recoverable under the Ontario Health Insurance Plan. The McMaster Students Union Dental Plan Premium fee of $95.00 provides a dental plan for all full-time undergraduates students enrolled in 18 units or more.

For details concerning coverage, contact the McMaster Students Union Office at ext. 21000 or visit their website at http://www.msu.mcmaster.ca/health.

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.

Co-op Fees

Co-op students attending the full academic term (September-April) should add a $1,100.00 Co-op Fee to the regular 30 unit Science fee. Co-op students attending one academic term should pay half the 30 unit Science fee plus a $550.00 Co-op Fee.

Listeners

You may register as a Listener in some degree courses. A Listener simply audits the course and does not receive a grade. Listener status is not available in limited enrolment classes. The Listener fee is one-half of the standard tuition fee. For any degree course, written permission to attend must be obtained from the course instructor before registration is finalized by the Office of the Registrar. Listeners withdrawing from a course may do so without penalty up to five working days before the first session. After that and before the second class, an administrative fee of $60.00 applies. There is no refund after the second class.

This category excludes currently registered students, who may audit a course. See *Admission Requirements* section in this Calendar for details.

Persons Aged 65+

Subject to meeting admission and prerequisite requirements, if you will be aged 65 or over during the academic session for which you are registering, you may register without payment of tuition and supplementary fees.

RESIDENCE AND MEAL PLAN FEES

Regular Session

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

The fees below are those for 2008-2009.

The Inter-Residence Council also levies an additional fee of $42.93 per student. For more information on the IRC, visit http://www.mcmaster.ca/irc/about.html.

RESIDENCES

Traditional Residences	Full Payment	Installment Payment
➢ Bunk and Loft Triple Room	3,805.00	2,203.00
➢ Quad Room	4,325.00	2,463.00
➢ Double/Triple Room	4,550.00	2,575.00
➢ Double Room with Washroom	4,840.00	2,720.00
➢ Single Room	5,020.00	2,810.00
➢ Single Room with Washroom	5,330.00	2,965.00

Apartment Style Residences	Full Payment	Installment Payment
➢ Bates Apartment Room	5,830.00	3,215.00
➢ Mary E. Keyes Suite Room	6,110.00	3,355.00

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 2008-2009.

Group A Full Meal Plan

(Available to all residence students)

	Full Payment	Installment Payment
• Light	2,500.00	1,250.00
• Small	2,700.00	1,350.00
• Regular	2,900.00	1,450.00
• Large	3,100.00	1,550.00
• X-Large	3,300.00	1,650.00

Group B Reduced Meal Plan

(Available to Bates and Mary E. Keyes Residence students only)

	Full Payment	Installment Payment
• Light	1,850.00	925.00
• Small	2,050.00	1,025.00
• Regular	2,250.00	1,125.00
• Large	2,450.00	1,225.00
• X-Large	2,650.00	1,325.00

For more information on meal plans visit our web page at http://hospitality.mcmaster.ca/ or contact Mac Express, Commons Building , Room 128, telephone (905) 525 9140, ext. 27448, email express@mcmaster.ca.

For information regarding applying to residence visit the Housing web page at http://housing.mcmaster.ca/ or contact Residence Admissions, Commons Building, Room 101, telephone (905) 525 9140, ext. 24342, 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 but no later than September 1st. 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.

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.

NOTE: Graduands who have outstanding accounts with the University will be permitted to attend convocation, but will not receive their diplomas until their accounts have been cleared in full.

Refunds

If you are forced, by illness or other personal reasons, to withdraw from courses, you will be charged a partial fee for courses that are cancelled. The charge is determined by the date on which notices of withdrawal in writing are received at the Office of the Dean of the appropriate Faculty. A full refund will be given for courses dropped until the end of the drop and add period. The 2009-2010 cancellation schedule will be available on the internet at http://www.mcmaster.ca/bms/student/pdf/fees_cancellation.pdf in the spring of 2009.

MISCELLANEOUS FEES

The following fees were in effect for the 2008-2009 academic year, and are over and above assessed academic fees, supplementary fees, and residence fees and meal plan fees.

Academic User Fees

- Applications for re-admission 50.00
- Applications to Part-Time Studies 50.00
- Certification of Enrolment Fee ..... No fee
- Contribution to Psycho-Educational Assessment 200.00
- Diploma Delivery Fee (not charged for pick-up at University) 25.00
- Examination Reread (Refunded if grade is changed) .. 50.00
- Graduation Fee (Service) for those attending 40.00
- Letter of Permission ..... No fee
- Notarizing Fee (plus $0.50 per page over 10 pages) . No fee
- Photocopying of Examination Script 10.00
- Replacement of Diploma 50.00
- Production of Student I.D. Card at Exams 30.00
- Replacement of Student I.D. Card 30.00
- Replacement of Student I.D. Card/ computer proximity chip 40.00
- Rush Transcript Fee (24 hour rush service) 15.00
- Supervision of Examinations at Other Universities 75.00
- Transcript per copy (students who are not covered under Service Fee agreements) 10.00
- Transcript Evaluation (non-refundable) 60.00

Financial/Administrative User Fees

- Certificate Replacement Fee .....
  Income Tax Receipt/Education Credit Certificate ..... No fee
- Certification of Fee Payment ..... No fee
- Meal Plan Withdrawal Fee 50.00
- Meal Card Misuse Fine 25.00
- Returned Cheque Charge (NSF, Stopped Payment)
  - First Occurrence 50.00
  - Each Subsequent Occurrence (Additional) 10.00
- Late Payment Agreement Fee 50.00
- Late Payment Fee 35.00
- Payment Agreement Default Fee 35.00
- Deferment Fee 35.00
- Monthly Payment Plan Application Fee 35.00
- Reinstatement Fee 100.00
- Locker Rental Small 20.00
- Locker Rental Wide 25.00
- Library Charges
  - Overdue Recalled Books (per day) 2.00
  - Overdue Reserve Material (per hour) 2.00
  - Replacement Cost, plus Fine: up to 100.00
  - Returned Books After Billing 25.00

EXPENSES

Costs Other Than Fees For Students in Clinical Courses

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

If you are a Nursing student, your uniform and accessories are ordered under the direction of the School of Nursing. The approximate cost is $100.00. Level I Nursing students are also required to purchase a stethoscope at approximately $100.00 and a basic blood pressure cuff at approximately $40.00.

Registration Examinations

Graduates of the B.Sc.N. program can expect to pay fees (currently, approximately $471.04) 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/artsci
Commons Building, Room 105
Ext. 24655, 23153

Director

P.G. Sutherland/B.Sc., M.S., Ph.D.

Program Administrator

D. Crnac/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 reference to the life of the being possessing it."

— The Aims of Education and Other Essays, 1929

The core curriculum consists of courses offered by the Council of Instructors of the Arts & Science 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 MUGSI/SOLAR is available to them.

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**

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.

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

IInquiry 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 (ARTS&SCI 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. Six units of upper-level inquiry are required and are normally taken in Level III or IV.

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. 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. **On-line application for Admission to Level II (March) is required for all 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 Departmental 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

ARTS & SCIENCE PROGRAM

B.Arts Sc. (Honours) {2027}

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 1A03,1AA3; 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, 4A09, 4A12, 4C06, 4C09, 4C12, 4EE6
12-18 units	Electives

ARTS & SCIENCE AND ANOTHER SUBJECT

Established Combined Honours programs are listed below. Students are encouraged to consult the Director of the Arts & Science Program by September of Level II for consideration of other possible combinations. Application for Admission to Level II (mid-March) is required for all Combined Honours Programs. Combined Honours Program descriptions are available on the web (http://www.mcmaster.ca/artsci) or from the Arts & Science Program Office.

Combined Honours Programs, Arts & Science and:

Anthropology	{2027010}
Art (Studio)	{2027028}
Art History	{2027029}
Biochemistry	{2027040}
Biology	{2027050}
Biology (Biodiversity Specialization)	{2027812}
Molecular Biology and Genetics	{2027365}
Chemistry	{2027070}
Classics	{2027130}
Comparative Literature	{2027142}
Computer Science	{2027145}
Economics-Option A	{2027151}
Economics-Option B	{2027152}
English	{2027200}
Environmental Science	{2027211}
French - Program A	{2027230}
French - Program B	{2027231}
Geography	{2027240}
Health Studies	{2027273}
History	{2027290}
Linguistics	{2027312}
Mathematics	{2027320}
Multimedia	{2027294}
Origins Specialization	{2027412}
Peace Studies	{2027417}
Philosophy	{2027420}
Physics	{2027440}
Political Science	{2027450}
Psychology	{2027460}
Religious Studies	{2027475}
Sociology	{2027520}
Theatre & Film Studies	{2027551}
Women's Studies	{2027642}

DeGROOTE SCHOOL OF BUSINESS

(FACULTY OF BUSINESS)

WEB ADDRESS: http://www.degroote.mcmaster.ca
EMAIL ADDRESS: buscom@mcmaster.ca
DeGroote School of Business, Room 104
Ext. 24433

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Associate Dean of Business, Academic
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Director, Undergraduate Programs
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Manager, Undergraduate Programs
A. Shanks
Academic Advisor
L. Hill
Academic Advisor
B. Pegg/B.A.
Academic Advisor
M. Burley

The School of Business offers two programs, each of which spans four levels of study. The Honours Commerce program, which leads to the Honours Bachelor of Commerce (Honours B.Com.) degree, allows substantial concentration in business subjects beyond the essential core of studies. The Commerce program, which leads to the Bachelor of Commerce (B.Com.) degree, contains essential grounding in business subjects and promotes the broadening of horizons through studies in Social Sciences, Humanities and Science. These programs are referred to collectively as the Commerce programs.

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

Also, the School of Business participates in the Committee of Instruction and offers courses for programs in Labour Studies which are described in the *Faculty of Social Sciences* section of this Calendar.

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 2009-2010 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, 4O06

All Religious Studies courses

ECON 2F03	The Political Economy of Development
ECON 3H03	International Monetary Economics
ECON 3HH3	International Trade
ECON 3I03	Economic History of the United States
ECON 3LL3	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)
GEOG 1HB3	Human Geographies: City and Economy
GEOG 3RJ3	Geography of Japan
GEOG 3RW3	Geography of a Selected World Region
GEOG 3UR3	Urban Residential Geography
KINESIOL 3SS3	Body, Mind, Spirit
SOCIOL 2C06	Deviant Behaviour
SOCIOL 2E06	Racial and Ethnic Group Relations
SOCIOL 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 course 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.)

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

Other than those graduates specified above, Commerce courses are not open to Continuing Students.

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.M.A. and C.G.A. are awarded by the Institute of Chartered Accountants of Ontario, the Society of Management Accountants of Ontario and the Certified General Accountants Association of Ontario, respectively, while the designation C.H.R.P. is awarded by the Human Resources Professionals Association.

Further opportunities for meeting educational requirements for professional designations are available to students in all Commerce and Engineering and Management programs. Additional course work may be taken while in the program. Further units of credit may also be taken after graduation (see *Continuing Students* above). Information concerning credit towards these professional designations can be obtained from the Academic Programs Office in the School of Business.

MINOR

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

ACADEMIC REGULATIONS

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 MUGSI/SOLAR is available to them.

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.**

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 appropriate, will be included in the calculation of a student's CA. Students who have extenuating circumstances may submit a *Petition for Relief* from the Faculty's Academic Regulations to the Undergraduate 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 more than six units of work is incomplete. Work of the next higher level may be undertaken only when necessary to fill a program load. Courses must be taken in the sequence specified by the School of Business.

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 audits. *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. **Readmission 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.

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 3IN0, 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 3IN0, 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, New Zealand, 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. Malik, 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 Business I (on 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 1PA0 and one of ANTHROP 1A03, GEOG 1HA3 (or GEO 1HS3), 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 {0725}

REQUIREMENTS

LEVEL I: 30 UNITS

Students admitted to Business I must complete 30 units as follows:

1 course	COMMERCE 1PA0
3 units	COMMERCE 1E03
3-6 units	from ANTHROP 1A03, GEOG 1HA3 (or GEO 1HS3), PSYCH 1XX3 (or 1A03), SOCIOL 1A06
3 units	COMP SCI 1BA3
6 units	from ECON 1A06, 1B03, 1BB3
3 units	from MATH 1A03, 1M03 (See *Note 5* above.)
0-3 units	MATH 1F03 (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	STATS 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 {2140}

Students who are currently registered in this program should refer to their degree audits or contact the Academic Programs Office to discuss their program requirements.

REQUIREMENTS

LEVEL II: 30 UNITS (EFFECTIVE 2009-2010)

24 units	COMMERCE 2AA3, 2AB3, 2BA3, 2BC3 (or 3BC3), 2FA3, 2KA3 (or 2QB3), 2MA3, 2QA3
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.) {2141}

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

REQUIREMENTS

LEVEL III: 30 UNITS (2009-2010 ONLY)

15 units	COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3 (If COMMERCE 3BC3 is not completed by August 2009, COMMERCE 2BC3 must be taken as a substitute.)
6 units	Level III or IV Commerce courses
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 III: 30 UNITS (EFFECTIVE 2010-2011)

15 units	COMMERCE 3FA3, 3MC3, 3QA3, 3QC3, 3S03
6 units	Level III or IV Commerce courses
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
9 units	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.) {2140}

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

REQUIREMENTS

LEVEL III: 30 UNITS (2009-2010 ONLY)

15 units	COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3 (If COMMERCE 3BC3 is not completed by August 2009, COMMERCE 2BC3 must be taken as a substitute.)
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 III: 30 UNITS (EFFECTIVE 2010-2011)

15 units	COMMERCE 3FA3, 3MC3, 3QA3, 3QC3, 3S03
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
18 units	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. Enrolment 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. COMMERCE 2AA3, 2FA3 and 2MA3 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 2BA3. ECON 2I03 will be accepted as a substitute for COMMERCE 2FA3. All courses listed as anti-requisite for COMMERCE 2QA3 in the *Course Listings* section of the Undergraduate Calendar will be accepted as a substitute for COMMERCE 2QA3.

REQUIREMENTS
24 units total

6 units	ECON 1A06 or 1B03 and 1BB3
18 units	COMMERCE 2AA3, 2AB3, 2BA3, 2BC3 (or 3BC3), 2FA3, 2KA3 (or 2QB3), 2MA3, 2QA3, 3FA3, 3MC3 (See *Note 4* above.)

Minor in Finance

The School of Business will admit a maximum of 30 students to 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 Finance courses.
5. For the purposes of this Minor, all courses listed as anti-requisite for COMMERCE 2QA3 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 2I03), 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 to 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 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

Minor in Information Systems

The School of Business will admit a maximum of 30 students to the Minor in Information Systems 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, with a minimum grade of B-, one of COMP SCI 1BA3, COMP SCI 1MA3, COMP SCI 1TA3, ECON 1B03 or 1BB3.
3. The Minor is not open to students registered in any Commerce, Engineering and Management or Business Informatics program.

REQUIREMENTS
24 units total

3 units	from COMP SCI 1BA3, 1MA3, 1TA3
3 units	from ECON 1B03, 1BB3
3 units	PHILOS 2N03
6 units	COMMERCE 2KA3, 3KA3
9 units	from COMMERCE 4KD3, 4KF3, 4KH3, 4KX3

FACULTY OF ENGINEERING

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

John Hodgins Engineering Building, Room A214

Ext. 24646

Dean of Engineering

D.S. Wilkinson/B.A.Sc., Ph.D., F.C.I.M., F.A.Cer.S., P.Eng.

Associate Dean of Engineering (Academic)

K.S. Coley/B.Sc.,Ph.D., D.I.C.

Associate Dean of Engineering (Research)

P. Mascher/M.Eng., Ph.d., P.Eng.

Director of Engineering I

S. Smith/B.Eng.C.S., M.Eng., Ph.D., P.Eng.

Assistant Dean (Studies)

M. White/B.Sc.

Undergraduate Student Advisors

J. Hopkins
S. Williams/B.A.

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 common 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 1B03 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.eng.mcmaster.ca/electives/electvs.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.eng.mcmaster.ca/electives/lv1elec.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.

Commerce 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 in a 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 months 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. 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, study, visa, insurance and living expenses. See the *General Academic Regulations* section in this Calendar.

Students registered 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.

ACADEMIC REGULATIONS FOR B.ENG. AND B.A.SC. 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.

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 MUGSI/SOLAR is available to them.

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.**

Students enrolled in the Faculty of Engineering programs not including Bachelor of Technology programs), in addition to meeting the General Academic Regulations of the University, shall be subject to the following Faculty Regulations.

ENGINEERING I

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

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

COMPUTER SCIENCE I

To be eligible for any Level II Computer Science program a student must successfully complete all non-elective Level I courses with an overall Cumulative Average (CA) of 4.0 or greater. See the program listings under *Programs for the B.A.Sc. Degree* for specific information on admission requirements for each program.

A student in Computer Science I whose Cumulative Average (CA) is less than 4.0 may no longer continue in the Faculty.

SEQUENCE OF COURSES

Courses must be taken in the sequence specified in the Calendar for the program. 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 Engineering 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 Associate Dean of Engineering.

REINSTATEMENT TO ENGINEERING

A student who is ineligible to continue in the Faculty of Engineering or who *May not continue at the university* may normally not apply for reinstatement for one full academic year. Exceptions may be made when there are extenuating circumstances which are supported by documentation.

Students seeking reinstatement must complete the *Reinstatement Request Form* available at the Office of the Registrar or the Office of the Associate Dean of Engineering. 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 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. **Reinstatement is not guaranteed.**

A student who is reinstated after being ineligible to continue at a given level must repeat all the courses of that level, unless specific course exemptions are granted explicitly in the letter of reinstatement. Students who are reinstated will be placed on 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 1 PROGRAMS

WEB ADDRESS: http://www.eng.mcmaster.ca/engineering1/

ENGINEERING I: 37 UNITS {0730}
ENGINEERING I CO-OP {0730003}

3 units	CHEM 1E03
10 units	ENGINEER 1C03, 1D04, 1P03
3 units	MATLS 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 *Degrees, Programs and Courses* section of this Calendar.)
1 course	ENGINEER 1A00

COMPUTER SCIENCE I: 30 UNITS {0145}
COMPUTER SCIENCE I CO-OP {0145003}

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	COMP SCI 1FC3, 1MD3
9 units	MATH 1Z04, 1ZZ5
15 units	Electives (See *Note* above)
1 course	ENGINEER 1A00

PROGRAMS FOR THE B.A.SC. DEGREE

Honours Arts & Science and Computer Science

(**B.Arts.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 requires completion of all non-elective Computer Science I 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 1Z04 and 1ZZ5.

Honours Business Informatics (B.A.Sc.) {4140}
Honours Business Informatics {4140003}
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 2C03, 2CS3, 2ME3, 2MJ3, 2SC3
9 units	COMMERCE 2AA3, 2AB3, 2FA3
3 units	STATS 2D03
3 units	Electives

LEVEL III: 30 UNITS

18 units	COMP SCI 3CN3, 3DB3, 3EA3, 3GC3, 3MH3, 3SR3
12 units	COMMERCE 2BA3, 2MA3, 3FA3, 4QA3

LEVEL IV: 30 UNITS

6 units	from COMP SCI 4CD3, 4HC3, 4WW3
3 units	COMMERCE 2BC3
6 units	from COMMERCE 4BK3, 4KF3, 4KH3, 4QB3
12 units	from COMP SCI 2CA3, 2MF3, Levels III, IV Computer Science
3 units	Electives

Honours Computer Science (B.A.Sc.) {4145}
Honours Computer Science {4145003}
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 2008. 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 2C03, 2CA3, 2CS3, 2ME3, 2MF3, 2MJ3, 2SC3
3 units	STATS 2D03
6 units	Electives

LEVEL III: 30 UNITS

21 units	COMP SCI 3CN3, 3DB3, 3EA3, 3GC3, 3MH3, 3MI3, 3SR3
3 units	Levels III, IV Computer Science
6 units	Electives

LEVEL IV: 30 UNITS

18 units	COMP SCI 4CD3, 4HC3, 4MN3, 4TB3, 4ZP6
6 units	Levels III, IV Computer Science
6 units	Electives

Honours Computer Science as a Second Degree (B.A.Sc.) {4149}

ADMISSION

Completion of a Bachelor's degree from a recognized university in a discipline other than Computer Science with a Cumulative Average of least 7.0 ; and completion of MATH 1Z04, 1ZZ5 and a grade of at least C+ in each of COMP SCI 1FC3, 1MD3 or equivalent. As Second Degree candidates, applicants must first apply for admission to the University through the Office of the Registrar (Admissions) indicating they wish to apply for the Honours Computer Science B.A.Sc. as a Second Degree program

NOTE

If a student in the program has previously taken a required course (or its equivalent), it is not a requirement to repeat the course. However, if the credit from that course has been used toward completion of a previous degree, the student will be required to take another course with the required number of units. Admission to this program is at Level III.

LEVEL III: 30 UNITS
27 units COMP SCI 2C03, 2CA3, 2ME3, 2MF3, 2MJ3, 2SC3, 3DB3, 3GC3, 3MH3
3 units STATS 2D03
LEVEL IV: 30 UNITS
24 units COMP SCI 3CN3, 3EA3, 3MI3, 3SR3, 4CD3, 4HC3, 4MN3, 4TB3
6 units Levels III, IV Computer Science

Minor in Computer Science

REQUIREMENTS
24 units total
6 units COMP SCI 1FC3, 1MD3
12 units from COMP SCI 2C03, 2CA3, 2ME3, 2MF3, 2MJ3, 2SC3
6 units Levels III, IV Computer Science

PROGRAMS FOR THE B.ENG., B.ENG.BIOSCIENCES, B.ENG.MGT., AND B.ENG.SOCIETY DEGREES

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.

Chemical Engineering (B.Eng.) {4080}

Chemical Engineering Co-op (B.Eng.) {4080003}

ADMISSION
See *Admission to Level II Engineering Programs.*
NOTES
1. Students may choose to follow a stream of recommended technical elective courses.
   PROCESS SYSTEMS ENGINEERING (PSE) STREAM:
   - **Required Courses:** CHEM ENG 4C03, 4E03, 4G03, 4L02 (PSE laboratories completed), 4W04 (with an approved PSE project). Other courses may be substituted with permission of the Department Chair.

   POLYMER MATERIALS AND MANUFACTURING (PMM) STREAM:
   - **Required Courses:** CHEM ENG 3Q03, 4B03, 4C03, 4L02 (PMM laboratories completed), 4W04 (with approved PMM project), 4X03. Other courses may be substituted with permission of the Department Chair.
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
18 units CHEM ENG 2A04, 2D04, 2F04, 2G03, 2I03
3 units CHEM 1AA3
6 units MATH 2Z03, 2ZZ3
3 units STATS 3N03
6 units approved complementary studies electives

LEVEL III: 38 UNITS
29 units CHEM ENG 3D03, 3E04, 3G04, 3K04, 3L02, 3M04, 3O04, 3P04
9 units 3-6 units from CHEM 2E03 or both CHEM 2OA3 and 2OB3
3-6 units from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 3I03, CHEM BIO 2A03
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 complementary studies electives
9-10 units Level III or IV technical electives from approved list or permission of the Department of Chemical Engineering

Chemical Engineering and Management (B.Eng.Mgt.) {4080325}

Chemical Engineering and Management Co-op (B.Eng.Mgt.) {4080323}

ADMISSION
See *Admission to Level II Engineering Programs.*
NOTES
1. Students may choose to follow a stream of recommended technical elective courses.
   PROCESS SYSTEMS ENGINEERING (PSE) STREAM:
   - **Required Courses:** CHEM ENG 4C03, 4E03, 4G03, 4L02 (PSE laboratories completed), 4W04 (with an approved PSE project). Other courses may be substituted with permission of the Department Chair.

   POLYMER MATERIALS AND MANUFACTURING (PMM) STREAM:
   - **Required Courses:** CHEM ENG 3Q03, 4B03, 4C03, 4L02 (PMM laboratories completed), 4W04 (with approved PMM project), 4X03, ENGINEER 2O03 (or MATLS 1M03). Other courses may be substituted with permission of the Department Chair.
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
3 units CHEM 1AA3
3 units COMMERCE 2AA3
6 units ECON 1BB3, 2X03
6 units MATH 2Z03, 2ZZ3
3 units from STATS 3N03, 3Y03
LEVEL III: 38 UNITS
25 units CHEM ENG 3D03, 3E04, 3G04, 3K04, 3L02, 3M04, 3O04
3 units approved complementary studies electives
9 units COMMERCE 2AB3, 2FA3, 2MA3
1 unit ENGN MGT 3AA1
LEVEL IV: 35-39 UNITS
7 units CHEM ENG 2I03, 3P04
3 units from CHEM ENG 4K03, 4M03, 4T03, 4X03, ENGINEER 4U03
12 units COMMERCE 2BA3, 3FA3, 3MC3, 4QA3
3 units from ENGINEER 4A03, 4H03
1 unit ENGN MGT 4A01
3-6 units CHEM 2E03; or both CHEM 2OA3 and 2OB3
3 units from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 3I03, CHEM BIO 2A03
3-4 units Level III or IV technical electives from approved list or permission of the Department of Chemical Engineering
LEVEL V: 37-38 UNITS
10 units CHEM ENG 4L02, 4N04, 4W04
6 units COMMERCE 2BC3, 4PA3
3 units ENGN MGT 5B03
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
3-4 units Level III or IV technical electives from approved list or permission of the Department of Chemical Engineering

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

Chemical Engineering and Society Co-op (B.Eng.Society) {4080533}

Chemical Engineering and International Studies (B.Eng. Society) {4080125}

Chemical Engineering and International Studies Co-op (B.Eng. Society) {4080123}

ADMISSION

See *Admission to Level II Engineering Programs.*

NOTES

1. Students may choose to follow a stream of recommended technical elective courses.

PROCESS SYSTEMS ENGINEERING (PSE) STREAM:

- Required Courses: CHEM ENG 4C03, 4E03, 4G03, 4L02 (PSE laboratories completed), 4W04 (with an approved PSE project). Other courses may be substituted with permission of the Department Chair.

POLYMER MATERIALS AND MANUFACTURING (PMM) STREAM:

- Required Courses: CHEM ENG 3Q03, 4B03, 4C03, 4L02 (PMM laboratories completed), 4W04 (with approved PMM project), 4X03, ENGINEER 2O03 (or MATLS 1M03). Other courses may be substituted with permission of the Department Chair.

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. (This does not include the six units of complementary studies elective in Level I.)

LEVEL II: 33-36 UNITS

15 units	CHEM ENG 2A04, 2D04, 2F04, 2G03
3 units	CHEM 1AA3
6 units	MATH 2Z03, 2ZZ3

SOCIETY:

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

INTERNATIONAL STUDIES:

9 units	ANTHROP 1A03, ENGSOCTY 2X03, 2Y03
3 units	International Studies focus electives

LEVEL III: 32-38 UNITS

20 units	CHEM ENG 2I03, 3D03, 3K04, 3L02, 3M04, 3O04
3-6 units	CHEM 2E03; or both CHEM 2OA3 and 2OB3
3 units	from STATS 3N03, 3Y03

SOCIETY:

3 units	ENGSOCTY 3Y03
3-6 units	Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:

3-6 units	from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units	ENGINEER 3PM3

LEVEL IV: 36-40 UNITS

12 units	CHEM ENG 3E04, 3G04, 3P04
6 units	from CHEM ENG 4K03, 4M03, 4T03, 4X03, ENGINEER 4U03
6 units	from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 3I03, CHEM BIO 2A03
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:

3 units	ENGSOCTY 3X03
3-6 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, 4Y03
6 units	Engineering and Society focus electives

INTERNATIONAL STUDIES:

6 units	ENGSOCTY 4X03, 4Y03
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 1EE0.

LEVEL II: 36 UNITS

15 units	CHEM ENG 2A04, 2D04, 2F04, 2G03
3 units	CHEM 1AA3
3 units	BIOLOGY 1A03
6 units	HTH SCI 2L03, 2LL3
6 units	MATH 2Z03, 2ZZ3
3 units	STATS 3N03

LEVEL III: 37-40 UNITS

24 units	BIOLOGY 2EE3, CHEM ENG 3D03, 3G04, 3K04, 3L02, 3M04, 3O04
3 units	CHEM ENG 2I03
3-6 units	CHEM 2E03; or both CHEM 2OA3 and 2OB3
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 BIO 2A03, CHEM ENG 3Q03.
3 units	approved complementary studies electives

LEVEL V: 38-39 UNITS

8 units	CHEM ENG 4N04, 4W04
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
6-7 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 {4110}

Water/Environmental Engineering Stream {4130}

Civil Engineering Co-op (B.Eng.)

Structural/Geotechnical Engineering Stream {4110003}

Water/Environmental Engineering Stream {4130003}

ADMISSION

See *Admission to Level II Engineering Programs.*

NOTES

1. Students entering Level II can choose between a Structural/Geotechnical Engineering Stream **(S/G Stream)** and a Water/Environmental Engineering Stream **(W/E 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, 2Q03
4 units ENGINEER 2P04
6 units MATH 2Z03, 2ZZ3

LEVEL III: 38 UNITS
25 units CIV ENG 3A03, 3B03, 3C03, 3G03, 3J04, 3K03, 3M03, 3P03
4 units STATS 3J04
3 units approved complementary studies electives
6 units **S/G Stream:** CIV ENG 3R03, 3S03
W/E Stream: CIV ENG 3L03, 3U03

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 **S/G Stream:** from approved list of Level IV Civil Engineering technical electives
W/E Stream: from approved list of Level III and IV Civil Engineering technical electives

Civil Engineering and Management (B.Eng.Mgt.)
Structural/Geotechnical Engineering Stream {4110325}
Water/Environmental Engineering Stream {4130325}
Civil Engineering and Management Co-op (B.Eng.Mgt.)
Structural/Geotechnical Engineering Stream {4110323}
Water/Environmental Engineering Stream {4130323}

ADMISSION
See *Admission to Level II Engineering Programs.*

NOTES
1. Students entering Level II can choose between a Structural/Geotechnical Engineering Stream **(S/G Stream)** and a Water/Environmental Engineering Stream **(W/E 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

LEVEL II: 40 UNITS
21 units CIV ENG 2A03, 2B03, 2C04, 2I03, 2J04, 2O04
6 units COMMERCE 2AA3, 2MA3
3 units ECON 2X03
4 units ENGINEER 2P04
6 units MATH 2Z03, 2ZZ3

LEVEL III: 38 UNITS
18 units CIV ENG 2E03, 2Q03, 3A03, 3B03, 3G03, 3M03
9 units COMMERCE 2AB3, 2BA3, 2FA3
3 units ECON 1BB3
4 units STATS 3J04
3 units approved complementary studies electives
1 unit ENGN MGT 3AA1

LEVEL IV: 35 UNITS
13 units CIV ENG 3C03, 3J04, 3K03, 3P03
12 units COMMERCE 2BC3, 3FA3, 3MC3, 4QA3
3 units Commerce electives selected from Level III or IV Commerce
1 unit ENGN MGT 4A01
6 units **S/G Stream:** CIV ENG 3R03, 3S03
W/E Stream: CIV ENG 3L03, 3U03

LEVEL V: 36-37 UNITS
3 units COMMERCE 4PA3
3 units Commerce electives selected from Level III or IV Commerce
3 units ENGN MGT 5B03
3 units from ENGINEER 4A03, 4H03
4 units from CIV ENG 4C04, 4R04
20-21 units **S/G Stream:** from approved list of Level IV Civil Engineering technical electives
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}
Civil Engineering and International Studies Co-op (B.Eng.Society)
Structural/Geotechnical Engineering Stream {4110123}
Water/Environmental Engineering Stream {4130123}

ADMISSION
See *Admission to Level II Engineering Programs.*

NOTES
1. Students entering Level II can choose between a Structural/Geotechnical Engineering Stream **(S/G Stream)** and a Water/Environmental Engineering Stream **(W/E 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, 2I03, 2J04, 2O04
4 units ENGINEER 2P04
6 units MATH 2Z03, 2ZZ3

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

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

LEVEL III: 31-34 UNITS
18 units CIV ENG 2E03, 2Q03, 3A03, 3B03, 3G03, 3M03
4 units STATS 3J04

SOCIETY:
3 units ENGSOCTY 3Y03
6-9 units from Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3
3 units International Studies focus electives

LEVEL IV: 31-34 UNITS
13 units CIV ENG 3C03, 3J04, 3K03, 3P03
6 units **S/G Stream:** CIV ENG 3R03, 3S03
W/E Stream: CIV ENG 3L03, 3U03

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

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6-9 units International Studies focus electives

LEVEL V: 36-37 UNITS
3 units ENGINEER 4B03
4 units from CIV ENG 4C04, 4R04
20-21 units **S/G Stream:** from approved list of Level IV Civil Engineering technical electives
W/E Stream: from approved list of Level III and IV Civil Engineering technical electives

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
3 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
3 units International Studies focus electives

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: 36 UNITS
16 units COMP ENG 2DI4, 2DP4, 2SH4, 2SI4
17 units ELEC ENG 2CI5, 2CJ4, 2EI5, 2FH3
3 units MATH 2Z03

LEVEL III: 38 UNITS
11 units COMP ENG 3DQ4, 3DR4, 3SK3
20 units ELEC ENG 3CL4, 3EJ4, 3TP4, 3TQ4, 3TR4
4 units SFWR ENG 3K04
3 units approved complementary studies electives

LEVEL IV: 37-39 UNITS
16 units COMP ENG 4DK4, 4DM4, 4DN4, 4DS4
6 units ELEC ENG 4OI6
3 units ENGINEER 4B03
3 units from ENGINEER 4A03, 4H03
3 units SFWR ENG 3SH3
3-4 units technical electives from Computer Engineering or Electrical Engineering Level III or IV
3-4 units approved Level III or IV technical electives of the Faculty of Engineering

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

Computer Engineering and Management Co-op (B.Eng.Mgt.) {4144323}

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
3 units COMMERCE 2AA3
8 units COMP ENG 2SH4, 2SI4
6 units ECON 1BB3, 2X03
12 units ELEC ENG 2CI5, 2CJ4, 2FH3
2 units ENGN MGT 2AA2
3 units MATH 2Z03
3 units approved complementary studies electives

LEVEL III: 38 UNITS
12 units COMMERCE 2AB3, 2BA3, 2FA3, 2MA3
13 units ELEC ENG 2EI5, 3TP4, 3TQ4
8 units COMP ENG 2DI4, 2DP4
1 unit ENGN MGT 3AA1
4 units SFWR ENG 3K04

LEVEL IV: 39 UNITS
12 units ELEC ENG 3CL4, 3EJ4, 3TR4
8 units COMP ENG 3DQ4, 3DR4
9 units COMMERCE 2BC3, 3FA3, 3MC3
3 units STATS 3Y03
1 unit ENGN MGT 4A01
3 units from ENGINEER 4A03, 4H03
3 units Commerce electives selected from Level III or IV Commerce

LEVEL V: 40 UNITS
6 units COMMERCE 4PA3, 4QA3
19 units COMP ENG 3SK3, 4DK4, 4DM4, 4DN4, 4DS4
6 units ELEC ENG 4OI6
3 units SFWR ENG 3SH3
3 units ENGN MGT 5B03
3 units Commerce electives selected from Level III or IV Commerce

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}

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: 36 UNITS
12 units COMP ENG 2DI4, 2SH4, 2SI4
12 units ELEC ENG 2CI5, 2CJ4, 2FH3
3 units MATH 2Z03

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

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

LEVEL III: 33-39 UNITS
7 units COMP ENG 2DP4, 3SK3
13 units ELEC ENG 2EI5, 3TP4, 3TQ4
4 units SFWR ENG 3K04

SOCIETY:
6 units ENGSOCTY 3Y03, 3Z03
6 units Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3
3-6 units International Studies focus electives

LEVEL IV: 32-35 UNITS
8 units COMP ENG 3DQ4, 3DR4
12 units ELEC ENG 3CL4, 3EJ4, 3TR4
3 units ENGINEER 4B03

SOCIETY:
3 units ENGSOCTY 3X03
6-9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6-9 units International Studies focus electives

LEVEL V: 37-38 UNITS
16 units COMP ENG 4DK4, 4DM4, 4DN4, 4DS4
6 units ELEC ENG 4OI6
3 units SFWR ENG 3SH3
3-4 units technical electives from an approved list of Computer Engineering or Electrical Engineering Level III or IV

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
3 units Engineering and Society focus electives
INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
3 units International Studies focus electives

Electrical Engineering (B.Eng.) {4170}

Electrical Engineering Co-op (B.Eng.) {4170003}

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: 35 UNITS
17 units ELEC ENG 2CI5, 2CJ4, 2EI5, 2FH3
12 units COMP ENG 2DI4, 2SH4, 2SI4
6 units MATH 2Z03, 2ZZ3
LEVEL III: 38 UNITS
7 units COMP ENG 2DP4, 3SK3
28 units ELEC ENG 3CL4, 3EJ4, 3FK4, 3PI4, 3TP4, 3TQ4, 3TR4
3 units approved complementary studies electives
LEVEL IV: 37-40 UNITS
6 units ELEC ENG 4OI6
3 units ENGINEER 4B03
16 units from COMP ENG 3DQ4, 3DR4, 4DK4, 4DM4, 4DN4, 4DS4, 4TL4, ELEC ENG 4BD4, 4BE4, 4CL4, 4FJ4, 4PK4, 4PL4, 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.) {4171}

Electrical and Biomedical Engineering Co-op (B.Eng.) {4171003}

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: 38 UNITS
14 units ELEC ENG 2CI5, 2CJ4, 2EI5
12 units COMP ENG 2DI4, 2SH4, 2SI4
6 units MATH 2Z03, 2ZZ3
3 units BIOLOGY 1A03
3 units CHEM 1AA3
LEVEL III: 40 UNITS (2009-2010 ONLY)
20 units ELEC ENG 2FH3, 3BA3, 3BB3, 3CL4, 3EJ4, 3TP3
8 units COMP ENG 2DI4, 2DP4
6 units CHEM 2OA3, 2OB3
6 units HTH SCI 2L03, 2LL3
LEVEL III: 40 UNITS (EFFECTIVE 2010-2011)
21 units ELEC ENG 2FH3, 3BA3, 3BB3, 3CL4, 3EJ4, 3TP4
4 units COMP ENG 2DP4
6 units CHEM 2OA3, 2OB3
6 units HTH SCI 2L03, 2LL3
3 units approved complementary studies electives
LEVEL IV: 38 UNITS
4 units COMP ENG 4TL4
28 units ELEC ENG 3TQ4, 3TR4, 4BC3, 4BD4, 4BE4, 4BF3, 4BI6
3 units from ENGINEER 4A03, 4H03
3 units ENGINEER 4B03

Electrical Engineering and Management (B.Eng.Mgt.) {4170325}

Electrical Engineering and Management Co-op (B.Eng.Mgt.) {4170323}

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
3 units COMMERCE 2AA3
6 units ECON 1BB3, 2X03
8 units COMP ENG 2SH4, 2SI4
12 units ELEC ENG 2CI5, 2CJ4, 2FH3
2 units ENGN MGT 2AA2
6 units MATH 2Z03, 2ZZ3
LEVEL III: 37 UNITS
12 units COMMERCE 2AB3, 2BA3, 2FA3, 2MA3
11 units COMP ENG 2DI4, 2DP4, 3SK3
13 units ELEC ENG 2EI5, 3TP4, 3TQ4
1 unit ENGN MGT 3AA1
LEVEL IV: 39 UNITS
9 units COMMERCE 2BC3, 3FA3, 3MC3
20 units ELEC ENG 3CL4, 3EJ4, 3FK4, 3PI4, 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
LEVEL V: 40 UNITS
6 units COMMERCE 4PA3, 4QA3
16 units from COMP ENG 3DQ4, 3DR4, 4DK4, 4DM4, 4DN4, 4DS4, 4TL4, ELEC ENG 4BD4, 4BE4, 4CL4, 4FJ4, 4PK4, 4PL4, 4TK4
6 units ELEC ENG 4OI6
3 units ENGN MGT 5B03
3 units approved complementary studies electives
3 units Commerce electives selected from Level III and IV Commerce
3 units technical electives (from Level III and IV of the Faculty of Engineering)

Electrical Engineering and Society (B.Eng.Society) {4170535}

Electrical Engineering and Society Co-op (B.Eng.Society) {4170533}

Electrical Engineering and International Studies (B.Eng.Society) {4170125}

Electrical Engineering and International Studies Co-op (B.Eng.Society) {4170123}

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: 36 UNITS
12 units COMP ENG 2DI4, COMP ENG 2SH4, 2SI4
9 units ELEC ENG 2CI5, 2CJ4
6 units MATH 2Z03, 2ZZ3
SOCIETY:
6 units ENGSOCTY 2X03, 2Y03
3 units Engineering and Society focus electives
INTERNATIONAL STUDIES:
9 units ANTHROP 1A03, ENGSOCTY 2X03, 2Y03

LEVEL III: 32-38 UNITS
7 units COMP ENG 2DP4, 3SK3
16 units ELEC ENG 2EI5, 2FH3, 3TP4, 3TQ4

SOCIETY:
6 units ENGSOCTY 3Y03, 3Z03
6-9 units Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3
3 units International Studies focus electives

LEVEL IV: 32-35 UNITS
20 units ELEC ENG 3CL4, 3EJ4, 3FK4, 3PI4, 3TR4
3 units ENGINEER 4B03

SOCIETY:
3 units ENGSOCTY 3X03
9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6-9 units International Studies focus electives

LEVEL V: 37-38 UNITS
6 units ELEC ENG 4OI6
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, 4Y03
6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
6 units International Studies focus electives

Engineering Physics (B.Eng.) {4190}

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 1EE0.
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 for the program in which they are registered and to consult with the Department of Engineering Physics for further information.

LEVEL II: 37 UNITS
4 units ENGINEER 2P04
18 units ENG PHYS 2A04, 2E04, 2H04, 2S03, 2QM3
6 units MATH 2Z03, 2ZZ3
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 3ES3, 3G03, 3MD3
M Stream ENG PHYS 3E03, 3MD3, 3PN4; 3 units approved Level III or IV technical electives
N Stream ENG PHYS 3D03, 3ES3, 3O04, 3 units approved Level III or IV technical electives
P Stream ENG PHYS 3E03, 3G03, 3PN4; 3 units approved Level III or IV technical electives

LEVEL IV: 35-38 UNITS
3 units ENGINEER 4B03
10 units ENG PHYS 4A06, 4U04
22-25 units Stream specific:
I Stream ENG PHYS 4L04, 4MD3, 4S03; 12-14 units of approved Level III or IV technical electives
M Stream ENG PHYS 4F03, 4MD3, 4Z03; 14-16 units of approved Level III or IV technical electives
N Stream ENG PHYS 4D03, 4ES3, 4L04, 4NE3; 10-12 units of approved Level III or IV technical electives
P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S03; 9-11 units of approved Level III or IV technical electives

Engineering Physics and Management (B.Eng.Mgt.) {4190325}

Engineering Physics and Management Co-op (B.Eng.Mgt.) {4190323}

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 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.
2. As well as completing the academic requirements as specified in this Calendar, students in a Co-op program must complete ENGINEER 1EE0.
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 for the program in which they are registered and to consult with the Department of Engineering Physics for further information.

LEVEL II: 37 UNITS
6 units COMMERCE 2AA3, 2MA3
3 units ENGN MGT 2AA2, 3AA1
4 units ENGINEER 2P04
15 units ENG PHYS 2A04, 2E04, 2H04, 2QM3
6 units MATH 2Z03, 2ZZ3
3 units PHYSICS 2D03

LEVEL III: 37 UNITS
9 units COMMERCE 2AB3, 2BA3, 2FA3
6 units ECON 1BB3, 2X03
10 units ENG PHYS 2S03, 3F03, 3W04
6 units MATH 3C03, 3D03
6 units PHYSICS 3BA3, 3BB3

LEVEL IV: 38 UNITS
12 units COMMERCE 2BC3, 3FA3, 3MC3, 4QA3
1 unit ENGN MGT 4A01
3 units MATH 4Q03
3 units approved complementary studies electives
6 units Commerce electives selected from Level III or IV Commerce

13 units Stream specific:
I Stream ENG PHYS 3D03, 3E03, 3PN4; 3 units from ENG PHYS 3ES3, 3G03, 3MD3
M Stream ENG PHYS 3E03, 3MD3, 3PN4; 3 units approved Level III or IV technical electives
N Stream ENG PHYS 3D03, 3ES3, 3O04; 3 units approved Level III or IV technical electives
P Stream ENG PHYS 3E03, 3G03, 3PN4; 3 units approved Level III or IV technical electives

LEVEL V: 37-39 UNITS
3 units COMMERCE 4PA3
3 units ENGN MGT 5B03
10 units ENG PHYS 4A06, 4U04
21-23 units Stream specific:
I Stream ENG PHYS 4L04, 4MD3, 4S03; 11-12 units of approved Level III or IV technical electives
M Stream ENG PHYS 4F03, 4MD3, 4Z03; 13-14 units of approved Level III or IV technical electives
N Stream ENG PHYS 4D03, 4ES3, 4L04, 4NE3; 9-10 units of approved Level III or IV technical electives
P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S03; 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)**
   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.
2. 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.)
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: 37 UNITS
4 units ENGINEER 2P04
15 units ENG PHYS 2A04, 2E04, 2H04, 2QM3
6 units MATH 2Z03, 2ZZ3
3 units PHYSICS 2D03

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

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

LEVEL III: 34-37 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, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3
3 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 3ES3, 3G03, 3MD3
M Stream ENG PHYS 3E03, 3MD3, 3PN4; 3 units approved Level III or IV technical electives
N Stream ENG PHYS 3D03, 3ES3, 3O04; 3 units approved Level III or IV technical electives
P Stream ENG PHYS 3E03, 3G03, 3PN4; 3 units approved Level III or IV technical electives

SOCIETY:
9 units ENGSOCTY 3X03, 3Z03, 4Y03
9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 3X03, 4Y03
12 units International Studies focus electives

LEVEL V: 35-38 UNITS
10 units ENG PHYS 4A06, 4U04
22-25 units Stream specific:
I Stream ENG PHYS 4L04, 4MD3, 4S03; 12-14 units of approved Level III or IV technical electives
M Stream ENG PHYS 4F03, 4MD3, 4Z03; 14-16 units of approved Level III or IV technical electives
N Stream ENG PHYS 4D03, 4ES3, 4L04, 4NE3; 10-12 units of approved Level III or IV technical electives
P Stream ELEC ENG 3FK4, 3TR4; ENG PHYS 4K03, 4S03; 9-11 units of approved Level III or IV technical electives

SOCIETY:
3 units ENGSOCTY 4X03

INTERNATIONAL STUDIES:
3 units ENGSOCTY 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 4C03, 4D03
   • Polymer CHEM ENG 3Q03, 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 ENG 2A04
7 units ENGINEER 2MM3, 2P04
13 units MATLS 2B03, 2D03, 2H04, 2X03
6 units MATH 2Z03, 2ZZ3
3 units approved complementary studies electives

LEVEL III: (MATERIALS ENGINEERING STREAM) 36-38 UNITS
21 units MATLS 3B03, 3C04, 3E04, 3F03, 3M03, 3T04
3 units MATH 3I03
9-11 units approved Level III or IV technical electives, which must include CHEM ENG 3O04 if not completed
3 units approved complementary studies electives

LEVEL IV: (MATERIALS ENGINEERING STREAM) 38-39 UNITS
3 units from ENGINEER 4A03, 4H03
6 units ENGINEER 4B03, 4J03
8 units ENGINEER 4T04, MATLS 4L04
6 units from MATLS 4K06, 4Z06
3 units STATS 3Y03
3 units approved complementary studies electives
9-10 units approved Level III or IV technical electives, which must include CHEM ENG 3O04 if not completed

Materials Engineering - Nanomaterials Stream (B.Eng) {4320}

Materials Engineering Co-op - Nanomaterials Stream (B.Eng.) {4320003}

LEVEL III: 36-37 UNITS
24 units MATLS 3B03, 3C04, 3E04, 3F03, 3M03, 3Q03, 3T04
3 units MATH 3I03
3 units STATS 3Y03
3-4 units approved Level III or IV technical electives, which must include CHEM ENG 3O04 if not completed
3 units approved complementary studies electives

LEVEL IV: 38-39 UNITS
3 units from ENGINEER 4A03, 4H03
6 units ENGINEER 4B03, 4J03
11 units ENGINEER 4T04, MATLS 4F03, 4L04
6 units from MATLS 4K06, 4Z06
3 units from MATLS 4G03, 4H03
6-7 units approved Level III or IV technical electives which must include CHEM ENG 3O04 if not completed
3 units approved complementary studies electives

Materials Engineering and Management (B.Eng.Mgt.) {4315325}

Materials Engineering and Management Co-op (B.Eng.Mgt.) {4315323}

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: 35 UNITS
2 units CHEM 2WW2
3 units COMMERCE 2MA3
6 units ECON 1BB3, 2X03
2 units ENGN MGT 2AA2
3 units ENGINEER 2MM3
6 units MATH 2Z03, 2ZZ3
13 units MATLS 2B03, 2D03, 2H04, 2X03

LEVEL III: 38 UNITS
4 units CHEM ENG 2A04
3 units CHEM 1AA3
9 units COMMERCE 2AA3, 2BA3, 2FA3
1 unit ENGN MGT 3AA1
4 units ENGINEER 2P04
11 units MATLS 3C04, 3F03, 3T04
3 units MATH 3I03
3 units STATS 3Y03

LEVEL IV: (MATERIALS ENGINEERING STREAM) 36-37 UNITS
4 units CHEM ENG 3O04
12 units COMMERCE 2AB3, 2BC3, 3FA3, 3MC3
3 units from ENGINEER 4A03, 4H03
1 unit ENGN MGT 4A01
10 units MATLS 3B03, 3E04, 3M03
3 units approved complementary studies electives
3-4 units approved Level III or IV technical electives

LEVEL V: (MATERIALS ENGINEERING STREAM) 38-39 UNITS
6 units COMMERCE 4PA3, 4QA3
3 units ENGINEER 4J03
3 units ENGN MGT 5B03
8 units ENGINEER 4T04, MATLS 4L04
6 units from MATLS 4K06, 4Z06
6 units Commerce electives selected from Level III or IV Commerce
6-7 units approved Level III or IV technical electives

Materials Engineering and Management - Nanomaterials Stream (B.Eng.Mgt.) {4320325}

Materials Engineering and Management Co-op - Nanomaterials Stream (B.Eng.Mgt.) {4320323}

LEVEL IV: 36 UNITS
4 units CHEM ENG 3O04
12 units COMMERCE 2AB3, 2BC3, 3FA3, 3MC3
3 units from ENGINEER 4A03, 4H03
1 unit ENGN MGT 4A01
13 units MATLS 3B03, 3E04, 3M03, 3Q03
3 units approved complementary studies electives

LEVEL V: 38-39 UNITS
6 units COMMERCE 4PA3, 4QA3
3 units ENGINEER 4J03
3 units ENGN MGT 5B03
11 units ENGINEER 4T04, MATLS 4F03, 4L04
6 units from MATLS 4K06, 4Z06
6 units Commerce electives selected from Level III or IV Commerce
3-4 units approved Level III or IV technical electives (MATLS 4G03, 4H03 are recommended if offered.)

Materials Engineering and Society (B.Eng.Society) {4315535}

Materials Engineering and Society Co-op (B.Eng.Society) {4315533}

Materials Engineering and International Studies (B.Eng.Society) {4315125}

Materials Engineering and International Studies Co-op (B.Eng.Society) {4315123}

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: 33-36 UNITS
2 units CHEM 2WW2
3 units ENGINEER 2MM3
13 units MATLS 2B03, 2D03, 2H04, 2X03
6 units MATH 2Z03, 2ZZ3

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

INTERNATIONAL STUDIES:
9 units ANTHROP 1A03, ENGSOCTY 2X03, 2Y03
3 units International Studies focus electives

LEVEL III: 34-37 UNITS
4 units CHEM ENG 2A04
3 units CHEM 1AA3
4 units ENGINEER 2P04
11 units MATLS 3C04, 3F03, 3T04
3 units MATH 3I03
3 units STATS 3Y03

SOCIETY:
3 units ENGSOCTY 3Y03
3-6 units Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3

LEVEL IV: (MATERIALS ENGINEERING STREAM) 29-36 UNITS
4 units CHEM ENG 3O04
10 units MATLS 3B03, 3E04, 3M03
6-7 units approved Level III or IV technical electives

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

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6-9 units International Studies focus electives

LEVEL V: (MATERIALS ENGINEERING STREAM) 35-39 UNITS
6 units ENGINEER 4B03, 4J03
8 units ENGINEER 4T04, MATLS 4L04
6 units from MATLS 4K06, 4Z06
6-7 units approved Level III or IV technical electives

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
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}

NOTE
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: 29-36 UNITS
4 units CHEM ENG 3O04
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 ENGSOCTY 3X03, 3Z03
6-9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6-9 units International Studies focus electives

LEVEL V: 34-38 UNITS
6 units ENGINEER 4B03, 4J03
11 units ENGINEER 4T04, MATLS 4F03, 4L04
6 units from MATLS 4K06, 4Z06
2-3 units approved Level III or IV technical electives (MATLS 4G03, 4H03 are recommended if offered.)

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
3-6 units International Studies focus electives

Mechanical Engineering (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 4B03, 4E03, 4Q03, 4S03, 4W03, 4Z03
   - **MECHANICS AND DESIGN:** MECH ENG 4Q03; three of ENGINEER 4T04, MATLS 4T03, MECH ENG 4B03, 4BB3, 4CC3, 4E03, 4H03, 4I03, 4K03, 4L03, 4T03, 4Z03
   - **MANUFACTURING:** MECH ENG 4Q03; three of CHEM ENG 4X03, ENGINEER 4J03, 4T04, MATLS 4T03, MECH ENG 4B03, 4D03, 4E03, 4H03, 4K03, 4T03, 4Z03
   - **THERMOFLUIDS AND ENERGY SYSTEMS:** MECH ENG 4S03, 4W03; two of CHEM ENG 4X03, MECH ENG 4I03, 4J03, 4O04, 4Q03, 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 2Z03, 2ZZ3
27 units MECH ENG 2B03, 2C03, 2D03, 2P04, 2Q04, 2W04, 3A03, 3C03
3 units approved complementary studies electives

LEVEL III: 37 UNITS
6 units ENGINEER 2MM3, 3N03
3 units MATLS 3M03
3 units MATH 3I03
22 units MECH ENG 3E05, 3F04, 3M03, 3O04, 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 4B03, 4E03, 4Q03, 4S03, 4W03, 4Z03
   - **MECHANICS AND DESIGN:** MECH ENG 4Q03; three of ENGINEER 4T04, MATLS 4T03, MECH ENG 4B03, 4BB3, 4CC3, 4E03, 4H03, 4I03, 4K03, 4L03, 4T03, 4Z03
   - **MANUFACTURING:** MECH ENG 4Q03; three of CHEM ENG 4X03, ENGINEER 4J03, 4T04, MATLS 4T03, MECH ENG 4B03, 4D03, 4E03, 4H03, 4K03, 4T03, 4Z03
   - **THERMOFLUIDS AND ENERGY SYSTEMS:** MECH ENG 4S03, 4W03; two of CHEM ENG 4X03, MECH ENG 4I03, 4J03, 4O04, 4Q03, 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: 37 UNITS
9 units COMMERCE 2AA3, 2BA3, 2MA3
6 units ECON 1BB3, 2X03
6 units MATH 2Z03, 2ZZ3
14 units MECH ENG 2D03, 2P04, 2W04, 3C03
2 units ENGN MGT 2AA2

LEVEL III: 37 UNITS
3 units COMMERCE 2FA3
1 unit ENGN MGT 3AA1
3 units ENGINEER 2MM3
3 units MATH 3I03
24 units MECH ENG 2B03, 2C03, 2Q04, 3A03, 3F04, 3O04, 3R03
3 units STATS 3Y03

LEVEL IV: 36 UNITS
12 units COMMERCE 2AB3, 2BC3, 3FA3, 3MC3
1 unit ENGN MGT 4A01
3 units MATLS 3M03
14 units MECH ENG 3E05, 3M03, 4R03, 4V03
6 units from required option courses or approved technical electives

LEVEL V: 36-37 UNITS
6 units COMMERCE 4PA3, 4QA3
6 units Commerce electives selected from Level III or IV Commerce
3 units ENGN MGT 5B03
3 units from ENGINEER 4A03, 4H03
3 units approved complementary studies electives
9 units MECH ENG 4M06, 4P03
6-7 units from required option courses or approved technical electives. (See *Note 1* above.)

Mechanical Engineering and Society (B.Eng.Society) {4330535}

Mechanical Engineering and Society Co-op (B.Eng.Society) {4330533}

Mechanical Engineering and International Studies (B.Eng.Society) {4330125}

Mechanical Engineering and International Studies Co-op (B.Eng.Society) {4330123}

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 4B03, 4E03, 4Q03, 4S03, 4W03, 4Z03
   - **MECHANICS AND DESIGN:** MECH ENG 4Q03; three of ENGINEER 4T04, MATLS 4T03, MECH ENG 4B03, 4BB3, 4CC3, 4E03, 4H03, 4I03, 4K03, 4L03, 4T03, 4Z03
   - **MANUFACTURING:** MECH ENG 4Q03; three of CHEM ENG 4X03, ENGINEER 4J03, 4T04, MATLS 4T03, MECH ENG 4B03, 4D03, 4E03, 4H03, 4K03, 4T03, 4Z03
   - **THERMOFLUIDS AND ENERGY SYSTEMS:** MECH ENG 4S03 4W03; two of CHEM ENG 4X03, MECH ENG 4I03, 4J03, 4O04, 4Q03, 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.
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.)

LEVEL II: 33-36 UNITS
6 units MATH 2Z03, 2ZZ3
18 units MECH ENG 2C03, 2D03, 2P04, 2Q04, 2W04

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

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

LEVEL III: 32-38 UNITS
3 units ENGINEER 2MM3
3 units MATH 3I03
20 units MECH ENG 2B03, 3A03, 3C03, 3F04, 3O04, 3R03

SOCIETY:
3 units ENGSOCTY 3Y03
3-6 units Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3
3-6 units International Studies focus electives

LEVEL IV: 35-38 UNITS
3 units ENGINEER 3N03
3 units MATLS 3M03
3 units STATS 3Y03
14 units MECH ENG 3E05, 3M03, 4R03, 4V03
3 units from required option courses or approved technical electives

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

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6-9 units International Studies focus electives

LEVEL V: 33-37 UNITS
3 units ENGINEER 4B03
9 units MECH ENG 4M06, 4P03
12-13 units from required option courses or approved technical electives (See *Note 1* above.)

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
3-6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
3-6 units International Studies focus electives

Mechatronics Engineering (B.Eng.) {4332}

Mechatronics Engineering Co-op (B.Eng.) {4332003}

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: 34 UNITS
6 units MATH 2Z03, 2ZZ3
6 units SFWR ENG 2MX3, 2S03
8 units ENG PHYS 2A04, 2E04
7 units MECH ENG 2B03, 2Q04
7 units ENGINEER 2MM3, 2P04

LEVEL III: 36 UNITS
19 units SFWR ENG 3DX3, 3F03, 3I03, 3K04, 3SH3, 3X03
8 units MECHTRON 3TA4, 3TB4
6 units ENGINEER 2H03, 3N03
3 units STATS 3N03

LEVEL IV: 36 UNITS
3 units SFWR ENG 4AA3
6 units MECHTRON 4TB6
6 units MECH ENG 4H03, 4K03
6 units ENGINEER 4A03, 4B03

6 units approved technical electives from List A (Contact the Department of Computing and Software.)
6 units approved technical electives from List B (Contact the Department of Computing and Software.)
3 units approved complementary studies electives

Mechatronics Engineering and Management (B.Eng.Mgt.) {4332325}

Mechatronics Engineering and Management Co-op (B.Eng.) {4332323}

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 2Z03, 2ZZ3
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 4A01
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) {4332535}

Mechatronics Engineering and Society Co-op (B.Eng.Society) {4332533}

Mechatronics Engineering and International Studies (B.Eng.Society) {4332125}

Mechatronics Engineering and International Studies Co-op (B.Eng.Society) {4332123}

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 2Z03, 2ZZ3

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
6 units Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3 units ENGSOCTY 2Y03
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3
3 units International Studies focus electives

LEVEL IV: 32-38 UNITS
3 units SFWR ENG 4AA3
8 units MECHTRON 3TA4, 3TB4
6 units MECH ENG 4H03, 4K03
6 units ENGINEER 3N03, 4B03

SOCIETY:
6 units ENGSOCTY 3Y03, 3Z03
6-9 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
6 units International Studies focus electives

LEVEL V: 33-36 UNITS
6 units MECHTRON 4TB6
6 units approved technical electives from List A (Contact the Department of Computing and Software.)
6 units approved technical electives from List B (Contact the Department of Computing and Software.)

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
9-12 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
9-12 units International Studies focus electives

Software Engineering (B.Eng.) {4517}

Software Engineering Co-op (B.Eng.) {4517003}

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: 35 UNITS
6 units MATH 2Z03, 2ZZ3
23 units SFWR ENG 2AA4, 2C03, 2DA4, 2DM3, 2FA3, 2MX3, 2S03
3 units STATS 3Y03
3 units approved complementary studies electives

LEVEL III: 35 UNITS
3 units ENGINEER 4A03
29 units SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3I03, 3RA3, 3S03, 3X03
3 units approved technical electives from List C

LEVEL IV: 33 UNITS
3 units ENGINEER 4B03
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.) {4517325}

Software Engineering and Management Co-op (B.Eng.Mgt.) {4517323}

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: 38 UNITS
6 units COMMERCE 2AA3, 2MA3
3 units ECON 1BB3
6 units MATH 2Z03, 2ZZ3
23 units SFWR ENG 2AA4, 2C03, 2DA4, 2DM3, 2FA3, 2MX3, 2S03

LEVEL III: 38 UNITS
6 units COMMERCE 2BA3, 2FA3
3 units ENGN MGT 2AA2, 3AA1
3 units ECON 2X03
26 units SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3RA3, 3S03, 3X03

LEVEL IV: 37 UNITS
12 units COMMERCE 2AB3, 2BC3, 3FA3, 3MC3
1 unit ENGN MGT 4A01
9 units SFWR ENG 4AA3, 4D03, 4M03
3 units STATS 3Y03
3 units from SFWR ENG 4F03, 4J03, 4TE3
3 units approved technical electives from List C
3 units approved complementary studies electives
3 units Commerce electives selected from Level III or IV Commerce

LEVEL V: 33 UNITS
6 units COMMERCE 4PA3, 4QA3
3 units ENGINEER 4H03
3 units ENGN MGT 5B03
15 units SFWR ENG 4C03, 4E03, 4G06, 4O03
3 units from SFWR ENG 4F03, 4J03, 4TE3
3 units Commerce electives selected from Level III or IV Commerce

Software Engineering and Society (B.Eng.Society) {4517535}

Software Engineering and Society Co-op (B.Eng.Society) {4517533}

Software Engineering and International Studies (B.Eng.Society) {4517125}

Software Engineering and International Studies Co-op (B.Eng.Society) {4517123}

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 1EE0.

LEVEL II: 38 UNITS
6 units MATH 2Z03, 2ZZ3
23 units SFWR ENG 2AA4, 2C03, 2DA4, 2DM3, 2FA3, 2MX3, 2S03

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

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

LEVEL III: 32-35 UNITS
26 units SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3RA3, 3S03, 3X03

SOCIETY:
3 units ENGSOCTY 3Y03
6 units Engineering and Society focus electives, ENGINEER 3PM3

INTERNATIONAL STUDIES:
3-6 units from POL SCI 2M03, 2XX3, RELIG ST 1B06
3 units ENGINEER 3PM3

LEVEL IV: 33 UNITS
3 units ENGINEER 4B03
6 units SFWR ENG 4AA3, 4M03
3 units STATS 3Y03
3 units approved technical electives from List C
3 units approved technical electives from List D

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

INTERNATIONAL STUDIES:
3 units ENGSOCTY 3X03
12 units International Studies focus electives

LEVEL V: 36 UNITS
18 units SFWR ENG 4C03, 4D03, 4E03, 4G06, 4O03
6 units from SFWR ENG 4F03, 4J03, 4TE3

SOCIETY:
6 units ENGSOCTY 4X03, 4Y03
6 units Engineering and Society focus electives

INTERNATIONAL STUDIES:
6 units ENGSOCTY 4X03, 4Y03
6 units International Studies focus electives

Software Engineering (Game Design) (B.Eng.) {4518}

Software Engineering (Game Design) Co-op (B.Eng.) {4518003}

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: 38 UNITS
6 units MATH 2Z03, 2ZZ3
6 units ENGINEER 2GA3, 2GB3
23 units SFWR ENG 2AA4, 2C03, 2DA4, 2DM3, 2FA3, 2MX3, 2S03
3 units approved technical electives from List C

LEVEL III: 38 UNITS
3 units ENGINEER 3GA3
3 units STATS 3Y03
32 units SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3GB3, 3GC3, 3RA3, 3S03, 3X03

LEVEL IV: 36 UNITS
6 units ENGINEER 4A03, 4B03
3 units ENGINEER 4GA3
24 units SFWR ENG 3I03, 4C03, 4D03, 4GA3, 4GC3, 4GP6, 4M03
3 units from SFWR ENG 4E03, 4F03, 4J03, 4O03, 4TE3

Software Engineering (Embedded Systems) (B.Eng.) {4519}

Software Engineering (Embedded Systems) Co-op (B.Eng.) {4519003}

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: 38 UNITS

23 units	SFWR ENG 2AA4, 2C03, 2DA4, 2DM3, 2FA3, 2MX3, 2S03
6 units	ENGINEER 2MM3, 3N03
6 units	MATH 2Z03, 2ZZ3
3 units	approved complementary studies electives

LEVEL III: 37 UNITS

8 units	MECHTRON 3TA4, 3TB4
26 units	SFWR ENG 3A04, 3BB4, 3DX3, 3F03, 3GA3, 3RA3, 3S03, 3X03
3 units	STATS 3Y03

LEVEL IV: 36 UNITS

15 units	SFWR ENG 3I03, 4AA3, 4C03, 4D03, 4M03
6 units	MECHTRON 4TB6
6 units	ENGINEER 4A03, 4B03
6 units	from SFWR ENG 4E03, 4F03, 4J03, 4O03, 4TE3
3 units	approved technical electives from List C

PROGRAMS FOR THE BACHELOR OF TECHNOLOGY (B.TECH.) DEGREE

WEB ADDRESS: http://btech.mcmastermohawk.ca/

Communications Research Laboratory (CRL), Room 112B
Ext. 27056

Executive Director

A.C. Heidebrecht/Ph.D., D.Sc., P.Eng.

Associate Director (Four-Year Degree Programs)

I. Singh/B.Sc., M.Sc., Ph.D., F.C.I.C.

Business Administrator

B. Eftekhari

Program Administrator (Four-Year Degree 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.

The programs are being offered in two specific configurations: Four-year programs with direct entry from high school leading to both a Diploma in Technology from Mohawk College and a Bachelor of Technology degree from McMaster. The programs are:

- Automotive and Vehicle Technology
- Biotechnology
- Process Automation Technology

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 just 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, cultural and ethical 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 behaviour, 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.

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.**

Students enrolled in a four-year program for the B.Tech. degree, in addition to meeting the General Academic Regulations of the University, shall be subject to the following regulations.

MINIMUM REQUIREMENTS TO CONTINUE IN 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.

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 apply for reinstatement.

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. Letters of reference may be submitted but are not 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 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.

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. Advanced credit will be given for completed Engineering I courses which are equivalent to courses in the Bachelor of Technology 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

Automotive and Vehicle Technology Stream Course List: ENG TECH 1ME3, 1PR3

Biotechnology Stream Course List: ENG TECH 1AC3, 1BI3

Process Automation Technology Stream Course List: ENG TECH 1AC3, 1PR3

TECHNOLOGY I: 36 UNITS {0731}

18 units	ENG TECH 1CH3, 1CP3, 1EL3, 1MC3, 1MT3, 1PH3
12 units	GEN TECH 1CS3, 1FT3, 1HB3, 1TI3
6 units	from Course List of chosen Stream (See above.)
1 course	ENG TECH 1A00
1 course	ENG TECH 1EE0

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. Students in the four-year B.Tech. Degree program must complete all co-op work terms prior to graduation.

Automotive and Vehicle Technology (B.Tech.) {4031}

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, 3ES3, 3MN3
9 units	GEN TECH 2ET3, 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, 3FT3, 3MT3

LEVEL IV: 33 UNITS

21 units	AUTOTECH 4AE3, 4AT3, 4CI3, 4DV3, 4EC3, 4MS3, 4TP3
9 units	GEN TECH 2TP3, 3TL3, 4SS3
3 units	from GEN TECH 4DM3, 4EE3, 4HR3, 4IS3, 4LT3, 4SZ3

Biotechnology (B.Tech.) {4054}

ADMISSION

Completion of Technology I including ENG TECH 1AC3 and 1BI3.

LEVEL II: 33 UNITS

21 units	BIOTECH 2BC3, 2BE3, 2BT3, 2CB3, 2GT3, 2MB3, 2OC3
3 units	ENG TECH 2MA3
9 units	GEN TECH 2ET3, 2TC3, 2TE3

LEVEL III: 36 UNITS

21 units	BIOTECH 3BP3, 3EC3, 3FM3, 3FR3, 3IV3, 3MB3, 3PM3
3 units	ENG TECH 3ES3
12 units	GEN TECH 2TL3, 2TM3, 3FT3, 3MT3

LEVEL IV: 33 UNITS

21 units	BIOTECH 4BI3, 4BL3, 4BM3, 4BS3, 4GP3, 4TB3, 4TP3
9 units	GEN TECH 2TP3, 3TL3, 4SS3
3 units	from GEN TECH 4DM3, 4EE3, 4HR3, 4IS3, 4LT3, 4SZ3

Process Automation Technology (B.Tech.) {4459}

ADMISSION

Completion of Technology I including ENG TECH 1AC3 and 1PR3.

LEVEL II: 36 UNITS

21 units	PROCTECH 2CA3, 2CE3, 2EC3, 2EE3, 2IO3, 2IC3, 2PL3
6 units	ENG TECH 2MA3, 2MT3
9 units	GEN TECH 2ET3, 2TC3, 2TE3

LEVEL III: 36 UNITS

18 units	PROCTECH 3CE3, 3CT3, 3MC3, 3PL3, 3SC3, 3SD3
6 units	ENG TECH 3ES3, 3MN3
12 units	GEN TECH 2TL3, 2TM3, 3FT3, 3MT3

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 4DM3, 4EE3, 4HR3, 4IS3, 4LT3, 4SZ3

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.

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.**

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

Advance 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 LOAD

Courses in the degree completion program are only offered on evenings (Monday through Friday) and on Saturdays. Students may elect to register in the program full-time or part-time. Students in these programs are considered to be full-time if registered for 18 units (six courses) or more in an 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 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 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 an advanced technology diploma from an Ontario college.

The degree completion programs will accept students with diplomas in a related technology program from Mohawk College. Graduates of similar diploma programs at other Ontario colleges may be required to complete additional course(s) if those diploma programs do not include the necessary prerequisite requirements; 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.) {4122}

ADMISSION

Admission requires satisfactory completion of an advanced technology diploma from Mohawk College in one of Civil Engineering Technology or Architectural Engineering Technology. Graduates of similar diplomas at other colleges may, in some instances, be required to complete additional course(s) if those diploma programs do not include the necessary prerequisite requirements. 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. Architectural 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.
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 term of the program.

INFRASTRUCTURE ELECTIVES COURSE LIST

CIV TECH 3BD3, 3CS3, 3FR3, 3LU3, 3ND3, 3PM3, 3RM3, 3TP3, 3UM3, 3WT3

LEVEL III: 36 UNITS

6 units	ENG TECH 3MA3, 3ML3
12 units	GEN TECH 1FS3, 1OB3, 2EN3, 3PM3
6 units	CIV TECH 3GT3, 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.)
3 units	from GEN TECH 1DM3, 1EE3, 1HR3, 4ST3
1 course	ENG TECH 1A00

LEVEL IV: 30 UNITS

3 units	CIV TECH 3MN3
9 units	CIV TECH 4EI3, 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, 1HR3, 4ST3

Computing and Information Technology (B.Tech.) {4141}

ADMISSION

Admission requires satisfactory completion of an advanced technology diploma from Mohawk College in one of Software Engineering, Networking Engineering Security Analyst or Computer Engineering Technology. Graduates of similar diplomas at other colleges may, in some instances, be required to complete additional course(s) if those diploma programs do not include the necessary prerequisite requirements.

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 4CC3 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 1FS3, 1OB3, 2EN3
1 course	ENG TECH 1A00 (See *Note 5* above.)

LEVEL IV: 36 UNITS

118 units	COMPTECH 4ES3, 4FD3, 4IN3, 4SD3, 4TM3, 4TR3 (See *Note 4* above.)
6 units	from COMPTECH 4AP3, 4CC3, 4DM3 (See *Note 4* above.)
6 units	GEN TECH 3PM3, 3SF3
6 units	from GEN TECH 1DM3, 1EE3, 1HR3, 4ST3

Energy Engineering Technologies (B.Tech.) {4175}

ADMISSION

The degree completion programs in Energy Engineering Technologies will accept graduates in related technologies from Mohawk College. Graduates of similar diplomas at other colleges may, in some instances, be required to complete additional course(s) if those diploma programs do not include the necessary prerequisite requirements. Graduates from Ontario university engineering programs who seek to develop careers in the energy technology sectors will also 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, 3MI3, 3PD3, 3PP3, ENG TECH 3MA3
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
6 units	GEN TECH 3PM3, 3SF3
6 units	from GEN TECH 1DM3, 1EE3, 4ST3, MAN TECH 4ST3

Manufacturing Engineering Technology (B.Tech.) {4319}

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	MAN TECH 3MD3, 3TF3, 4FB3
9 units	GEN TECH 1FS3, 1OB3, 2EN3
1 course	ENG TECH 1A00 (See *Note* above.)

LEVEL IV: 36 UNITS

24 units	from MAN TECH 3CC3, 3CD3, 4DM3, 4FM3, 4FT3, 4ID3, 4MC3, 4MT3, 4ST3, 4TF3
6 units	GEN TECH 3PM3, 3SF3
6 units	from GEN TECH 1DM3, 1EE3, 1HR3, 4LM3, 4ST3

Manufacturing Engineering Technology (B.Tech.) {4317}

(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. Students currently enrolled in this program must complete all of the program requirements before September 2011.

NOTE

ENG TECH 1A00 must be taken in the first term of the program.

LEVEL II: 18 UNITS

9 units	ENG TECH 3CT3, 3FE3, 3FN3, 3MN3, 3SP3
9 units	MAN TECH 3MD3, 4MT3, 4TF3
1 course	ENG TECH 1A00 (See *Note* above.)

LEVEL III: 15 UNITS

9 units	MAN TECH 4FB3, 4FM3, 4FT3
6 units	MAN TECH 4MC3, 4ST3

FACULTY OF HEALTH SCIENCES

WEB ADDRESS: http://www.fhs.mcmaster.ca

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

S.D. Denburg/B.A., M.A., Ph.D.

Associate Dean (Nursing)

C. Tompkins/B.Sc.N., M.Ed., Ph.D., R.N.

Associate Dean (Rehabilitation 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: Doctor of Medicine (MD), Bachelor of Science in Nursing (B.Sc.N.), Bachelor of Health Sciences (Honours) (B.H.Sc. Honours), Bachelor of Health Sciences (B.H.Sc.) in Midwifery and 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; Neuroscience 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. As well, a Certificate in Primary Health Care Nurse Practitioner is offered.

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 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 Centre, Mohawk College. Extensive use is made of a variety of community agencies. A satellite program has been developed with institutions in Northwestern Ontario. In accordance with the plan to coordinate the development of specialized health services among the Hamilton and District hospitals, the Postgraduate Education 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 that 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 6
• Medicine (MD)	
Registration with OMSAS	September 15
Final application deadline	October 1
• Midwifery (B.H.Sc.)	February 1
• Nursing (B.Sc.N.)	
Applicants directly from Ontario Secondary Schools	May 1
Post Diploma Practical Nurses	February 15
Applicants to Basic Accelerated	February 15
Applicants with Other Qualifications	February 15
• Physician Assistant (B.H.Sc.)	February 5
• Child Life Studies Diploma Program	March 1
• Diploma Program in Clinical Behavioural Sciences	August 1
• Primary Health Care Nurse Practitioner Certificate Program	January 15

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, 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.

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 in the September of entry to a degree program and provides each student with advice on evaluations, electives and other educational needs throughout the program. Changes in advisors may be entertained as each student becomes acquainted with Faculty well enough to choose his or her own advisor. The academic advisory role for B.Sc.N. students is fulfilled by the Coordinator of Studies (Nursing). Students are also encouraged to consult individual faculty members regarding career planning.

TRANSPORTATION

Students are responsible for expenses involved in transporting themselves to community agencies, making home visits, or in connection with clinical study.

LICENCE TO PRACTISE

All graduates who wish to engage in clinical practice in any of medicine, midwifery, nursing, occupational therapy and physiotherapy are subject to any qualifying examinations and other requirements by the licensing bodies for each of these professions. In addition students should be aware that a licence may be denied if they have been convicted of a criminal offence for which a pardon has not been granted. A student in such a position should consult the respective licensing body about such a situation.

POST-PROFESSIONAL HEALTH SCIENCES EDUCATION 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 and review the growth and development of infants, children and youth, incorporating communication, play, expression of feelings, discovery and mastery of the environment, behaviour management, and parent/child relationships, and
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 small group learning, 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. Applications must be submitted by March 1 of each year for the study period beginning in September. Information outlining application requirements can be obtained by contacting the Child Life Studies program office at (905) 525-9140, ext. 22795 or by email at humphre@mcmaster.ca or at http://www.fhs.mcmaster.ca/childlife.

Part-time Multidisciplinary Distance Learning Courses

The Child Life Studies on-line educational program offers a variety of research-based courses related to supporting the psychosocial needs of children, youth and families through health care experience and life changing events. For a current listing of courses, schedules and registration fees, visit the web site at http://www.fhs.mcmaster.ca/childlife or call (905) 525-9140, ext. 22795 or by email at dilalla@mcmaster.ca

DIPLOMA PROGRAM IN CLINICAL BEHAVIOURAL SCIENCES

The Clinical Behavioural Sciences (CBS) Post-Baccalaureate Diploma and Selected Studies 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. Single courses vary from 10 to 20 weeks in length. A small group learning format is used.

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 CBS 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 an undergraduate degree at McMaster University, as determined by the Faculty to which they are applying. For additional information visit the CBS web site at http://www.fhs.mcmaster.ca/cbs. Applications can be obtained by contacting the CBS 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 with a degree or certification in a recognized field. 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 on the experience of applicants. Those without environmental health experience will also be considered.

Applications, a Transcript Assessment Fee, original transcripts and a letter of interest must be submitted by the end of June for the 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, interested individuals without such experience may also be considered. Physicians, nurses, hygienists, related professionals and others are invited to apply. A relevant university degree or equivalent is generally required.

Applications must be submitted by 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/pohem).

PRIMARY HEALTH CARE NURSE PRACTITIONER CERTIFICATE PROGRAM

The Primary Health Care Nurse Practitioner (PHCNP) Certificate is offered on a full-time or part-time basis. The admission requirements are: a baccalaureate degree in Nursing with a minimum of a B+ average over the final 60 units from an undergraduate Nursing program, or its equivalent. Applicants who are graduates of a baccalaureate Nursing degree program for registered nurses and who have between 50 and 59 units of university study will be considered on a case-by-case basis. PHCNP applicants must also have had two years of full-time nursing practice within the past five years.

For 2009-2010, the PHCNP program (for those with a B.Sc.N. or M.Sc.) is designed so that students complete the seven courses offered through the NP Consortium (NUR 761-767). Once the PHCNP courses are completed successfully, they are eligible to write their RN (Extended Class) exams. Since the seven PHCNP courses are offered every year, they can be completed in 12 months of full-time study or be taken part-time. Each PHCNP student will have a Faculty Advisor assigned by the Coordinator. Note: Students wishing to pursue the course-based Masters following the PHCNP should consult the Nursing graduate website at http://www.fhs.mcmaster.ca/grad/nursing/index.htm for details.

Applications for 2010-2011 must be submitted by January 15 for the program commencing in September. Applications can be accessed online at the School of Nursing website http://fhs.mcmaster.ca/nursing/np_application.shtml.

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 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 these 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

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 2010 must be received by OUAC no later than **February 5**. 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 web site by **February 5, 2010 (for September 2010 admission)**. Supplementary Applications are to be submitted electronically via the web at: http://fhs.mcmaster.ca/bhsc.

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 web site by **February 5, 2010 (for September 2010 admission)**. Supplementary Applications are to be submitted electronically via the web at: http://fhs.mcmaster.ca/bhsc.

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 23rd.

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 23rd. Supplementary Applications are to be submitted electronically via the web at: http://fhs.mcmaster.ca/bhsc.

Biomedical Sciences Specialization

Students registered in Health Sciences I who are interested in this specialization will apply during early March to early April via MUGSI/SOLAR by completing the Application for Admission to Level II. Enrolment 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 prior 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://fhs.mcmaster.ca/bhsc. 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. Enrolment 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 9.0 (minimum overall average of B+) will be required for admission consideration.

Curriculum

B.H.Sc. (Honours) {2276}

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://fhs.mcmaster.ca/bhsc/bhsc_courses.html

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 1I06
6 units	CHEM 1A03, 1AA3
6 units	HTH SCI 1E06
3 units	HTH SCI 1G03
9 units	Electives
1 course	SCIENCE 1A00

LEVEL II: 30 UNITS

3 units	HTH SCI 2A03
3 units	HTH SCI 2E03
3 units	HTH SCI 2F03
3 units	HTH SCI 2FF3
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 3E03
3 units	HTH SCI 3G03
3 units	HTH SCI 3GG3
3 units	HTH SCI 3H03
18 units	Electives

LEVEL IV: 30 UNITS

6-9 units	HTH SCI 4A09 or 4B06
3 units	HTH SCI 4X03 (See Note above.)
18-21 units	Electives

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://fhs.mcmaster.ca/bhsc/biomed_courses.html.

REQUIREMENTS

121 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL II: 31 UNITS

6 units	CHEM 2OA3, 2OB3
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 III: 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 IV: 30 UNITS

3 units	HTH SCI 4YY3
3 units	HTH SCI 4X03
6 units	from BIOCHEM 3H03, 3N03, 3Y03, 4H03, 4Q03, HTH SCI 4II3, 4J03, MOL BIOL 4H03
9 units	BIOCHEM 4F09
9 units	Electives

Bursaries

B.H.Sc. (Honours) students are eligible to apply for one of the following bursaries provided they are Canadian citizens and demonstrate financial need. Bursary application forms are available online through MUGSI via *My Financial Aid* menu and the quick link *Bursary Application Form* from mid-October to mid-November. Bursaries are intended to offset provincial financial assistance. The following bursaries have been generously donated to assist Bachelor of Health Sciences (Honours) students in financial need:

- Ruth Murray Memorial B.H.Sc. Bursary
- Loucks Family and Friends B.H.Sc. Bursary
- Ron and Gina Fraser Health Sciences Bursary

There are many other bursaries provided through the central campus bursary program, which will be disbursed to students in the Fall each year. For further information about bursaries, please contact Teresa Basilio, (905) 525-9140 ext. 22786.

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 MUGSI/SOLAR is available to them.

In addition to the regulations in the General Academic Regulations section of this Calendar, the following Program regulations apply.

MINOR

A Minor is an option available to a student enrolled in a four- or five-level program. A Minor consists of a minimum of 24 units in the Minor subject. No more than six of these units can be at Level I, unless otherwise stated in the specific requirements of the Minor. A student is responsible for registering for courses to be applied towards a Minor using elective units only. In the case of cross-listed courses, students must ensure that they register in the appropriate subject for the Minor designation. Those who have the necessary requirements may apply for recognition of that Minor when they graduate. If recognition for a Minor is granted, this recognition will be recorded on the student's transcript. Minors cannot be revoked once approved. Students may return for a second degree in the subject in which they have obtained a Minor, but only at the Honours level. For further information please refer to *Minors* in the *General Academic Regulations* section in this Calendar.

CONTINUATION IN THE PROGRAM

Students must have a CA of 6.0 to continue in the program. If a CA of 5.5 to 5.9 is obtained, a student 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.

If a CA of 3.5 to 5.4 is obtained, a student must transfer to another program for which he/she qualifies, or register in the B.H.Sc. (Honours) Program as an irregular student for one reviewing period. During that period a student cannot take B.H.Sc. (Honours) Program courses. At the end of that period a student may apply for readmission to the B.H.Sc. (Honours) Program.

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://fhs.mcmaster.ca/bhsc/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 an 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.

SPRING COUNSELLING

Academic counselling is available throughout the year from the B.H.Sc. (Honours) Program Office. It is recommended that students make an appointment with an advisor from this office during the March/April counselling period if they have any questions.

GRADUATION

A CA of 5.0 is required for graduation.

Students who successfully complete Level III of the program may request permission from the B.H.Sc. (Honours) Program Office to graduate with a three-level B.H.Sc. degree. Please refer to the *General Academic Regulations* section in this Calendar for additional information related to graduation.

THE MICHAEL G. DEGROOTE SCHOOL OF MEDICINE

WEB ADDRESS: http://www.fhs.mcmaster.ca/mdprog/

Michael G. DeGroote Centre for Learning and Discovery, Room 3101
Ext. 22141

Assistant Dean

A.J. Neville/B.Med.Biol., M.B.Ch.B., M.Ed., M.R.C.P., F.R.C.P., F.R.C.P.C.

Program Administrator

C. Oudshoorn

The School of Medicine, established in 1965 and renamed the Michael G. DeGroote School of Medicine in 2004, offers major programs in undergraduate, postgraduate and graduate medical education. The clinical programs use not only the teaching hospital and ambulatory care and research facilities at the McMaster University Medical Centre division of Hamilton Health Sciences, but also the clinical teaching units at several of the major Hamilton hospitals and community health-care centres.

The Undergraduate Medical Program for the MD degree was initiated in 1969, graduating its first students in May 1972. In August 2009, 182 students will be admitted to the program.

Waterloo Regional and Niagara Regional Campuses

For the incoming class in 2008, 21 of the 182 positions were designated to the Waterloo Regional Campus and 15 positions were designated to the Niagara Regional Campus. All applicants invited to the McMaster MMI (Multiple-Mini Interview) will be asked to rank their site choice (Hamilton, Waterloo Region or Niagara Region) as 1, 2, 3 or no preference. Offers of admission to the medical school will be made from the master rank list irrespective of geographical preference. Subsequent to filling the 182 positions, registrants to the class will be offered a position based on their preference and geographical background. **The offer of admission is binding to a specific site.**

Students accepted into the Waterloo Regional Campus and the Niagara Regional Campus will spend the first Medical Foundation in Hamilton. The costs associated with transportation and/or accommodation will be covered by the student.

The academic program operates on an 11 months-a-year basis and students qualify for the MD degree at the end of the third academic year. The curriculum has been designed to involve medical students in a broad range of human health problems throughout their education and to prepare them for effective working relationships with patients, colleagues and society.

Postgraduate training programs currently include: Anesthesia, Community Medicine, Critical Care, Emergency Medicine, Family Medicine, Internal Medicine (and subspecialities), Laboratory Medicine (and subspecialities), Obstetrics and Gynecology, Pediatrics (and subspecialities), Psychiatry, Radiology, and Surgery (and subspecialities).

More details on these postgraduate programs are available from the Postgraduate Medical Education Office.

The Undergraduate Medical Program {7880}

The three-year program in Medicine uses a problem-based 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.

UNDERGRADUATE MD 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 out new information and evaluate this information critically.
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 healthy public policy within the context of the health care 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 2005, 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 tutorial-based curriculum, students will work in small groups 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 learn-

ing, self-awareness and personal growth, moral reasoning and 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, communication, 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 stressed.

The central focus of the program is the tutorial. The class is divided into small groups of approximately seven students, each with a tutor. In the tutorial session students develop a series of learning objectives from each tutorial case and negotiate how they will approach their learning tasks. They then acquire the knowledge and skills to meet the objectives of the Foundation in which they are working. They also learn to work as a team, helping and learning from peers. The study habits and sense of responsibility to self and others provide a basis for lifelong working and learning habits. Attendance is mandatory. In the Professional Competencies curriculum, students work in groups of approximately 10, with two facilitators, one an MD, the other a non-MD.

Students admitted to the Undergraduate Medical Program have the responsibility and privilege of taking an active role in the planning and evaluation of the education program. Through representation on most policy-making and implementing committees, students can influence decisions in such areas as education, philosophy, faculty recruitment and curriculum design. It is expected that all students will participate in the continuing reappraisal and improvement of the program. Such participation is a hallmark of the Program.

STUDENT EVALUATION METHODS

The evaluation format has been designed to complement learning in the Undergraduate Medical Program. Evaluation methods have been developed to measure how well the student achieves the stated educational objectives in the various Foundations of the program. Continual evaluation of the student occurs within the tutorial setting with input from their peers, faculty preceptors and the tutor.

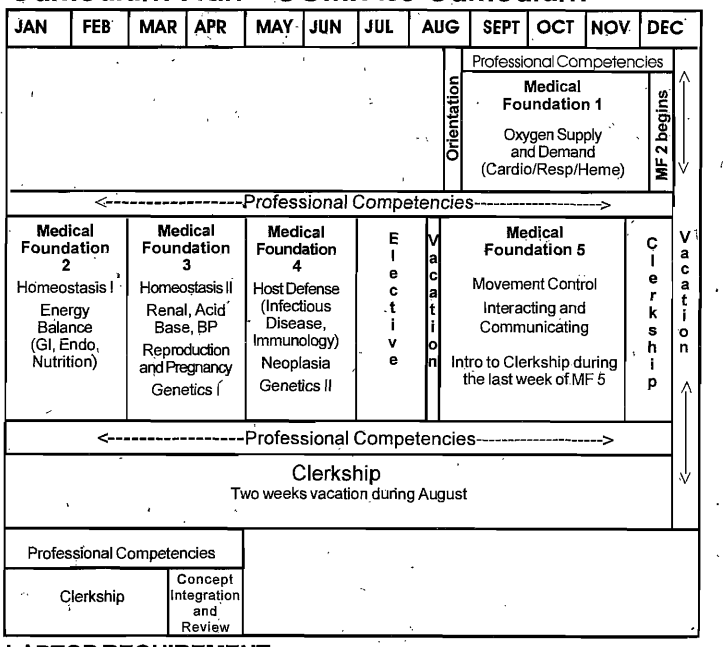
An objective evaluation exercise is required during each Foundation. At the completion of the Foundation, the tutor is responsible for the final summary statement of student learning progress. The tutor prepares a written summary of the student's performance in the tutorials and all associated activities during that Foundation. A copy of the evaluation summary is given to the student and to the student advisor while the original is kept in the student's evaluation file.

In addition to the tutorial-based evaluation, the accumulation of medical knowledge is assessed at regular intervals by means of the Personal Progress Index. This is in a multiple-choice format. Results are given to the students for self-evaluation and, in summary form, to the student advisor. The Personal Progress Index is in addition to, and does not replace, tutorial- and performance-based evaluation. The Program monitors student progress, and responds to students showing persistently low progress.

The acquisition of clinical and professional skills is evaluated by clinical skills preceptors in each Foundation and in the Clerkship, and additionally by Objective Structured Clinical Evaluations (OSCE's) which are run on an annual basis.

The Evaluation Committee has the responsibility of working with the Medical Program to assist with the development and implementation of valid and reliable evaluation methods to provide timely and helpful information to assist students and faculty in assessing progress and performance. Continuation in the Program is subject to satisfactory performance.

Curriculum Plan - COMPASS Curriculum



LAPTOP REQUIREMENT

The MD Program delivers lectures and course materials online, and communications with students and faculty between the three campuses through the use of email as well as various software programs. Thus, it is a requirement that each student own a PC or Apple laptop and web cam while attending the program.

TRANSPORTATION COSTS

Students are expected to travel outside their home campus area 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 first conceptual theme addressed in the curriculum is that of oxygen supply and exchange. In 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 system 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 defence, 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.

THE CLERKSHIP: While the Clerkship will be firmly linked to the preclerkship 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 populations. 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 and its sub-specialties, orthopedic surgery, surgery, family medicine, anesthesia, 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 component of the Undergraduate Medical Program. Block Electives occur after Medical Foundation 4 and during the Clerkship, for a total of 24 weeks. 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 explore special *frontier* areas of medicine and health care. Examples include: research training and experience; community health projects; international health opportunities. These experiences are often undertaken following Medical Foundation 5 or during the first half of Clerkship. Some experiences may potentially have 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 **more stringent** than those for admission to the Undergraduate Medical 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 this right, university graduates in medicine must hold a certificate of the College of Physicians and Surgeons of the province in which they elect to engage in practice. Students in Ontario medical schools will be required to register with the College of Physicians and Surgeons of Ontario (CPSO). Students intending to practise 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 Ontario.

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 applicants they wish to enrol. For both students and directors, it removes the factors that generate unfair pressures and premature decisions.

Further information is available from Cathy Oudshoorn, MD Program Administrator, (905) 525-9140, ext. 22141.

BASIC CARDIAC LIFE SUPPORT TRAINING

All students are required to provide evidence of a current Basic Life Support (BLS) for Health Care Providers (C) certificate prior to registration in the medical program. Information is sent to successful applicants prior to registration. Students are responsible for annual recertification before starting each academic year. Recertification must be completed prior to September 1st. The cost of this course is the responsibility of the student. Courses are readily available in most communities.

Specific questions can be directed to Cathy Oudshoorn, MD Program Administrator, (905) 525-9140, ext. 22141.

IMMUNIZATION

The Ontario Public Hospitals Act requires that all persons working in a hospital setting meet certain criteria regarding surveillance for infectious diseases. In order for the requirement of the legislation to be met, students are required to complete the immunization screening process by September 1st of each academic year. Failure to do so will result in suspension of clinical work. Information will be sent to successful applicants prior to registration. Specific questions can be directed to Cathy Oudshoorn, MD Program Administrator, (905) 525-9140, ext. 22141.

POLICE RECORDS CHECK

Through the course of their medical school program, all medical students will serve vulnerable populations. In an effort to protect these vulnerable people against potential risk of harm, the Ontario Faculties of Medicine and many clinical agencies require that all medical students provide confirmation of the absence of a criminal conviction or outstanding criminal charges. **An offer of admission is contingent upon provision of a Police Records Check, at the applicant's expense, by August 15th of the year of admission.** At the beginning of each subsequent academic year in the Undergraduate Medical Program, students will be required to sign a criminal record and disclosure form to confirm that there has been no change in the information contained in the Police Records Check.

The Police Records Check includes a Vulnerable Sector Screening and check of the Royal Canadian Mounted Police (RCMP), National Canadian Police Information Centre (CPIC) database for the following:

- All records of Criminal Code (Canada) convictions
- All pardoned sexual offences
- All records of convictions under the Controlled Drugs and Substances Act
- All records of convictions under the Narcotic Control Act
- All records of convictions under the Food and Drug Act
- Any undertakings to enter into a Surety to Keep the Peace
- Any Restraining Orders issued under the Criminal Code (Canada) or the Family Act
- All outstanding warrants and charges

The Michael G. DeGroote School of Medicine will review the files of any applicants who have presented a *Not Clear* Police Records Check to determine what action, if any, will be taken.

Admission Policy for the Medical Program

The official admission policy and deadlines for the Undergraduate Medical Program for entry in late August 2010 shall be as published in the 2010 Ontario Medical School Information Booklet. This booklet is available through:

Ontario Medical School Application Service (OMSAS)
170 Research Lane
Guelph, Ontario, N1G 5E2
(519) 823-1940
http://www.ouac.on.ca/omsas/
email: omsas@ouac.on.ca

Please note that the admission policy is reviewed annually, and the admission requirements from the previous year may not apply. Because of the nature of the selection procedures, deadlines are strictly enforced. All relevant documentation must be provided by the specified deadlines. Applicants must follow the instructions precisely. All applicants should be aware that the Admissions Office is committed to the protection of personal information. Use of personal information is strictly limited to the appropriate handling of applications, record-keeping for those admitted to the program, and research intended to further the efficacy of Medical Education Program procedures. **The University reserves the right to change the admission requirements at any time without notice.**

ADMISSION AND REGISTRATION

Registration in the Undergraduate Medical Program implies acceptance by the student of the objectives of the program, and the methods which evaluate progress toward the achievement of those objectives. The following describes the regulations governing admission and registration in the Undergraduate Medical Program. Candidates applying for entry in 2010 must register their intention to apply with the Ontario Medical School Application Service (OMSAS) by September 15, 2009. The final application deadline is October 1, 2009. The deadline 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 admission policies and procedures, and the methods by which candidates are chosen for the program.

Applications received in the Fall of 2009 are for the academic year commencing late August 2010. 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, 2009 at 4:30 p.m. EDT. Final applications must be submitted by October 1, 2009, 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 182 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, 2010.

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. The MD Admissions Committee will normally not allow the applicant to reapply to the Medical Program for seven (7) years.

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 Education Form to a 4.0 scale according to the OMSAS Undergraduate Grading System Conversion Table. (The Conversion Table is provided with the OMSAS Application.)

All applicants must fulfill the requirements described below in both **a), b)** and **c)**.

a) By May 2010, applicants must have completed a minimum of three years of undergraduate work. 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. Marks from supplementary and summer courses will be included in the grade point average calculation. If requested, applicants must provide evidence that this requirement has been met by May 30th of the year of entry. Courses for which a Pass grade is assigned are counted for credit, but will not be included in the GPA calculation. In order for the GPA to be evaluated, independent grades from a minimum of five half-year or five full-year courses are required, without which the application will not be considered
An applicant who has completed a diploma at a CEGEP must have completed by May 2010, at least two additional full academic years of degree credit work at an accredited university. Applicants who have completed the requirements for a baccalaureate degree in less than three years by October 1, 2009 are also eligible.

b) By October 1, 2009, applicants must have achieved an overall simple average of at least a 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.

c) **MCAT** - The MCAT is required for application. The score from the Verbal Reasoning section of the MCAT will be used in both formulae (offer of interview and offer of admission). A minimum score of 6 on the Verbal Reasoning component is required. The Physical Sciences, Biological Sciences and Writing Sample scores will **not** be considered in the selection process.

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 MD 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 three or more years of undergraduate degree-level courses by May of the year of entry with an overall GPA of at least 3.0 as calculated on the OMSAS 4.0 scale and a minimum score of 6 on the Verbal Reasoning component of the MCAT.

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 of Canada by October 1, 2009, **and** have resided for at least three years in the province of Ontario since the age of 14 by the date of possible entry into the program.

TRANSCRIPT REQUIREMENTS AND TRANSCRIPT REQUEST FORMS (TRF)

All transcripts from Ontario universities must be ordered by OMSAS via the Transcript Request Form (TRF). It is required that applicants will request all other transcript materials prior to September 15, 2009 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 at the time of the application 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, 2009. 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, 2009. **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 colleges, 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 2009/2010 courses in which applicants are registered. In this case, applicants must arrange to have the Registrar of the institution that they are attending send a statement of registration and a list of courses to OMSAS by October 1, 2009. 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, 2009.

GRADUATE STUDENTS

Those applicants with a completed and conferred Master's or Ph.D. at the time of application will receive a small amount of extra weighting in the formula used to determine the likelihood of invitation to an interview. Individual grades for course work taken as part of a graduate degree will not be included in the calculation of the grade point average.

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, 2009. If the applicant's graduate degree supervisor is acting as one of their references, a second letter is not required.

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, 2009. Those requiring WES assessment must also ensure that transcripts are received by WES in time for their assessment to reach OMSAS by October 1, 2009.

AUTOBIOGRAPHICAL SUBMISSION

Applicants must provide an Autobiographical Submission (five questions posed as part of the on-line application) which is a description about their preparedness for medicine and suitability for the McMaster Undergraduate Medical Program.

The Autobiographical Submission questions are included in the on-line application provided by OMSAS.

Detailed instructions with regard to the length and format of responses to the Autobiographical Submission questions 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 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, 2009, 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 process entitled the 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, 2010.

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 APPLICANTS

The Special Applicant Pool is on hold this admission cycle.

INTERNATIONAL APPLICANTS

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.carms.ca) for further information.

ADVANCED STANDING/TRANSFER

The structure of the McMaster 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 OMSAS Information Booklet, 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 2008-2009, the academic fees (tuition and student supplementary fees) for a student in the McMaster Undergraduate Medical Program were:

CANADIAN CITIZENS AND LANDED IMMIGRANTS

	Hamilton Campus	Regional Campuses
Year I	$18,921.22	$18,921.22
Year II	$17,598.34	$17,564.38
Year III	$16,973.18	$16,939.22

INTERNATIONAL (VISA) STUDENTS

Each Year $91,862.38 (All Campuses)

In addition, the cost of books and diagnostic equipment for a Year I 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 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:

- Adraches (Archie) Yian Moughalian Memorial Bursary
- Andrew Talalla Memorial Bursary
- Burlington Medical Society Bursary
- Cholowsky Family Multiple Sclerosis Bursary
- CIBC Medical Bursaries in Breast Cancer
- Daniel and Natalie Strub Bursary
- Ferrara Kennedy Bursary
- Daniel Giannini Bursary
- Dr. Leo Celini Bursary
- Dr. Leonard E. Levine Bursary
- Dr. Victoria Lee Bursary
- Gail Henning Memorial Bursary
- Henry and Sylvia Wong Bursary in Medicine
- J.W. Harry Butcher Estate Bursary
- Magenheim Family Medicine Education Travel Bursary
- McMaster University MD Program Bursary
- MD Class of 1975 Bursary
- MD Class of 1976 Bursary
- MD Class of 1977 Bursary
- MD Class of 1981 Bursary
- MD Class of 1982 Bursary
- MD Class of 1985 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
- Orville J. Mirehouse Memorial Bursary
- Ragonetti Family Bursary
- Ripley Estate Bursaries
- Ron and Gina Fraser Health Sciences Bursary
- Ronald Pye Bursary
- Ruth Tomlinson Memorial Bursaries
- Sau-Mi Lee Memorial Bursary
- Schenkel Medical Assistance Fund
- Scotiabank Breast Cancer Bursary
- Scotiabank McMaster Medical Bursary
- Scotiabank Pediatric Medical Bursary
- Wendy Wang Bursary
- William A. Vanderburgh Estate Bursary

There are many other bursaries provided through the central campus bursary program, which will be disbursed to students each year. Information about each award, criteria and amounts will be provided to all medical students each fall. For further information about bursaries, please contact Cathy Oudshoorn, (905) 525-9140, ext. 22141.

ACADEMIC AWARDS

The Undergraduate Medical Program has in the past indicated its preparedness 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 neither compromise the spirit of cooperative scholarship which characterizes its MD Program nor replace its priority of concern for 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.

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.SC. 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

Midwives are primary health care providers who have well-developed interpersonal skills and are competent in areas of health education, counselling and interprofessional collaboration. 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 is a leader in midwifery education in 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.

The Midwifery Education Program at McMaster University is a collaborative venture shared by McMaster, Ryerson and Laurentian Universities, and leads to a Bachelor of Health Sciences (B.H.Sc.) in Midwifery. 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. Midwives provide care and advice to women during pregnancy, labour and the postpartum period; conduct deliveries and provide care for newborn babies. Midwifery is potentially one of the most important components of women's health care in Ontario.

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.

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. **Students should expect to relocate for clinical placements. Travel and living expenses are the responsibility of the student.**

REQUIREMENTS

136 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*, 1AA3*
4 units	HTH SCI 3C04 (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 2F03 (Term 1)
6 units	MIDWIF 2G06 (Term 1)
3 units	One elective from the Faculties of Health Sciences, Humanities, or Social Sciences (Term 1)*

LEVEL III: 45 UNITS

3 units	MIDWIF 3I03 (Term 1)
6 units	MIDWIF 3J06 (Term 1)
6 units	MIDWIF 3K06 (Term 1)
9 units	MIDWIF 3A09 (Term 1)
3 units	MIDWIF 3F03 (Term 1)
3 units	MIDWIF 3L03 (Term 2)
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

Enrolment in the Midwifery Education Program is limited. Admission into the Midwifery Education Program is by selection (see Selection Procedure) and 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. The application deadline is February 1 each year. All certified transcripts from secondary and post secondary institutions previously attended must be forwarded to the Office of the Registrar by the application deadline. Applications received after February 1 will not be considered. Please note that required courses must be completed at the time of application (excluding current High School students). ***All documents submitted with the application become the property of the university.***

All applicants must have completed the following course requirements in order to be considered for admission:

A full course credit in:

1. Science (Biology or Chemistry - both strongly recommended)
2. English
3. a Social Science (Anthropology, Family Studies, Geography, History, Law, Psychology, Sociology)

75% in each course is required.

It is recognized that applicants apply to the program with varying educational backgrounds. Applicants can fulfill the courses required from the following educational backgrounds:

Applicants Directly from Ontario Secondary Schools

The following are the minimum Grade 12 U and M requirements under the Ontario Secondary School curriculum:

1. English U;
2. One of Biology U or Chemistry U (both are recommended);
3. One Grade U or M course in Social Science (History, Sociology, Psychology, Geography, Law);
4. Completion of additional Grade 12 U or M courses to total six credits;
5. Students must obtain a minimum grade of 75% in each of the **three** (3) required courses listed in points 1, 2, and 3 above AND a minimum overall average acceptable to the Faculty.

Prior/Current College Diploma Studies

Applicants with prior or current college diploma studies from accredited Canadian colleges must have successfully completed:

1. 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 75% 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 75%.

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 75% 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 75%.

Mature Students

Mature students must have completed the three required subjects as noted in the basic requirements, and have obtained a minimum grade of 75% 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 or 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.

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 mid to high 80s. The program has a two step selection procedure:

1. Assessment of academic eligibility.
2. Admission interview — 80 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.

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.

IMMUNIZATION

The Ontario Public Hospitals Act requires that all persons working in a hospital setting meet certain criteria regarding surveillance for infectious diseases. In order for the requirement of the legislation to be met, once students have been enrolled in the Midwifery Education Program they must annually complete Pre-Clinical Communicable Disease Screening. More information will be sent to successful applicants prior to registration.

POLICE RECORDS CHECK

An offer of admission is contingent upon provision of a Police Records Check, at the applicants expense. At the beginning of each subsequent academic year in the Undergraduate Midwifery Program, students will be required to sign a criminal record and disclosure form to confirm that there has been no change in the information contained in the Police Records Check.

The Police Records Check includes a Vulnerable Sector Screening and check of the Royal Canadian Mounted Police (RCMP), National Canadian Police Information Centre (CPIC) database for the following:

- All records of Criminal Code (Canada) convictions
- All pardoned sexual offences
- All record of convictions under the Narcotic Control Act
- All records of convictions under the Food and Drug Act
- Any undertakings to enter into a Surety to Keep the Peace
- Any Restraining Orders issued under the Criminal Code (Canada) or the Family Act
- All outstanding warrants and charges

Financial Information

In 2008-2009 the tuition fees for a student in Level I of the Midwifery Education Program were $5,187.00 for an eight month academic term. Supplementary fees are estimated at $375.00 per year.

Additional costs include books, supplies, and other learning resources estimated at $750.00-$1250.00.

Students must have access to a vehicle for all placement courses.

Students should expect to cover their own travel and accommodation costs during the program. The program strongly suggests that students join both the College of Midwives Subscriber Status and the Association of Ontario Midwives as a student member.

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 MUGSI/SOLAR is available to them.

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.**

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 laboratory setting if the student exhibits unsafe clinical practice or behaviour that places clients or others at risk and/or violates the Midwifery Act of Ontario. Such removal will result in the student receiving a grade of F and may result in dismissal from the program.

CONTINUATION IN THE PROGRAM

All courses (clinical and non-clinical) with the subject abbreviation MIDWIF and HTH SCI (as outlined in the Curriculum Plan) are required for the degree. Students are reviewed at the end of each term. Students must achieve a Cumulative Average (CA) of at least 6.0 in **all graded 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 1D06; 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 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:

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 items **2.** and **3.** 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 is met. The student:

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 C- for any of HTH SCI 1C06, 1D06, 1J03, 2M03, 3C04, MIDWIF 2F03 or below B- for MIDWIF 1D03 or 2G03;
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 the 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 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

Health Sciences Centre, Room 2J36

Ext. 22694

Assistant Dean, Undergraduate Nursing Education

J. Landeen/B.Sc.N., M.Ed., Ph.D., R.N.

Program Administrator

A. Cholewka/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 1946, 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 nine 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. See *Post-Professional Health Sciences Education Programs* in this section of the Calendar for further information.

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 Student Liaison Office during the school year. For more details about these sessions or to register for a visit, please call the Office of the Registrar at (905) 525-4600. Applicants not applying directly from high school who require a supplemental application package will find this at http://www.fhs.mcmaster.ca/nursing/educ_faq.shtml. All further inquiries should be directed to the Admissions Coordinator at (905) 525-9140, ext. 22232.

The provincial legislation on entry to practice requires all new graduating nurses to have a baccalaureate degree in Nursing. In response, McMaster University, Mohawk College and Conestoga College have formed an educational consortium to offer the McMaster Nursing degree through the McMaster Mohawk Conestoga B.Sc.N. Program. Currently the Basic (A) (formerly (D)) and Registered Practical Nurse (E) Streams are offered at all sites. Students wishing to register in the B.Sc.N. Program at McMaster should pay particular attention to the information which immediately follows this introduction. Those students who wish to register in the B.Sc.N. Program at either Mohawk or Conestoga College should refer to the Collaborative B.Sc.N. (A) and (E) Stream references throughout the School of Nursing section of the Calendar.

Students are also advised to contact the Office of the Registrar at either Mohawk or Conestoga College for additional information. **Please note the Basic Stream at either of the College sites was previously labelled (D) Stream. It is now called (A) Stream and any information that is site specific is noted in the appropriate section of the Calendar.** 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 person-based learning within a problem-based approach, and small group and 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.

In 2009, the B.Sc.N. Curriculum has been renewed and is now called the Kaleidoscope Curriculum. Implementation of the renewed curriculum will begin for students entering the Basic Stream (A), and will roll out into the other streams for future incoming classes. All streams share a common curriculum in their final year of the program, and implementation is staggered so that all cohorts will have the same prerequisites for their final year.

Some changes will be implemented in September 2009 for existing cohorts, although students entering prior to September 2009 will be expected to meet the program goals that were in place the year in which they entered. All students from all years will see a change in emphasis in small group, tutorial classes with a renewed focus on the McMaster model of nursing and nursing education which has been in place since 1989. Consistent with the philosophy, the person will be re-emphasized as the central focus for learning, and person-based learning within a problem-based approach will be adopted. In addition, students will be exposed to different ways of knowing including empirical, ethical, personal, aesthetic and emancipatory.

Four types of courses are taken within the curriculum: (1) nursing courses (professional practice and classroom); (2) required health sciences courses (e.g. anatomy, physiology, biochemistry); (3) required non-health sciences courses (e.g. psychology), and (4) elective courses (non-professional, liberal arts or sciences).

As students move through the program the focus of learning progresses in the following ways. In Levels I and II students are provided with a strong basis in the health and social sciences and are able to choose a variety of electives. They learn about themselves and their clients as individuals. The focus is on health, health assessment and the promotion of health. In Levels II and III students begin to consider the family and the community as client. Students begin to deal with more acute and complex situations. In Levels III and IV, there is a strong focus on nursing and the integration and appraisal of knowledge based on the different ways of knowing into client care in both the classroom and professional practice setting. Students also begin to consider health care from the national and global perspective. Students initially learn about nursing's role in health care and, through interprofessional education opportunities, they gain greater understanding of the interprofessional health care team.

Themes are a logical grouping of prominent or frequently recurring concepts that provide direction to sequence and unify concepts throughout the curriculum. The themes that guide the renewed curriculum include:

1. *Personhood and Caring:* This theme focuses on the humanistic aspect of nursing beginning with a focus on the nurse and client as person and the professional, therapeutic relationship between nurse and client.
2. *Context, Health and Healing:* This theme focuses on the internal and external influences on health and the nurses ability to provide safe and competent care as part of the health care team within a health care system and broader community.
3. *Learning and Knowing:* This theme focuses on critical inquiry, discovery and appropriate use of technology within nursing to facilitate life long learning and reflective practice.

   Evaluation by self, peers and faculty is part of an on-going assessment process of the achievement of clinical, course, and program outcomes.

GOALS FOR STUDENTS WHO ENTER IN SEPTEMBER 2009

Graduates of the McMaster University B.Sc.N. Program will be prepared to engage in 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. Provide competent care with a holistic awareness of the impact of the internal and external context on health and healing.
2. Integrate an understanding of the clients unique perspective on his/her health, and how this perspective influences participation in ones health care
3. Identify the need for appropriate change in health care, create a climate for adopting change and contribute to effecting and evaluating change.
4. Build relationships in a team environment and be actively engaged in team decision making around client care.
5. Contribute to the body of nursing knowledge through demonstrating an inquiring approach to practice.
6. Provide technologically appropriate care in a variety of contexts.
7. Contribute to the future of the nursing profession through a commitment to lifelong learning and professional growth and integrate critical inquiry into professional practice.
8. Assume leadership roles in partnership with clients and the health care team.
9. Assume advocacy roles in partnership with clients and the health care team and challenge inequities that impact on the health of clients.
10. Practice within the professional standards, guidelines, legislation and values of the nursing profession.
11. Establish therapeutic partnerships with clients to enhance health and healing and communicate effectively in a variety of media.

GOALS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2009

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.
11. Identify the need for appropriate change, create a climate for adapting to change in self and others, and contribute to effecting and evaluating change.
12. Participate in developing and implementing strategies for advocacy and political and social action on behalf of and with clients, and the nursing profession.
13. Recognize, develop and maintain the personal characteristics associated with professionalism:
    - awareness of competencies and limitations
    - accountability for own actions
    - commitment to the search for new knowledge
    - advocacy for the voice of professional nursing
    - commitment to self-directed, life long learning
    - critical self-reflection and reflective practice.

Admission Policy and Procedure

ADMISSION POLICY

Enrolment in all B.Sc.N. programs is limited. Possession of the minimum admission requirements does not guarantee an offer of admission.

Application to the B.Sc.N. Program in the Faculty of Health Sciences implies acceptance of admission policies, procedures and the methods by which applicants are chosen for the program.

There are five streams of study leading to the completion of the B.Sc.N. degree. The Basic (A) Stream and Collaborative B.Sc.N. (A) (formerly (D)) Stream require four years of study, and are available to those applying directly from an Ontario secondary school with Grade 12 U or M courses; to those who have qualifications equivalent to Grade 12 U or M courses; and to applicants with other qualifications who meet the admission requirements. ***Note:*** *Beginning in September 2009, students registered in the Basic Stream at any site (McMaster, Mohawk or Conestoga) will be classified as Stream (A). Any differences in the application process or course of studies are noted in the appropriate section below.*

The Post Diploma (E) Stream is available to diploma prepared Registered Practical Nurses only. Graduates of an approved Diploma Practical Nurse Program who are admitted are granted 30 units of advanced credit. Students may complete the program in three academic years if taken on a full-time basis.

The Basic-Accelerated (F) Stream is open to applicants who have completed another university degree or have completed a minimum of 54 units of university degree credits. This program is available on a full-time basis and requires five terms of study taken over one calendar and one academic year.

The requirements and application deadlines vary depending on the applicant's background. An applicant supplying documentation or evidence which, at the time or subsequently, is found to be falsified will be withdrawn from consideration. Any student admitted to the program having submitted false documentation will be withdrawn.

The School of Nursing is committed to equality of opportunity. Disability is not grounds for exclusion from the School. Every attempt will be made to remove barriers and create accommodation provided any accommodation maintains the same academic and clinical standards for all students and does not require significant program change. Applicants should refer to the School of Nursing Admissions Procedure and Guidelines for Applicants with Disability available from the School of Nursing Admissions Office (905) 525-9140, ext. 22232 and consult the Centre for Student Development at (905) 525-9140, ext. 24711 or TTY (905) 528-4307.

ADMISSION PROCEDURE

Applicants from Ontario Secondary Schools (A) Stream

Applicants currently completing Grade 12 U or M courses apply through the Ontario Universities' Application Centre (OUAC). (See address below.) Application forms are available in secondary school guidance offices or on-line at http://www.ouac.on.ca/101. Applications for all studies beginning in September must be received by OUAC no later than **May 1**. Note that this is a program that is usually over-subscribed and it is recommended that you apply by **February 1** to be considered in the first round of admission offers. Secondary schools will forward mid-term and final transcripts directly to OUAC in support of applications.

Applicants With Qualifications Equivalent to Ontario Secondary School (A) Stream

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 with Other Qualifications to (A) Stream and All Applicants to Post Diploma R.P.N. to B.Sc.N. (E) and Basic Accelerated (F) (McMaster Site) Streams

Applicants apply online to the Ontario Universities' Application Centre (OUAC) at http://www.ouac.on.ca/ and complete the supplementary application on-line at http://www.fhs.mcmaster.ca/nursing by February 15th. Applications for all studies beginning in September must be received by February 15.

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 3Z5

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 (A) 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.ocas.on.ca

Admission 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. Failure to comply with these requirements may result in an offer of admission being withdrawn or the student not being allowed to attend class.

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) web site (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 offence 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
MCMASTER SITE

Applicants Directly from Ontario Secondary Schools

To be considered to this category, applicants must not have attended any post secondary educational program prior to application.

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 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. The scores awarded by the assessors are final.

Applicants will be informed of the admission decision by mid-June. Where courses are in progress at the time of admission, the offer of admission will be conditional upon the applicant achieving a final Cumulative Average of B- in the required course work.

Applicants with a University Degree or with University Degree Credits

To be considered applicants must:

1. achieve a Cumulative Average of at least B- in all university degree credit 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.)
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. complete the supplementary application on-line at http://www.fhs.mcmaster.ca/nursing 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.

To be considered applicants 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. Applications 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 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. complete the supplementary application on-line at http://www.fhs.mcmaster.ca/nursing 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 and to receive details of requirements.

II. COLLABORATIVE B.SC.N. PROGRAM (A) (FORMERLY (D)) STREAM
MOHAWK 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 (See Admission Requirements, Basic (A) Stream, McMaster Site).

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

To be considered applicants must:

1. achieve a Cumulative Average of at least B- in all university degree credit 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 prior to 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 qualified applications received by the equal consideration date (February 1) to fill the program.

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 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.

To be considered applicants 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. Applications will not be considered from applicants who possess credit only in the required subjects;
2. achieve at least a 75% Cumulative Average in the pre health sciences program;
3. 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 Accelerated 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 site to determine if there is space for transfer applicants. For the Mohawk College site, contact the Associate Dean, B.Sc.N. Program; for the Conestoga College site, contact the Chair, Nursing Program.

Applicants must be currently enrolled in or have completed Level I of a B.Sc.N. Program with an overall Cumulative Average of at least B- (75%) and at least a B- average in nursing and science courses.

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.

Applicants must submit the following to the Registrars 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.

III. POST DIPLOMA R.P.N. (E) STREAM (MCMASTER)

Selection is based on academic qualifications and the rating 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. To be considered, applicants enrolled in a diploma practical nurse program must write the College of Nurses of Ontario (CNO) practical nurse registration examinations by May 31st of the year in which they are applying.

To be considered applicants must:

1. possess a current CNO annual registration payment card or have written the Practical Nurses Registration Examinations by May 31st of the year of application;
2. have a diploma in practical nursing (two year program) from an Ontario College of Applied Arts and Technology or equivalent with a minimum overall average of 75% or higher. Applicants who have satisfactorily completed a diploma practical nurse program but who have not achieved the required Cumulative Average may become academically eligible by completing at least six units (one full course or two half courses) of university degree credit with a Cumulative Average of at least B- (70%). This work can be in any subject area and will be used for transfer credit once the applicant is admitted to the Post Diploma Practical Nurse B.Sc.N. program (Stream E).
   Note: Potential applicants who possess a certificate in practical nursing should seek upgrading to diploma practical nurse at a College of Applied Arts and Technology or apply to a basic B.Sc.N. program (see admission criteria for Stream A);
3. complete Form 105D on-line at http://www.ouac.on.ca/ 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 on-line following instructions at http://www.fhs.mcmaster.ca/nursing/ by February 15.

POST DIPLOMA R.P.N. TO B.SC.N. PROGRAM (E) STREAM MOHAWK AND CONESTOGA SITES

To be considered applicants must:

1. meet criteria 1 and 2 above under Post Diploma R.P.N. to B.Sc.N. Program (E) Stream McMaster Site.
2. apply to the Ontario College Application Services (OCAS) along with the required fees by February 1. All applications must be received by OCAS on or before February 1 to be given equal consideration by the college.

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.

IV. BASIC-ACCELERATED (F) STREAM

The Basic-Accelerated (F) Stream is available to those applying from a university science program of studies. Students may complete the program of studies in five academic terms. Note: F Stream is not open to students currently enrolled/registered in the Basic Stream at McMaster or any other nursing program.

To be considered applicants must:

1. achieve a Cumulative Average of at least B- in all university degree credit courses taken.
2. complete a minimum of 54 units of university credit which include a grade of at least C- on each of the following required courses:
   - six units of Psychology of which at least three units consist of Introductory Psychology
   - six units of Human Physiology **or** six units of Human Anatomy and Physiology
   - six units of Biochemistry (preferred) **or** six units of Chemistry **and**
   - three units of Statistics

   Note: When choosing Chemistry courses to meet the requirements, students are advised to select relevant courses that would facilitate success in a nursing program. Students must have completed or be currently registered in the required courses at the time of application.
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 the completed supplementary application on-line following instructions at http://www.fhs.mcmaster.ca/nursing/ by February 15.

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 {6390}
CONESTOGA SITE (FORMERLY D STREAM) {6385}
MOHAWK SITE (FORMERLY D STREAM) {6386}

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 2009

ELECTIVES

Eighteen units of electives are to be selected from disciplines of the students choice, of which a minimum of six units are to be chosen from courses designated as Level II or above. Normally a maximum of six 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 McMaster Site 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 (A) Stream* for more information.

Basic (A) Stream Mohawk and Conestoga Site students must take nine units of COLLAB electives and nine units of McMaster electives. Collab electives 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 (A) Stream*.

NOTE

HTH SCI 4L03 may be completed in either Level III or IV.

LEVEL I: 30 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 6)

9 units	HTH SCI 1AA3, 1H06
12 units	NURSING 1F03, 1G03, 1I02, 1J02, 1K02
6 units	PSYCH 1X03, 1XX3 (or 1A03, 1AA3)
3 units	Electives
1 course	NURSING 1A00

LEVEL II: 31 UNITS (EFFECTIVE 2010-2011)

(UNITS GRADED: 21; UNITS PASS/FAIL: 10)

9 units	HTH SCI 2H03, 2HH3, 2RR3
19 units	NURSING 2K02, 2L03, 2M04, 2N04, 2P03, 2R03
3 units	Electives

LEVEL III: 31 UNITS (EFFECTIVE 2011-2012)

(UNITS GRADED: 23; UNITS PASS/FAIL: 8)

3 units	HTH SCI 3BB3
0-3 units	HTH SCI 4L03 (See Note above.)
19 units	NURSING 3QQ3, 3S04, 3T04, 3X04, 3Y04
6-9 units	Electives

LEVEL IV: 30 UNITS (EFFECTIVE 2012-2013)

(UNITS GRADED: 13; UNITS PASS/FAIL: 17)

0-3 units	HTH SCI 4L03 (See Note above.)
24 units	NURSING 4J07, 4K10, 4P04, 4Q03
3-6 units	Electives

TOTAL UNITS: 122

REQUIREMENTS FOR STUDENTS WHO ENTERED 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 McMaster Site 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 (A) Stream* for more information.

For Basic (A) Stream Mohawk and Conestoga Site students 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 (A) Stream*.

NOTE

Basic (A) Stream Mohawk and Conestoga Site 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 1AA3).

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) (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
15 units	NURSING 2L03, 2M03, 2N03, 2P03, 2R03
6 units	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 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 McMaster Site 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 (A) Stream* for more information.

Basic (A) Stream Mohawk and Conestoga Site students must take 15 units of COLLAB electives and 15 units of McMaster electives. Enrolment in some COLLAB courses may be limited.

NOTE

Basic (A) Stream Mohawk and Conestoga Site 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 1AA3).

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 (See *Note* above)
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 (or 3QQ3)
9 units Electives

LEVEL III: 32 UNITS

(UNITS GRADED: 24; UNITS PASS/FAIL: 8)

7 units HTH SCI 3B03 (or 2RR3), 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

DIPLOMA R.N. (B) STREAM {6391}
(LAST INTAKE WAS IN SEPTEMBER 2008)

The program of study for Diploma Registered Nurses is integrated 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 experiences 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 normally 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 3MM3, 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

POST DIPLOMA R.P.N. (E) STREAM MCMASTER SITE {6388}
CONESTOGA SITE {6383}
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 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

ADVANCED CREDIT: 30 UNITS

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 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

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 (or 2RR3), 3C04
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

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
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 2I06
1 course NURSING 1A00
TERM 2: 16 UNITS
3 units HTH SCI 2HH3
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

REQUIREMENTS FOR STUDENTS WHO ENTERED IN 2007
ADVANCED CREDIT: 54 UNITS
UNITS TAKEN AT MCMASTER: 69
(UNITS GRADED: 41)
TERM 1: 15 UNITS
6 units HTH SCI 2H03, 3B03 (or 2RR3)
9 units NURSING 2I06, 3LL3
1 course NURSING 1A00
TERM 2: 15 UNITS
3 units HTH SCI 2HH3
12 units NURSING 2J04, 2Q03 (or 3QQ3), 3S03, 3U02
SPRING/SUMMER TERM: 11 UNITS
11 units NURSING 3T03, 3X04, 3Y04
TERM 4: 15 UNITS
4 units HTH SCI 3C04
11 units NURSING 4J07, 4P04
TERM 5: 13 UNITS
2 units HTH SCI 4L02
11 units NURSING 4K07, 4Q04
TOTAL UNITS: 69

REGISTRATION TO PRACTISE NURSING (FOR ALL NURSING STUDENTS)

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}

See *Post-Professional Health Sciences Education Programs* in this section of the Calendar.

Leadership and Management Program {6396}

The Leadership and Management Program, which was previously administered and is currently endorsed by the Canadian Nurses Association, was transferred to McMaster in 1993. The Program is offered to Registered Nurses and health care professionals located throughout Canada and internationally by means of distance education. It is also offered locally through individual self-directed study and tutorial.

The course work is designed to familiarize the student with the theory and application necessary to function effectively in a formal or informal leadership position. Content includes theory and techniques of management, leadership, organizational development and change, motivation, labour relations, legal implications, ethics, finance and the Canadian Health Care System.

Enrolment is by approval of the Director. Further information may be obtained through the Program Office (905) 525-9140 ext. 22409.

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
6 units NURSING 4B06
6 units NURSING 4DD6
3 units NURSING 4FF3
3 units NURSING 4HH3
3 units NURSING 4I03
3 units NURSING 4Z03

Students who are enrolled in the Post Diploma R.N. (B) Stream of the B.Sc.N. Program will be granted credit for the equivalent courses in the B.Sc.N. Program.

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 MUGSI/SOLAR is available to them.

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.**

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 class, clinical placement or laboratory setting at any point during the term if the student exhibits unsafe clinical practice or behaviour that places the patient or others at risk or is deemed a serious breech of professional behaviour. 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); 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) 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) Streams: NURSING 1I02, 1J02, 2L03, 2P03, 3QQ3 (or 2Q03), 3X04, 3Y04, 4J07, 4K07, 4K10
   - Diploma Registered Nurses (B) Stream: NURSING 4S06, 4T06
   - Registered Practical Nurses (E) Stream: NURSING 2AA4, 3QQ3 (or 2Q03), 3X04, 4J07, 4K07
   - Basic-Accelerated (F) Stream: NURSING 2J04, 3QQ3 (or 2Q03), 3X04, 3Y04, 4J07, 4K07

   Clinical courses are usually evaluated on a Pass/Fail basis. Areas of excellence in practice are noted in a detailed evaluation summary for each course.

   (A course for which credit has not been given may be repeated only when approval is given by the Coordinator of Studies in consultation with the program Reviewing Committee.)
4. Students who drop or cancel required Nursing or Health Science courses must notify the Office of the Coordinator of Studies. The Program reserves the right to limit the number of times a student may register for and then drop or cancel a course, due to resource limitations.
5. Normally, Level I, II, III and IV Nursing courses are available only to students registered in the B.Sc.N. Program.
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 for any course is constrained by 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) and (E) who are interested in International or Outpost placements, prerequisites include, but are not limited to, attaining a Cumulative Average of 8.0 in all Level II and Term 1 of Level III (Basic A Stream) or Term 2 Level II and Term 1 Level III (R.P.N. to B.Sc.N. E Stream), a pass in all clinical courses, and a pass in HTH SCI 3B03 or HTH SCI 2RR3.
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 1AA3, 1BB3, 1H06 (or 1H03 and 1HH3), 2H03, 2HH3, 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.

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 Reviewing Committee, proceed in the program and will be placed on program probation. 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 Reviewing Committee, be allowed to repeat the course in which the minimum grade or Pass requirement has not been met. If a student fails to meet the minimum grade or Pass requirements after repeating the course, he or she may not continue in the program. A student may normally be allowed to repeat only one clinical and one non-clinical Nursing or Health Sciences course during the program.

ACCOMMODATION PLAN FOR STUDENTS EXPERIENCING COHORT LAG

An individualized plan will be made with each student experiencing cohort lag as the Kaleidoscope Curriculum is phased in over the period of 2009 to 2013. In each instance, a plan for course completion will be developed considering which particular aspects of the curriculum have been completed with the guiding principle to advantage the student where ever possible. The Curriculum for students who entered in September 2008 will be of greatest concern. The Program reserves the right to offer courses which have been replaced by new courses in the Kaleidoscope Curriculum if this is to the students advantage, and if there are sufficient numbers of students requiring a course, based on resources. In other instances students will require individualized or group tutoring to learn specific concepts so that they can join a cohort who enters the program after them. Students experiencing cohort lag should contact the Office of the Coordinator of Studies.

Collaborative B.Sc.N. (A) (Formerly (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 contact the Student Advisor at the appropriate site (Conestoga or Mohawk College). Before courses are selected, students are requested to determine the requirements for the program as outlined in the appropriate sections of this Calendar and to follow the instructions in the registration package.

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.

Academic Records: Student files shall be kept at the respective College site for reference and audit purposes.

Examinations: A Mohawk College, Conestoga College or McMaster student photo identification card is required at all examinations.

THE B.H.SC. PHYSICIAN ASSISTANT PROGRAM {7884}

WEB ADDRESS: http://fhs.mcmaster.ca/physicianassistant

PROGRAM OVERVIEW

McMaster was among one of the first institutions in Canada to launch a Physician Assistant Education Program in 2008. The PA Education program will lead to the Bachelor of Health Sciences (Physician Assistant) degree. The program is 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 practising 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 focusses on the study of the clinical sciences underpinning health care delivery. In the second year, students enter into clinical placements.

YEAR 1: CLINICAL SCIENCES

The clinical sciences curriculum is modelled on the McMaster Medical School COMPASS Curriculum and is designed to meet the competencies outlined in the *Canadian Association of Physician Assistants Occupation Competency Profile* and the Canadian Medical Association accreditation requirements. The curriculum is 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.

he clinical sciences curriculum consists of three 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

1. **Clinical Sciences:** Homeostasis 1: Energy Balance: GI, endocrine and nutrition, physiology, disease, fluid and electrolyte balance (including renal, acid base, BP) and reproduction, pregnancy and genetics 1
2. **Professional Skills:** Additional focus on the GI, endocrine history, communication skills, obstetric and gynecologic history
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, 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 3

1. **Clinical Sciences:** Host defenses, neoplasia, genetics 2, neurologic, psychiatric and musculoskeletal physiology and disease
2. **Professional Skills:** Additional focus on health care counselling, neurologic, psychiatric and musculoskeletal history
3. **Professional Competencies:** Mental health and society, negotiation and conflict resolution, charting, public reporting and accountability, consent and confidentiality, 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 46 weeks of supervised clinical placements. Core experiences will take place in family medicine, internal medicine, surgery, 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 Canadian Association of Physician Assistants certification examination.

Admission Procedures and Requirements

ADMISSION REQUIREMENTS

By June 2009, 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 PA Education program. There is no requirement for applicants to have carried a full course load. By February 2009, applicants are expected to have achieved an overall simple average of at least 3.0 on the OMSAS 4.0 scale for consideration. Higher grades may be required.

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 applicants expense) upon entering the program and annually thereafter.

ADMISSION PROCEDURES

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 February 5, 2009. Please refer to the programs 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
- 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 2009-2010 the tuition fee for a student in Year I 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

WEB ADDRESS: http://www.humanities.mcmaster.ca/
EMAIL ADDRESS: humanities@mcmaster.ca
Chester New Hall, Room 112
Ext. 27423

Dean of Humanities

S. Crosta/B.A., M.A., Ph.D.

Associate Dean of Humanities

D. Wright/B.A., M.A., D.Phil.

Assistant Dean (Studies)

P.A. Kalnins/B.A.

Academic Advisors

D. Hayward
J. Osterman/B.A., B.Admin.
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, Cultural Studies & Critical Theory, English, French, History, Linguistic Cognitive Science, Linguistics, Multimedia, Music, Peace Studies, Philosophy, Theatre & Film Studies and Women's Studies. Additionally, Minors are available in German, Greek, Italian, Japanese, Latin, and Spanish (formerly Hispanic Studies) and courses are available in Mandarin Chinese. Students may also take an interdisciplinary Minor in Archaeology.

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 1Z03 and 1ZZ3 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. Entrance 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.
   - 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.
   - 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).
   - Permission to register in ART 1F03 and 1FF3 will be confirmed in writing by the School of the Arts. School of the Arts verification (with confirmation number **and** a Letter of Acceptance 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 in the *School of the Arts* programs in the *Faculty of Humanities* section of the Calendar.

   When applying for admission using the OUAC application, applicants who wish to study **Art** should select **MH** for the OUAC code and choose **STUDIO ART** as the Subject of Major Interest.
8. 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 7* 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
CSCT	1B03, 1BB3
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
PEACE 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)

CHINESE	1Z06, 1ZZ6
GERMAN	1B03, 1BB3, 1Z06
INQUIRY	1HU3
ITALIAN	1A03, 1AA3, 1Z06
JAPANESE	1Z06
MUSIC	1B03, 1BB3, 1CC3, 1D03, 1EE6, 1G03 (See *Note 8* above.)
POLISH	1Z03, 1ZZ3
RUSSIAN	1Z03, 1ZZ3
SPANISH	1A03, 1AA3, 1Z06

REQUIREMENTS

Students admitted to Humanities I must complete 30 units as follows:

12 units from Course List 1 **(should include six units in each of two subjects listed above. CMST 1A03 is an exception to this.)**

18 units Electives, which may include courses from Course Lists 1 and 2

MUSIC I **{0370}**

PROGRAM NOTE

Students interested in entering Honours Music (Music Cognition) must have completed Grade 12 Biology, or enrol 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, which may include courses from Humanities Course Lists 1 and 2
(Students intending to enter the Honours Music (Music Cognition) program must take PSYCH 1X03 and 1XX3 (or PSYCH 1A03 and 1AA3).)

B. Degree Programs

Upon successful completion of Humanities I, a student may be admitted to a program of study leading toward a Bachelor of Arts degree. Completion of Music I may lead to a Bachelor of Music or Bachelor of Arts degree. Three types of programs lead toward a Bachelor's degree in the Faculty of Humanities.

SINGLE HONOURS PROGRAM

This involves three years of study, beyond Level I, concentrated in the work of a single discipline (e.g. History). After three years of Music study beyond Music I, students receive a B.Mus. degree.

COMBINED HONOURS PROGRAM

This involves three years of study, beyond Level I, concentrated in the work of two disciplines (e.g. English and Peace Studies). A student can combine study in any two Humanities disciplines, or one Humanities discipline and a subject from another Faculty where appropriate (e.g. History and Political Science).

B.A. PROGRAM

This involves two years of study, beyond Level I, concentrated in the work of a single discipline.

The content and the requirements of Single Honours, Combined Honours and other B.A. programs are found after the *Academic Regulations* below.

There are a number of Humanities courses without prerequisites which may be taken as electives. Individual course descriptions are listed by department in the *Course Listings* section of this Calendar.

Not only are students from other Faculties able to take individual courses which have no prerequisites, but they are also able to transfer into any of the degree programs offered by the Faculty of Humanities. For the majority of programs in the Faculty, admission may be gained after the successful completion of any Level I program at the university, providing this includes the necessary program requisites as outlined in the admission statement for each Humanities program as described under Programs for the B.A., B.A. (Honours) and B.Mus. Degrees.

MINOR

A Minor is an option available to a student enrolled in a four-level honours program. A Minor consists of at least 18 units of Level II, III or IV courses in addition to the designated Level I course(s), that meet the requirements set out in the program description of that Minor. Students are responsible for ensuring that they take courses that meet these requirements **(using elective units only)**. When registering for cross-listed courses to be applied towards a Minor, students must ensure that they register in the appropriate subject for the Minor designation. Those who have the necessary requirements may apply for recognition of a Minor when they graduate. If recognition for a Minor is granted, it will be recorded on the student's transcript. Minors cannot be revoked once approved. **Students may return for a second degree in the subject in which they have obtained a Minor, but only at the Honours level.** For further information please refer to *Minors* in the *General Academic Regulations* section in this Calendar.

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 Linguistics. Generally, proficiency in more than one language is a hallmark of most highly-qualified Humanities' graduates seeking the widest range of post-graduation academic and employment opportunities.

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.

PART-TIME 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 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 MUGSI/SOLAR is available to them.

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.**

Students enrolled in Humanities programs, in addition to meeting the General Academic Regulations of the University, shall be subject to the following Faculty Regulations and Policies.

Admission to Level II Programs

The dates for application may vary somewhat from year to year; however, the specific dates and information will be posted on campus and outlined in the campus newspaper. It is the student's responsibility to take the necessary steps to apply for a Level II program.

1. **In February/March**, a Majors Fair is held in the Faculty of Humanities to provide information on undergraduate programs, course offerings, career opportunities, etc.;
2. **Mid-March to Mid-April**, students seeking admission to a Level II program for the following Fall/Winter session must complete an application for admission to Level II through MUGSI. The application allows students to rank four program choices, and students will be notified of their eligibility for these choices on their grade reports in June.

DEFERRED EXAMINATIONS

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.

TRANSFER TO THE FACULTY OF HUMANITIES

Students from other Faculties are able to transfer to degree programs offered by the Faculty of Humanities provided that they have obtained a Cumulative Average of at least 3.5 and have completed the necessary requirements for admission to a program.

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, and should include relevant documentary evidence, for example a letter from a physician outlining any medical condition that might have affected the student's academic performance or final grades. Reinstatement cases will be carefully screened and the evidence considered will include the student's academic performance before and after admission to McMaster, as well as the nature of the reasons cited in the application letter and the accompanying documentation.

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 their personal degree audit each time they cancel or add courses, 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 their eligibility for scholarships and financial aid such as OSAP.

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 I). **A student with outstanding deferred examinations 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 the student is registered in the final Level of his/her 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 Spring/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 request a Letter of Permission from 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 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 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 counsellor(s), must be submitted to the Coordinator 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://www.humanities.mcmaster.ca/~sota/index.html

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 {2028}

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, 2F03, 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, 2F03, 2FF3, 3D03, 3E06, 4E12
9 units	from ART 3F03, 3G03, 3H03, 3I03, 3J03
6 units	ART HIST 2D03, 3AA3
6 units	Levels III and IV Art History
3 units	Levels II, III 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, 2F03, 2FF3 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, 2F03, 2FF3, 3D03, 3E06, 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 {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

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

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 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. 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 enrol 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 1X03 and 1XX3 (or 1A03 and 1AA3).)

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 post-graduate studies in other professions should select a significant number of the courses in Course List 2.

COURSE LIST 1

MUSIC 3AA3, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4OC3, 4OI3, 4P03, 4Q03, 4V03

COURSE LIST 2

MUSIC 3CM3, 3CT3, 3H03, 3Y03, 3YY3, 4C03, 4H03, 4R03, 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
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
9 units	from Course Lists 3 and 4
30 units	Electives

Honours Music (B.Mus.) {2377} (Music Cognition)

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. Admission 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 1X03 and 1XX3 (or 1A03 and 1AA3).

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 post-graduate studies in other professions should select a significant number of the courses in Course List 2.

COURSE LIST 1

MUSIC 3AA3, 3J03, 3K03, 3L03, 3M03, 3N03, 3O03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4OC3, 4OI3, 4P03, 4Q03, 4V03

COURSE LIST 2

MUSIC 3CM3, 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 2AA3, 2D03, 2F03, 2H03, 2N03, 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, 2I03, 2II3, 2Z03, 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 {1378}

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 1AA3, 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 **in writing** through the Dean's Office, **with a copy of the application sent to the Director of the School of the Arts** 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)
3 units	from MUSIC 3SS3, 4G03, 4SS3, 4U03
9 units	MUSIC 4E09

- Lesson fees: Lesson fees are charged over and above tuition for MUSIC 2E06, 2EE6, 3E06, 3EE6, 3SS3, 4E09 and 4SS3. Students registered in Honours Music will not be charged extra fees for MUSIC 2E06.
- 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 the 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)

Honours Theatre & Film Studies {2551}

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 beginning 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.)
27 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
45 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 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 beginning 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 3.5 including an average of at least 4.0 in THTR&FLM 1A03 and 1B03.

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 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.)
12 units	Level III or IV Theatre & Film
36 units	Electives

Minor in Theatre & Film Studies

24 units of Theatre & Film.

DEPARTMENT OF CLASSICS

WEB ADDRESS: http://www.humanities.mcmaster.ca/~classics/

Honours Arts & Science and Classics

(**B.Arts.Sc.**; See Arts & Science Program)

NOTES

1. Students in a Classics program may choose courses from the following subfields: Ancient History and Society, Ancient Philosophy, Classical Archaeology and Art History, Classical Literature in Translation, Greek Language and Literature, Latin Language and Literature.
2. With the approval of the Department of Classics and the Office of the Dean of the Faculty of Humanities, students who have completed 60 units of work of any Honours program in Classics may replace all or part of their Level III work by courses of study at a university or equivalent institution abroad. Consult the Department for further details.
3. Students may receive up to six units of credit for archaeological field work at an approved Classical site. Consult the Department for further details.
4. Students 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 to fulfill the degree requirements. Students intending to do graduate work in the field of Classics should note that most universities offering such programs require several years of undergraduate work in both Greek and Latin for admission. These students are strongly encouraged to include Greek and Latin courses as early as possible in their program.
5. Students intending to do graduate work in the field of Classics may wish to include an independent study course (CLASSICS 4T03) in the final level of their program.

Honours Classics {2130}

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 U 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 I Greek or Latin)
15 units	Level III Classics, Greek, Latin (may include Level II Greek or Latin)
6 units	Level IV Classics, Level III or IV Greek, Level III or Level IV Latin
12 units	Levels II, III, IV Classics, Greek or Latin
42 units	Electives

Combined Honours in Classics 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 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

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 I Greek or Latin)
9 units	Level III Classics, Greek, Latin (may include Level II Greek or Latin)
6 units	Level IV Classics, Level III or IV Greek, Level III or IV 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 I 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 or Latin (may include Level I 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.

PROGRAMS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2007

Students who entered a program in Classics prior to September 2007 should refer to their degree audits or contact the Departmental Counsellor in the Department of Classics to discuss their program requirements.

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, 2Z03, 3AA3, 3C03, 3D03, 3I03, 3K03, 3MM3, 3Q03, 3S03 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, 2R03, 2RR3, 2S03, 3BB3, 3H03, 3N03, 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 2I03 which may include no more than three units of Level I courses
6 units	from Levels II or III Communication Studies, MMEDIA 3B03, 3K03
6 units	Level IV Communication Studies
39 units	Electives

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.

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 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.) (Also, see *Note* above.)
3 units	from CMST 2DD3, 2K03, 2Z03
3 units	from CMST 3AA3, 3C03, 3D03, 3I03, 3K03, 3MM3, 3Q03, 3S03
3 units	from CMST 2BB3, 2G03, 2H03, 2I03, 2R03, 2RR3, 2S03, 3N03
3 units	from CMST 3BB3, 3H03, 3SS3, 3UU3
3 units	from CMST 2E03, 2F03, 3G03, 3V03, 3Y03, MMEDIA 2I03
3 units	from Levels II or III Communication Studies, MMEDIA 3B03, 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

Students who entered a program in Communication Studies prior to September 2007 should refer to their degree audits or contact the Departmental Counsellor in the Department of Communication Studies and Multimedia to discuss their program requirements.

Multimedia

WEB ADDRESS: http://csmm.humanities.mcmaster.ca/

Honours Arts & Science and Multimedia

(**B.Arts.Sc.**; See Arts & Science Program)

PROGRAMS FOR STUDENTS WHO ENTER IN SEPTEMBER 2009

Honours Multimedia {2294}

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. (See *Notes* below.)

ADMISSION
Enrolment in this program is limited and 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. **Applicants must have completed Level I (30 units including MMEDIA 1A03 and 1B03) by April of the year in which application is made.**

2. **Application for this program must be made no later than April 30.** Please see *Admission to Level II Programs* in *Academic Regulations* in this section of the Calendar for information with regard to the application procedure. Serious applicants are advised to rank the Multimedia program as their first program of choice for Level II.
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 Honours 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 offered through the Centre for Continuing Education. Please refer to the *Certificate and Diploma Programs* section of this calendar under the heading *Centre for Continuing Education.*
5. Students must complete MMEDIA 4A03 and 4B03 in the same academic year or obtain permission from the Multimedia Advisor.

COURSE LIST 1

COMP SCI 1MA3, 2SC3; MMEDIA 2E03, 2F03, 2H03, 2I03, 3C03, 3F03, 3H03, 3I03, 3K03, 4F03, 4J03

COURSE LIST 2

CMST 2DD3, 2E03, 2G03, 2H03, 2K03, 2S03, 2T03, 3C03, 3CC3, 3H03, 3I03, 3K03, 3MM3, 3N03, 4I03

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
27 units	MMEDIA 2A03, 2B03, 2G03, 2K03, 3A03, 3B03, 3M03, 4A03, 4B03
12 units	CMST 1A03, 2A03, 2B03, 2C03
15 units	from Course List 1
6 units	from Course List 2
30 units	Electives

Combined Honours in Multimedia 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. (See Notes below.)

ADMISSION

Enrolment in this program is limited and 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. **Applicants must have completed Level I (30 units including MMEDIA 1A03 and 1B03) by April of the year in which application is made.**
2. **Application for this program must be made no later than April 30.** Please see *Admission to Level II Programs* under *Academic Regulations* in this section of the Calendar for information with regard to the application procedure.
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 offered through the Centre for Continuing Education. Please refer to the *Certificate and Diploma Programs* section of this calendar under the heading *Centre for Continuing Education.*
5. Students must complete MMEDIA 4A03 and 4B03 in the same academic year.

COURSE LIST

CMST 2T03, COMP SCI 1MA3, 2SC3; LINGUIST 4D03; MMEDIA 2E03, 2F03, 2H03, 2I03, 2K03, 3C03, 3F03, 3H03, 3I03, 3K03, 4F03, 4J03; MUSIC 2F03; THTR&FLM 2E03; 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 admission into the program
27 units	MMEDIA 2A03, 2B03, 2G03, 2K03, 3A03, 3B03, 3M03, 4A03, 4B03
12 units	from Course List
36 units	Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
15 units	Electives to total 120 units

PROGRAMS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2009

Honours Multimedia {2294}

NOTE

Students must complete MMEDIA 4A03 and 4B03 in the same academic year or obtain permission from the Multimedia Advisor.

COURSE LIST 1

COMP SCI 1MA3, 2SC3; MMEDIA 2C03, 2D03, 2E03, 2F03, 2G03, 2H03, 2I03, 2J03, 3C03, 3D03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3K03, 3M03, 4C03, 4D03, 4F03, 4J03

COURSE LIST 2

CMST 2DD3, 2E03, 2G03, 2H03, 2K03, 2S03, 2T03, 3C03, 3CC3, 3H03, 3I03, 3K03, 3MM3, 3N03, 4I03

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	MMEDIA 2A03, 2B03, 3A03, 3B03, 4A03, 4B03
12 units	CMST 1A03, 2A03, 2B03, 2C03
3 units	from MMEDIA 2C03, 2K03, 3G03
15 units	from Course List 1
6 units	from Course List 2
36 units	Electives

Combined Honours in Multimedia and Another Subject

NOTE

Students must complete MMEDIA 4A03 and 4B03 in the same academic year or obtain permission from the Multimedia Advisor.

COURSE LIST

CMST 2T03, COMP SCI 1MA3, 2SC3; LINGUIST 4D03; MMEDIA 2C03, 2D03, 2E03, 2F03, 2G03, 2H03, 2I03, 2J03, 3C03, 3D03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3K03, 3M03, 4C03, 4D03, 4F03, 4J03; MUSIC 2F03; THTR&FLM 2E03; 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 admission into the program
18 units	MMEDIA 2A03, 2B03, 3A03, 3B03, 4A03, 4B03
3 units	from MMEDIA 2C03, 2K03, 3G03
15 units	from Course List
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)

The Combined Honours program in Comparative Literature is being phased out. No new registrants will be accepted after September 2008. Students who entered a program in Comparative Literature prior to September 2008 should refer to their degree audits or contact an Academic Advisor in the Office of the Dean in the Faculty of Humanities to discuss their program requirements.

Combined Honours in Comparative Literature and Another Subject

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 requirements, with the approval of the Director of the Program.
2. Graduate programs in Comparative Literature require proficiency in a second language. Students who plan to pursue graduate studies in Comparative Literature are strongly encouraged to include a second language beyond the introductory 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 (Level 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	from COMP LIT 2A03, 2AA3, 2BB3, 2CC3, 2F03, 3BB3, 3EE3, 3G03, 3HH3, 3JJ3, 3MM3, 3N03, 3QQ3, 3SS3, 3WW3
6 units	from COMP LIT 4A03, 4D03, 4E03, 4F03, 4T03
15 units	Levels II, III, IV Comparative Literature (See *Note 1* 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

The Combined Honours program and the Minor in Comparative Literature are being phased out. As a result, the Minor in Comparative Literature will no longer be available once the current group of Comparative Literature program students complete their degree requirements.

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:

	AREA	COURSES
AREA 1	Early British and Comparative Literature	ENGLISH 2B06, 2T03, 3C06, 3I06, 3K06, 3L06, 3V06
AREA 2	Later British and Comparative Literature	ENGLISH 2I06, 2TT3, 3G06, 3M06, 3N06
AREA 3	Canadian, American and Post-Colonial	ENGLISH 2G06, 2H06, 3R06
AREA 4	Theory and Cultural Studies	ENGLISH 2A03, 2K06, 2M03, 2MM3, 3A03, 3AA3, 3J03, 3JJ3, 3Q03, 3QQ3

Honours English {2200}

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 18 units of Levels II and/or III English
   - Level III 18 units of Levels II and/or III English
   - Level IV nine 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 ENGLISH 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 admission 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 Area 1-4 English courses
3 units	from ENGLISH 2D03, 2N03, 2R03, 3CC3, 3D03, 3DD3, 3EE3, 3F03, 3GG3, 3H03, 3RR3, 3S03, 3W03, 3X03, 3Y03
9 units	Level IV English seminars
36 units	Electives

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 12 units of Levels II and/or III English
- Level IV six units of Levels II and/or III English; six units of Level IV English seminars (No student may take more than six units of Level IV seminars.)

2. With permission of the Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in second term. Students who are interested in taking ENGLISH 4X03 should contact the faculty member chairing the ENGLISH 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 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
6 units	from Area 1-4 English courses or ENGLISH 2D03, 2N03, 2R03, 3CC3, 3D03, 3DD3, 3EE3, 3F03, 3GG3, 3H03, 3RR3, 3S03, 3W03, 3X03, 3Y03
6 units	Level IV English seminars
36 units	Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units	Electives to total 120 units

Combined Honours in Cultural Studies and Critical Theory and Another Subject

Cultural Studies and Critical Theory (CSCT) provides students with an opportunity to investigate the texts, practices, theories and concepts that animate modern individual and social experience. CSCT 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 CSCT 1B03, 1BB3, ENGLISH 1A03, 1AA3, 1B03, 1BB3, 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
   - Level IV six units of Levels II and/or III Cultural Studies and Critical Theory; six units of Level IV Cultural Studies and Critical Theory seminars (No student may take more than six units of Level IV seminars.)
2. With permission of the Department, students may substitute CSCT 4X03 for three units of Level IV seminar work in second term. Students who are interested in taking CSCT 4X03 should contact the faculty member chairing the CSCT 4X03 committee early in the **first** term.
3. Most graduate programs in Cultural Studies and/or Critical Theory 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.

CORE COURSE LIST

CSCT 2C03, 2M03, 2MM3, 2P03, 2S03, 3A03, 3AA3, 3CC3, 3Q03, 3QQ3, 3R06

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 Core Course List
6 units	Levels II or III Cultural Studies and Critical Theory
6 units	Level IV Cultural Studies and Critical Theory seminars
36 units	Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units	Electives to total 120 units

B.A. in English {1200}

Students wishing to enter this 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 Diversity. 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.

AREA	COURSES
Linguistics, Translation and Literary Theory	FRENCH 2GO3, 2H03, 3A03, 3CC3, 3GG3, 3H03, 4BB3, 4H03, 4X03
African and Caribbean Literatures and Cultures	FRENCH 3Z03, 4LL3
Quebec and Franco-Canadian Literatures and Cultures	FRENCH 2E03, 3AA3, 4U03
Franco-European Literatures and Cultures	FRENCH 2F03, 2J03, 2JJ3, 3K03, 3KK3, 3Q03, 3QQ3, 3SS3, 3W03, 3WW3, 3Y03, 4D03, 4F03, 4I03, 4J03, 4MM3, 4N03, 4S03, 4V03, 4Y03

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, 4LL3
3 units	from FRENCH 3AA3, 4U03
12 units	from FRENCH 2J03 or 2JJ3; 3K03 or 3KK3; 3Q03 or 3QQ3; 3W03 or 3WW3; 3Y03, 4J03, 4S03
9 units	Levels II, III or IV French
6 units	Level 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.

NOTE

Upon completion of 60 units of work (including 12 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, up to 15 units of Level III 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
6 units	from FRENCH 2E03, 2F03, 2H03
3 units	from FRENCH 3Z03, 4LL3
3 units	from FRENCH 3AA3, 4U03
12 units	from FRENCH 2J03 or 2JJ3; 3K03 or 3KK3; 3Q03 or 3QQ3; 3W03 or 3WW3; 3Y03, 4J03, 4S03
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 French {1230}

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, 4J03, 4S03
3 units	Levels II or III French
24 units	Electives

Minor in French

REQUIREMENTS

24 units total

6 units	from FRENCH 1A06, 2M06
9 units	FRENCH 2B03, 2BB3, 3C03
3 units	from FRENCH 2E03, 2F03, 2J03, 2JJ3, 2W03, 2WW3, 3AA3, 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 2009

Students who entered a program in French prior to September 2009 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)

The Department has defined four 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:

	AREA	COURSES
FIELD 1	Europe (including Britain)	HISTORY 2CC3, 2DD3, 2EE3, 2F03, 2FF3, 2II3, 2K03, 2LA3, 2LB3, 2LC3, 2LD3, 2M03, 2MM3, 2N03, 2Q03, 2QQ3, 3D03, 3E03, 3EE3, 3FF3, 3H03, 3HH3, 3I03, 3M03, 3MA3, 3MB3, 3PP3, 3QQ3, 3R03, 3RR3, 3SS3, 3T03, 3TT3, 3VV3, 3X03, 3YY3
FIELD 2	Asia, Africa, Middle East	HISTORY 2A03, 2HH3, 2J03, 2JJ3, 3A03, 3AA3, 3B03, 3BB3, 3DD3, 3GG3, 3SA3, 3TT3
FIELD 3	The Americas	HISTORY 2AA3, 2D03, 2G03, 2R03, 2RR3, 2T03, 2TT3, 3G03, 3II3, 3J03, 3K03, 3KK3, 3N03, 3NN3, 3P03, 3W03, 3WW3, 3Y03
FIELD 4	Global History	HISTORY 2EE3, 2S03, 2U03, 2UU3, 2X03, 3CG3, 3CW3, 3JJ3, 3KK3, 3L03, 3O03, 3S03, 3U03, 3UU3, 3V03, 3XX3, 3ZZ3

Honours History {2290}

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 any two fields of History and three units in each of the other two fields. 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.

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 four 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 toward 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.

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 {1290}

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 any six units of Level I History.

NOTE
In selecting courses, students must ensure that they take a minimum of three units in each of four fields of History. All Level II and III History courses from the above list may be used towards this requirement.

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

REQUIREMENTS
24 units total
6 units JAPANESE 1Z06
3-6 units JAPAN ST 2P03, 2P06
12-15 units Levels II, III, IV Japanese or Japanese Studies

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

In addition, Minors are available, using electives only, in: German, Italian, Japanese Language, Linguistics and Spanish (formerly Hispanic Studies).

Language courses in Chinese, Polish and Russian are also offered by the Department.

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 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 LINGUIST 1A03 and 1AA3. It is strongly recommended that students include six units of a language other than English in their Level I program. Please see *Note 5* below.

NOTES
1. In this program students are required to study at least two languages for a total of 24 units of language study. The department has defined four language groups (see below) for this purpose. Of the 24 units, students must take at least six units from one language group of their choice, and 18 units of a language from another group (six units at Level I and 12 units above Level I). Please note that some languages begin at Level II and, thus, may only fulfill the six unit requirement from one language group. Students should consult the Departmental Counsellor in Linguistics in selecting their language of concentration.
   a) **Romance Languages:** French, Italian, Spanish
   b) **Classical:** Greek, Latin, Sanskrit

c) **Other Indo-European Languages:**
German, Polish, Russian
d) **Non Indo-European Languages:**
Cayuga, Chinese, Hebrew, Japanese, Mohawk, Ojibwe

2. 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.*
3. For students concentrating in Applied Linguistics, all 24 units of language study required for the program may be taken in one language.
4. Students who wish to qualify for TESL Certification should make sure to include the following courses in their program of study: LINGUIST 1A03, 1AA3, 3X03, 4B03, 4E03, 4N03, 4TE3. They should also consult the TESL Ontario website for additional requirements of Certification.
5. Students who are interested in taking Psychology courses which appear in Course Lists 1 and 2 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 1X03, 1XX3 (or 1A03, 1AA3).
6. Students must include LINGUIST 2D03 in Level II or III of their program in order to take any Level IV seminars in Linguistics. Students from other programs must have completed an equivalent research methods course.

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

30 units	from the Level I program completed prior to admission into the program
18 units	LINGUIST 2D03, 2L03, 3A03, 3I03, 3II3, 3M03
3 units	from LINGUIST 2AA3, 2LL3
3 units	from LINGUIST 2E03, 2FL3, 3P03, 3X03
6 units	from LINGUIST 3B03, 3C03
3 units	from LINGUIST 4F03, 4LB3, 4LC3, 4XX3
3 units	from LINGUIST 4I03, 4M03, 4N03, 4R03, 4S03
3 units	from LINGUIST 4B03, 4D03, 4E03, 4T03
12 units	from one of the languages (above Level I) as specified in *Note 1* above
6 units	from a second language as specified in *Note 1* above
18 units	from Course List 1 or 2 (See *Note 4* above.)
15 units	Electives

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 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 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 1X03, 1XX3 (or 1A03, 1AA3).
5. Students must include LINGUIST 2D03 in Level II or III of their program in order to take any Level IV seminars in Linguistics. Students from other programs must have completed an equivalent research methods course.

COURSE LIST 1
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

REQUIREMENTS
120 units total (Levels I to IV), of which 48 units may be Level I

30 units	from Level I program completed prior to admission into the program
12 units	from LINGUIST 2AA3, 2E03, 2FL3, 2LL3, 3B03, 3C03, 3P03, 3X03, 4B03, 4D03, 4E03, 4F03, 4I03, 4M03, 4N03, 4R03, 4S03, 4T03, 4XX3, 4Z03
18 units	LINGUIST 2D03, 2L03, 3A03, 3I03, 3II3, 3M03
12 units	from a language other than English, above Level I. (See *Notes 1 and 2* above.)
36 units	Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
12 units	Electives to total 120 units

Honours Linguistic Cognitive Science {2313}

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 LINGUIST 1A03, 1AA3 and PSYCH 1X03 (or 1AA3).

NOTES
1. Students should be aware that, effective 2008-2009, the Department of Psychology, Neuroscience & 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. 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 Counsellor for Linguistics to determine which electives are most appropriate for their academic and professional objectives.

SPEECH AND LANGUAGE PATHOLOGY PREPARATION
GERONTOL 2E03; MATH 1M03; KINESIOL 1Y03, 1YY3; LINGUIST 3B03, 3C03, 3X03, 4F03, 4SL3; PSYCH 2AA3, 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, 2FL3, 3P03, 3X03, 4I03, 4M03, 4N03, 4R03, 4S03, 4T03, 4ZZ3; MMEDIA 2D03, 2I03, 3B03, 3D03; PSYCH 2C03

COGNITIVE SCIENCE
FRENCH 3CC3, 4BB3, 4H03, 4X03; LINGUIST 2AA3, 2LL3, 4D03, 4F03, 4LB3, 4LC3, 4XX3, 4Z03, 4ZZ3; MMEDIA 2D03, 3B03, 3D03, 3F03, 3J03; PHILOS 2F03, 3F03, 3M03; PSYCH 2C03, 2D03, 2H03, 2N03, 3A03, 3BN3, 3HH3, 3II3, 3QQ3, 3VV3, 4BN3, 4Z03

3. Students must include LINGUIST 2D03 in Level II or III of their program in order to take any Level IV seminars in Linguistics. Students from other programs must have completed an equivalent research methods course.
4. 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.

5. 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.
6. 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, 4II3, 4Z03; PSYCH 3EE3, 3LL3, 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
18 units	LINGUIST 2D03, 2L03, 3A03, 3I03, 3II3, 3M03
3 units	from LINGUIST 3C03, PSYCH 3II3
6 units	from LINGUIST 4B03, 4F03, 4LB3, 4LC3, 4M03, 4XX3, 4Z03, 4ZZ3
3 units	from LINGUIST 3P03, PHILOS 2B03, 3E03, 3F03
6 units	from PSYCH 1XX3 (or 1A03 or equivalent), 2H03
6 units	from LINGUIST 3B03, PSYCH 3U03, 3UU3
3 units	from PSYCH 2D03, 2E03, 2F03, 2N03
3 units	from PSYCH 2RA3, 2RR3, SOC SCI 2J03
12 units	from a language other than English (See *Note 5* above.)
3 units	from Course List 1
27 units	Electives

Combined Honours in Linguistic Cognitive Science 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 LINGUIST 1A03, 1AA3 and PSYCH 1X03 (or 1AA3).

NOTES
1. Students should be aware that, effective 2008-2009, the Department of Psychology, Neuroscience & 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. Enrolment 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.
4. Students must include LINGUIST 2D03 in Level II or III of their program in order to take any Level IV seminars in Linguistics. Students from other programs must have completed an equivalent research methods course.

COURSE LIST 1
LINGUIST 4D03, 4II3, 4Z03; PSYCH 3EE3, 3LL3, 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
18 units	LINGUIST 2D03, 2L03, 3A03, 3I03, 3II3, 3M03
3 units	from LINGUIST 3C03, PSYCH 3II3
6 units	from LINGUIST 4B03, 4F03, 4LB3, 4LC3, 4M03, 4XX3, 4Z03, 4ZZ3
3 units	from LINGUIST 3P03, PHILOS 2B03, 3E03
6 units	from PSYCH 1XX3 (or 1A03 or equivalent), 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.)
6 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 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.

Minor in Spanish

(FORMERLY MINOR IN HISPANIC STUDIES)
24 units of Hispanic Studies and/or Spanish, 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 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 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, 3II3, 3KK3; PEACE ST 2AA3, 2B03, 2F03, 2I03, 2II3, 2S03, 3A03, 3B03, 3E06, 3I03, 3M03, 3N03, 3O03, 3W03, 3X03, 3XX3, 3Y03, 3YY3, 3Z03, 4C03, 4IP3

COURSE LIST 2
ANTHROP 2X03, 3T03; BIOLOGY 4EE3; ECON 2F03; LABR ST 2A03, 2C03, 3G03; POL SCI 3AA3, 3KK3, 3Q03, 3Y03; RELIG ST 2H03, 2L03, 2MM3; SOCIOL 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, 4PR3
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, from Anthropology, Biology, English, History, Indigenous Studies, Labour Studies, Philosophy, Religious Studies, Science and Sociology provided that the course prerequisites are fulfilled.

Minor in Peace Studies

REQUIREMENTS

24 units total

6 units	PEACE ST 1A03, 1B03
18 units	from ANTHROP 2X03, 3T03, ECON 2F03, HISTORY 2G03, 3II3, 3KK3, LABR ST 2A03, 2C03, 3G03, PEACE ST 2A03, 2AA3, 2B03, 2F03, 2I03, 2II3, 2S03, 3A03, 3B03, 3E06, 3G03, 3I03, 3M03, 3N03, 3O03, 3W03, 3X03, 3XX3, 3Y03, 3YY3, 3Z03, 4A03, 4B03, 4C03, 4IP3, 4PR3, POL SCI 3AA3, 3KK3, 3Q03, 3Y03, RELIG ST 2E03, 2H03, 2L03, 2MM3, SOCIOL 3KK3

DEPARTMENT OF PHILOSOPHY

WEB ADDRESS: http://www.humanities.mcmaster.ca/~philos

Honours Arts & Science and Philosophy

(**B.Arts.Sc.**; See Arts & Science Program)

Honours Philosophy {2420}

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 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
27 units	PHILOS 2A06, 2C06, 3A06, 3G03, 3O03, 4H03
3 units	PHILOS 2B03
3 units	Levels II, III or IV Philosophy
15 units	Levels III or IV Philosophy
6 units	Level IV Philosophy
36 units	Electives

Combined Honours in Philosophy and Another Subject

Students wishing to enter this 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
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.) {2420050}

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) and an average of at least 7.0 in BIOLOGY 1A03 and 1AA3 (or 1M03) and six units of Level I Mathematics. Students are cautioned to observe that CHEM 1AA3 is the normal prerequisite for BIOLOGY 2B03 and 2C03, which are required courses in the program. **Enrolment in this program is limited.**

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
12 units	from BIOCHEM 2EE3, BIOLOGY 2A03, 2B03, 2C03, 2D03, 2EE3, 2F03, CHEM 2E03
24 units	from BIOLOGY 2G03, Levels III or IV Biology
18 units	PHILOS 2A06, 2C06, 3O03, 4H03
3 units	PHILOS 2B03
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.) {2320420}

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 {1420}

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 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 2C03, 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

Pending Senate approval, the Combined Honours program in Women's Studies is being phased out. No new admissions will be made for the 2010-11 Fall/Winter session. Students who are currently registered in a program in Women's Studies should refer to their degree audits or contact an Academic Advisor in the Office of the Dean in the Faculty of Humanities to discuss their program requirements.

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 the required Women's Studies courses at each level, and six additional units of Women's Studies courses or 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 SOCIOL 2Q06, WOMEN ST 2B03, 2BB3, 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, 3FF3, 3G03, 3GG3, 3H03, 3HH3, 3I03, 3NN3, 3WW3, 3Z03
6 units	WOMEN ST 4A06
6 units	from HISTORY 4I06, KINESIOL 4T03, SOC WORK 4R03, WOMEN ST 4B03, 4C03, 4J03, 4WA3
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

FACULTY OF SCIENCE

WEB ADDRESS: http://www.science.mcmaster.ca
EMAIL ADDRESS: science@mcmaster.ca
Burke Science Building, Room 129
Ext. 27590

Dean of Science

J.P. Capone/B.Sc., Ph.D.

Associate Dean of Science (Studies)

A.Sills/B.Sc., Ph.D.

Assistant Dean (Studies)

J. Smith/B.A.

Student Advisors

R. Campbell/B.Sc.
T. Gammon/B.A., B.A.
C. Mackenzie/B.A.Sc.
R. Tebbutt/B.A.

The Faculty of Science provides studies through the following Departments/Programs/Schools:

- Biochemistry and Biomedical Sciences*
- Biology*
- Chemistry*
- Geography and Earth Sciences
- Integrated Science
- Kinesiology
- Life Sciences*
- Mathematics and Statistics*
- Medical Physics and Applied Radiation Sciences
- Physics and Astronomy*
- Psychology, Neuroscience & Behaviour*

(* May also be combined with the Origins Research Specialization.)

PROGRAMS AND DEGREES

A. Level I Programs

The Faculty of Science offers the following Level I programs leading to the Honours Bachelor of Science and Bachelor of Science degrees:

ENVIRONMENTAL AND EARTH SCIENCES I

HONOURS INTEGRATED SCIENCE I

LIFE SCIENCES I

MATHEMATICS AND STATISTICS I

PHYSICAL SCIENCES I

Additionally, the Faculty offers the following Level I programs (and degrees):

HONOURS KINESIOLOGY I (Leading to the Honours Bachelor of Science Kinesiology degree)

MEDICAL RADIATION SCIENCES I (Leading to the Bachelor of Medical Radiation Sciences degree)

IMPORTANT NOTE FOR LEVEL I STUDENTS:

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.

LEVEL I PROGRAMS IN THE FACULTY OF SCIENCE

HONOURS BACHELOR OF SCIENCE
AND BACHELOR OF SCIENCE PROGRAMS

ENVIRONMENTAL AND EARTH SCIENCES I **{0211}**

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. SCIENCE 1A00, a one-hour mandatory on-line Introduction to Health and Safety course, is a co-requisite to Level I courses with a lab component and must be completed prior to the first lab.

ENVIRONMENTAL AND EARTH SCIENCES I COURSE LIST

BIOLOGY 1A03, 1M03; CHEM 1AA3; COMP SCI 1FC3, 1MA3, 1MD3; ENVIR SC 1A03, 1B03; KINESIOL 1Y03, 1YY3; MATH 1A03, 1AA3, 1B03, 1LS3; MED PHYS 1E03; PHYSICS 1B03, 1BA3, 1BB3, 1F03, 1L03; PSYCH 1X03, 1XX3

REQUIREMENTS: 30 UNITS

3 units	ENVIR SC 1G03
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 I **{0312}**

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 & 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 on-line Introduction to Health and Safety course, is a co-requisite to Level I courses with a lab component and must be completed prior to the first lab.

LIFE SCIENCES I COURSE LIST

ASTRON 1F03; BIOLOGY 1A03, 1M03; CHEM 1A03, 1AA3; COMP SCI 1FC3, 1MA3, 1MD3; ENVIR SC 1A03, 1B03, 1G03; KINESIOL 1Y03, 1YY3; MATH 1A03, 1AA3, 1B03, 1LS3; MED PHYS 1E03; 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, 1LS3
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 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 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 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. 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 on-line Introduction to Health and Safety course, is a co-requisite to Level I courses with a lab component and must be completed prior to the first lab.

PHYSICAL SCIENCES I COURSE LIST

ASTRON 1F03; BIOLOGY 1A03, 1M03; COMP SCI 1FC3, 1MA3, 1MD3; ENVIR SC 1A03, 1B03, 1G03; KINESIOL 1Y03, 1YY3; MATH 1B03; MED PHYS 1E03; PHYSICS 1L03; PSYCH 1X03, 1XX3

REQUIREMENTS: 30 UNITS

6 units	CHEM 1A03, 1AA3
6 units	MATH 1A03, 1AA3
3 units	PHYSICS 1B03
3 units	from PHYSICS 1BA3, 1BB3
6 units	from Physical Sciences I Course List
6 units	Electives (See *Program Note 1* above.)

HONOURS INTEGRATED SCIENCES I {0301}

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 one of Grade 12 Biology U, Chemistry U and Physics U.
4. SCIENCE 1A00, a one-hour mandatory on-line Introduction to Health and Safety course, is a co-requisite to Level I courses with a lab component and must be completed prior to the first lab.

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. However, entry into Level II of this program will be last available in September 2009. 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. Completion of MATH 1A03 or 1LS3 is required for the Hons.B.Sc.Kin. program. Students are encouraged to fulfil this requirement by the end of Level II.
4. Students who do not have credit in Grade 12 Calculus and Vectors U (or Grade 12 Advanced Functions and Introductory Calculus U), must complete MATH 1F03.
5. Upon completion of Honours Kinesiology I, students who have achieved an average of at least 6.0 in KINESIOL 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, by the next academic review 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 KINESIOL 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03, and whose C.A. is between 3.5 and 5.4 may register in Level II Kinesiology General and, with permission, take the 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. Preregistration counselling is mandatory.
   Upon completion of Honours Kinesiology I, students who have **not** achieved an average of at least 6.0 in KINESIOL 1A03, 1AA3, 1C03, 1E03, 1F03, 1G03, and whose C.A. is between 3.5 and 5.9 may register in Level II Kinesiology General for one reviewing period. Such students must attend a mandatory preregistration counselling session with an Academic Advisor. Eligibility to transfer to Honours Kinesiology at the next review will require a C.A. of at least 6.0. Students who fail to meet the minimum requirements must transfer to a non-Kinesiology program for which they qualify.
   Upon completion of Honours Kinesiology I, students whose C.A. is between 3.0 and 3.4 may request transfer to Science II.
6. SCIENCE 1A00, a one-hour mandatory on-line Introduction to Health and Safety course, is a co-requisite to Level I courses with a lab component and must be completed prior to the first lab.

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

This program leads to the Bachelor of Medical Radiation Science (B.M.R.Sc.) degree.

MEDICAL RADIATION SCIENCES I {0345}

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 1L03.
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 on-line Introduction to Health and Safety course, is a co-requisite to Level I courses with a lab component and must be completed prior to the first lab.

REQUIREMENTS: 30 UNITS

3 units	BIOLOGY 1A03
6 units	KINESIOL 1Y03, 1YY3
3 units	from MATH 1A03, 1LS3
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. normally requires the completion of 120 units, including 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 Institute* in this section of the Calendar for more information.

Effective 2009-2010, the Faculty will 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. Many disciplines 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. degree may request permission from the Office of the Associate Dean of Science (Studies) to transfer to graduate with a three-level B.Sc. degree.

Honours Bachelor of Science Kinesiology Program

Similar to the Honours Bachelor of Science, the Honours Bachelor of Science Kinesiology (Honours B.Sc.Kin.) requires 120 units, including the completion of a set of required courses and electives. Honours Bachelor of Science Kinesiology, a limited enrolment, direct-entry program is only available to students who completed Honours Kinesiology I. Kinesiology students who successfully complete the first three levels of the Honours B.Sc.Kin. degree may request permission from the Office of the Associate Dean of Science (Studies) to transfer to graduate with the three-level B.Sc.Kin. degree.

CO-OP PROGRAMS

The Faculty of Science has Cooperative Education programs, beginning in Level III, in Honours Biochemistry, Honours Molecular Biology and Genetics, Honours Biology and Pharmacology, Honours Chemistry, Honours Mathematics and Statistics, Honours Medical and Health Physics, and Honours Physics.

Co-op programs have **limited enrolment** and admission is by selection. Please see the admission statement for each program in this section of the Calendar. Students must complete SCIENCE 2C00 prior to the first work term placement and are strongly recommended to complete this course in Level II. Employment must be full-time during the work terms. Students enrolled in Co-op programs must be registered in full-time studies, 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 an Honours B.Sc. program and who will 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.

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.

Please see *Minors* in the *General Academic Regulations* section of this Calendar for further information. All courses have an enrolment capacity and the Faculty cannot guarantee registration in courses, even when all requisites have been met. Therefore, the completion of a Minor is not guaranteed.

Minors offered by the Faculty of Science include:

- Astronomy
- Biochemistry
- Biology
- Chemistry
- Earth Sciences
- Environmental Sciences
- Geographical Information Systems (GIS)
- Geography
- Geography and Earth Sciences
- Mathematics and Statistics
- Physics
- Psychology
- Radiation Sciences

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. B.Sc. programs require completion of 90 units including a set of required courses and electives.

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 *Life Sciences* in this section of the Calendar. Students interested in the Mathematical Science 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 *Physical Sciences* 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.

Bachelor of Medical Radiation Sciences Program

The Bachelor of Medical Radiation Sciences Program is offered jointly in partnership by McMaster University and Mohawk College of Applied Arts and Technology. Students pursue two qualifications simultaneously, and graduates receive the McMaster Bachelor of Medical Radiation Sciences degree and the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk. Effective September 2009, the program requires 150 units. Levels II through IV of the program run consecutively from September of Level II to completion of the program at the end of April in Level IV. 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.

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 MUGSI/SOLAR is available to them.

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.**

Students enrolled in Science programs, in addition to meeting the *General Academic Regulations of the University, shall be subject to additional Faculty Regulations.*

ADMISSION TO LEVEL II PROGRAMS

All Level I students who wish to be reviewed for admission to a Level II program in the Faculty of Science for the following Fall/Winter session must submit an *Application for Admission to Level II* through MUGSI/SOLAR (Student On-Line Academic Registration) by the University stated deadline (normally in early April). Students may rank up to four program choices and will be notified on their grade reports in June of their eligibility for the Level II programs.

Level I students must meet the admission criteria for a Level II program according to the Calendar in effect when they registered for Level I. Students must follow the program requirements of the Calendar in force when they enter Level II, except when a later Calendar explicitly modifies such requirements.

Students who have a *Result of Session* of *May Continue* but who do not achieve the admission requirements for any Level II program may continue in the Faculty of Science, or apply to transfer to another Faculty.

LIMITED ENROLMENT PROGRAMS

Admission at Level I (and above) is limited for the following programs:

- Honours Integrated Science
- Honours Kinesiology
- All Medical Radiation Sciences programs

Admission at Level II (and above) is limited for the following:

- All Honours Biochemistry programs
- All Honours Biology programs
- Honours Biology and Environmental Sciences
- Honours Chemical Biology
- Honours Computational Biology
- Honours Molecular Biology and Genetics
- All Psychology, Neuroscience & Behaviour programs
- All programs combined with the Origins Research Specialization
- All Co-op programs, beginning at Level III, are limited enrolment.

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 deadline for the session. See the *Application Procedures* section of this Calendar. Reinstatement forms will be carefully reviewed and the evidence considered will include the student's academic performance before and after admission to McMaster, a letter of explanation supported by two letters of reference and other appropriate documentation. **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 (Studies) or the Department of Kinesiology. The application deadline is April 30 for September entry. **Reinstatement is not guaranteed.**

Former Medical Radiation Sciences students will be considered for reinstatement to their program upon completion of a minimum of 24 units of university work taken on a full-time basis in a non-Medical Radiation Sciences program with a minimum average of 7.0 (B-). Application forms are available from the Office of the Associate Dean or the Department of Medical Physics and Applied Radiation Sciences. The application deadline is April 30 for September entry. **Reinstatement is not guaranteed.**

DEADLINES

The Faculty of Science will not consider applications for admission, 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 BALLOTTING

The Psychology, Neuroscience & Behaviour Department 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 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, 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 & Behaviour's web site at http://www.mcmaster.ca/psychology.

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, Kinesiology, Medical Physics and Applied Radiation Sciences and the School of Geography and Earth Sciences. Some of these courses are taken outside of the Fall/Winter session, during the spring or summer.

Students who enrol in field courses must pay ***both***:

- a fee to the department to cover travel expenses, room and board ***and***
- the associated tuition fee to McMaster at time of 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 session.

Detailed information regarding field courses and deadlines for registration may be obtained from the individual 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. Electives may be taken elsewhere.

Courses taken at another university cannot be used to satisfy the university's minimum residence requirements, will not be included in the calculation of the Cumulative or Sessional Averages, and therefore cannot be used to raise standing. Students may take up to six units of courses towards a Minor on Letter of Permission.

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 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 II or III 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

In-course, McMaster students seeking transfer/admission to Honours Kinesiology I for the following Fall/Winter session must submit an Application for Admission through MUGSI by the stated deadline (normally early April). The application allows students to rank four program choices. Additionally, transfer students must submit the mandatory Supplemental Application to the Department of Kinesiology by the stated deadline. Students will be notified of their eligibility for transfer to Honours Kinesiology I on their grade reports in June. McMaster students interested in transferring may contact the Undergraduate Administrative Assistant (Kinesiology) or the Office of the Associate Dean of Science (Studies). Students transferring from another university should see the *Admission Requirements and Application Procedures* sections of this Calendar. A limited number of exceptionally qualified students are admitted each year. To be considered, applicants must have an average of at least 8.0 (B) in a minimum of 24 units of university work, taken on a full-time basis, including an average of at least 6.0 in either BIOLOGY 1A03 and 1M03 (or 1AA3), or KINESIOL 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 degree 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:

Honours Biochemistry, Biology, Chemical Biology, Computational Biology, Life Sciences, Molecular Biology and Genetics and Psychology, Neuroscience & Behaviour programs normally qualify for the B.Sc. Life Sciences degree. All Environmental and Earth Sciences programs qualify for the B.Sc. Environmental and 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 may 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. Students who do not qualify for the degrees, as stated above, may request to be considered to graduate with the B.Sc. Science 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 Integrated Science and Biochemistry

(See Integrated Science)

Honours Life Sciences

(See Life Sciences)

NOTES APPLICABLE TO ALL HONOURS BIOCHEMISTRY PROGRAMS

1. In addition to the Honours Biochemistry program, the Department offers two specializations. 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. Alternatively, students may wish to select one of the following specializations which are strongly recommended for students intending to pursue graduate studies.
   - Biotechnology and Genetic Engineering Specialization
   - Molecular Biology Specialization

   Honours Biochemistry may also be combined with the Origins Research Specialization.

   Admission to all Biochemistry programs is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Level I requirements listed below.
2. Transfer between programs is possible at any time, subject to satisfying the admission requirements and availability of space.

Honours Biochemistry {2040802}

ADMISSION NOTES

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

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, 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, 1M03 (or 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 2BA3 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

12 units	BIOCHEM 2B03, 2BB3, 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 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

3 units	BIOCHEM 3D03
3 units	BIOLOGY 2C03
3 units	from CHEM 2N03, CHEM BIO 2A03
0-3 units	STATS 2B03 (See *Program Note 4* above.)
18-21 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, Chemical Biology, BIOLOGY 3O03, 4V03, HTH SCI 3I03, 3K03, 4II3, 4O03, MOL BIOL 3O03, 4H03
12 units	Electives

Honours Biochemistry {2040806} (Biotechnology and Genetic Engineering Specialization)

ADMISSION NOTES

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

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, 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, 1M03 (or 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 requisite waiver 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 2BA3 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

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

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	from CHEM 3FF3, CHEM BIO 3OA3
0-3 units	STATS 2B03 (See *Program Note 4* above.)
6-9 units	Electives

LEVEL IV: 30-31 UNITS
9 units BIOCHEM 4E03, 4H03, 4N03
3 units from BIOLOGY 3O03, MOL BIOL 3O03
12-13 units Levels III, IV Biochemistry, Biology, Chemical Biology, Chemical Engineering, Chemistry, Molecular Biology, CHEM ENG 3K04, HTH SCI 3I03, 3K03, 4I13, 4O03, which must include one of BIOCHEM 4B06, 4F09, 4P03 (See *Program Note 1* above.)
6 units Electives

Honours Biochemistry {2040804} (Molecular Biology Specialization)

ADMISSION NOTES
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

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, 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, 1M03 (or 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 requisite waiver 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 2BA3 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
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
9 units BIOCHEM 3C03, 3D03, 3P03 (See *Program Note 2* above.)
6 units BIOLOGY 2C03, 2EE3
3 units from CHEM 2N03, CHEM BIO 2A03
3 units from CHEM 3FF3, CHEM BIO 3OA3
0-3 units STATS 2B03 (See *Program Note 4* above.)
6-9 units Electives

LEVEL IV: 30 UNITS
12 units from BIOCHEM 4E03, 4EE3, 4N03, BIOLOGY 3O03, MOL BIOL 3O03
12 units Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology, HTH SCI 3I03, 3K03, 4I13, 4O03, which must include one of BIOCHEM 4B06, 4F09, 4P03 (BIOCHEM 4S03, 4Y03 are recommended.) (See *Program Note 1* above.)
6 units Electives

Honours Biochemistry {2040412} (Origins Research Specialization)

ADMISSION NOTES
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

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, 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, 1M03 (or 1AA3), CHEM 1A03, 1AA3 and either MATH 1A03 or 1LS3 is required.

PROGRAM NOTES
1. Students who entered the program prior to September 2008, may use CHEM 2BA3 and 2BB3 as substitutions for CHEM 2OA3 and 2OB3.
2. Completion of ORIGINS 2B03 and 2FF3 is required by the end of Level III.
3. 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.

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, 2BB3, 2L06
3 units BIOLOGY 2B03
3 units from CHEM 2R03, CHEM BIO 2P03
6 units CHEM 2OA3, 2OB3 (See *Program Note 1* above.)
3 units from ORIGINS 2B03, 2FF3 (See *Program Note 2* above.)
3 units ORIGINS 2S03

LEVEL III: 30 UNITS
3 units BIOCHEM 3D03
3 units BIOLOGY 2C03
3 units from CHEM 2N03, CHEM BIO 2A03
0-3 units STATS 2B03 (See *Program Note 3* above.)
3 units from ORIGINS 2B03, 2FF3 (See *Program Note 2* above.)
6 units from the Origins Course List
3 units ORIGINS 3S03
0-3 units PHYSICS 1B03 (See *Admission Note 1* above.)
0-3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3, 1F03 (See *Admission Note 2* above.)
0-9 units Electives

LEVEL IV: 30 UNITS

6 units	BIOCHEM 4E03, 4N03
3 units	from BIOCHEM 3H03, 3N03, 4H03, 4Q03
6 units	Levels III, IV Biochemistry, Chemical Biology, BIOLOGY 3O03, HTH SCI 3I03, 3K03, 4II3, 4O03, MOL BIOL 3O03, 4H03
9 units	ORIGINS 4A09
6 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) {2046}

ADMISSION (2009-2010 ONLY)

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, submission of the on-line application by the stated deadline and completion of either Level II Honours Biochemistry or Honours Molecular Biology with a Cumulative Average of at least 6.0.

ADMISSION (EFFECTIVE 2010-2011)

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, submission of the on-line application by the stated deadline and completion of Level II Honours Biochemistry with a Cumulative Average of at least 6.0.

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 3P03.
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

120 units total (Levels I to V), 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 (2009-2010 ONLY)

30 units	Completion of any Level II Honours Biochemistry or Honours Molecular Biology program, including completion of BIOLOGY 2B03 and SCIENCE 2C00 (See *Program Note 3* above.)

LEVEL II: 30 UNITS (EFFECTIVE 2010-2011)

30 units	Completion of any Level II Honours Biochemistry program, including completion of BIOLOGY 2B03 and SCIENCE 2C00 (See *Program Note 3* above.)

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: 15 UNITS

3 units	BIOCHEM 3P03
6 units	BIOLOGY 2C03, 2EE3
3 units	STATS 2B03 (See *Program Note 7* above.)
0-3 units	CHEM ENG 2B03 if not already completed
1 course	SCIENCE 2C00 if not already completed
0-3 units	Electives

TERM 2 (WINTER) AND SUMMER

Work Term (eight-month)

LEVEL IV (2009-2010 ONLY)

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): 30-31 UNITS

9 units	BIOCHEM 3P03, 4E03, 4H03 (See *Program Note 5* above.)
3 units	from BIOLOGY 3O03, MOL BIOL 3O03
3 units	from CHEM 2N03, CHEM BIO 2A03
3 units	from CHEM 3FF3, CHEM BIO 3OA3
9-10 units	Levels III, IV Biochemistry (which may include BIOCHEM 4B06, 4F09), Biology, Chemical Biology, Chemistry, Molecular Biology, CHEM ENG 3BK3, 3K04, HTH SCI 3I03, 3K03, 4II3, 4O03 (See *Program Note 6* above.)
3 units	Electives

SUMMER

Work Term

LEVEL IV (EFFECTIVE 2010-2011)

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): 30-31 UNITS

9 units	BIOCHEM 3D03, 4E03, 4H03 (See *Program Note 5* above.)
3 units	from BIOLOGY 3O03, MOL BIOL 3O03
3 units	from CHEM 2N03, CHEM BIO 2A03
3 units	from CHEM 3FF3, CHEM BIO 3OA3
9-10 units	Levels III, IV Biochemistry (which may include BIOCHEM 4B06, 4F09), Biology, Chemical Biology, Chemistry, Molecular Biology, CHEM ENG 3BK3, 3K04, HTH SCI 3I03, 3K03, 4II3, 4O03 (See *Program Note 6* above.)
3 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 15 units Academic, *Term 2 (Winter)*

TERM 1 (FALL)

Work Term

TERM 2 (WINTER): 15 UNITS

6 units	BIOCHEM 4LL3, 4N03
3 units	Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology, HTH SCI 3I03, 3K03, 4II3, 4O03. BIOCHEM 4P03 is required if BIOCHEM 4B06 or 4F09 was not completed in Level IV. (See *Program Note 6* above.)
6 units	Electives

Honours Biochemistry (Molecular Biology Specialization Co-op) {2045}

ADMISSION (2009-2010 ONLY)

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, submission of the on-line application by the stated deadline and completion of either Level II Honours Biochemistry or Honours Molecular Biology with a Cumulative Average of at least 6.0.

ADMISSION (EFFECTIVE 2010-2011)

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, submission of the on-line application by the stated deadline and completion of Level II Honours Biochemistry with a Cumulative Average of at least 6.0.

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 3P03.
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

120 units total (Levels I to V), 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 (2009-2010 ONLY)

30 units Completion of any Level II Honours Biochemistry or Honours Molecular Biology program, including completion of BIOLOGY 2B03 and SCIENCE 2C00 (See *Program Note 3* above.)

LEVEL II: 30 UNITS (EFFECTIVE 2010-2011)

30 units Completion of any Level II Honours Biochemistry program, including completion of BIOLOGY 2B03 and SCIENCE 2C00 (See *Program Note 3* above.)

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: 15 UNITS

3 units BIOCHEM 3P03
6 units BIOLOGY 2C03, 2EE3
0-3 units STATS 2B03 (See *Program Note 7* above.)
3-6 units Electives
1 course SCIENCE 2C00 if not already completed

TERM 2 (WINTER) AND SUMMER

Work Term (eight-month)

LEVEL IV (2009-2010 ONLY)

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

9 units BIOCHEM 3C03, 3P03, 4E03 (See *Program Note 5* above.)
3 units from BIOLOGY 3O03, MOL BIOL 3O03
3 units from CHEM 2N03, CHEM BIO 2A03
3 units from CHEM 3FF3, CHEM BIO 3OA3
9 units Levels III, IV Biochemistry (which may include BIOCHEM 4B06, 4F09), Biology, Chemical Biology, Chemistry, Molecular Biology, (See *Program Note 6* above.) (BIOCHEM 4EE3, 4S03 are recommended.)
3 units Electives

SUMMER

Work Term

LEVEL IV (EFFECTIVE 2010-2011)

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

9 units BIOCHEM 3C03, 3D03, 4E03 (See *Program Note 5* above.)
3 units from BIOLOGY 3O03, MOL BIOL 3O03
3 units from CHEM 2N03, CHEM BIO 2A03
3 units from CHEM 3FF3, CHEM BIO 3OA3
9 units Levels III, IV Biochemistry (which may include BIOCHEM 4B06, 4F09), Biology, Chemical Biology, Chemistry, Molecular Biology (See *Program Note 6* above.) (BIOCHEM 4EE3, 4S03 are recommended.)
3 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 15 units Academic *Term 2 (Winter)*

TERM 1 (FALL)

Work Term

TERM 2 (WINTER): 15 UNITS

6 units BIOCHEM 4EE3, 4N03
3 units Levels III, IV Biochemistry, Biology, Chemical Biology, Chemistry, Molecular Biology, HTH SCI 3I03, 3K03, 4II3, 4O03. BIOCHEM 4P03 is required if BIOCHEM 4B06 or 4F09 was not completed in Level IV. (See *Program Note 6* above.)
6 units Electives (BIOCHEM 4Y03 is recommended.)

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	15 units from Academic Level III + SCIENCE 2C00 if not completed	Work Term	
	Term 1	Term 2	Summer Term
LEVEL 4	30-31 units from Academic Levels III and IV		Work Term
	Term 1	Term 2	Summer Term
LEVEL 5	Work Term	15 units form Academic Level IV	

Minor in Biochemistry

NOTES

1. Students who have already completed CHEM 2BA3 and 2BB3 may substitute these courses for CHEM 2OA3 and 2OB3.
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 CHEM 2OA3, 2OB3 (See *Note 1* above.)
6 units from BIOCHEM 2B03, 2BB3, 2EE3, 3D03, 3G03, HTH SCI 2E03
6 units Levels III, IV Biochemistry

DEPARTMENT OF BIOLOGY

WEB ADDRESS: http://www.biology.mcmaster.ca

Honours Arts & Science and Biology (Biodiversity Specialization)

(**B.Arts Sc.**; See Arts & Science Program)

Honours Arts & Science and Molecular Biology and Genetics

(**B.Arts Sc.**; See Arts & Science Program)

Honours Chemical Biology

(See Department of Chemistry)

Honours Integrated Science and Biology

(See Integrated Science)

Honours Life Sciences

(See Life Sciences)

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, Honours Biology (Biodiversity Specialization), and Honours Biology (Physiology Specialization) programs, the Department offers an Honours Molecular Biology and Genetics program, a Computational Biology program, and two Co-op programs (entry at Level III). All options are suitable for students wishing to pursue graduate studies in Biology. Honours Biology may also be combined with the Origins Research Specialization.
2. Transfer between programs is possible, 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 1AA3 in Level I.
5. Admission to Honours Biology and Pharmacology (Co-op) requires completion of CHEM 2OA3 and 2OB3. Students are strongly recommended to register in BIOLOGY 2A03 while registered in Level II.
6. Students considering graduate studies in Biology are recommended to complete BIOLOGY 2L03 and either BIOLOGY 4C09 or 4F06.

Honours Biology {2050808}

ADMISSION NOTE

Students who have not completed one of PHYSICS 1B03 or 1L03 will be considered for admission, however, completion of one of these courses is required by the end of Level II.

ADMISSION

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, 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 2OA3 and 2OB3: 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 interested in microbiology and biotechnology and especially those considering postgraduate studies in this area should take the following courses: BIOLOGY 2EE3, 4PP3, MOL BIOL 3CC3, 3O03, 3V03, 4P03, 4XX3.

BIOLOGY COURSE LIST

BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03, 2G03, 2L03, all Biology Level III and IV courses; all Biochemistry courses for which the prerequisites are met; CHEM BIO 2A03, 2P03, 3A03, 4OA3, 4OB3; EARTH SC 2B03, 2C03, 2E03, 2EI3, 2GI3, 2Q03, 2W03, 3GI3, 3J03, 4B03, 4C03, 4EA3, 4FF3, 4GI3; ENVIR SC 2MB3, 3EP3, 3SA3; GEO 2A03, 2B03, 2C03, 2E03, 2I03, 2Q03, 2W03, 3A03, 3I03, 3J03, 3S03, 4A03, 4B03, 4C03, 4FF3, 4I03, 4S03; HTH SCI 3I03, 3K03, 4II3; MED PHYS 3T03, 4B03; all Molecular Biology courses for which the prerequisites are met; ORIGINS 2FF3, 3D03; PSYCH 2D03, 2E03, 2F03, 2N03, 2TT3, 3A03, 3F03, 3FA3, 3S03, 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	BIOLOGY 2C03
0-3 units	STATS 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, 2OA3, 2OC3
18 units	from Biology Course List (See *Program Note 3* above.)
15 units	Levels III, IV Biology and Molecular Biology which may include BIOLOGY 4C09 or 4F06
0-3 units	from PHYSICS 1B03, 1L03 if not completed in Level I (See *Admission Note* above.)
36-42 units	Electives (See *Program Note 2* above.)

Honours Biology (Biodiversity Specialization) {2050812}

ADMISSION NOTE

Students who have not completed one of PHYSICS 1B03 or 1L03 will be considered for admission, however, completion of one of these courses is required by the end of Level II.

ADMISSION

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, 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 2OA3 and 2OB3: 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 2GI3 (formerly GEO 2I03) and PSYCH 2RA3 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.

BIODIVERSITY COURSE LIST

BIOCHEM 2EE3; BIOLOGY 2A03, 2B03, 2EE3, 2L03, 3B03, 3BB3, 3E03, 3MM3, 3R03, 3S03, 3SS3, 3TT3, 3U03, 3UU3, 3Y03, 4A03, 4DD3, 4EE3, 4J03, 4JJ3, 4PP3, 4X03, 4Y03; EARCH SC 2B03, 2C03, 2EI3, 2E03, 2G03, 2GI3, 2Q03, 2W03, 3CC3, 3GI3, 3J03, 3L03, 4B03, 4C03, 4FF3; ENVIR SC 2MB3, 3EP3, 3SA3; GEO 2A03, 2B03, 2C03, 2E03, 2G03, 2I03, 2Q03, 2W03, 3A03, 3J03, 3L03, 3NN3, 3S03, 4B03, 4C03, 4FF3, 4I03, 4S03; ORIGINS 2FF3, 3D03, 3E03; PSYCH 2F03, 2RA3, 2RB3, 2TT3, 3A03, 3F03, 3FA3, 3S03, 3T03, 3Y03, 4R03, 4Y03

BIOLOGY COURSE LIST

BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03, 2G03, 2L03; all Biology Level III and IV courses; all Biochemistry courses for which the prerequisites are met; CHEM BIO 2A03, 2P03, 3A03, 4OA3, 4OB3; EARTH SC 2B03, 2C03, 2E03, 2EI3, 2GI3, 2Q03, 2W03, 3GI3, 3J03, 4B03, 4C03, 4EA3, 4FF3, 4GI3; ENVIR SC 2MB3, 3EP3, 3SA3; GEO 2A03, 2B03, 2C03, 2E03, 2I03, 2Q03, 2W03, 3A03, 3I03, 3J03, 3S03, 4A03, 4B03, 4C03, 4FF3, 4I03, 4S03; HTH SCI 3I03, 3K03, 4II3; MED PHYS 3T03, 4B03; all Molecular Biology courses for which the prerequisites have been met; ORIGINS 2FF3, 3D03; PSYCH 2D03, 2E03, 2F03, 2TT3, 3A03, 3F03, 3FA3, 3S03, 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
24 units BIOLOGY 2C03, 2D03, 2F03, 2G03, 3FF3, 3G03, 4AA3, 4E03
3 units from EARTH SC 2GI3, GEO 2I03 (See *Program Note 3* above.)
3 units from CHEM 2E03, 2OA3, 2OC3
0-3 units from STATS 2B03, PSYCH 2RA3 (See *Program Note 3* above.)
24 units from Biodiversity Course List, including at least six units from Biology
9 units BIOLOGY 4C09; or BIOLOGY 4F06 and three units from Biology Course List (See *Program Note 4* above.)
0-3 units PHYSICS 1B03, 1L03 if not completed in Level I (See *Admission Note* above.)
21-27 units Electives (See *Program Note 2* above.)

Honours Biology {2050814} (Genetics Specialization)

The Honours Biology (Genetics Specialization) program is being phased out. Students who intended to register in this program should refer to the Honours Molecular Biology and Genetics program in this section of the Calendar. Entry to Level III Honours Biology (Genetics Specialization) is last available in 2009-2010.

PROGRAM NOTES
1. Students registered in the Genetics Specialization are encouraged to complete PHILOS 2D03 or 2G03 as an elective.
2. Students with mathematical interests are encouraged to register in mathematical statistics. (See *Note 4* under *Notes Applicable to all Honours Biology Programs* in this section of the Calendar.)
3. BIOLOGY 2A03 and 2F03 are strongly recommended.
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. 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.

GENETICS COURSE LIST
BIOCHEM 2EE3, 3G03, 4E03, 4EE3; BIOLOGY 2L03, 3CC3, 3HH3, 3J03, 3M03, 3S03, 3V03, 3Y03, 4B03, 4DD3, 4E03, 4EE3, 4P03, 4PP3, 4XX3; HTH SCI 3I03, 3K03, 4II3; MOL BIOL 3CC3, 3HH3, 3M03, 3V03, 3Y03, 4DD3, 4P03, 4H03, 4XX3

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVELS II-IV: 90 UNITS
6 units CHEM 2OA3, 2OB3
0-3 units STATS 2B03 (See *Program Note 4* above.)
39 units from BIOLOGY 2B03, 2C03, 2D03, 2EE3, 3FF3, 3H03, 3I03, 3O03, 3S03, 4C09, 4R03, MOL BIOL 3H03, 3O03, 4RR3 (See *Program Note 5* above.)
18 units from Genetics Course List
0-3 units PHYSICS 1B03 if not completed in Level I (See *Admission Note* above.)
21-27 units Electives (See *Program Notes 1 and 3* above.)

Honours Biology {2050817} (Microbiology and Biotechnology Specialization)

The Honours Biology (Microbiology and Biotechnology Specialization) program has been cancelled. Students who intended to register in this program should see the Honours Molecular Biology and Genetics program in this section of the Calendar. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean of Science (Studies) or refer to their personal degree audit for program requirements.

Honours Biology {2050412} (Origins Research Specialization)

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. One of ASTRON 1F03, PHYSICS 1BA3, 1BB3 must be completed by the end of Level II.

ADMISSION
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, 1LS3
3 units from PHYSICS 1B03, 1L03 (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 3CC3, 3P03, 4B03, 4T03 must complete both CHEM 2OA3 and 2OB3. 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, 2L03, all Biology Level III and IV courses; all Biochemistry courses for which the prerequisites are met; CHEM BIO 2A03, 2P03, 3A03, 4OA3, 4OB3; EARTH SC 2B03, 2C03, 2E03, 2EI3, 2GI3, 2Q03, 2W03, 3GI3, 3J03, 4B03, 4C03, 4EA3, 4FF3, 4GI3; ENVIR SC 2MB3, 3EP3, 3SA3; GEO 2A03, 2B03, 2C03, 2E03, 2I03, 2Q03, 2W03, 3A03, 3I03, 3J03, 3S03, 4A03, 4B03, 4C03, 4FF3, 4I03, 4S03; HTH SCI 3I03, 3K03, 4II3; MED PHYS 3T03, 4B03; all Molecular Biology courses for which the prerequisites are met; ORIGINS 2FF3, 3D03; PSYCH 2D03, 2E03, 2F03, 2N03, 2TT3, 3A03, 3F03, 3FA3, 3S03, 3T03, 3Y03, 4R03, 4Y03

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, 2OA3
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.)
0-3 units STATS 2B03 (See *Program Note 4* above.)
12 units Levels III, IV Biology
15 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 1* above.)
0-3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3 (if not already completed)
12-21 units Electives

Honours Biology (Physiology Specialization) {2050444}

ADMISSION NOTE

PHYSICS 1B03 must be completed by the end of Level II. Completion of PHYSICS 1BB3 is also recommended.

ADMISSION

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, 1LS3
3 units	from PHYSICS 1B03, 1L03 (See *Admission Note* above.)
6 units	from Life Sciences 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 2L03, 3AA3, 3B03, 3F03, 3FF3, 3K03, 3M03, 3MM3, 3R03, 3S03, 3SS3, 3TT3; KINESIOL 2C03, 2CC3, 3Y03, 4C03, 4CC3; MED PHYS 4B03; ORIGINS 2FF3; PSYCH 2D03, 2E03, 2F03, 2N03, 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

30 units	(See *Admission* above.)

LEVELS II-IV: 90 UNITS

12 units	BIOLOGY 2A03, 2B03, 2C03, 2F03 (See *Program Note 2* above.)
6 units	CHEM 2OA3, 2OB3
0-3 units	STATS 2B03 (See *Program Note 4* above.)
3 units	BIOCHEM 3G03
21 units	BIOLOGY 3P03, 3U03, 3UU3, 3ZZ3, 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.)
21-27 units	Electives

Honours Molecular Biology and Genetics {2055}

ADMISSION NOTE

PHYSICS 1B03 must be completed by the end of Level II. Completion of PHYSICS 1BB3 is also recommended.

ADMISSION

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, 1LS3
3 units	from PHYSICS 1B03, 1L03 (See *Admission Note* above.)
6 units	from Life Sciences I Course List

PROGRAM NOTES

1. BIOLOGY 2B03, 2C03 and 2EE3 must be completed in Level II.
2. Six units of BIOLOGY 2A03, 2D03, 2F03, 3FF3 are required. However, completion of 9-12 units is recommended.
3. 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.
4. BIOLOGY 2L03, MOL BIOL 3A03 and 3I03 are recommended as preparatory courses for BIOLOGY 4C09 or 4F06.
5. Completion of BIOLOGY 4C09 or 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.
6. Students interested in microbiology and biotechnology and especially those considering postgraduate studies in this area should take the following courses: BIOLOGY 4PP3, MOL BIOL 3CC3, 4P03, 4XX3.
7. Some Biology courses have been renamed Molecular Biology (MOL BIOL). To determine the former Biology course designations, please see *Biology* in the *Course Listings* section of this Calendar.

MOLECULAR BIOLOGY AND GENETICS COURSE LIST

BIOCHEM 2B03, 2BB3, 2EE3, 3G03, 4E03, 4EE3; BIOLOGY 2A03, 2D03, 2F03, 2L03, 3CC3, 3FF3, 3HH3, 3M03, 3Y03, 4B03, 4DD3, 4E03, 4EE3, 4P03, 4PP3, 4R03, 4U03, 4XX3; CHEM BIO 2A03, 2P03; CHEM ENG 2B03, 3BK3, 3BM3; HTH SCI 3I03, 3K03, 4II3; MOL BIOL 3A03, 3CC3, 3HH3, 3I03, 3M03, 3Y03, 4DD3, 4H03, 4P03, 4RR3; ORIGINS 2FF3

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

6 units	CHEM 2OA3, 2OB3
0-3 units	STATS 2B03 (See *Program Note 3* above.)
6 units	from BIOLOGY 2A03, 2D03, 2F03, 3FF3 (See *Program Note 2* above.)
24 units	BIOLOGY 2B03, 2C03, 2EE3, 3I03, 3S03, MOL BIOL 3H03, 3O03, 3V03
27 units	from Molecular Biology and Genetics Course List, which must include at least 21 units of Levels III, IV courses, and include one of BIOLOGY 4C09 or 4F06 (See *Program Notes 4 and 5* above.)
0-3 units	PHYSICS 1B03 if not completed in Level I (See *Admission Note* above.)
21-27 units	Electives (See *Program Note 2* above.)

Honours Biology and Environmental Sciences (B.Sc.) {2050211}

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 enables students to select courses according to their interests; to develop broad 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

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 1A03, 1LS3
6 units	BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0
3 units	from ENVIR SC 1A03, 1G03 with a grade of at least C+

12 units from ASTRON 1F03, CHEM 1A03, 1AA3, COMP SCI 1FC3, 1MA3, 1MD3, ENVIR SC 1A03, 1B03, 1G03, KINESIOL 1Y03, 1YY3, MATH 1A03, 1AA3, 1B03, 1LS3, MED PHYS 1E03, PHYSICS 1B03, 1BA3, 1BB3, 1F03, 1L03, PSYCH 1X03, 1XX3, SCIENCE 1E03 (See *Admission Note* above.)

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. Prerequisites 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 2OA3, 2OB3, 2OC3, 2OD3.
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 2EE3, 3G03; BIOLOGY 2A03, 2B03, 2C03, 2D03, 2EE3, 2F03, 2G03; CHEM 2OA3, 2OB3, 2OC3, 2OD3; STATS 2B03

COURSE LIST 2

EARTH SC 3RD3, 4MT6; ENVIR SC 2B03, 2C03, 2E03, 2G03, 2GI3, 2MB3, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3GI3, 3J03, 3L03, 3ME3, 3O03, 3Q03, 3SA3, 3U03, 3W03, 4B03, 4C03, 4GI3, 4HH3, 4L03, 4O03, 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, Molecular Biology
3 units ENVIR SC 4EA3
21 units Electives

Honours Biology and Mathematics {2050320}

ADMISSION NOTE

Students who have not completed Grade 12 Discrete Mathematics U or Grade 12 Calculus and Vectors U must take MATH 1F03 as a prerequisite for MATH 1B03.

ADMISSION

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 (or 1X03), 1AA3 (or 1XX3), 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 review 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.
5. Students who entered the program prior to September 2009 and who have already completed BIOCHEM 2EE3 will be required to complete three units from BIOLOGY 2A03, 2B03, 2D03, 2EE3.

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

6 units BIOLOGY 2C03, 2F03
6 units from BIOLOGY 2A03, 2B03, 2D03, 2EE3 (See *Note 5* above.)
18 units MATH 2C03, 2R03, 2X03, 2XX3, 3A03, 3X03
21 units Levels III, IV Biology, Molecular Biology, which must include at least nine units of Level IV
6 units 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 NOTE

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.

ADMISSION

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 1A03)
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* above.)

PROGRAM NOTES

1. Counselling for this program is shared by the Departments of Biology and Psychology, Neuroscience & Behaviour. Information may be obtained through the Undergraduate Advisors in the Life Sciences Building, Room 215A or Psychology Building, Room 207.
2. PSYCH 3QQ3 or 4QQ3 will only fulfill the psychology lab requirement if taken under the supervision or co-supervision of a faculty member in the Department of Psychology, Neuroscience & Behaviour.
3. The Psychology, Neuroscience & Behaviour Department preregistration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D09, 4DD6), and the Individual Study courses (PSYCH 3Q03, 3QQ3, 4Q03, 4QQ3). Students wishing to take these courses must complete and submit a ballot by **mid February**. 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**. Ballots can be obtained from the Department of Psychology, Neuroscience & Behaviour web site at http://www.mcmaster.ca/psychology.
4. Students who do not obtain the minimum Cumulative Average as stated in the prerequisite of one of BIOLOGY 4C09, 4F06 or PSYCH 4D09, 4DD6 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 & Behaviour and apply to graduate with a Minor in the alternate subject area.
5. Students who entered the program prior to September 2008 should refer to the Undergraduate Calendar of the year in which they entered the program or their personal degree audit for program requirements.

BIOLOGY COURSE LIST
BIOCHEM 2EE3, 3H03, 3N03, 4E03, 4EE3, 4K03, 4Q03; BIOLOGY 2A03, 2B03, 2D03, 2EE3, 2F03, 2G03, 2I03, 2L03, all Level III and IV Biology courses; HTH SCI 3I03, 4BB3, 4II3; MED PHYS 3T03, 4B03; all Molecular Biology courses for which the prerequisites have been met

PSYCHOLOGY COURSE LIST
KINESIOL 3E03, 4P03; MUSICCOG 2A03, 3A03, 3B03; PSYCH 2E03, 2F03, 2H03, 2TT3, all Level III and IV Psychology courses (PSYCH 2AA3, 2B03, 2C03, 2S03, 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may only be used as elective credit.)

PSYCHOLOGY LAB COURSE LIST
PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3 (All Psychology lab courses have limited enrolment. See *Program Notes 2 and 3* 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 5* above.)
18 units BIOCHEM 3G03, BIOLOGY 2C03, CHEM 2OA3, 2OB3, PSYCH 2RA3, 2RB3
3 units from BIOLOGY 2A03, 2B03, 2F03
6 units from PSYCH 2E03, 2F03, 2H03, 2TT3, which must include three units from PSYCH 2F03 or 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
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 4C09, 4F06, PSYCH 4D09 or 4DD6 must be included. (See *Program Notes 3 and 4* above.)
3 units from Psychology Lab Course List (See *Program Notes 2 and 3* above.)
0-3 units PHYSICS 1B03 if not completed in Level I (See *Admission Note* above.)
15-18 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 NOTE
Students who have not completed BIOLOGY 1X03 will be considered for admission. However, completion of the course is required by the end of Level II.

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:
6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 6.0
3 units BIOLOGY 1X03 (See *Admission Note* above.)
6 units CHEM 1A03, 1AA3
6 units 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 215A 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 2X03. Completion of MATH 2XX3 is strongly recommended.
4. MATH 2X03 is the prerequisite of MATH 3F03.
5. BIOLOGY 4DD3 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 3I03, 3O03, 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
21 units BIOLOGY 2A03, 2B03, 2C03, 2YY3, 2Z03, 3FF3, 3S03
0-3 units COMP SCI 1MD3
6 units COMP SCI 2SC3, 3DA3
0-3 units MATH 1B03
3 units MATH 2C03
6 units STATS 2D03, 2MB3
3 units from BIOLOGY 2D03, 2EE3, 2F03
9 units Levels III, IV Biology (See *Program Note 7* above.)
6-9 units from BIOLOGY 4C09, 4F06 (See *Program Note 6* above.)
6 units from BIOCHEM 3Y03, 4Y03, BIOLOGY 4AA3, 4DD3, 4E03, MOL BIOL 3CC3, 4DD3
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.)
12-24 units Electives

Honours Molecular Biology {2365}

The Honours Molecular Biology program is being phased out. Students who intended to register in this program should see the Honours Molecular Biology and Genetics program in this section of the Calendar. Entry to Level III Honours Molecular Biology is last available in 2009-2010.

PROGRAM NOTES
1. BIOLOGY 2L03, MOL BIOL 3A03, 3I03 are strongly recommended as electives in Level III.
2. 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.

MOLECULAR BIOLOGY COURSE LIST
BIOCHEM 2EE3, 3G03, 4E03, 4EE3; BIOLOGY 2A03, 2D03, 2EE3, 2F03, 2L03, 3CC3, 3FF3, 3HH3, 3M03, 3Y03, 4B03, 4DD3, 4E03, 4P03, 4PP3, 4R03, 4U03, 4XX3; CHEM BIO 2A03, 2P03; CHEM ENG 2B03, HTH SCI 3I03, 3K03, 4II3, MOL BIOL 3A03, 3CC3, 3HH3, 3I03, 3M03, 3Y03, 4DD3, 4P03, 4RR3

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 BIOCHEM 2B03, 2BB3, 3D03, 4E03
9 units BIOLOGY 2C03, 3O03, 3S03
6 units CHEM 2OA3, 2OB3
27 units BIOLOGY 4C09, MOL BIOL 2B03, 2L06, 3A03, 3V03, 4A03
0-3 units STATS 2B03 (See *Program Note 2* above.)
6 units from BIOLOGY 3H03, 3HH3, 3I03, 3M03, HTH SCI 3I03, MOL BIOL 3H03, 3HH3, 3M03
9 units from BIOCHEM 4EE3, 4H03, 4N03, 4Q03, BIOLOGY 4B03, 4E03, 4P03, 4PP3, 4R03, 4T03, HTH SCI 4II3, MOL BIOL 4H03, 4J03, 4RR3
0-3 units PHYSICS 1B03 if not completed in Level I (See *Admission Note* above.)
15-21 units Electives (See *Program Note 1* above.)

Honours Biology (Genetics Specialization Co-op) {2053}

The Honours Biology (Genetics Specialization Co-op) program has been cancelled. Students who intended to register in this program should see the Honours Molecular Biology and Genetics Co-op program in this section of the Calendar. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean of Science (Studies) or refer to their personal degree audit for program requirements.

Honours Biology and Pharmacology (Co-op) {2050419}

ADMISSION

Enrolment in this program is limited. Selection is based on academic and other achievement and an interview but requires, as a minimum, submission of the on-line application by the stated deadline, 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, 2C03
6 units CHEM 2OA3, 2OB3
6 units from BIOLOGY 2B03, 2D03, 2EE3, 2F03, CHEM 2N03, 2R03, CHEM BIO 2A03, 2P03
1 course SCIENCE 2C00

Information about this program and the selection procedure can be obtained from Science Career and Cooperative Education and the Program Director.

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 2 and Level V, Term 1.
3. PHARMAC 3A06, 3B06, 4A03, 4AA3, 4C03, 4D03 and 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 and are recommended to complete the course in Level II.
6. Students should seek academic counselling for this program in the Department of Biology.
7. If BIOCHEM 2B03 and 2BB3 have not been completed at the time of 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.
8. Students who completed PSYCH 2RA3 prior to September 2009 may use it to replace STATS 2B03. If STATS 1CC3 has been completed, these units will be taken as electives.

COURSE LIST

BIOCHEM 2EE3, 3D03, 3H03, 3N03; all Levels III and IV Biology, Molecular Biology and Pharmacology courses; CHEM 2II3, 3FF3, 4DD3; CHEM BIO 3P03, 4A03, 4IB3, 4OA3, 4OB3; EARTH SC 3J03, 4B03, 4EA3; ENVIR SC 3J03, 4B03, 4EA3; GEO 3J03, 4A03, 4B03; HTH SCI 3I03, 3K03, 4II3; STATS 2MB3

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 units from Course List (See *Program Note 7* above.)
or
6 units from Course List
9 units BIOLOGY 3P03, 3U03, 3UU3
12 units PHARMAC 3A06, 3B06
3 units Electives (See *Program Note 7* above.)
1 course SCIENCE 2C00 if not already completed

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
0-3 units STATS 2B03 (See *Program Note 8* above.)
6 units from Course List
0-3 units Electives

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 4AA3, 4D03, 4E03
3 units from Course List
6 units Electives

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	15 units from Academic Level III + SCIENCE 2C00 if not completed	15 units from Academic Level III	Work Term
	Term 1	Term 2	Summer Term
LEVEL 4	15 units from Academic Level IV	Work Term	Senior Thesis
	Term 1	Term 2	Summer Term
LEVEL 5	Work Term	15 units from Academic Level IV	

Honours Molecular Biology and Genetics (Co-op) {2056}

ADMISSION

Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, submission of the on-line application by the stated deadline, completion of Level II of the Honours Molecular Biology and Genetics program, including BIOLOGY 2B03, 2C03, 2EE3 with a Cumulative Average of at least 6.0. Admission is by selection, and possession of the published minimum requirements does not guarantee admission. Information about this program and the selection procedure can be obtained from Science Career and Cooperation Education Office.

PROGRAM NOTES

1. This 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 Molecular Biology and 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 and are recommended to complete the course in Level II.
4. Students should seek academic counselling for this program in the Department of Biology.

5. Completion of BIOLOGY 2B03, 2C03 and 2EE3 is required prior to admission to this program.
6. Students should consult the MOL BIOL 4GG9 Course Coordinator regarding supervision arrangements.
7. Students may complete the program in December of the year prior to Spring convocation.

MOLECULAR BIOLOGY AND GENETICS COURSE LIST

BIOCHEM 2B03, 2BB3, 2EE3, 3G03, 4E03, 4EE3; BIOLOGY 2A03, 2D03, 2F03, 2L03, 3CC3, 3FF3, 3HH3, 3M03, 3Y03, 4B03, 4DD3, 4E03, 4EE3, 4P03; 4PP3, 4R03, 4U03, 4XX3; CHEM BIO 2A03, 2P03; CHEM ENG 2B03, 3BK3, 3BM3; HTH SCI 3I03, 3K03, 4II3; MOL BIOL 3A03, 3CC3, 3HH3, 3I03, 3M03, 3Y03, 4DD3, 4H03, 4P03, 4RR3; ORIGINS 2FF3

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 Molecular Biology and Genetics program, including BIOLOGY 2B03, 2C03, 2EE3 (See *Admission* above.)
1 course SCIENCE 2C00

LEVEL III

Consists of Academic *Terms 1 and 2 (Fall/Winter)* and completion of MOL BIOL 4XX3 and the first half of the first eight-month work term, *Summer Term*

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS

12 units BIOLOGY 3I03, MOL BIOL 3H03, 3O03, 3V03
9 units from Molecular Biology and Genetics Course List
9 units Electives
1 course SCIENCE 2C00 if not already completed

SUMMER: 3 UNITS

3 units MOL BIOL 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

9 units from Molecular Biology and Genetics Course List
6 units Electives

SUMMER

Work Term (in an Academic Lab) and preparation for MOL BIOL 4GG9

LEVEL V

Consists of Academic *Term 1 (Fall)*

TERM 1 (FALL): 12 UNITS

9 units Completion of MOL BIOL 4GG9
3 units from the Molecular Biology and Genetics Course List

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	15 units from Academic Level III + SCIENCE 2C00 If not completed	15 units from Academic Level III	MOL BIOL 4XX3 + Work Term
	Term 1	Term 2	Summer Term
LEVEL 4	Work Term	15 units from Academic Level IV	Work Term (in a lab) + prep for MOL BIOL 4GG9
	Term 1	Term 2	Summer Term
LEVEL 5	MOL BIOL 4GG9 + 3 units from Academic Level IV		

B.Sc. Degree

A three-level program with a general Life Sciences orientation is available through the **B.Sc. in Life Sciences**. See *Life Sciences* in this section of the calendar.

Minor in Biology

NOTE

Students with credit in ISCI 1A24 do not need to complete BIOLOGY 1A03 and 1M03 (or 1AA3).

REQUIREMENTS

24 units total

6 units BIOLOGY 1A03, 1M03 (or 1AA3)
18 units Levels II, III, IV Biology or Molecular Biology including at least six units from Levels III, IV Biology or Molecular Biology

DEPARTMENT OF CHEMISTRY

WEB ADDRESS: http://www.chemistry.mcmaster.ca/

Honours Arts & Science and Chemistry

(**B.Arts.Sc.**; See Arts & Science Program)

Honours Integrated Science and Chemistry

(See Integrated Science)

The Department offers two distinct programs, Honours Chemistry and Honours Chemical Biology.

NOTES APPLICABLE TO ALL HONOURS CHEMISTRY PROGRAMS

1. In addition to the Honours Chemistry program, the Department offers 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

   Students interested in registering in a specialization must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session.
   Honours Chemistry may also be combined with the Origins Research Specialization, beginning at Level II.
2. Students are encouraged to seek academic counselling from the Undergraduate Advisor for Chemistry programs (email: advisory@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.
8. CHEM 3QA3 provides the opportunity 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 {2070816}

ADMISSION NOTE

MATH 1LS3, with a grade of at least 10, may be substituted for MATH 1A03.

ADMISSION
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 PHYSICS 1B03
3 units from PHYSICS 1BA3, 1BB3
9 units from Life Sciences I Course List or Physical Sciences I Course List

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 2PC3 is recommended for all Chemistry students, however, it is not required for students who have credit in MATH 1B03.
4. 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
15 units CHEM 2AA3, 2II3, 2OC3, 2OD3, 2PD3
6 units CHEM 2LA3, 2LB3
0-3 units from CHEM 2PC3, MATH 1B03 (See *Program Note 3* above.)
6-9 units Electives (See *Program Note 4* above.)

LEVEL III: 30 UNITS
9 units CHEM 3AA3, 3II3, 3PA3
6 units CHEM 3LA3, 3LB3
3 units Levels III, IV Chemical Biology or Chemistry
3 units BIOCHEM 3G03 (See *Program Note 2* above.)
9 units Electives

LEVEL IV: 30 UNITS (2009-2010 ONLY)
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 {2070830}
(Advanced Materials Specialization)

ADMISSION NOTE
Level II Honours Chemistry students interested in this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building, Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session.

ADMISSION
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
Completed prior to admission to the program

LEVEL II: 30 UNITS
Completed prior to admission to the specialization

LEVEL III: 30 UNITS
12 units CHEM 3AA3, 3II3, 3PA3, 3PB3
6 units CHEM 3LA3, 3LB3
3 units from CHEM 4IC3, 4OB3
3 units BIOCHEM 3G03
6 units Electives

LEVEL IV: 30 UNITS
9 units CHEM 4G09
6 units from CHEM 3OA3, 4AA3, 4IA3, 4IB3, 4II3, 4OA3, 4PA3, 4PB3
3 units from CHEM 4IC3, 4OB3
3 units from MATLS 4F03, 4G03
3 units Level IV Chemical Biology or Chemistry
6 units Electives

Honours Chemistry {2070826}
(Molecular Science Specialization)

ADMISSION NOTE
Level II Honours Chemistry students interested in this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building, Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session.

ADMISSION
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
Completed prior to admission to the program

LEVEL II: 30 UNITS
Completed prior to admission to the specialization

LEVEL III: 30 UNITS
9 units CHEM 3AA3, 3II3, 3PA3
6 units CHEM 3LA3, 3LB3
6 units from CHEM 3OA3, 4AA3, 4IA3, 4IB3, 4II3, 4OA3, 4PA3, 4PB3
3 units BIOCHEM 3G03
6 units Electives

LEVEL IV: 30 UNITS
9 units CHEM 4G09
6 units from CHEM 3OA3, 4AA3, 4IA3, 4IB3, 4II3, 4OA3, 4PA3, 4PB3
9 units Level IV Chemical Biology or Chemistry
6 units Electives

Honours Chemistry {2070818}
(Biological Specialization)

The Honours Chemistry (Biological Specialization) program is being phased out. Entry to Level IV will be last available in 2009-2010. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean (Studies) or refer to their degree audit for program requirements.

Honours Chemistry {2070822}
(Physical and Analytical Specialization)

The Honours Chemistry (Physical and Analytical Specialization) program is being phased out. Entry to Level IV will be last available in 2009-2010. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean (Studies) or refer to their degree audit for program requirements.

Honours Chemistry {2070824}
(Synthesis and Structure Specialization)

The Honours Chemistry (Synthesis and Structure Specialization) program is being phased out. Entry to Level IV will be last available in 2009-2010. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean (Studies) or refer to their degree audit for program requirements.

Honours Chemistry (Origins Research Specialization) {2070412}

ADMISSION NOTES

1. MATH 1LS3, with a grade of at least 10, may be substituted for MATH 1A03.
2. BIOLOGY 1A03 and 1M03 (or 1AA3) 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

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 1* above.)
3 units	PHYSICS 1B03
3 units	from PHYSICS 1BA3, 1BB3
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 II 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 2PC3 is recommended for all Chemistry students, however, it is not required for students who have credit in MATH 1B03.

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: 30-36 UNITS

15 units	CHEM 2AA3, 2II3, 2OC3, 2OD3, 2PD3
6 units	CHEM 2LA3, 2LB3
0-3 units	from CHEM 2PC3, MATH 1B03 (See *Program Note 4* above.)
3 units	from ORIGINS 2B03, 2FF3 (See *Program Note 1* above.)
3 units	ORIGINS 2S03
0-6 units	from BIOLOGY 1A03 and 1M03 (or 1AA3) if not completed in Level I (See *Admission Note 2* above.)
0-3 units	Electives

LEVEL III: 30 UNITS

9 units	CHEM 3AA3, 3PA3, 3II3
6 units	CHEM 3LA3, 3LB3
3 units	Levels III, IV Chemical Biology or Chemistry
3 units	BIOCHEM 3G03 (See *Program Note 3* above.)
3 units	from ORIGINS 2B03, 2FF3
3 units	from Origins Course List
3 units	ORIGINS 3S03

LEVEL IV: 30 UNITS (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	Electives

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

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 1A03, 1LS3
6 units	BIOLOGY 1A03, 1M03 (or 1AA3) with a grade of at least C+ in each
6 units	CHEM 1A03, 1AA3 with an average of at least 6.0
3 units	from 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	from CHEM BIO 2A03, 2AA3, 2L03, 2P03, 2Q03
6 units	from CHEM 2OA3, 2OB3, CHEM BIO 2OA3, 2OB3
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 3OA3, 3P03
3 units	from CHEM BIO 3OB3, 4IB3
6 units	CHEM 3AA3, 3OA3
3 units	CHEM BIO 3L03
3 units	BIOCHEM 3D03
3 units	BIOLOGY 2C03
6 units	Electives

LEVEL IV: 30 UNITS

6 units	from CHEM BIO 4A03, 4OA3, 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, submission of the on-line application by the stated deadline, and completion of Level II Honours 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 by 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 your Level II and III courses. Students should, in particular, note the Mathematics and Physics prerequisites for CHEM 3BB3 and 3ZZ3.
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.

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
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): 15 UNITS

6 units CHEM 3II3, 3PA3
9 units Electives
1 course SCIENCE 2C00 if not already completed

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

9 units CHEM 3AA3, 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 (EFFECTIVE 2010)

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

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	15 units from Academic Level III + SCIENCE 2C00 if not completed	Work Term	
	Term 1	Term 2	Summer Term
LEVEL 4	15 units from Academic Level III	15 units from Academic Level IV	Work Term
	Term 1	Term 2	Summer Term
LEVEL 5	Work Term	15 units from Academic Level IV	

B.Sc. Three-Level Degree

A three-level program with a Chemistry orientation is available through the **B.Sc. in Physical Sciences**. See *Physical Sciences* 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.

REQUIREMENTS

24 units total

6 units from CHEM 1A03, 1AA3
18 units Levels II, III, IV Chemistry courses, including at least six units from Levels III, IV Chemistry courses

DEPARTMENT OF COMPUTING AND SOFTWARE

(See Faculty of Engineering, Programs for the B.A.Sc. degree)

Honours Mathematics and Computer Science

(See Department of Mathematics and Statistics)

SCHOOL OF GEOGRAPHY AND EARTH SCIENCES

WEB ADDRESS: http://www.science.mcmaster.ca/geo/

Honours Arts & Science and Geography and Honours Arts & Science and Environmental Sciences

(**B.Arts.Sc.**; 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)

Honours Integrated Science and Environmental Sciences

(See Integrated Science)

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 Science or Geography courses, please see Geography and Earth Sciences in the *Course Listings* section of this Calendar.**
2. Upon completion of Level II Honours Earth and Environmental Sciences, students may choose to register in one of three specializations:
   - Aqueous Environmental Geochemistry Specialization
   - Earth Sciences Specialization
   - Environmental Hydrology and Climate Specialization

   Students interested in registering in a specialization must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session. 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.) {2211820}

All GEO courses have been renumbered and renamed EARTH SC, ENVIR SC or GEOG. To determine the former GEO designations of the new EARTH SC, ENVIR SC or GEOG courses, see *Geography and Earth Sciences* in the *Course Listings* section of this Calendar.

ADMISSION NOTES

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

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	from CHEM 1A03, 1R03 (See *Admission Note 2* above.)
3 units	from MATH 1A03, 1LS3
12 units	from BIOLOGY 1A03, 1M03 (or 1AA3), CHEM 1AA3, MATH 1A03, 1AA3, 1B03, PHYSICS 1B03, 1BA3, 1L03

PROGRAM NOTES

1. Students may elect 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, 4FE3, ENVIR SC 3ME3 and GEOG 3ME3 are normally taken outside of the normal term. Details are announced in March.
5. A Minor in Geography and Earth Sciences, Earth Sciences or Environmental Science is not permitted in the Honours Earth and Environmental Sciences program. However, Minors in Environmental Studies, Geographic Information Systems and Geography are permitted.

REQUIREMENTS FOR STUDENTS WHO ENTER IN SEPTEMBER 2009

COURSE LIST I

BIOLOGY 2D03 or 2F03; CHEM 2A03, 2E03; ENVIR SC 1B03 or EARTH SC 2EI3; EARTH SC 2C03, 2GI3, 2K03; STATS 2B03

COURSE LIST 2

BIOLOGY 2F03, 3SS3; CHEM 2A03, 2E03; EARTH SC 2C03, 2GI3, 2K03, 3CC3, 3E03, 3GI3, 3J03, 3K03, 3L03, 3O03, 3P03, 3SR3, 3T03, 3U03, 3V03, 3W03, 3Z03, 4B03, 4C03, 4E03, 4EA3, 4FE3, 4FF3, 4G03, 4GI3, 4J03, 4L03, 4MR3, 4MT6, 4O03, 4Q03, 4T03, 4V03, 4W03, 4WB3, 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

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	from MATH 1A03, 1AA3, 1B03 (if not completed in Level I), 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 IN SEPTEMBER 2008

COURSE LIST I

BIOLOGY 2D03 or 2F03; CHEM 2A03, 2E03; ENVIR SC 1B03 or EARTH SC 2EI3; EARTH SC 2C03, 2GI3, 2K03; STATS 2B03

COURSE LIST 2

BIOLOGY 2F03, 3SS3, 3TT3; CHEM 2A03, 2E03; EARTH SC 2C03, 2GI3, 2K03, 3CC3, 3E03, 3GI3, 3J03, 3K03, 3L03, 3O03, 3P03, 3Q03, 3SR3, 3T03, 3U03, 3V03, 3W03, 3Z03, 4B03, 4C03, 4E03, 4EA3, 4FE3, 4FF3, 4G03, 4GI3, 4J03, 4L03, 4MR3, 4MT6, 4O03, 4Q03, 4T03, 4V03, 4W03, 4WB3, 4WW3, 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

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* above.)
6-9 units	Electives

LEVEL III: 30 UNITS

(See below for the Level III requirements for Specializations)

6 units	from EARTH SC 3FE3, GEO 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

Students who registered prior to September 2008 may refer to their degree audit or contact an academic advisor in the office of the Associate Dean of Science (Studies) for program requirements.

Honours Earth and Environmental Sciences (Aqueous Environmental Geochemistry Specialization) {2211825}

ADMISSION NOTE

Level II Honours Earth and Environmental Sciences students wishing to register in this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building, Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session.

ADMISSION

Completion of Level II Honours Earth and Environmental Sciences.

Aqueous Environmental Geochemistry Course List: BIOLOGY 2F03; CHEM 2A03 or 2E03; EARTH SC 2GI3, 2K03, 3E03, 3GI3, 3J03, 3SR3, 3T03, 3U03, 3V03, 3Z03, 4EA3, 4FE3, 4FF3, 4G03, 4GI3, 4L03, 4MR3, 4MT6, 4O03, 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, 3W03
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, 4L03, 4O03, 4WB3, 4WW3
6 units	Electives

Honours Earth and Environmental Sciences (Earth Sciences Specialization) {2211830}

ADMISSION NOTE

Level II Honours Earth and Environmental Sciences students wishing to register in this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building, Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session.

ADMISSION

Completion of Level II Honours Earth and Environmental Sciences.

Earth Sciences Course List 1: EARTH SC 2GI3, 2K03, 3E03, 3K03, 3V03, 4G03

Earth Sciences Course List 2: EARTH SC 2K03, 3E03, 3GI3, 3K03, 3P03, 3SR3, 3T03, 3U03, 3V03, 4E03, 4EA3, 4FE3, 4FF3, 4G03, 4J03, 4MR3, 4MT6, 4Q03, 4T03, 4V03, 4Z03

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	EARTH SC 3FE3, 3RD3, 3Z03
6 units	from Earth Sciences Course List 1
9 units	from Earth Sciences Course List 2
6 units	Electives

LEVEL IV: 30 UNITS

9 units	from Earth Sciences Course List 1
15 units	from Earth Sciences Course List 2, which must include one of EARTH SC 4MR3, 4MT6
6 units	Electives

Honours Earth and Environmental Sciences (Environmental Hydrology and Climate Specialization) {2211835}

ADMISSION NOTE

Level II Honours Earth and Environmental Sciences students wishing to register in this program must contact an Academic Advisor in the Office of the Associate Dean of Science (Studies), Burke Science Building, Room 129 or email: science@mcmaster.ca by April 30 for consideration for the following Fall/Winter session.

ADMISSION

Completion of Level II Honours Earth and Environmental Sciences.

PROGRAM NOTE

Completion of EARTH SC 2C03 at Level II is recommended.

Environmental Hydrology and Climate Course List 1: BIOLOGY 2F03; EARTH SC 2C03, 2GI3, 3J03, 3W03

Environmental Hydrology and Climate Course List 2: EARTH SC 3CC3, 3GI3, 3L03, 3O03, 3SR3, 3U03, 4B03, 4C03, 4FE3, 4FF3, 4GI3, 4L03, 4MR3, 4MT6, 4O03, 4W03, 4WB3, 4WW3

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

Honours Environmental Sciences (B.Sc.) {2210}

ADMISSION NOTE

ENVIR SC 1A03, 1B03, 1G03 must be completed by the end of Level II.

ADMISSION

Completion of any Level I program with a Cumulative Average of at least 6.0 including:

3 units	from MATH 1A03, 1LS3
3 units	BIOLOGY 1M03 (or 1AA3)
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, MED PHYS 1E03, PHYSICS 1B03, 1BA3, 1BB3, 1F03, 1L03, PSYCH 1X03, 1XX3

Environmental Sciences Course List: ASTRON 2E03; BIOLOGY 2G03, 3R03, 3SS3, 3TT3, 4A03, 4J03, 4Y03; ENVIR SC 2B03, 2C03, 2E03, 2G03, 2GI3, 2MB3, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3GI3, 3J03, 3L03, 3ME3, 3O03, 3SA3, 3SR3, 3U03, 3W03, 4B03, 4C03, 4G03, 4GI3, 4HH3, 4L03, 4O03, 4W03, 4WB3, 4WW3; 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, 2G03, 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, 3O03, 3U03, 3W03
9 units	from Environmental Sciences Course List
9 units	Electives

LEVEL IV: 30 UNITS

3 units	ENVIR SC 4EA3
18 units	Levels III, IV courses from Environmental Sciences Course List
9 units	Electives

REQUIREMENTS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2008

Environmental Sciences Course List: ASTRON 2E03; BIOLOGY 3R03, 3SS3, 3TT3, 4A03, 4J03, 4Y03; ENVIR SC 2B03, 2C03, 2E03, 2G03, 2GI3, 2MB3, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3GI3, 3J03, 3L03, 3ME3, 3O03, 3SA3, 3SR3, 3U03, 3W03, 4B03, 4C03, 4G03, 4GI3, 4HH3, 4L03, 4O03, 4W03, 4WB3, 4WW3; STATS 2B03; all Level II, III and IV Geo courses **except** GEO 2GG3, 2MM3, 2WW3, 3AA3, 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 IV Honours Geoscience will be last available in 2009-2010. Those students currently registered in Honours Geoscience who wish to remain in the program should refer to their degree audit for requirements.

B.Sc. in Environmental and Earth Sciences {1149}

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 3.5 including:
6 units from ENVIR SC 1A03, 1B03, 1G03 with an average of at least 4.0
3 units from MATH 1A03, 1LS3
15 units from ASTRON 1F03, BIOLOGY 1A03, 1M03, CHEM 1A03, 1AA3, COMP SCI 1FC3, 1MA3, 1MD3, ENVIR SC 1A03, 1B03, 1G03, MATH 1A03, 1AA3, 1B03, MED PHYS 1E03, PHYSICS 1B03, 1BA3, 1BB3, 1F03, 1L03, PSYCH 1X03, 1XX3

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
ASTRON 2E03; EARTH SC 2EI3, 2K03, 3K03, 3P03, 3T03, 3V03, 3Z03, 4E03, 4J03, 4Q03, 4T03, 4V03, 4Z03; ENVIR SC 2B03, 2C03, 2E03, 2G03, 2GI3, 2MB3, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3GI3, 3J03, 3L03, 3O03, 3SA3, 3U03, 3W03, 4B03, 4C03, 4G03, 4GI3, 4HH3, 4L03, 4O03, 4W03, 4WB3, 4WW3

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 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 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 ASTRON 2E03, EARTH SC 2E03, 2G03, 2GI3, 2K03, 3DD3, 3E03, 3GI3, 3K03, 3P03, 3Q03, 3V03, 3W03, 3Z03, 4E03, 4FF3, 4GI3, 4J03, 4Q03, 4T03, 4Z03, GEO 2E03, 2K03, 3DD3, 3E03, 3K03, 3P03, 3Q03, 3V03, 3Z03, 4E03, 4FF3, 4J03, 4K03, 4Q03, 4T03, 4V03, 4Z03, including at least six units from Levels III, IV Earth Sciences or Geo courses

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 ASTRON 2E03, BIOLOGY 2F03, 3R03, 3SS3, 3TT3, 4J03, 4Y03, CHEM 2A03, 2E03, 2R03, EARTH SC 2EI3, ENVIR SC 2B03, 2C03, 2E03, 2G03, 2GI3, 2MB3, 2Q03, 2W03, 3CC3, 3E03, 3EP3, 3GI3, 3J03, 3L03, 3O03, 3Q03, 3SA3, 3U03, 3W03, 4B03, 4C03, 4EA3, 4G03, 4GI3, 4HH3, 4L03, 4O03, 4W03, 4WB3, 4WW3, GEO 2A03, 2B03, 2C03, 2E03, 2G03, 2Q03, 2W03, 3A03, 3B03, 3C03, 3J03, 3O03, 3Q03, 3U03, 3V03, 3W03, 4A03, 4B03, 4C03, 4G03, 4J03, 4Q03, 4W03, 4WW3, including at least six units from Levels III, IV Environmental Science or Geo courses and at least three units from Levels II, III, IV Biology or Chemistry courses

Minor in Environmental Studies

NOTES
1. The Minor in Environmental Studies is not permitted for students registered in the Honours Geography Environmental and Health Specialization Program.
2. At least nine of the 12 units from the Course List must be selected from outside the student's own department or school.
3. At least six units from the Course List must be outside of the School of Geography and Earth Sciences.

COURSE LIST
ANTHROP 2AN3, 2F03, 2H03, 2U03, 3C03, 3Z03, 4AE3, 4P03; BIOLOGY 2D03, 2E03, 2F03, 3SS3, 3TT3, 4Y03; ECON 2J03, 3W03; EARTH SC 2GG3, 2WW3; ENVIR SC 3CC3; GEOG 2EI3, 3EE3, 3ER3, 3HH3, 4EA3, 4HH3; HEALTHST 4E03; PHILOS 2G03, 2N03; POL SCI 2E06, 3Z03, 3ZZ3, 4D06; RELIG ST 2W03

REQUIREMENTS
24 units total
3 units from GEOG 1HA3, 1HB3
3 units from ENVIR SC 1A03, 1B03, 1G03
6 units from GEOG 2EI3, 3ER3, 4EA3
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 (GIS)

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, GEOG 1HA3, 1HB3
18 units GEOG 2GI3, 2MB3, 3GI3, 3SA3, 3SR3, 4GI3

Minor in Geography

NOTE
Students who completed GEO 2GG3, 2HC3, 2HG3, 2HU3, 2MM3, 2WW3, 3AA3, 3CC3, 3DD3, 3HJ3, 3HR3, 3NN3 prior to September 2008 may include up to six units toward the minor.

REQUIREMENTS
24 units total
6 units from ENVIR SC 1A03, 1B03, 1G03, GEOG 1HA3, 1HB3
18 units Levels II, III or IV Geography, including at least six units of Levels III or IV. No more than six units may be from GEOG 2RC3, 2RU3, 3RJ3, 3RW3. (See *Note* above.)

Minor in Geography and Earth 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, GEOG 1HA3, 1HB3
18 units Levels II, III or IV Geography or Earth Sciences, including at least six units of Levels III or IV. No more than six units may be from GEOG 2RC3, 2RU3, 3RJ3, 3RW3, EARTH SC 2GG3, 2MM3, 2WW3, 3AA3, 3DD3

Certificate in G.I.S. (Geographic Information Systems)

For further information see the *Certificate and Diploma Programs* section of this Calendar.

Honours Integrated Science (ISCI)

WEB ADDRESS: www.science.mcmaster.ca/isci

NOTES APPLICABLE TO ALL HONOURS INTEGRATED SCIENCE PROGRAMS

1. Beginning at Level II, Honours Integrated Science students may complete Combined Honours programs in the following areas:
   - Biochemistry
   - Biology
   - Chemistry
   - Environmental Sciences
   - Mathematics and Statistics
   - Physics
   - Psychology, Neuroscience & Behaviour
2. Application for admission to Level II is required for all programs (See *Degree Programs, Admission to Level II Programs*, in this section of the Calendar).
3. *Completion of a Combined Honours degree normally requires 36 units in the other subject.*

Honours Integrated Science I (ISCI I) {0301}

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 one of Biology U, Chemistry U and Physics U.
4. SCIENCE 1A00, a one-hour mandatory Introduction to 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

24 units ISCI 1A24
6 units Electives

Honours Integrated Science {2299}

ADMISSION (EFFECTIVE 2010-2011)

Completion of Honours Integrated Science I with a Cumulative Average of at least 6.0 including ISCI 1A24.

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

18 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

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 registration in Level IV will be last available in 2009. 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 Faculty of Science. These units may be completed in any Level but may not include any course that is exclusively GEOG or PSYCH 2AA3, 2B03, 2C03, 2I03, 2S03, 3AB3, 3AC3, 3BA3, 3CB3, 3CD3.
2. KINESIOL 3C03 or STATS 2B03 may substitute for STATS 1CC3.
3. Kinesiology courses may not be used toward the elective component of the degree.
4. At least 18 units of Course List must be completed as part of the 30 units of Levels III, IV Kinesiology required in Levels III, IV.

COURSE LIST

KINESIOL 3AA3, 3B03, 3C03, 3D03, 3E03, 3K03, 3N03, 3U03, 3V03, 3Y03, 4A03, 4A06, 4AA3, 4B03, 4BB3, 4C03, 4CC3, 4EE3, 4F03, 4FF3, 4GG3, 4I03, 4J03, 4K03, 4KK3, 4M03, 4MM3, 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

LEVEL IV: 30 UNITS

15 units Levels III, IV Kinesiology including at least nine units from Course List (See *Program Note 2* above.)
15 units Electives (See *Program Notes 1 and 3* above.)

Honours Kinesiology (B.Sc. Kinesiology) {2672}

ADMISSION (FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2007 OR HONOURS KINESIOLOGY I IN SEPTEMBER 2008)

Completion of Kinesiology I or Honours 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

PROGRAM NOTES

1. Completion of one of MATH 1A03, 1B03, 1LS3 is a requirement for this program. Students who completed MATH 1D03 in 2007-2008, may use it toward the Mathematics requirement.
2. Completion of a statistics course is a requirement for this program. Students who have not completed STATS 1CC3, must complete either KINESIOL 3C03 or STATS 2B03. Students who choose to complete KINESIOL 3C03 will be required to complete an additional three units of Levels III, IV Kinesiology.
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 Geography.
4. Kinesiology courses may not be used toward the elective component of the degree.
5. A maximum of 18 units of Levels III, IV Kinesiology courses may be completed in Level III of the program.
6. 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.Kinesiology 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, 3U03, 3V03, 3Y03, 4A03, 4A06, 4AA3, 4B03, 4BB3, 4C03, 4CC3, 4EE3, 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 2007 OR HONOURS 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, 1LS3 if not completed in Level I (See *Program Note 1* above.)
0-3 units	from STATS 1CC3, 2B03, KINESIOL 3C03 (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 (See *Program Note 5* above.)
30-36 units	Electives (See *Program Notes 3 and 4* above.)

PROGRAM NOTES (FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2005 OR 2006)

1. Completion of one of MATH 1A03, 1B03, 1D03, 1LS3 is a requirement for this program.
2. Completion of a statistics course is a requirement for this program. Students who have not completed STATS 1CC3 must complete either KINESIOL 3C03 or STATS 2B03. Students who choose to complete KINESIOL 3C03 will be required to complete an additional three units of Levels III, IV Kinesiology.
3. Honours B.Sc. Kinesiology students who entered Level I in September 2005 or 2006 must complete at least 12 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 Geography.
4. Kinesiology courses may not be used toward the elective component of the degree.
5. A maximum of 15 units of Levels III, IV Kinesiology courses may be completed in Level III of the program.
6. 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.Kinesiology 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.

REQUIREMENTS (FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2005 OR 2006)

120 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

LEVELS II - IV: 90 UNITS

15 units	KINESIOL 2A03, 2C06, 2G03, 2H03
0-3 units	from MATH 1A03, 1B03, 1LS3 if not completed in Level I
0-3 units	from STATS 1CC3, 2B03, KINESIOL 3C03
30 units	Levels III, IV Kinesiology including at least nine units of Level IV and at least 18 units from Course List (See *Program Note 5* above.)
39-45 units	Electives (See *Program Notes 3 and 4* above.)

LIFE SCIENCES

Honours Life Sciences {2514}

ADMISSION NOTES (2009-2010 ONLY)

1. BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) must be completed by the end of Level II.
2. Completion of one of PHYSICS 1B03 or 1L03 is required by the end of Level II.
3. Completion of CHEM 1A03, 1AA3 is strongly recommended in Level I as these courses are prerequisites for CHEM 2OA3, LIFE SCI 2B03 and 2EE3 and a wide selection of Biochemistry, Biology and Psychology courses.

ADMISSION

2009-2010 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:

3 units	from MATH 1A03, 1LS3
9 units	from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with an average of at least 6.0
12 units	from Life Sciences I Course List (See *Admission Notes* above.)

ADMISSION NOTES (EFFECTIVE 2010-2011)

1. Completion of one of PHYSICS 1B03 or 1L03 is required by the end of Level II.
2. Completion of CHEM 1A03, 1AA3 is strongly recommended in Level I as these courses are prerequisites for CHEM 2OA3, LIFE SCI 2B03 and 2EE3 and a wide selection of Biochemistry, Biology and Psychology courses.

ADMISSION

EFFECTIVE 2010-2011: Completion of any Level I program with a Cumulative Average of at least 6.0 including:

3 units	from MATH 1A03, 1LS3
12 units	BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with an average of at least 6.0
9 units	from Life Sciences I Course List (See *Admission Notes* above.)

PROGRAM NOTES

1. 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.
2. 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 2BA3, 2BB3, 2N03, 2R03, PSYCH 3AA3, 3K03, SCIENCE 1D03, 2J03.
3. Students interested in graduate school may wish to consider completion of a thesis or independent study course (see LIFE SCI 4A03, 4B06, 4C09, SCIENCE 4A03, 4B06, 4C09).

HONOURS LIFE SCIENCES COURSE LIST

Biochemistry	Levels II, III, IV*
Biology	Levels II, III, IV*
Chemistry	CHEM 2BB3, 2BA3, 2E03, 2N03, 2OA3, 2OB3, 2R03
Chemical Biology	CHEM BIO 2A03, 2P03
Earth Sciences	EARTH SC 2EI3
Environmental Science	Levels II, III, IV* (and equivalent Levels II, III, IV GEO)
Health Sciences	HTH SCI 3I03, 3K03, 4I13
Kinesiology	KINESIOL 3E03, 3Y03, 4P03
Life Sciences	Levels II, III, IV*
Mathematics	MATH 2E03
Medical and Health Physics	MED PHYS 2A03, 3R03, 4A03, 4B03, 4SZ3, 4XX3
Molecular Biology	Levels II, III, IV*
Origins	ORIGINS 2FF3, 3D03, 3E03, 3F03
Psychology	Levels II, III, IV*
Science	Levels II, III, IV*
Statistics	STATS 2B03

* All Level II, III, IV courses for which the prerequisites have been met are acceptable.

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 2009)

3 units	LIFE SCI 2A03
9 units	from LIFE SCI 2B03, 2C03, 2D03, 2EE3, 2F03, 2H03
6 units	from LIFE SCI 3A03, 3B03, 3C03, 3D03
36 units	from the Honours Life Sciences Course List, of which at least 18 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 1* above.)
0-3 units	from PHYSICS 1B03, 1L03 if not completed in Level I (See *Admission Note 2* above.)
30-36 units	Electives

LEVELS II-IV: 90 UNITS (REQUIREMENTS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2009)

42 units	from Honours Life Sciences Course List, of which at least 24 units must be Levels III, IV (See *Program Note 2* 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 1* above.)
15 units	from Faculty of Science courses which may include Honours Life Sciences Course List
30-33 units	Electives

B.Sc. in Life Sciences {1312}

ADMISSION NOTES (2009-2010 ONLY)

1. BIOLOGY 1A03, 1AA3 (or 1M03), PSYCH 1A03 (or 1XX3), 1AA3 (or 1X03) must be completed by the end of Level II.
2. Completion of CHEM 1A03, 1AA3 is strongly recommended in Level I as these courses are prerequisites for CHEM 2OA3, LIFE SCI 2B03 and 2EE3 and a wide selection of Biochemistry, Biology and Psychology courses.

ADMISSION

2009-2010 ONLY: Completion of any Level I program with a Cumulative Average of at least 3.5 including:

3 units	from MATH 1A03, 1LS3
9 units	from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with an average of at least 4.0
12 units	from Life Sciences I Course List (See *Admission Notes* above.)

ADMISSION NOTE (EFFECTIVE 2010-2011)

Completion of CHEM 1A03, 1AA3 is strongly recommended in Level I as these courses are prerequisites for CHEM 2OA3, LIFE SCI 2B03 and 2EE3 and a wide selection of Biochemistry, Biology and Psychology courses.

ADMISSION

EFFECTIVE 2010-2011: Completion of any Level I program with a Cumulative Average of at least 3.5 including:

3 units	from MATH 1A03, 1LS3
12 units	BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with an average of at least 4.0
9 units	from the 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, 1AA3.
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: BIOCHEM 2B03, 2BB3, CHEM 2BA3, 2BB3, 2N03, 2R03, PSYCH 3AA3, 3K03, 3Y03, SCIENCE 1D03, 2J03.

B.SC. LIFE SCIENCES COURSE LIST

Biochemistry	BIOCHEM 2EE3, 3G03, 3H03, 3N03, 4E03, 4Q03
Biology	Levels II, III*
Chemistry	CHEM 2BA3, 2BB3, 2E03, 2N03, 2OA3, 2OB3, 2R03
Earth Sciences	EARTH SC 2EI3
Environmental Science	Levels II, III, IV* (and equivalent Levels II, III, IV GEO)
Health Sciences	HTH SCI 3I03, 3K03, 4II3
Kinesiology	KINESIOL 3E03, 3Y03, 4P03
Life Sciences	Levels II, III, IV*
Mathematics	MATH 2E03
Medical and Health Physics	MED PHYS 2A03, 3R03, 4A03, 4B03
Molecular Biology	Levels II, III*
Origins	ORIGINS 2FF3, 3D03, 3E03, 3F03
Physics	PHYSICS 1BB3
Psychology	Levels II, III*
Science	SCIENCE 1D03, 2A03, 2B03, 2J03, 2K03, 2L03, 3S03
Statistics	STATS 2B03

* Courses for which the prerequisites have been met are acceptable.

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 (REQUIREMENTS FOR STUDENTS WHO ENTER IN SEPTEMBER 2009)

3 units	LIFE SCI 2A03
9 units	from LIFE SCI 2B03, 2C03, 2D03, 2EE3, 2F03, 2H03
6 units	from LIFE SCI 3A03, 3B03, 3C03, 3D03
12 units	from the B.Sc. Life Sciences Course List, of which at least six 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
27-30 units	Electives

LEVELS II-III: 60 UNITS (REQUIREMENTS FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 2009)

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 B.Sc. Life Sciences Course List (See *Program Notes 1 and 3* above.)
0-3 units	from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) if not completed in Level I
24-27 units	Electives

MATERIALS SCIENCE AND ENGINEERING

(**B.Eng.**; See Faculty of Engineering, Materials Engineering)

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 Department of Biology)

Honours Economics and Mathematics

(**B.A.**; See Faculty of Social Sciences, Department of Economics)

Honours Integrated Science and Mathematics and Statistics

(See Integrated Science)

Honours Philosophy and Mathematics

(**B.A.**; 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

   Honours Mathematics and Statistics may also be combined with the Origins Research Specialization.
2. The Mathematics and Statistics Department recommends the Mathematics Specialization or Applied Mathematics Specialization to students considering graduate studies in Mathematics and recommends the Statistics Specialization to students considering graduate studies in Statistics.

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.
6. Students considering a career as an actuary are encouraged to complete the actuarial sequence of courses: STATS 2D03, MATH 2K03, STATS 3G03, STATS 3H03, MATH 4K03. These courses cover many of the concepts that are tested in the common professional actuarial exams.

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.

COURSE LIST

MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3CI3, 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} (Applied 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 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 4G03, 4Q03, 4V03, 4X03
15 units Levels II, 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.

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 MATH 2C03, 2R03, 2S03, 2X03, 2XX3
3 units STATS 2D03
12 units Electives (See *Program Note* above.)

LEVEL III: 30 UNITS

6 units MATH 3A03, 3X03
6 units MATH 3E03, 3EE3
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 {2320412} (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

Students who have not completed the following courses will be considered for admission, however, completion is required by the end of Level II:

6 units BIOLOGY 1A03, 1M03 (or 1AA3)
3 units PHYSICS 1B03
3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3
3 units CHEM 1A03
3 units ENVIR SC 1G03

Completion of at least 12 of the above units is strongly recommended in Level I, otherwise the requirements may exceed 120 units.

PROGRAM NOTE

MATH 1C03, although not required, is strongly recommended, if not completed in Level I.

MATHEMATICS AND STATISTICS COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3CI3, 3D03, 3DD3, 3S03, 3U03

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 MATH 2C03, 2R03, 2X03, 2XX3
3 units STATS 2D03
3 units from ORIGINS 2B03, 2FF3
3 units ORIGINS 2S03
0-6 units BIOLOGY 1A03, 1AA3 (or 1M03) if not completed in Level I
0-3 units PHYSICS 1B03 if not completed in Level I
0-3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3 if not completed in Level I
0-3 units CHEM 1A03 if not completed in Level I
0-3 units ENVIR SC 1G03 if not completed in Level I
0-9 units Electives (See *Admission* and *Program Note* above.)

LEVEL III: 30 UNITS
6 units MATH 3A03, 3X03
3 units Levels III, IV Mathematics or Statistics
6 units from Mathematics and Statistics Course List
3 units from ORIGINS 2B03, 2FF3 (whichever not completed)
3 units ORIGINS 3S03
6 units from Origins Course List
0-6 units BIOLOGY 1A03, 1AA3 (or 1M03) if not completed in Level I
0-3 units PHYSICS 1B03 if not completed in Level I
0-3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3 if not completed in Level I
0-3 units CHEM 1A03 if not completed in Level I
0-3 units ENVIR SC 1G03 if not already completed
0-3 units Electives

LEVEL IV: 30 UNITS
15 units Levels III, IV Mathematics or Statistics
9 units ORIGINS 4A09
0-6 units BIOLOGY 1A03, 1AA3 (or 1M03) if not completed in Level I
0-3 units PHYSICS 1B03 if not completed in Level I
0-3 units from ASTRON 1F03, PHYSICS 1BA3, 1BB3 if not completed in Level I
0-3 units CHEM 1A03 if not completed in Level I
0-3 units ENVIR SC 1G03 if not already completed
0-6 units Electives

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 3DD3, may substitute it for one of STATS 3CI3, 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 STATS 3A03, 3D03
3 units from STATS 3CI3, 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, STATS 2D03
9 units COMP SCI 2C03, 2MJ3, 2SC3
3 units from COMP SCI 2CA3, 2ME3, 2MF3
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 from COMP SCI 3DB3, 3EA3, 3GC3, 3MH3, 3MI3, 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 Physical Sciences 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 2B06, 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 4B03
9 units Levels III, IV Physics or Astronomy, including PHYSICS 4L03 or 4P06
6 units Electives

Honours Mathematical Science {2515}

The Honours Mathematical Science program has been phased out. Registration in Level IV of this program will be last available in September 2009.

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 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 Co-op Programs

Co-op opportunities in Mathematics and Statistics are available in combination with the specializations. **Enrolment in these programs is limited.** Selection is based on academic achievement and an interview but requires, as a minimum, submission of the on-line application by the stated deadline, and completion of a Level II Honours Mathematics and Statistics program 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.

NOTES
1. These are five-level (year) co-op programs which include two eight-month work terms which must be spent in mathematics or statistics related placements.
2. Students must be registered in a full-load and take a full academic program 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.

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, submission of the on-line application by the stated deadline, and completion of Level II Honours Mathematics and Statistics (Applied Mathematics Specialization) with a Cumulative Average of at least 6.0.

PROGRAM NOTE
Students registered in the Applied Mathematics Co-op 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.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 2MB3, 3CI3, 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)
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): 15 UNITS
6 units MATH 3A03, 3F03
3 units from Course List
3 units Levels III, IV Mathematics or Statistics
3 units Electives
1 course SCIENCE 2C00 if not already completed

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
9 units MATH 3FF3, 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
3 units from MATH 4G03, 4Q03, 4V03
6 units Levels III, IV Mathematics or Statistics
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, submission of the on-line application by the stated deadline, and 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, 3CI3, 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)
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): 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 if not already completed

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*

TERMS 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* 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, submission of the on-line application by the stated deadline, and completion of Level II Honours Mathematics and Statistics (Statistics Specialization) with a Cumulative Average of at least 6.0.

PROGRAM NOTE
Students who have already completed STATS 3DD3, may substitute it for one of STATS 3CI3, 3S03, 3U03.

COURSE LIST
MATH 2E03, 2S03, 2T03, 3B03, 3E03, 3F03, 3FF3, 3T03; STATS 3S03, 3U03

LEVEL I: 30 UNITS
Completed prior to admission to the program

LEVEL II
30 units Completion of Level II Honours Mathematics and Statistics (Statistics Specialization)
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): 15 UNITS
6 units STATS 3A03, 3D03
3 units MATH 3A03
6 units Electives
1 course SCIENCE 2C00 if not already completed

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 3CI3, 3S03, 3U03 if not completed in Level III (See *Program Note* above.)
6 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 1 (FALL)
Work Term

TERM 2 (WINTER): 15 UNITS
6 units Levels III, IV Mathematics or Statistics
3 units Level IV Statistics
6 units Electives

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	15 units from Academic Level III + SCIENCE 2C00 if not completed	Work Term	
	Term 1	Term 2	Summer Term
LEVEL 4	15 units from Academic Levels III, IV	15 units from Academic Levels III, IV	Work Term
	Term 1	Term 2	Summer Term
LEVEL 5	Work Term	15 units from Academic Level IV	

B.Sc. in Mathematical Science {1325}

ADMISSION NOTE
Students should be aware that MATH 1B03 may be a prerequisite for upper level Computer Science and Mathematics courses.

ADMISSION
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, 2R03, 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
12 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
15 units Electives

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

2009-2010 ONLY: Completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units	MATH 1A03, 1AA3
3 units	BIOLOGY 1A03
6 units	CHEM 1A03, 1AA3
3 units	PHYSICS 1B03
3 units	from BIOLOGY 1M03 (or 1AA3), MATH 1B03, PHYSICS 1BA3 (or 1BB3) (See *Program Note 1* below.)
3 units	from Physical Sciences I Course List (See *Program Note 1* below.)

An average of at least 7.0 in MATH 1A03, 1AA3, 1B03, PHYSICS 1B03 or a grade of at least C+ in two of MATH 1A03, 1AA3, 1B03, PHYSICS 1B03, 1BA3 (or 1BB3) is required.

EFFECTIVE 2010-2011: Completion of any Level I program with a Cumulative Average of at least 6.0 including:

6 units	MATH 1A03, 1AA3
3 units	BIOLOGY 1A03
6 units	CHEM 1A03, 1AA3
3 units	PHYSICS 1B03
3 units	from MATH 1B03, PHYSICS 1BA3 (or 1BB3) (See *Program Note 1* below.)
3 units	from Physical Sciences I Course List (See *Program Note 1* below.)

A grade of at least C+ in two of MATH 1A03, 1AA3, 1B03, PHYSICS 1B03, 1BA3 (or 1BB3) is required.

PROGRAM NOTES

1. MATH 1B03 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 & Behaviour Departmental Academic 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	(See *Admission* above.)

LEVEL II: 31 UNITS

3 units	MED PHYS 2A03
3-6 units	CHEM 2E03; or both CHEM 2OA3 and 2OB3
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 2C03, 3H03, 3MM3, 3N03
3 units	from BIOCHEM 3G03, BIOLOGY 2C03, MEDRADSC 3Y03, PSYCH 3A03, 3AA3, 3FA3, 3J03, 3N03 (See *Program Note 2* above.)

LEVEL IV: 30 UNITS

3 units	from BIOLOGY 4U03, MOL BIOL 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 {2330}

ADMISSION

Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, submission of the on-line application by the stated deadline, and 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 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. 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 & 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 5* above.)
1 course	SCIENCE 2C00 if not already completed

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*

TERMS 1 AND 2 (FALL AND WINTER): 31 UNITS

6 units	from BIOLOGY 2B03, 4U03, MOL BIOL 4U03
3 units	MATH 3D03
13 units	MED PHYS 4AA1, 4R06, 4T03, 4XX3
9 units	PHYSICS 3MM3, 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 (2009-2010 ONLY)

5 units	MED PHYS 3R03, 4AB2
5 units	PHYSICS 3HD2, 4E03
3 units	Electives (See *Program Note 4* above.)

TERM 2 (WINTER): 13 UNITS (EFFECTIVE 2010-2011)

5 units	MED PHYS 3R03, 4AB2
5 units	PHYSICS 3HD2, 4E03
3 units	MED PHYS 4I03

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	16 units from Academic Level III + SCIENCE 2C00 if not completed	Work Term	
	Term 1	Term 2	Summer Term
LEVEL 4	13 units from Academic Levels III, IV	18 units from Academic Levels III, IV	Work Term
	Term 1	Term 2	Summer Term
LEVEL 5	Work Term	13 units from Academic Level IV	

MEDICAL 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 graduates receive the Ontario College Advanced Diploma in Medical Radiation Sciences from Mohawk and 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.

Registration in the Medical Radiation Sciences 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 program specializations 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 meeting the admission requirements, if space is available. Level I students whose Level I Fall/Winter Sessional Average (on at least 24 units) is less than 5.0 and/or whose Cumulative Average is less that 5.0 can no longer continue in the Medical Radiation Sciences program without approval from the Reviewing Committee.

CONTINUATION IN THE PROGRAM

A student may not proceed to the next level until he/she has completed all required courses for the current level, and has attained a Cumulative Average of at least 5.0.

In Level I, students are reviewed at the end of Fall/Winter session. 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 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 Level 1 student who may not continue in the program and whose Cumulative Average is between 3.5 and 4.4 may apply to transfer to a program for which he/she qualifies.

A Level 1 student who may not continue in the program and whose Cumulative Average is between 3.0 and 3.4 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). Excessive absenteeism may jeopardize a student's ability to meet course performance requirements and 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 behaviour 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. Students apply for their Level II program 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 II 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 practica 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 term 2 of 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 provide evidence of compliance with completion of mandatory immunization requirements as well as completing pre clinical disease screening. Updated screening may be required for Level IV clinical practica.
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.

Medical Radiation Sciences {1408}
(Radiation Therapy Specialization)

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 the McMaster Bachelor of Medical Radiation Sciences degree. Students who entered the Radiation Therapy Specialization prior to September 2008, 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.
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

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
3 units	BIOLOGY 1A03
6 units	KINESIOL 1Y03, 1YY3
3 units	from MATH 1A03, 1LS3

REQUIREMENTS

150 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 75 units of academic courses in Levels II to IV

LEVEL I

30 units (See *Admission* above.)

LEVEL II (FALL AND WINTER): 30 UNITS

15 units MEDRADSC 2A03, 2D03, 2W03, 2X03, 2Z03
9 units MEDRADSC 2S03, 2T03, 2U03
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 2V15 (Clinical Practicum I)

LEVEL III (FALL AND WINTER): 30 UNITS (2009-2010 ONLY)

3 units MED PHYS 4B03
9 units MEDRADSC 3I03, 3K03, 3X03
9 units MEDRADSC 3S03, 3T03, 3V03
3 units MEDRADSC 3Y03
6 units Electives

LEVEL III (FALL AND WINTER): 30 UNITS (EFFECTIVE 2010-2011)

3 units MED PHYS 4B03
9 units MEDRADSC 3I03, 3K03, 3X03
9 units MEDRADSC 3S03, 3T03, 3V03
3 units MEDRADSC 3Y03
3 units STATS 2B03
3 units Electives

LEVEL III (SPRING AND SUMMER): 15 UNITS (See *Program Note 2* above.)

9 units MEDRADSC 3E03, 3U03, 3W03
6 units MEDRADSC 3B03 and three units from MEDRADSC 3DA3, 3DD3, 3DE3, 3DH3
or
MEDRADSC 3Z06

LEVEL IV (FALL AND WINTER): 30 UNITS

15 units MEDRADSC 4E15 (Clinical Practicum II)
15 units MEDRADSC 4F15 (Clinical Practicum III)

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL II	30 units from Academic Level II		Clinical Practicum I
	Term 1	Term 2	Summer Term
LEVEL III	48 units from Academic Level III		
	Term 1	Term 2	Summer Term
LEVEL IV	Clinical Practicum II	Clinical Practicum III	

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 the McMaster Bachelor of Medical Radiation Sciences degree. Students who entered the Radiography Specialization prior to September 2008, 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.
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

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
3 units BIOLOGY 1A03
6 units KINESIOL 1Y03, 1YY3
3 units from MATH 1A03, 1LS3

REQUIREMENTS

150 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 75 units of academic courses in Levels II to IV

LEVEL I

30 units (See *Admission* above.)

LEVEL II (FALL AND WINTER): 30 UNITS

18 units MEDRADSC 2A03, 2BB3, 2D03, 2E03, 2F03, 2X03
9 units MEDRADSC 2G03, 2H03, 2I03
3 units CHEM 1A03

LEVEL II (SPRING AND SUMMER): 15 UNITS (See *Program Note 2* above.)

15 units MEDRADSC 2J15 (Clinical Practicum I)

LEVEL III (FALL AND WINTER): 30 UNITS (2009-2010 ONLY)

6 units MEDRADSC 3I03, 3X03
12 units MEDRADSC 3G03, 3H03, 3J03, 3K03
3 units MEDRADSC 3Y03
3 units PSYCH 1X03 (or 1AA3)
6 units Electives

LEVEL III (FALL AND WINTER): 30 UNITS (EFFECTIVE 2010-2011)

6 units MEDRADSC 3I03, 3X03
12 units MEDRADSC 3G03, 3H03, 3J03, 3K03
3 units MEDRADSC 3Y03
3 units PSYCH 1X03 (or 1AA3)
3 units STATS 2B03
3 units Electives

LEVEL III (SPRING AND SUMMER): 15 UNITS (See *Program Note 2* above.)

9 units MEDRADSC 3C03, 3E03, 3L03
6 units MEDRADSC 3B03 and three units from MEDRADSC 3DA3, 3DB3, 3DD3, 3DE3
or
MEDRADSC 3Z06

LEVEL IV (FALL AND WINTER): 30 UNITS

~~15 units MEDRADSC 4A15 (Clinical Practicum II)~~
15 units MEDRADSC 4B15 (Clinical Practicum III)

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL II	30 units from Academic Level II		Clinical Practicum I
	Term 1	Term 2	Summer Term
LEVEL III	48 units from Academic Level III		
	Term 1	Term 2	Summer Term
LEVEL IV	Clinical Practicum II	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 the McMaster Bachelor of Medical Radiation Sciences degree.

Students who entered the Ultrasonography Specialization prior to September 2008, 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.

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

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
3 units BIOLOGY 1A03
6 units KINESIOL 1Y03, 1YY3
3 units from MATH 1A03, 1LS3

REQUIREMENTS

150 units total (Levels I to IV), 45 units of clinical practicum are interspersed with 75 units of academic courses in Levels II to IV

LEVEL I: 30 UNITS

30 units (See *Admission* above.)

LEVEL II (FALL AND WINTER): 30 UNITS

6 units MEDRADSC 2A03, 2BB3
21 units MEDRADSC 2K03, 2L03, 2M03, 2N03, 2O03, 2P03, 2Q03
3 units CHEM 1A03

LEVEL II (SPRING AND SUMMER): 15 UNITS (See *Program Note 2* above.)

15 units MEDRADSC 2R15 (Clinical Practicum I)

LEVEL III (FALL AND WINTER): 30 UNITS (2009-2010 ONLY)

3 units MEDRADSC 3X03
15 units MEDRADSC 3M03, 3N03, 3O03, 3P03, 3Q03
3 units MEDRADSC 3Y03
3 units PSYCH 1X03 (or 1AA3)
6 units Electives

LEVEL III (FALL AND WINTER): 30 UNITS (EFFECTIVE 2010-2011)

3 units MEDRADSC 3X03
15 units MEDRADSC 3M03, 3N03, 3O03, 3P03, 3Q03
3 units MEDRADSC 3Y03
3 units PSYCH 1X03 (or 1AA3)
3 units STATS 2B03
3 units Electives

LEVEL III (SPRING AND SUMMER): 15 UNITS (See *Program Note 2* above.)

9 units MEDRADSC 3C03, 3E03, 3R03
6 units MEDRADSC 3B03 and three units from MEDRADSC 3DC3, 3DF3, 3DG3
or
MEDRADSC 3Z06

LEVEL IV (FALL AND WINTER): 30 UNITS

15 units MEDRADSC 4C15 (Clinical Practicum II)
15 units MEDRADSC 4D15 (Clinical Practicum III)

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL II	30 units from Academic Level II		Clinical Practicum I
	Term 1	Term 2	Summer Term
LEVEL III	48 units from Academic Level III		
	Term 1	Term 2	Summer Term
LEVEL IV	Clinical Practicum II	Clinical Practicum III	

Minor in Radiation Sciences

REQUIREMENTS

24 units total

9 units from MED PHYS 1E03, 2A03, 3R03, 4XX3, MEDRADSC 1C03, 3X03, 3Y03, PHYSICS 4E03
15 units MED PHYS 4B03, 4R06, 4T03, MOL BIOL 4U03 (or BIOLOGY 4U03)

MOLECULAR BIOLOGY

(See Department of Biology, Honours Molecular Biology and Genetics)

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 involving 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 possess comprehensive, multifaceted knowledge about the natural world.

NOTE

The Origins Research Specialization curriculum may be taken in conjunction with the Honours program in Arts & Science, Biochemistry, Biology, Chemistry, Life Sciences, Mathematics and Statistics, Physics, or Psychology, Neuroscience & Behaviour. 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

ADMISSION

Enrolment 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, 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 CHEM 1A03

Additionally, if not already completed in Level I, the following courses must be completed by the end of Level II:

6 units 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 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 may be accessed at the Origins Institute Internet site (http://origins.mcmaster.ca/) or by contacting the Associate Director (Jon Stone, Life Sciences Building, Room 327, (905) 525-9140 ext. 26136 or email origins@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)
9 units ORIGINS 2B03, 2FF3, 2S03 (See *Program Note 3* above.)
6 units from Origins Course List
12 units ORIGINS 3S03, 4A09

PHYSICAL SCIENCES

Honours Physical Sciences {2516}

The Honours Physical Sciences program has been phased out. Registration in Level IV of this program will be last available in September 2009.

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 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, MATH 1AA3, PHYSICS 1B03, 1BA3, 1BB3 must be completed by the end of Level II.

ADMISSION
Completion of any Level I program with a Cumulative Average of at least 3.5 including:
6 units 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 Departments 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.SC. 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 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

DEPARTMENT OF PHYSICS AND ASTRONOMY

WEB ADDRESS: http://www.physics.mcmaster.ca/#undergrads

Honours Arts & Science and Physics

(**B.Arts.Sc.**; See Arts & Science Program)

Honours Integrated Science and Physics

(See Integrated Science)

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)

NOTES APPLICABLE TO ALL HONOURS PHYSICS PROGRAMS
1. In addition to the Honours Physics program, the Department offers two 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. For the Honours program, Program Notes 1 and 2 describe additional sets of courses which students may wish to complete and which are appropriate preparation for graduate studies in Physics or Astronomy. Alternatively students may wish to complete one of the following specializations which are also appropriate for graduate studies in Physics or Astronomy.
   - Astrophysics Specialization
   - Biophysics Specialization

   Honours Physics may also be combined with the Origins Research 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 from any of these options.
4. The Physics Department considers the Astrophysics or Biophysics specializations or Honours Physics plus additional courses in Physics or Astronomy (see Program Notes) 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. PHYSICS 2G03 is strongly recommended for students without good programming skills.
7. Students wishing to take additional Level III, IV Mathematics courses should consider selecting MATH 2X03 and 2XX3 instead of MATH 2A03.

Honours Physics {2440800}

ADMISSION NOTE
Completion of MATH 1B03 is required by the end of Level II and is recommended in Level I.

ADMISSION
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.)

PROGRAM NOTES

1. Students interested in computational and theoretical physics and especially those considering postgraduate studies in this area should take the following courses: MATH 2R03, 2T03, PHYSICS 2G03, 3A03, 3C03, 3N03, 4B03, 4F03, 4G03, plus six additional units from Levels III, IV Astronomy, Mathematics, Physics.
2. Students interested in experimental physics and especially those considering postgraduate studies in this area should take the following courses: PHYSICS 3BA3, 3BB3, 3N03, 4B03, 4F03 plus six additional units from Levels III, IV Astronomy, Mathematics, Physics.

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

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 (See *Program Notes* above.)

LEVEL III: 30 UNITS

12 units PHYSICS 3D03, 3H03, 3K03, 3MM3
6 units MATH 3C03, 3D03
12 units Electives (See *Program Notes* above.)

LEVEL IV: 30 UNITS (2009-2010 ONLY)

3 units PHYSICS 4A03
3-6 units from PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03, GEO 3V03
15-18 units Electives (See *Program Notes* above.)

LEVEL IV: 30 UNITS (2010-2011 ONLY)

3-6 units from PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03
18-21 units Electives (See *Program Notes* above.)

LEVEL IV: 30 UNITS (EFFECTIVE 2011-2012)

15 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03 including one of PHYSICS 4L03, 4P06
15 units Electives (See *Program Notes* above.)

Honours Physics {2440805} (Astrophysics Specialization)

ADMISSION NOTES

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

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 Notes 1 and 2* above.)

PROGRAM NOTES

1. One of ORIGINS 3A03, 3B03, 3C03 or 3D03 is recommended.
2. PHYSICS 4G03 is recommended.

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

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 MATH 1B03 if not completed in Level I (See *Admission Note 2* above.)
0-6 units Electives

LEVEL III: 30 UNITS

21 units ASTRON 3X03, PHYSICS 2G03, 3D03, 3H03, 3K03, 3MM3, 3N03
6 units MATH 3C03, 3D03
3 units Electives (See *Program Note 1* above.)

LEVEL IV: 30 UNITS (2009-2010 ONLY)

12 units ASTRON 3Y03, PHYSICS 4A03, 4B03, 4F03
3-6 units PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03, GEO 3V03
6-9 units Electives (See *Program Note 2* above.)

LEVEL IV: 30 UNITS (2010-2011 ONLY)

9 units ASTRON 3Y03, PHYSICS 4B03, 4F03
3-6 units PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03
9-12 units Electives (See *Program Note 2* above.)

LEVEL IV: 30 UNITS (EFFECTIVE 2011-2012)

9 units ASTRON 3Y03, PHYSICS 4B03, 4F03
12 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03 including one of PHYSICS 4L03, 4P06
9 units Electives (See *Program Note 2* above.)

Honours Physics {2440886} (Biophysics Specialization)

ADMISSION NOTES

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

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 Notes 1 and 2* above.)

PROGRAM NOTES

1. Completion of ORIGINS 3D03 is recommended.
2. Completion of both BIOCHEM 3Y03 and 4Y03 is recommended.

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

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 MATH 1B03 if not completed in Level I (See *Admission Note 2* above.)
0-3 units Electives

LEVEL III: 30 UNITS

15 units PHYSICS 3D03, 3H03, 3K03, 3MM3, 3S03
6 units MATH 3C03, 3D03
6 units BIOCHEM 2L06
3 units Electives (See *Program Note 1* above.)

LEVEL IV: 30 UNITS (2009-2010 ONLY)

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, 4V03, 4Z03, GEO 3V03
9-12 units Electives (See *Program Note 2* above.)

LEVEL IV: 30 UNITS (2010-2011 ONLY)
3 units from BIOCHEM 3Y03, 4Y03
3 units PHYSICS 4S03
3-6 units from PHYSICS 4L03, 4P06
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03
12-15 units Electives (See *Program Note 2* above.)

LEVEL IV: 30 UNITS (EFFECTIVE 2011-2012)
3 units from BIOCHEM 3Y03, 4Y03
3 units PHYSICS 4S03
12 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03 including one of PHYSICS 4L03, 4P06
12 units Electives (See *Program Note 2* above.)

Honours Physics {2440888} (Computation and Theory Specialization)

The Honours Physics (Computation and Theory Specialization) program is being phased out. Students who intended to register in this program should refer to the Honours Physics program in this section of the Calendar. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean (Studies) or refer to their degree audit for program requirements. Registration in Level III Honours Physics (Computation and Theory Specialization) is last available in 2009-2010.

Honours Physics {2440810} (Experimental Specialization)

The Honours Physics (Experimental Specialization) program is being phased out. Students who intended to register in this program should refer to the Honours Physics program in this section of the Calendar. Students who registered in the program prior to September 2009 may see an Academic Advisor in the Office of the Associate Dean (Studies) or refer to their degree audit for program requirements. Registration in Level III Honours Physics (Experimental Specialization) is last available in 2009-2010.

Honours Physics {2440412} (Origins Research Specialization)

ADMISSION NOTES
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
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 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
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
0-6 units from BIOLOGY 1A03, 1M03 (or 1AA3) if not completed in Level I (See *Admission Note 1* above.)
0-3 units MATH 1B03 if not completed in Level I (See *Admission Note 2* above.)
0-3 units Electives (See *Admission Note 3* above.)

LEVEL III: 30 UNITS
12 units PHYSICS 3D03, 3H03, 3K03, 3MM3
6 units MATH 3C03, 3D03
3 units from ORIGINS 2B03, 2FF3
6 units from Origins Course List
3 units ORIGINS 3S03

LEVEL IV: 30 UNITS (2009-2010 ONLY)
3 units PHYSICS 4A03
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03, GEO 3V03
9 units ORIGINS 4A09
12 units Electives

LEVEL IV: 30 UNITS (2010-2011 ONLY)
6 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03
9 units ORIGINS 4A09
15 units Electives

LEVEL IV: 30 UNITS (EFFECTIVE 2011-2012)
9 units from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03
9 units ORIGINS 4A09
12 units Electives

Honours Physics Co-op {2445}

ADMISSION NOTE
Enrolment in this program is limited. Selection is based on academic achievement and an interview but requires, as a minimum, submission of the on-line application by the stated deadline, and 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 interested in computational and theoretical physics and especially those considering postgraduate studies in this area should take the following courses: MATH 2R03, 2T03, PHYSICS 3A03, 3C03, 3N03, 4B03, 4G03.
5. Students interested in experimental physics and especially those considering postgraduate studies in this area should take the following courses: PHYSICS 3BA3, 3BB3, 3N03, 4B03, 4F03.

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): 17 UNITS
3 units MATH 3C03
8 units PHYSICS 2G03, 3DA1, 3HC1, 3K03
6 units Electives (See *Program Notes 4 and 5* above.)
1 course SCIENCE 2C00 if not already completed

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*

TERMS 1 AND 2 (FALL AND WINTER): 31 UNITS (2009-2010 ONLY)

3 units	MATH 3D03
4 units	PHYSICS 3MM3, 4AA1
3-6 units	from PHYSICS 4L03, 4P06
6 units	from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03, GEO 3V03
12-15 units	Electives (See *Program Notes 4 and 5* above.)

TERMS 1 AND 2 (FALL AND WINTER): 30 UNITS (EFFECTIVE 2010-2011)

3 units	MATH 3D03
3 units	PHYSICS 3MM3
15 units	from Levels III, IV Astronomy, Mathematics, Physics, EARTH SC 3V03, 4V03, 4Z03 including PHYSICS 4L03 or 4P06
9 units	Electives (See *Program Notes 4 and 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 (2009-2010 ONLY)

4 units	PHYSICS 3HD2, 4AB2
9 units	Electives (See *Program Notes 4 and 5* above.)

TERM 2 (WINTER): 13 UNITS (EFFECTIVE 2010-2011)

4 units	PHYSICS 3DB2, 3HD2
9 units	Electives (See *Program Notes 4 and 5* above.)

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
LEVEL 3	17 units from Academic Level III + SCIENCE 2C00 if not completed	Work Term	
	Term 1	Term 2	Summer Term
LEVEL 4	15 units from Academic Level III	15 units from Academic Level IV	Work Term
	Term 1	Term 2	Summer Term
LEVEL 5	Work Term	13 units from Academic Level IV	

B.Sc. Three-Level Degree

A three-level program with a Physics orientation is available through the **B.Sc. in Physical Sciences**. Please see *Physical Sciences* 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 2Q03, 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 1B03, 1BA3 (or 1BB3).

REQUIREMENTS
24 units total

6 units	from PHYSICS 1B03, 1BA3 (or 1BB3)
18 units	from EARTH SC 3V03, GEO 3V03, Levels II, III, IV Astronomy, Physics, including at least six units from Levels III, IV Astronomy, Physics

DEPARTMENT OF PSYCHOLOGY, NEUROSCIENCE & 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 Integrated Science and Psychology, Neuroscience & Behaviour

(**B.Sc.**; See Integrated Science)

Honours Life Sciences

(See Life Sciences)

Honours Linguistic Cognitive Science

(**B.A.**; See Faculty of Humanities, Department of Linguistics and Languages)

Honours Psychology, Neuroscience & Behaviour (B.A.) and B.A. in Psychology

(See Faculty of Social Sciences, Department of Psychology, Neuroscience & Behaviour)

Honours Psychology, Neuroscience & Behaviour (B.A) (Music Cognition Specialization)

(See Faculty of Social Sciences, Department of Psychology, Neuroscience & Behaviour)

Honours Psychology, Neuroscience & Behaviour (B.Sc.) {2463}

ADMISSION NOTES
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 1BB3 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.

ADMISSION
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 PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each
3 units from MATH 1A03, 1LS3
6 units BIOLOGY 1A03, 1M03 (or 1AA3)
3 units from CHEM 1A03, PHYSICS 1B03, 1L03 (See *Admission Note 1* above.)
6 units from Life Sciences I Course List (See *Admission Notes 1 and 2* above.)

PROGRAM NOTES

1. The Department of Psychology, Neuroscience & 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 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 & Behaviour web site at http://www.mcmaster.ca/psychology.
2. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.

LAB COURSE LIST

PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03

CAPSTONE COURSE LIST

PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

PSYCHOLOGY COURSE LIST

BIOLOGY 3P03, 4T03; HTH SCI 4BB3; KINESIOL 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 I

30 units (See *Admission* above.)

LEVEL II: 30 UNITS

6 units PSYCH 2RA3, 2RB3
3 units from PSYCH 2D03, 2F03, 2N03
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 Note 1* above.)
15 units Electives (See *Program Note 2* 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 1* above.)
15 units Electives (See *Program Note 2* above.)

Honours Psychology, Neuroscience {2463371} & Behaviour (B.Sc.) (Music Cognition Specialization)

ADMISSION NOTES

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 1BB3 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. MUSIC 1A03 or 1AA3 is required for admission, however, both are required for degree completion.

ADMISSION

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 PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each
3 units from MATH 1A03, 1LS3
6 units BIOLOGY 1A03, 1M03 (or 1AA3)
3 units from CHEM 1A03, PHYSICS 1B03, 1L03 (See *Admission Note 1* above.)
6 units from Life Sciences I Course List (See *Admission Notes 1 and 2* above.)
3 units from MUSIC 1A03, 1AA3 (See *Admission Note 3* above.)

PROGRAM NOTES

1. Entrance into MUSIC 1CC3 requires Grade 2 Rudiments from the Royal Conservatory of Music (a grade of 80% or above, within the last two years) or a grade of 65% or above on a qualifying music theory exam administered by the School of the Arts (SOTA). Appointments can be made with SOTA to write the exam on specific dates between February and May. The content of the exam is summarized at: http://www.humanities.mcmaster.ca/audition/index.html
2. The Department of Psychology, Neuroscience & 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 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 & Behaviour web site at http://www.mcmaster.ca/psychology.
3. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
4. PSYCH 3QQ3 or 4QQ3 may fulfill the Level III Lab requirement only if taken under the supervision or co-supervision of a faculty member in the Department of Psychology, Neuroscience & Behaviour.
5. Both MUSIC 1A03 and 1AA3 must be completed for degree completion.

LAB COURSE LIST

PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3

CAPSTONE COURSE LIST

PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

PSYCHOLOGY COURSE LIST

BIOLOGY 3P03, 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.)

LEVEL II: 30 UNITS

6 units PSYCH 2RA3, 2RB3
3 units from PSYCH 2D03, 2F03, 2N03
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.)
3 units MUSIC 1CC3 (See *Program Note 1* above.)
3 units from MUSICCOG 2A03, PSYCH 2MA3
3-6 units Electives (See *Program Note 5* above.)

LEVEL III: 30 UNITS
6 units from Psychology Course List (PSYCH 3A03 and 3H03 are recommended.)
3 units from Lab Course List (See *Program Notes 2 and 4* above.)
6 units MUSIC 2H03, 2CC3
6 units from MUSICCOG 3A03, 3B03, PSYCH 3MA3, 3MB3
9 units Electives (See *Program Notes 3 and 5* above.)

LEVEL IV: 30 UNITS
6 units from Psychology Course List
9 units 6 units from Capstone Course List or MUSICCOG 4D06 and 3 units from Psychology Course List
or
PSYCH 4D09 (See *Program Note 2* above.)
15 units Electives (See *Program Notes 3 and 5* above.)

Honours Psychology, Neuroscience {2463412} & Behaviour (B.Sc.) (Origins Research Specialization)

ADMISSION NOTES
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 1BB3 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. One of ASTRON 1F03, PHYSICS 1BA3, 1BB3, 1F03, 1L03 must be completed by the end of Level II. Completion in Level I is strongly recommended.
4. One of CHEM 1AA3, ENVIR SC 1G03 must be completed by the end of Level II. Completion in Level I is strongly recommended.

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:
6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each
3 units from MATH 1A03, 1LS3
6 units BIOLOGY 1A03, 1M03 (or 1AA3)
3 units from CHEM 1A03, PHYSICS 1B03, 1L03 (See *Admission Note 1* above.)
6 units from Life Sciences I Course List (See *Admission Notes 2, 3 and 4* above.)

PROGRAM NOTES
1. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
2. The Department of Psychology, Neuroscience & 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 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 & Behaviour web site at http://www.mcmaster.ca/psychology.

LAB COURSE LIST
PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03

PSYCHOLOGY COURSE LIST
BIOLOGY 3P03, 4T03; HTH SCI 4BB3; KINESIOL 3E03, 4P03; MUSICCOG 2A03, 3A03, 3B03; all Level III and IV Psychology courses except PSYCH 3AB3, 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
3 units from PSYCH 2D03, 2F03, 2N03
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 if not completed in Level I (See *Admission Note 3* above.)
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
3 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 {2461858} (Behavioural Neuroscience Specialization)

The Honours Psychology (Behavioural Neuroscience Specialization) is being phased out. Registration in Level IV will be last available in September 2009.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL IV: 30 UNITS
6 units from BIOLOGY 4T03, PSYCH 2D03, 2N03, 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
12 units Electives

Honours Psychology {2461890} (Cognition and Perception Specialization)

The Honours Psychology (Cognition and Perception Specialization) is being phased out. Registration in Level IV will be last available in September 2009.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL IV: 30 UNITS
6 units from PSYCH 3A03, 3AA3, 3BB3, 3BN3, 3D03, 3FA3, 3HH3, 3II3, 3J03, 3U03, 3UU3, 3VV3, 4BN3, 4C03, 4L03, 4Z03
3 units from Psychology Course List
9 units 6 units from Capstone Course List and 3 units from Psychology Course List
or
PSYCH 4D09
12 units Electives

Honours Psychology (Developmental Specialization) {2461862}

The Honours Psychology (Developmental Specialization) is being phased out. Registration in Level IV will be last available in September 2009.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL IV: 30 UNITS

6 units	from PSYCH 3HH3, 3II3, 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
12 units	Electives

Honours Psychology (Evolution and Social Behaviour Specialization) {2461864}

The Honours Psychology (Evolution and Social Behaviour Specialization) is being phased out. Registration in Level IV will be last available in September 2009.

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL IV: 30 UNITS

6 units	PSYCH 2C03, 3A03, 3F03, 3JJ3, 3M03, 3T03, 3Y03, 3YY3, 4R03, 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
12 units	Electives

B.Sc. Degree

A three-level program with a general Life Sciences orientation is available through the **B.Sc. in Life Sciences**. See Life Sciences 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 ISCI 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 1AA3, 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.)

(See Department of Biology)

Honours Computational Biology

(See Department of Biology)

Honours Integrated Science (ISCI) (B.Sc.)

(See Integrated Science)

Honours Life Sciences

(See Life Sciences)

B.Sc. in Life Sciences

(See Life Sciences)

Honours Molecular Biology

(See Honours Molecular Biology and Genetics, Department of Biology)

Origins Institute

(See Origins Institute)

Honours Physical Sciences

(See Physical Sciences)

B.Sc. in Physical Sciences

(See Physical Sciences)

FACULTY OF SOCIAL SCIENCES

WEB ADDRESS: http://www.socsci.mcmaster.ca/adeans/

E-MAIL ADDRESS: socscfac@mcmaster.ca

Kenneth Taylor Hall, Room 129
Ext. 23772

Dean of Social Sciences

C. Yates/B.A., M.A., Ph.D

Associate Dean

S. Watt/B.A., M.S.W., D.S.W., R.S.W.

Assistant Dean (Studies)

L. Giordano/B.A.

Director, Experiential Education

S. Vajoczki/B.A., M.Sc., Ph.D.

Student Advisors

K. Cale/B.A.
T. Horton
S. Hunt/B.A.
E. Moore
W. Spencer/B.A. (on leave)

Programming and Outreach Managers

C. Foley/B.A.
R. Talbot/B.A. (on leave)
K. Long/B.A.

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 assistanceships.

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.

PROGRAMS AND DEGREES

A. Level I Programs

Social Sciences I {0720}

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.

COURSE LIST 1

ANTHROP	1A03, 1B03, 1Z03
ECON	1B03, 1BB3
GEOG	1HA3, 1HB3
GERONTOL	1A03
HEALTHST	1A03
INQUIRY	1SS3
LABR ST	1A03, 1C03
POL SCI	1G06
PSYCH	1X03, 1XX3
RELIG ST	1B06, 1D06, 1J03
SOC WORK	1A06
SOCIOL	1A06

REQUIREMENTS: 30 UNITS

12 units from Course List 1
18 units Electives, which may include courses from Course List 1. (See the *Degrees, Programs and Courses* section of this Calendar for a list of elective courses available to Level I students)

B. Degree Programs

HONOURS PROGRAMS (HONOURS BACHELOR OF ARTS AND HONOURS BACHELOR OF KINESIOLOGY)

Honours Bachelor of Arts programs 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.

The Honours Bachelor of Kinesiology is being phased out and admission to Level II will be last available in September 2009.

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) 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 valuable 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 SOC SCI 2EL0 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:
Programming and Outreach Manager,
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 MUGSI/SOLAR is available to them.

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.**

Students enrolled in a program in the Faculty of Social Sciences, in addition to meeting the General 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 MUGSI **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 *Application Procedures* section of this Calendar. Reinstatement forms will be carefully reviewed and the evidence considered 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.

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 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 the 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.

NON ACADEMIC REQUIREMENTS

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.

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 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

DEPARTMENT OF ANTHROPOLOGY

WEB ADDRESS: http://www.socsci.mcmaster.ca/anthro/

Honours Arts & Science and Anthropology

(**B.Arts.Sc.**; See Arts & Science Program)

ANTHROPOLOGY SUBFIELDS

(Applicable to all Anthropology programs)

Anthropology includes the four major subfields of Social/Cultural Anthropology, Physical/Biological Anthropology, Archaeology, and Linguistics. It should be noted that each subfield has its own sequence of courses and prerequisites. (See the *Course Listings* section in this Calendar.)

CULTURAL/SOCIAL ANTHROPOLOGY

ANTHROP 2B03, 2F03, 2G03, 2H03, 2R03, 2X03, 3F03, 3G03, 3HI3, 3L03, 3P03, 3RR3, 3T03, 3V03, 3Y03, 4AE3, 4D03, 4I03, 4M03, 4N03, 4Q03

PHYSICAL/BIOLOGICAL ANTHROPOLOGY

ANTHROP 2AN3, 2D03, 2DD3, 2E03, 2FF3, 2U03, 3C03, 3H03, 3PP3, 3R03, 4H03, 4J03, 4JJ3, 4R03, 4S03 (Relevant courses are also offered by Biology and Kinesiology.)

ARCHAEOLOGY

ANTHROP 2C03, 2O03, 2PA3, 2PC3, 2RP3, 2VV3, 2W03, 3AS3, 3CA3, 3CC6, 3DD3, 3E03, 3EE3, 3K03, 3X03, 4E03, 4EE3, 4F03, 4HF3, (Relevant courses are also offered by the School of Geography and Earth Sciences, History and Classics.)

LINGUISTICS

ANTHROP 2LC3, 2L03, 2LL3, 2LP3, 3A03, 3I03, 3II3, 3M03, 4LB3, 4LC3, 4XX3

OTHER COURSES

Courses not distinguished by subfield include the independent study course ANTHROP 3IS3; topic courses ANTHROP 3W03, 4G03, 4GG3, as well as the seminar courses ANTHROP 4B03 and 4BB3.

In planning a program, it is important for students to take note of the prerequisites of certain upper-level courses.

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.)
9 units	ANTHROP 2E03, 2F03, 2PA3
3 units	from ANTHROP 2D03, 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03
3 units	ANTHROP 4I03
9 units	Level IV Anthropology
27 units	Levels II, III or IV Anthropology
3 units	from SOC SCI 2J03 or STATS 1CC3*
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 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.)
9 units	ANTHROP 2E03, 2F03, 2PA3
3 units	from ANTHROP 2D03, 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03
3 units	ANTHROP 4I03
3 units	Level IV Anthropology
18 units	Levels II, III or IV Anthropology
36 units	courses specified for the other subject
3 units	from SOC SCI 2J03 or STATS 1CC3* or in combined programs within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject.
15 units	Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining 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 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 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.

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 1BB3.

NOTES
1. COMMERCE 2FA3 may be substituted for ECON 2I03 and COMMERCE 2QA3 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. Some, but not all graduate programs in Economics require ECON 3G03, 4T03 and 4TT3. For this reason students interested in an M.A. in Economics are advised to consult a departmental advisor for more detailed information.
4. **Alternate admission to upper level Economics programs requires a Cumulative Average of at least 6.0 including an average of at least 6.0 in ECON 2G03, 2GG3, 2H03 and 2HH3 with a grade of at least C- in each.**

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
24 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.)
6 units ECON 2B03 and 3U03 (See *Note 2* above.)
3 units* from MATH 1A03, 1LS3, 1M03
3 units** from STATS 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 1BB3. 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, with programs in 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 2FA3 may be substituted for ECON 2I03 and COMMERCE 2QA3 may be substituted for ECON 2B03.
5. **Alternate admission to upper level Economics programs requires a Cumulative Average of at least 6.0 including an average of at least 6.0 in ECON 2G03, 2GG3, 2H03 and 2HH3 with a grade of at least C- in each.**

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, 2I03, 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 or 1M03
3 units** from STATS 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 and Computer Science {2150145}

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 1BB3, and a weighted average of at least 7.0 in ECON 1B03, 1BB3, COMP SCI 1MD3 and 1FC3; MATH 1A03, 1AA3 and 1B03. MATH 1B03 may be postponed until Level II.

NOTES
1. COMMERCE 2FA3 may be substituted for ECON 2I03 and COMMERCE 2QA3 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. Alternate admission to upper level Economics programs requires a Cumulative Average of at least 6.0 including an average of at least 6.0 in ECON 2G03, 2GG3, 2H03 and 2HH3 with a grade of at least C- in each.

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
18 units	Levels II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03
18 units	COMP SCI 2C03, 2CA3, 2ME3, 2MF3, 2MJ3, 2SC3
9 units	from COMP SCI 3CN3, 3DB3, 3GC3, 3IS3, 3MH3, 4HC3, 4WW3
3 units	Levels III or IV Computer Science except COMP SCI 4ZP6
6-9 units	STATS 2D03 and either STATS 2MB3, or 3D03 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 and Mathematics {2150320}

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 (or 1X03) an average of at least 7.0 in ECON 1B03 and 1BB3 and a grade of at least B- in each of MATH 1AA3 (or 1XX3) and 1B03.

NOTES

1. COMMERCE 2FA3 may be substituted for ECON 2I03 and COMMERCE 2QA3 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 required units.
4. Neither STATS 2D03 nor 2MB3 can be used to satisfy these required units.
5. **Alternate admission to upper level Economics programs requires a Cumulative Average of at least 6.0 including an average of at least 6.0 in ECON 2G03, 2GG3, 2H03 and 2HH3 with a grade of at least C- in each.**

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
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 *Notes 3 and 4* 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.

NOTES

1. COMMERCE 2FA3 may be substituted for ECON 2I03 and COMMERCE 2QA3 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. **Alternate admission to the B.A. Economics program requires a Cumulative Average of at least 3.5 including an average of at least 4.0 in ECON 2G03, 2H03.**

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 2I03.
3. COMMERCE 2QA3 (or another Statistics course equivalent to ECON 2B03) may be substituted for ECON 2B03.
4. ECON 2CC3 may not be used to satisfy a minor in Economics.

REQUIREMENTS

24 units total

6 units	ECON 1B03 and 1BB3
18 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 *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.

ENVIRONMENT

GEOG 2EI3, 3EA3, 3EE3, 3EP3, 3ER3, 4HH3

GEOGRAPHIC INFORMATION SYSTEMS (GIS) AND SPATIAL ANALYSIS

GEOG 2GI3, 3GI3, 3SA3, 3SR3, 4GI3

HEALTH AND POPULATION
GEOG 2HI3, 3HH3, 3HP3, 4HC3, 4HD3, 4EA3, 4HH3, 4HP3

LOCATION AND TRANSPORTATION
GEOG 2LI3, 3LT3, 4LP3, 4LT3

URBAN GEOGRAPHY
GEOG 2UI3, 3UG3, 3UP3, 3UR3, 4UH3, 4UT3

OTHER COURSES
Courses not distinguished by subfield include the regional geography courses GEOG 2RC3, 2RU3, 3RJ3, 3RW3, as well as the Earth Science courses EARTH SC 2GG3, 2MM3, 2WW3, 3AA3 and 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, 1HB3, ENVIR SC 1A03, 1B03, 1G03. (See *Note 1* below.)

NOTES
1. **EFFECTIVE SEPTEMBER 2009** for students who enter an Honours Geography program, GEOG 1HA3 and 1HB3 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.
2. Students enrolled in an Honours Geography program prior to September 2008 may substitute GEO 2E03 for GEOG 2MA3.
3. Students enrolled in an Honours Geography program prior to September 2008 may substitute one of STATS 1CC3 or SOC SCI 2J03 for GEOG 2MB3.
4. Students enrolled in an Honours Geography program prior to September 2008 may substitute GEO 2HB3, 2HD3 or 2HY3 for GEOG 2UI3.
5. Students enrolled in an Honours Geography program prior to September 2008 may substitute EARTH SC 3FE3 for GEOG 3MF3.
6. Students intending to register in GEOG 4MT6 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
6 units GEOG 2MA3, GEOG 2MB3 (See *Notes 2 and 3* above.)
9 units from GEOG 2EI3, 2HI3, 2LI3, 2UI3 (See *Note 4* above.)
12 units Electives

LEVELS III AND IV: 60 UNITS
6 units GEOG 3MF3, 3MR3 (See *Note 5* above.)
12 units Level III Geography, excluding GEOG 3RJ3, 3RW3
12 units Level IV Geography, including one of GEOG 4MR3 or 4MT6 (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 Health Specialization {2240868}

The Honours Geography (Environment and Health Specialization) has been cancelled. Students who had intended to register in this program should contact an advisor in the School of Geography and Earth Sciences or the Office of the Associate Dean (Social Sciences) to discuss an alternative choice of study. Students who are currently registered in this program should refer to the 2007-2008 version of this Calendar or their degree audit.

G.I.S. and Spatial Analysis Specialization {2240870}

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 or the Office of the Associate Dean (Social Sciences) to discuss an alternative choice of study. Students who are currently registered in this program should refer to the 2007-2008 version of this Calendar or their degree audit.

Urban Social Geography Specialization {2240872}

The Honours Geography (Urban Social Geography Specialization) has been cancelled. Students who had intended to register in this program should contact an advisor in the School of Geography and Earth Sciences or the Office of the Associate Dean (Social Sciences) to discuss an alternative choice of study. Students who are currently registered in this program should refer to the 2007-2008 version of this Calendar or their degree audit.

Honours Geography and Environmental Studies {2243}

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, 1HB3, ENVIR SC 1A03, 1B03, 1G03. (See *Note 1* below.)

NOTES
1. GEOG 1HA3, 1HB3 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 2E03 for GEOG 2MA3.
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.
5. Students who entered the program prior to September 2006 may use GEO 3NN3 as three units of Level III Geography
6. Students enrolled in the Honours Geography and Environmental Studies program prior to September 2009 may substitute EARTH SC 3FE3 or GEOG 3MF3 for GEOG 3ME3.
7. Students intending to enrol in GEOG 4MT6 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.)
18 units GEOG 2EI3, 2GI3, 3EP3, 3ER3, 3MR3, 4EA3

6 units GEOG 2MA3, GEOG 2MB3 (See *Notes 3 and 4* above.)
3 units GEOG 3ME3 (See *Note 6* above.)
12 units Level IV Geography or Earth Science, including one of GEOG 4MR3 or 4MT6 (See *Note 7* above.)
12 units Level III Geography or Earth Science, excluding EARTH SC 3AA3, 3DD3, GEOG 3RJ3, 3RW3 (See *Note 5* above.)
12 units Levels II or III Geography or Earth Science, excluding EARTH SC 2GG3, 2MM3, 2WW3, 3AA3, 3DD3, GEOG 2RC3, 2RU3, 3RJ3, 3RW3 (See *Note 5* above.)
6 units* GEOG 1HA3, 1HB3, which must be completed by the end of 60 units
3 units* from ENVIR SC 1A03, 1B03, 1G03, which must be completed by the end of 60 units
18 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

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, 1HB3, 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 students who enter an Honours Geography program, GEOG 1HA3 and 1HB3 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 GEOG 2MA3.
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.
5. Students in a combined Honours program within the Faculty of Social Sciences may substitute GEOG 2MA3 with the three or six unit Research Methods course specified for the other subject (i.e. GERONTOL 2C03, HEALTHST 2B03, POL SCI 3N06, SOCIOL 2Z03).
6. Students enrolled in an Honours Geography program prior to September 2008 may substitute EARTH SC 3FE3, for GEOG 3MF3.
7. Students intending to enrol in GEOG 4MT6 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 2GI3, 3MR3
6 units GEOG 2MA3, GEOG 2MB3 (See *Notes 3 and 4* above.)
3 units GEOG 3MF3 (See *Note 6* above.)
6 units Level III Geography, excluding, GEOG 3RJ3, 3RW3
9 units Levels II or III Geography, excluding GEOG 2RC3, 2RU3, 3RJ3, 3RW3
12 units Level IV Geography, including one of GEOG 4MR3 or 4MT6 (See *Note 7* above.)
or
9 units Level IV Geography and the thesis or honours seminar specified by the department for the other subject. (See *Note 3* above.)
36 units courses specified for the other subject
12-15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Geography and Arts & Science or with a Humanities subject, are exempt from this requirement.

B.A. in Geography {1240}

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 3.5 including an average of at least 4.0 in six units from GEOG 1HA3, 1HB3, ENVIR SC 1A03, 1B03, 1G03.

NOTES

1. Students who entered this program prior to September 2007 may use GEO 3AA3 as three units of Level III Geography.
2. Students who entered Level II prior to September 2008 may include up to six units from GEO 2GG3 (EARTH SC 2GG3), 2HC3 (GEOG 2RC3), 2HG3 (GEOG 3HP3), 2HU3 (GEOG 2RU3), 2MM3 (EARTH SC 2MM3), 2WW3 (EARTH SC 2WW3)
3. Students who entered Level II prior to September 2008 may include up to six units from GEO 3AA3 (EARTH SC 3AA3), 3CC3 (EARTH SC 3CC3), 3DD3 (EARTH SC 3DD3), 3HJ3 (GEOG 3RJ3), 3HR3 (GEOG 3RW3), GEO 3NN3

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 Geography (See *Note 2* above.)
12 units Level III Geography (See *Note 3* 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 Geography and Earth Sciences

(See *Minor in Geography and Earth Sciences* in the *Faculty of Science* section of this Calendar.)

Minor in Geography

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. Students who entered this program prior to September 2007 may use GEO 3AA3 as three units of Level III Geography.
2. Students who completed GEO 2GG3, 2HC3, 2HG3, 2HU3, 2MM3, 2WW3, 3AA3, 3CC3, 3DD3, 3HJ3, 3HR3, 3NN3 prior to September 2008 may include up to six units toward the minor.

REQUIREMENTS

24 units total
6 units from ENVIR SC 1A03, 1B03, 1G03, GEOG 1HA3, 1HB3
18 units Levels II, III or IV Geography, including at least six units of Levels III or IV. No more than six units may be from GEOG 2RC3, 2RU3, 3RJ3, 3RW3 (See *Note 2* above.)

Minor in 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.

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, 2F03, 2H03, 2U03, 3C03, 3Z03, 4AE3, 4P03
BIOLOGY	2D03, 2E03, 2F03, 3SS3, 3TT3, 4Y03
ECON	2J03, 3W03
ENVIR SC	3CC3
EARTH SC	2GG3, 2WW3
GEOG	2EI3, 3EE3, 3ER3, 3HH3, 4EA3, 4HH3
HEALTHST	4E03
PHILOS	2G03, 2N03
POL SCI	2E06, 3Z03, 3ZZ3, 4D06
RELIG ST	2W03

REQUIREMENTS

24 units total

3 units	from GEOG 1HA3, 1HB3
3 units	from ENVIR SC 1A03, 1B03, 1G03
6 units	from GEOG 2EI3, 3ER3, 4EA3
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 2GI3. 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, 1HB3 (See *Note 3* above.)
18 units	GEOG 2GI3, 2MB3, 3GI3, 3SA3, 3SR3, 4GI3 (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 Health Studies

(**B.Arts.Sc.**; See Arts & Science Program)

Honours Gerontology {2265}

Admission to all Gerontology programs has been suspended for the September 2009-2010 session. Students who had intended to register in any of these programs should refer to the *Health Studies* programs in this section of the Calendar for an alternative program of study. Please note that GERONTOL 1A03 will be accepted as a substitute for HEALTHST 1A03 for the purpose of admission to Health Studies in 2009-2010.

NOTES
1. 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.
2. Students are strongly recommended to complete HLTH AGE 3Z06 and SOC SCI 2J03 (or another approved statistics course) by the end of Level II.
3. Students who have completed HLTH AGE 2A06 or equivalent are not required to complete HLTH AGE 3Z06.
4. Students are strongly recommended to complete GERONTOL 2E03 prior to registration in GERONTOL 3B03.

COURSE LIST

ANTHROP	3HI3, 3Z03, 3ZZ3
ECON	3D03, 3Q03, 3Z03
GEOG	2HI3, 3HH3, 3HP3
HEALTHST	2AA3, 2C03, 2D03, 2HI3, 3AA3, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3YY3, 4C03
HTH SCI	3B03
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 1* 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
18 units	GERONTOL 2B03, 2D03, 3B03, 3D03, HLTH AGE 4Z06
3 units	Level IV Gerontology or Health Aging and Society
18 units	Levels II, III or IV Gerontology or Health Aging and Society or courses from Course List
6 units	HLTH AGE 3Z06 (See *Notes 2 and 3* above.)
3 units	from SOC SCI 2J03, STATS 1CC3 (See *Note 2* 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 to all Gerontology programs has been suspended for the September 2009-2010 session. Students who had intended to register in any of these programs should refer to the *Health Studies* programs in this section of the Calendar for an alternative program of study. Please note that GERONTOL 1A03 will be accepted as a substitute for HEALTHST 1A03 for the purpose of admission to Health Studies in 2009-2010.

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. 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.
3. Students are strongly recommended to complete HLTH AGE 3Z06 and SOC SCI 2J03 (or another approved statistics course) by the end of Level II.
4. Students who have completed HLTH AGE 2A06 or equivalent are not required to complete HLTH AGE 3Z06.
5. Students who choose to complete a six unit, Level IV thesis (Independent Study) in the other subject may replace HLTH AGE 4Z06 with six units of Levels III or IV Gerontology or courses from Course List. This substitution must be approved by the Chair.
6. Students who are registered in the Combined Honours Gerontology and Health Studies program will complete HLTH AGE 4Z06 and are not required to take HEALTHST 4A03.
7. Students are strongly recommended to complete GERONTOL 2E03 prior to registration in GERONTOL 3B03.
8. Students who entered the program prior to September 2003 or students who have permission of the Chair to complete the Research Methods as required by their other component will replace GERONTOL 3C03 with a three unit elective.

COURSE LIST

ANTHROP	3HI3, 3Z03, 3ZZ3
ECON	3D03, 3Q03, 3Z03
GEOG	2HI3, 3HH3, 3HP3
HEALTHST	2AA3, 2C03, 2D03, 2HI3, 3AA3, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3YY3, 4C03
HTH SCI	3B03
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 2* 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
12 units	GERONTOL 2B03, 2D03, 3B03, 3D03
6 units	HLTH AGE 4Z06 or if available, a thesis in the other subject (See *Notes 5 and 6* above.)
3 units	Level IV Gerontology or Health Aging and Society
12 units	Levels II, III or IV Gerontology or Health Aging and Society or courses from Course List (See *Note 2* above.)
36 units	Courses as specified for the other subject
6 units	HLTH AGE 3Z06 (See *Notes 3 and 4* above.)
3-6 units	from SOC SCI 2J03, STATS 1CC3* (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.

B.A. in Gerontology {1265}

Admission to all Gerontology programs has been suspended for the September 2009-2010 session. Students who had intended to register in any of these programs should refer to the *Health Studies* programs in this section of the Calendar for an alternative program of study. Please note that GERONTOL 1A03 will be accepted as a substitute for HEALTHST 1A03 for the purpose of admission to Health Studies in 2009-2010.

NOTES

1. 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.
2. 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 3DD6.
3. Students are strongly recommended to complete GERONTOL 2E03 prior to registration in GERONTOL 3B03.
4. While it is not a requirement, it is strongly recommended that students in the B.A. in Gerontology program complete HLTH AGE 3Z06.

COURSE LIST

ANTHROP	3HI3, 3Z03, 3ZZ3
ECON	3D03, 3Q03, 3Z03
GEOG	2HI3, 3HH3, 3HP3
HEALTHST	2AA3, 2C03, 2D03, 2HI3, 3AA3, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3YY3
HTH SCI	3B03
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 1* above.)

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
12 units	GERONTOL 2B03, 2D03, 3B03, 3D03
12 units	Levels II, III or IV Gerontology or Health Aging and Society or courses from Course List (See *Note 1* 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 Gerontology

Admission to all Gerontology programs has been suspended for the September 2009-2010 session. Students who had intended to register in any of these programs should refer to the *Health Studies* programs in this section of the Calendar for an alternative program of study. Please note that GERONTOL 1A03 will be accepted as a substitute for HEALTHST 1A03 for the purpose of admission to Health Studies in 2009-2010.

NOTES

1. Kinesiology students completing a Minor in Gerontology may substitute KINESIOL 4SS3 for GERONTOL 2B03.
2. 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	3HI3, 3Z03, 3ZZ3
ECON	3D03, 3Q03, 3Z03
GEOG	2HI3, 3HH3, 3HP3
GERONTOL	2E03, 2F03, 3H03, 3J03, 3K03, 3L03, 3M03, 3N03
HEALTHST	2AA3, 2C03, 2D03, 2HI3, 3AA3, 3CC3, 3D03, 3E03, 3H03, 3HH3, 3YY3, 4C03
HTH SCI	3B03
KINESIOL	3S03, 3SS3
PHILOS	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 1* 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.

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 the 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 entered the program prior to September 2004 may substitute HEALTHST 3A03 for 3AA3.
4. Students who have completed HEALTHST 2B03 and 3G03 or HLTH AGE 2A06 (or equivalent research methods course) are not required to complete HLTH AGE 3Z06.
5. Students who 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, 3HI3, 3Y03, 3Z03, 3ZZ3
ECON	3Z03
GEOG	3HH3, 3HP3
GERONTOL	2F03, 3H03, 3K03, 3L03, 3N03
HTH SCI	2G03, 2J03
HISTORY	3V03
INDIG ST	3H03, 3HH3
KINESIOL	3A03, 3S03, 3SS3
PHILOS	2D03, 3C03
PSYCH	3B03, 3N03,
RELIG ST	2C03, 2M03, 2N03, 2WW3
SOC WORK	3C03, 3O03
SOCIOL	3G03, 3HH3
WOMEN ST	2HH3

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 3* above.)
18 units	from Levels II, III, IV Health Aging and Society, Health Studies or GERONTOL 4I03
9 units	from Level IV Health Aging and Society or Health Studies
12 units	from Course List (See *Note 5* above.)
6 units	HLTH AGE 3Z06 (See *Note 4* above.)
3 units	from SOC SCI 2J03 or STATS 1CC3* 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 1**. See *Admission to Level II Programs* in *Academic Regulations* in this section of the Calendar.
2. Students are strongly encouraged to complete HLTH AGE 3Z06 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 entered the program prior to September 2004 may substitute HEALTHST 3A03 for 3AA3.
4. 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.
5. Students who completed GERONTOL 2B03 or 3Q03, prior to September 2005, may use these units to fulfill Course List requirements.
6. Students who have completed HEALTHST 2B03 are not required to complete HLTH AGE 3Z06 and will complete three additional units of Levels II, III or IV Health Aging and Society or Health Studies.

COURSE LIST
(Students are responsible for ensuring that course prerequisites are fulfilled.)

ANTHROP	2AN3, 2FF3, 2U03, 3C03, 3HI3, 3Y03, 3Z03, 3ZZ3, 4S03
ECON	3Z03
GEOG	3HH3, 3HP3
GERONTOL	2F03, 3H03, 3K03, 3L03, 3N03
HTH SCI	2G03, 2J03
HISTORY	3V03
INDIG ST	3H03, 3HH3
KINESIOL	3A03, 3S03, 3SS3
PHILOS	2D03, 3C03
PSYCH	3B03, 3N03
RELIG ST	2C03, 2M03, 2N03, 2WW3
SOC WORK	3C03, 3O03
SOCIOL	3G03, 3HH3, 4G03
WOMEN ST	2HH3

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 3* above.)
15 units	Levels II, III or IV Health Aging and Society, Health Studies or GERONTOL 4I03, of which at least six units must be at Level IV
3 units	HEALTHST 4A03
9 units	from Course List (See *Note 5* above.)
36 units	courses specified for the other subject
3-6 units	HLTH AGE 3Z06 or an equivalent research methods course if required by the other subject (See *Notes 2 and 6* above.)
3-6 units	from SOC SCI 2J03 or STATS 1CC3* 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
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 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 entered the program prior to September 2004 may substitute HEALTHST 3A03 for 3AA3.
4. Students who completed GERONTOL 2B03 or 3Q03, prior to September 2005, may use these units to fulfill Course List requirements.
5. Students who completed HLTH AGE 2A06 or equivalent are not required to complete HLTH AGE 3Z06. While it is not a requirement, it is strongly recommended that students in the B.A. program in Health Studies complete HLTH AGE 3Z06.

COURSE LIST
(Students are responsible for ensuring that course prerequisites are fulfilled.)

ANTHROP	2AN3, 2U03, 3C03, 3HI3, 3Y03, 3Z03, 3ZZ3
ECON	3Z03
GEOG	3HH3, 3HP3
GERONTOL	2F03, 3H03, 3K03, 3L03, 3N03
HTH SCI	2G03, 2J03,
HISTORY	3V03
INDIG ST	3H03, 3HH3
KINESIOL	3A03, 3S03, 3SS3
PHILOS	2D03, 3C03
PSYCH	3B03, 3N03,
RELIG ST	2C03, 2M03, 2N03, 2WW3
SOC WORK	3C03, 3O03
SOCIOL	3G03, 3HH3
WOMEN ST	2HH3

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 3* above.)
12 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 *Note 4* 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. KINESIOL 2G03 and 3A03 may be used to satisfy Health Studies requirements for Kinesiology students pursuing a Minor in Health Studies.
3. Students who completed GERONTOL 2B03, 3Q03 or HEALTHST 3A03 prior to September 2005, may use these units to fulfill Course List requirements.

COURSE LIST

ANTHROP	2AN3, 2FF3, 2U03, 3C03, 3HI3, 3Y03, 3Z03, 3ZZ3, 4S03
ECON	2CC3, 3Z03
GEOG	3HH3, 3HP3
GERONTOL	2F03, 3H03, 3K03, 3L03, 3N03, 4I03
HEALTHST	2C03, 2D03, 2E03, 2H03, 3C03, 3D03, 3E03, 3F03, 3H03, 3M03, 3Y03
HTH SCI	2G03, 2I03, 2J03, 3Y03
HISTORY	3V03, 3Y03
INDIG ST	3H03, 3HH3
KINESIOL	3S03, 3SS3
LABR ST	3D03
PHILOS	2D03, 3C03
POL SCI	3M03
PSYCH	3B03, 3N03,
RELIG ST	2C03, 2M03, 2N03, 2WW3
SOC WORK	3C03, 3O03
SOCIOL	3G03, 3HH3, 4G03
WOMEN ST	2H03, 2HH3

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)

Honours Bachelor of Kinesiology (B.Kin.) {2303}

This program is being phased out and admission to Level II will be last available in September 2009.

NOTE
Kinesiology courses **may not** be used toward the elective component of the degree.

REQUIREMENTS FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2007 OR 2008
120 units total (Levels I to IV), of which 48 units may be Level I

LEVEL II: 30 UNITS

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

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 Kinesiology (B.Kin.) {2303}

REQUIREMENTS FOR STUDENTS WHO ENTERED KINESIOLOGY I IN SEPTEMBER 2005 OR 2006

NOTES
1. Students may register in a **maximum of 15 units** of Levels III or IV Kinesiology courses in Level III of their program.
2. 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

LEVELS III AND IV: 60 UNITS

30 units	Levels III or IV Kinesiology (See *Note 1* above.)
30 units	Electives (See *Note 2* above.)

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 1Z03.

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 are encouraged to consult the Labour Studies **web site at: http://socserv.mcmaster.ca/labourstudies**.
3. Students may not transfer to another Labour Studies program except by the normal application process.
4. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.
5. Students who entered the program prior to September 2003, and who completed LABR ST/SOCIOL 2I06, will use this course to satisfy six units of Course List 1 and not Course List 2.
6. Students who have completed LABR ST 4D03 need not complete LABR ST 4C03 or 4E03.
7. Students are encouraged to complete LABR ST 3H03 before registering in LABR ST 4A06.
8. Students who have completed LABR ST 1Z03 may substitute three units Level II or III Labour Studies for LABR ST 2E03.
9. 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, 4BC3, 4BD3
LABR ST	2B03, 2BB3, 2G03, 3A03, 3B03, 3C03, 3D03, 3E03, 3F03, 3G03, 3J03, 3W03
WOMEN ST	2A03

COURSE LIST 2

COMMERCE	2BC3
ECON	2F03, 2K03, 2N03
GERONTOL	3J03
HISTORY	3W03, 3WW3
POL SCI	3D03, 3E03, 3EE3, 3F03
SOCIOL	2E06, 2I03, 2Q06, 2R03, 2RR3, 2V06, 3F06, 3LL3

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.)
18 units from Course List 1, where at least nine units must be selected from Levels III or IV courses (See *Note 5* above.)
3 units from LABR ST 4C03, 4E03 (See *Note 6* above.)
3-6 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 and/or the Department of Religious Studies.
*If requirement completed in Level I, these units will be taken as electives.

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 1Z03. 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.
3. Students are encouraged to consult the Labour Studies **web site at: http://socserv.mcmaster.ca/labourstudies**.
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 2I06, will use this course to satisfy six units of Course List 1 and not Course List 2.
8. Students who have completed LABR ST 4D03 need not complete LABR ST 4C03 or 4E03.
9. Students are encouraged to complete LABR ST 3H03 before registering in 4A06.
10. Students who have completed LABR ST 1Z03 may substitute three units Level II or III Labour Studies for LABR ST 2E03.

COURSE LIST 1
COMMERCE 2BA3, 4BC3, 4BD3
LABR ST 2B03, 2BB3, 2G03, 3A03, 3B03, 3C03, 3D03, 3E03, 3F03, 3G03, 3J03, 3W03
WOMEN ST 2A03

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 *Notes 6 and 10* above.)
15 units from Course List 1, where at least nine units must be selected from Levels III or IV (See *Note 7* above.)
3 units from LABR ST 4C03, 4E03 (See *Note 8* above.)
36 units courses specified for the other subject
3 units from SOC SCI 2J03 or STATS 1CC3* or an equivalent Research Methods/Statistics course specified by the other subject. (See *Note 5* above.)
15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Labour Studies with Arts & Science, or with a Humanities subject are exempt from this requirement.
*If requirement completed in Level I, these units will be taken as electives.

B.A. in Labour Studies {1640}

ADMISSION
Enrolment in this 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 3.5 including an average of at least 4.0 in six units from LABR ST 1A03 and one of LABR ST 1C03 or 1Z03.

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 are encouraged to consult the Labour Studies **web site at: http://socserv.mcmaster.ca/labourstudies**.
3. Students may not transfer to another Labour Studies program except by the normal application process.
4. Students who entered the program prior to September 2003, and who completed LABR ST/SOCIOL 2I06 may use this course to satisfy six units from the Course List.
5. Students who have completed LABR ST 1Z03 may substitute three units Level II or III Labour Studies for LABR ST 2E03.

COURSE LIST
COMMERCE 2BA3, 4BD3
LABR ST 2B03, 2BB3, 2G03, 3A03, 3B03, 3C03, 3D03, 3E03, 3F03, 3G03, 3J03, 3W03
WOMEN ST 2A03

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 LABR ST 2A03, 2C03, 2E03, COMMERCE 4BC3 (See *Note 5* above.)
18 units from Course List, where at least nine units must be selected from Levels III or IV courses. (See *Note 4* above.)
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.

Minor in Labour Studies

ENROLMENT IS LIMITED.
Labour Studies will admit a maximum of 10 students to the Minor each year.

NOTES
1. Application for admission (forms available from Labour Studies Office), 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.
3. Students are encouraged to consult the Labour Studies **web site at: http://socserv.mcmaster.ca/labourstudies**.
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, 2C03 (See *Note 5* above.)
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

(Students are responsible for ensuring that course prerequisites are fulfilled.)

CANADIAN POLITICS

POL SCI 2D03, 2DD3, 2F03, 2L03, 3C03, 3FF3, 3GG3, 3HH3, 3J03, 3JJ3, 3K03, 3NN6, 3S03, 3SP3, 3Z03, 4O06, 4T06

COMPARATIVE POLITICS

POL SCI 2A06, 2B03, 2C03, 2M03, 2N03, 2XX3, 2Z03, 3BB3, 3D03, 3EE3, 3F03, 3G03, 3GG3, 3H03, 3I03, 3K03, 3KK3, 3LL3, 3M03, 3MM3, 3T03, 3U03, 3V03, 3VV3, 3Y03, 3YY3, 4A03, 4AA6, 4D06, 4G06, 4L03, 4Q06, 4R06

INTERNATIONAL RELATIONS

POL SCI 2BB3, 2C03, 2H03, 2I03, 2J03, 2XX3, 3AA3, 3B03, 3E03, 3EE3, 3FF3, 3K03, 3KK3, 3P03, 3Q03, 3QQ3, 3X03, 3Y03, 4D06, 4M06, 4MM6

POLITICAL THEORY

POL SCI 2O06, 3CC3, 3O03, 4C06, 4E06, 4P06

PUBLIC POLICY

POL SCI 2L03, 3B03, 3D03, 3E03, 3FF3, 3H03, 3J03, 3LL3, 3M03, 3S03, 3SP3, 3U03, 3YY3, 3Z03, 4A03, 4G06, 4L03, 4O06, 4R06

The following courses while satisfying the requirements of the program are not specific to any field of study: POL SCI 1G06, 3N06, 3UU3, 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. For students who entered the program prior to 2009-2010, one course from Canadian Politics is strongly recommended, but not required.
3. POL SCI 3N06 and 2O06 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 2O06
24 units	Levels II, III Political Science of which a maximum of 12 units may be Level II; including at least one course from the Canadian Politics Field of Study (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. For students who entered the program prior to 2009-2010, one course from Canadian Politics is strongly recommended, but not required.
3. 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.
4. POL SCI 2O06 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 12 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 2O06
18 units	Levels II, III, Political Science of which a maximum of nine units may be Level II; including at least one course from the Canadian Politics Field of Study (See *Note 2* above.)
6 units	Level IV Political Science (See *Note 5* 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 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. For students who entered the program prior to 2009-2010, one course from Canadian Politics is strongly recommended, but not required.
3. POL SCI 2O06 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.)
24 units	Level II, III Political Science of which a maximum of 12 units may be Level II; including at least one course from the Canadian Politics Field of Study (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 & 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 B.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 Social Psychology (B.A.)

(See Faculty of Social Sciences, Multidisciplinary Program)

Honours Psychology, Neuroscience & Behaviour (B.Sc.)

(See Faculty of Science, Department of Psychology, Neuroscience & Behaviour)

Honours Psychology, Neuroscience & Behaviour (B.Sc.) (Music Cognition Specialization)

(See Faculty of Science, Department of Psychology, Neuroscience & Behaviour)

Honours Psychology, Neuroscience & Behaviour (B.A.) {2460}

ADMISSION

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; a grade of at least B- in each of PSYCH 1X03 (or 1AA3) and 1XX3 (or 1A03); credit in one of BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03) or Grade 12 Biology U; 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 considering applying to graduate school should complete a course with a strong research component such as PSYCH 3QQ3, 4QQ3, 4D06, 4D09.
3. 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.
4. 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.
5. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
6. The Department of Psychology, Neuroscience & Behaviour preregistration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09) and the Individual Study courses (PSYCH 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 on the Department of Psychology, Neuroscience & Behaviour web site at: http://www.science.mcmaster.ca/psychology/.

COURSE LIST 1 (LAB COURSES)

PSYCH 3EE3, 3LL3, 3L03, 3MM3, 3S03, 3V03

COURSE LIST 2 (CAPSTONE COURSES)

PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

COURSE LIST 3 (PSYCHOLOGY COURSE LIST)

All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)

BIOLOGY 3P03, 4T03
HTH SCI 4BB3
KINESIOL 3E03, 4P03
MUSICCOG 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.)

LEVEL II: 30 UNITS

6 units PSYCH 2RA3, 2RB3
9 units PSYCH 2E03, 2H03, 2TT3
3 units from PSYCH 2D03, 2F03, 2N03
12 units Electives

LEVEL III: 30 UNITS

12 units from Course List 3
3 units from Course List 1 (See *Notes 3 and 6* above.)
15 units Electives (See *Notes 4 and 5* above.)

LEVEL IV: 30 UNITS

15 units nine units from Course List 3 and six units from Course List 2; or six units from Course List 3 and PSYCH 4D09 (See *Notes 2 and 6* above.)
15 units Electives (See *Notes 4 and 5* above.)

REQUIREMENTS FOR STUDENTS WHO ENTERED LEVEL II PRIOR TO 2007-2008

LEVEL II: 30 UNITS

6 units PSYCH 2RA3, 2RB3
9 units PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3 (Students interested in completing a specialization should review admission requirements below.)
3 units * from BIOLOGY 1A03, 1AA3, (or 1M03), 1K03 (or 1P03) or Grade 12 Biology U
12 units Electives

*If requirement completed in Level I, these units will be taken as electives.

LEVEL III: 30 UNITS

12 units from Course List 3; or three additional units from PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3 and nine units from Course List 3
3 units from Course List 1 (See *Notes 3 and 6* above.)
15 units Electives (See *Notes 4 and 5* above.)

LEVEL IV: 30 UNITS

15 units nine units from Course List 3 and six units from Course List 2; or six units from Course List 3 and PSYCH 4D09 (See *Notes 2 and 6* above.)
15 units Electives (See *Notes 4 and 5* above.)

Honours Psychology, Neuroscience & Behaviour (B.A.) (Music Cognition Specialization) {2460371}

ADMISSION

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; a grade of at least B- in each of PSYCH 1X03 (or 1AA3) and 1XX3 (or 1A03); credit in one of BIOLOGY 1A03, 1M03 (or 1AA3) 1P03 (or 1K03) or Grade 12 Biology U; credit in MATH 1A03 or 1LS3, or a grade of at least C- in MATH 1M03; and credit in MUSIC 1A03 or 1AA3. (See *Note 2* below.)

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. MUSIC 1A03 or 1AA3 is required for admission, however, completion of both are required by the end of Level IV.

3. Entrance into MUSIC 1CC3 requires Grade 2 Rudiments from the Royal Conservatory of Music (a grade of 80% or above, within the last two years) or an average of 65% or above on a qualifying music theory exam administered by the School of the Arts (SOTA). Appointments can be made with SOTA to write the exam on specific dates between February and May. The content of the exam is summarized at: http://www.humanities.mcmaster.ca/audition/index.html.
4. Students considering applying to graduate school should complete a course with a strong research component such as MUSICCOG 4D06, PSYCH 3QQ3, 4D06, 4D09, 4QQ3.
5. PSYCH 3QQ3 or 4QQ3 will only fulfill the lab requirement if taken under the supervision or co-supervision of a faculty member in the Department of Psychology, Neuroscience & Behaviour.
6. 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.
7. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
8. The Department of Psychology, Neuroscience & Behaviour preregistration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09) and the Individual Study courses (PSYCH 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 on the Department of Psychology, Neuroscience & Behaviour web site at: http://www.science.mcmaster.ca/psychology/.

COURSE LIST 1 (LAB COURSES)
PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3

COURSE LIST 2 (CAPSTONE COURSES)
PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

COURSE LIST 3 (PSYCHOLOGY COURSE LIST)
All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)
BIOLOGY 3P03, 4T03
HTH SCI 4BB3
KINESIOL 3E03, 4P03

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
9 units PSYCH 2E03, 2H03, 2TT3
3 units from PSYCH 2D03, 2F03, 2N03
3 units from MUSICCOG 2A03, PSYCH 2MA3
3 units MUSIC 1CC3 (See *Note 3* above.)
6 units Electives (See *Notes 2 and 6* above.)

LEVEL III: 30 UNITS
6 units from Course List 3 (PSYCH 3A03, 3H03 are recommended)
3 units from Course List 1 (See *Notes 5 and 8* above.)
6 units from MUSICCOG 3A03, 3B03, PSYCH 3MA3, 3MB3
6 units MUSIC 2CC3, 2H03
9 units Electives (See *Notes 2, 6 and 7* above.)

LEVEL IV: 30 UNITS
6 units from Course List 3
9 units three units from Course List 3, and six units from Course List 2 or MUSICCOG 4D06; or PSYCH 4D09 (See *Notes 4 and 8* above.)
15 units Electives (See *Notes 2, 6 and 7* above.)

Honours Psychology Specializations

THE HONOURS SPECIALIZATION PROGRAMS ARE BEING PHASED OUT. REGISTRATION IN LEVEL IV OF EACH OF THESE PROGRAMS WILL BE LAST AVAILABLE IN SEPTEMBER 2009-2010.

Upon satisfactory completion of Level III 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, Neuroscience & Behaviour program.

COURSE LIST 1 (LAB COURSES)
PSYCH 3EE3, 3LL3, 3L03, 3MM3, 3S03, 3V03

COURSE LIST 2 (CAPSTONE COURSES)
PSYCH 3I06, 4B03, 4BN3, 4C03, 4D06, 4F03, 4J03, 4Q03, 4QQ3, 4R03, 4Y03

COURSE LIST 3 (PSYCHOLOGY COURSE LIST)
All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)
BIOLOGY 3P03, 4T03
HTH SCI 4BB3
MUSICCOG 2A03, 3A03, 3B03

Behavioural Neuroscience Specialization {2460874}

ADMISSION
Completion of Level III Honours Psychology, including PSYCH 2F03.

REQUIREMENTS
LEVEL IV: 30 UNITS
6 units from PSYCH 2D03, 3A03, 3AA3, 3BN3, 3D03, 3FA3, 3HH3, 3J03, 3M03, 3Y03, 4BN3, 4F03, 4Y03, BIOLOGY 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 {2460882}

ADMISSION
Completion of Level III Honours Psychology, including PSYCH 2E03, 2H03.

REQUIREMENTS
LEVEL IV: 30 UNITS
6 units from PSYCH 3A03, 3AA3, 3BB3, 3BN3, 3D03, 3FA3, 3HH3, 3II3, 3J03, 3U03, 3UU3, 3VV3, 4BN3, 4C03, 4Z03
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 {2460878}

ADMISSION
Completion of Level III Honours Psychology.

REQUIREMENTS
LEVEL IV: 30 UNITS
6 units from PSYCH 3HH3, 3II3, 3JJ3, (if not already taken) 3B03, 3C03, 3Z03, 3ZZ3, 4C03
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

Evolution and Social Behaviour Specialization {2460880}

ADMISSION
Completion of Level III Honours Psychology, including PSYCH 2TT3.

REQUIREMENTS

LEVEL IV: 30 UNITS

6 units	PSYCH 2C03, 3A03, 3F03, 3JJ3, 3M03, 3T03, 3Y03, 3YY3, 4R03, 4Y03
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

Combined Honours in Psychology and Another Subject (B.A.)

ADMISSION

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; a grade of at least B- in each of PSYCH 1X03 (or 1AA3) and 1XX3 (or 1A03); credit in one of BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03) or Grade 12 Biology U; and credit in one of MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03. Satisfaction of the admission requirements for the Honours program in the other subject.

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. 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.
3. Students considering applying to graduate school should complete a course with a strong research component such as PSYCH 3QQ3, 4QQ3, 4D06, 4D09.
4. 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.
5. 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.
6. A maximum of six units from PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3 may be used as electives.
7. The Department of Psychology, Neuroscience & Behaviour preregistration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09), and the Individual Study courses (PSYCH 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 on The Department of Psychology, Neuroscience & Behaviour web site at: http://www.science.mcmaster.ca/psychology/.

COURSE LIST 1 (LAB COURSES)

PSYCH 3EE3, 3L03, 3LL3, 3MM3, 3S03, 3V03

COURSE LIST 2 (PSYCHOLOGY COURSE LIST)

All Levels III and IV Psychology courses (except PSYCH 3AB3, 3AC3, 3BA3, 3CB3, 3CD3)

BIOLOGY	3P03, 4T03
HTH SCI	4BB3
KINESIOL	3E03, 4P03
MUSICCOG	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
3 units	from PSYCH 2D03, 2F03, 2N03
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 I (See *Notes 4 and 7* 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 5 and 6* 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 5 and 6* above.)

REQUIREMENTS FOR STUDENTS WHO ENTERED LEVEL II PRIOR TO 2007-2008

LEVEL II: 30 UNITS

6 units	PSYCH 2RA3, 2RB3
6 units	from PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3
3 units*	from BIOLOGY 1A03, 1AA3 (or 1M03), 1K03 (or 1P03), Grade 12 Biology U
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 III: 30 UNITS

3 units	from Course List 1 (See *Notes 4 and 7* above.)
6 units	from Course List 2
3 units	from PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3
12 units	courses as specified for the other subject
6 units	Electives (See *Notes 5 and 6* above.)

LEVEL IV: 30 UNITS

12 units	Course List 2
12 units	courses as specified for the other subject
6 units	Electives (See *Notes 5 and 6* above.)

B.A. in Psychology {1460}

ADMISSION

Completion of any Level I program with a Cumulative Average of at least 3.5 and a grade of at least C- in PSYCH 1X03 (or 1AA3).

NOTES

1. One of MATH 1A03, 1F03, 1K03, 1LS3 or 1M03 must be completed by the end of Level II. Completion in Level I 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 (or 1K03) or Grade 12 Biology U 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 3Q03 and 3QQ3 must complete and submit a pre-registration ballot by **mid February**. Students will be informed of the outcome by **mid March**. Specific dates will be announced during the fall term. Ballots can be obtained on the Department of Psychology, Neuroscience & Behaviour web site at: http://www.science.mcmaster.ca/psychology/.
5. Students who entered Level II B.A. Psychology in September 2007 must complete at least six units of Level III Psychology.

COURSE LIST 1 (PSYCHOLOGY COURSE LIST)

PSYCH 2AA3, 2B03, 2C03, 2I03, 2S03, 3AB3, 3AC3, 3BA3, 3BB3, 3C03, 3CB3, 3CC3, 3CD3, 3F03, 3FA3, 3K03, 3M03, 3N03, 3Q03, 3QQ3, 3T03, 3U03, 3UU3, 3VV3, 3YY3

REQUIREMENTS
90 units total (Levels I to III), of which 42 units may be Level I
LEVEL II: 30 UNITS
3 units SOC SCI 2J03 (See *Note 2* above.)
9 units Level II Psychology where at least six units must be from PSYCH 2AA3, 2B03, 2C03, 2I03, 2S03
3 units* from MATH 1A03, 1F03, 1K03, 1LS3, 1M03 (See *Note 1* above.)
9 units Electives, excluding Psychology
6 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. (See *Note 3* above.)
*If requirement completed in Level I, these units will be taken as non-psychology electives.
LEVEL III: 30 UNITS
12 units from Course List I, of which at least nine units must be from Level III
12 units Electives, excluding Psychology
6 units Electives
REQUIREMENTS FOR STUDENTS WHO ENTERED LEVEL II PRIOR TO 2007-2008
LEVEL II: 30 UNITS
3 units from STATS 1A03, 1CC3*, SOC SCI 2J03 (See *Note 2* above.)
9 units Level II Psychology where up to six units may be from PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3
3 units* from MATH 1A03, 1F03, 1K03, 1LS3, 1M03 (See *Note 1* above.)
6 units Humanities or Religious Studies
6 units Electives, excluding Psychology
3 units Electives
*If requirement completed in Level I, these units will taken as electives.
LEVEL III: 30 UNITS
12 units Level II or III 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 1X03 (or 1AA3)
21 units PSYCH 1XX3 (or 1A03), 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/relstud/

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 any one of these fields. Levels II, III and IV courses are allocated to the fields as follows:

I. ASIAN RELIGIONS
RELIG ST 2E03, 2F03, 2I03, 2K03, 2L03, 2P03, 2TT3, 3AA3, 3E03, 3L03, 3P03, 3RR3, 3S03, 3U03, 3UU3, 3V03, 4H03
SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES
RELIG ST 2B03, 2DD3, 2EE3, 2GG3, 2HH3, 2VV3, 2YY3, 2Z03, 3DD3, 3GG3, 3J03, 3K03, 3M03, 3N03, 3R03, 3T03, 4I03
HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT
RELIG ST 2C03, 2EA3, 2EB3, 2FF3, 2G03, 2II3, 2J03, 2JJ3, 2KK3, 2LL3, 2MM3, 2NN3, 2Q03, 2U03, 2V03, 2X03, 2ZZ3, 3A03, 3B03, 3C03, 3CC3, 3D03, 3GG3, 3KK3, 3LL3, 3MM3, 3NN3, 3W03, 3X03, 3Y03, 3Z03, 3ZZ3, 4N03

IV. CONTEMPORARY AND COMPARATIVE RELIGIONS
RELIG ST 2BB3, 2H03, 2M03, 2N03, 2QQ3, 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 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.).

Honours Religious Studies {2475}

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 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 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 one Level IV seminar during 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.)
6 units from Asian Religions
3 units from Biblical Studies
3 units from Western Religious Thought
3 units from Contemporary and Comparative Religions (See *Note 4* above.)
3 units RELIG ST 3F03
24 units Levels II, III Religious Studies of which at least nine units must be from 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. (See *Notes 5 and 6* above.)
6 units Level IV Religious Studies (See *Notes 5 and 6* above.)
3-6 units* from Linguistics, a language other than English or Statistics
36-39 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 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. 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. All honours students are encouraged to consult a departmental undergraduate advisor in the selection of their Levels III and IV courses.
3. 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.
4. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.
5. Students must consult both departments to determine the manner in which the Research Methods/Statistics requirement is to be satisfied.
6. 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.
7. RELIG ST 4R06 is strongly recommended for students considering graduate work in Religious Studies.
8. Since not all Level IV seminars are offered each year, students in the Honours program are encouraged to take one Level IV seminar during 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. Students combining Religious Studies with Arts & Science, or with a Humanities subject are exempt from this requirement.

*If requirement completed in Level I, these units will be taken as electives.

B.A. in Religious Studies {1475}

ADMISSION

Completion of any Level I 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.)

Minor in Japanese Studies

(Please see *Minor in Japanese Studies* in *Japanese Studies* in the *Faculty of Humanities* section of this Calendar)

Minor in Religious Studies

REQUIREMENTS

24 units total

24 units	Religious Studies courses with no more than six units from Level I

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

Enrolment 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	1HA3, 1HB3
GERONTOL	1A03
HEALTHST	1A03
INDIG ST	1A03, 1AA3
INQUIRY	1SS3
LABR ST	1A03, 1C03, 1Z03
PEACE ST	1A03, 1B03
POL SCI	1G06
PSYCH	1X03 (1AA3), 1XX3 (1A03)
RELIG ST	1B06, 1D06, 1E03, 1I03
SOC WORK	1A06
SOCIOL	1A06
WOMEN ST	1A03, 1AA3 (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 (75%) 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. In choosing Level I courses, the student should take care to include those 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 online 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.
      If you wish to study *part-time*, complete a *Part-time Degree Studies* application online at http://registrar.mcmaster.ca/future/chs-partt.html.
      To allow adequate time for the processing of the General Application, applicants are advised to submit their applications **by December 1.**
   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 B.A. work beyond Level I normally will require three years after admission to complete the program.

PROGRAM 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.
   - Social and Political Context of Social Work. Only Social and Political Context of Social Work courses may be taken for elective credit by undergraduates in Level III or above of a non-Social Work program. Social Work students must take 12 units from Social and Political Context of Social Work courses including SOC WORK 4J03 for elective credit. All Social and Political Context of Social Work courses are limited enrolment.

   FOUNDATION OF SOCIAL WORK

   SOC WORK 2A06, 2B03, 2BB3, 2E03, 3A03, 3D06, 3DD6, 4D06, 4DD6, 4O03, 4X03

   SOCIAL AND POLITICAL CONTEXT OF SOCIAL WORK

   SOC WORK 3C03, 3H03, 3O03, 4B03, 4C03, 4G03, 4I03, 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, 4O03, and 4X03, a Pass in SOC WORK 3DD6 and 4DD6 and a CA of at least 6.0.
3. Students must complete three units of Social Sciences Research Methods (e.g. SOCIOL 2Z03, or GERONTOL 2C03). A statistics course may not substitute for a research methods course.
4. **Graduation:** To qualify for the B.A./B.S.W. degrees, students must complete a total of at least 60 units of Social Work: 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, 2BB3, 2E03, 3A03, 3D06, 4D06, 4J03, 4O03, and 4X03, a Pass in SOC WORK 3DD6 and 4DD6 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

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, 2BB3, 2E03, (which must be completed prior to enrolling in SOC WORK 3D06 and 3DD6)
12 units	SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)
12 units	SOC WORK 4D06, 4DD6
9 units	SOC WORK 3A03, 4O03, 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.A. 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 SOCIOL 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, 1BB3
GEOG	1HA3, 1HB3
GERONTOL	1A03
HEALTHST	1A03
INDIG ST	1A03, 1AA3
INQUIRY	1SS3
LABR ST	1A03, 1C03, 1Z03
PEACE ST	1A03, 1B03
POL SCI	1G06
PSYCH	1X03 (1AA3), 1XX3 (1A03)
RELIG ST	1B06, 1D06, 1E03, 1I03
SOC WORK	1A06
SOCIOL	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 Métis) 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 the **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 105D on-line application form at http://www.ouac.on.ca/ or, if you are a McMaster graduate, obtain the *McMaster Returning Student Application* at http://registrar.mcmaster.ca/future/chs-retur.html.
   If you wish to study *part-time*, complete the Part-Time Degree Studies Application at http://registrar.mcmaster.ca/future/chs-partt.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/future/chs-retur.html.
   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;
   - Social and Political Context of Social Work. Only Social and Political Context of Social Work courses may be taken for elective credit by undergraduates in Level III or above of an non-Social Work program. Social Work students must take 12 units from Social and Political Context of Social Work courses, including SOC WORK 4J03. All Social and Political Context of Social Work courses have limited enrolment.

   FOUNDATION OF SOCIAL WORK
   SOC WORK 2A06, 2B03, 2BB3, 2E03, 3A03, 3D06, 3DD6, 4D06, 4DD6, 4O03, 4X03

   SOCIAL AND POLITICAL CONTEXT OF SOCIAL WORK
   SOC WORK 3C03, 3H03, 3O03, 4B03, 4C03, 4G03, 4I03, 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, 4O03 and 4X03, a Pass in SOC WORK 3DD6 and 4DD6, and a CA of at least 6.0.
3. Students must complete three units of Social Sciences research Methods (e.g. SOCIOL 2Z03 or GERONTOL 2C03). If this requirement was completed prior to admission to the B.S.W. program, three additional units from the Social and Political Context of Social Work courses will be taken. A statistics course may not substitute for a research methods course.
4. **Graduation:** To qualify for the B.S.W. students must complete a total of 60 units. The B.S.W will be granted only if the student has achieved a grade of at least C+ in each of SOC WORK 2A06, 2B03, 2BB3, 2E03, 3A03, 3D06, 4D06, 4J03, 4O03 and 4X03, a Pass in SOC WORK 3DD6 and 4DD6, 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 3DD6)
12 units	SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)
12 units	SOC WORK 4D06, 4DD6
9 units	SOC WORK 3A03, 4O03, 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/sociology/

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 SOCIOL 1A06.

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 3I03 may substitute this course with SOCIOL 3O03 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 3O03, 3W03 (See *Note 4* above.)
12 units	Level IV Sociology (See *Note 5* above.)
18 units	Levels II or III Sociology
3 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.

Combined Honours in Sociology 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 SOCIOL 1A06. 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, with programs in the Faculty of Humanities and with the Arts and Science Program.
2. Students may take a maximum of nine units of Level IV Sociology.
3. Students taking six units of independent research or thesis in their other program may not take SOCIOL 4M03, 4MM6 or 4N03.

4. Students should check both this Calendar and the Departmental web-site for prerequisites and course descriptions.
5. Students may take a maximum of nine combined units of SOCIOL 3GG3 and 4GG3.
6. Students who previously completed SOCIOL 3I03 may substitute this course with SOCIOL 3O03 or 3W03 to satisfy the Advanced Sociological Methods requirement.

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 3O03, 3W03 (See *Note 6* above.)
6 units	Level IV Sociology (See *Note 2* above.)
18 units	Levels II, III or IV Sociology (See *Notes 2 and 3* above.)
36 units	courses specified for the other subject
6-9 units	SOCIOL 2Z03 which must be completed by the end of 60 units, and SOCIOL 3H06 or, in combined programs within the Faculty of Social Sciences, the six units Research Methods/Statistics course 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. Students combining Sociology with Arts & Science, or with a Humanities subject, are exempt from this requirement.

B.A. in Sociology {1520}

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 2S06
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 2O06 or 2S06 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

MULTIDISCIPLINARY PROGRAM

Honours Social Psychology {2524}

Subject to the approval of the Ministry of Training, Colleges and Universities, beginning in the 2010-2011 academic year, an Honours Bachelor of Arts program in Social Psychology will be offered.

Students study various aspects of Social Psychology from a multidisciplinary perspective to gain an understanding of how individuals behave, how small groups and communities interact, and how societies form practices and priorities. Students will learn how to locate themselves in the complex fabrics of their cultures, their geographies and their power relationships. Students who are interested in many social science perspectives on how people develop over the lifespan and how they behave in different environments and circumstances should consider this program.

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 a grade of at least B- in each of PSYCH 1X03 and SOCIOL 1A06 and credit in at least nine units of other Social Sciences courses from at least two disciplines from the following list:

ANTHROP	1A03, 1B03, 1Z03
ECON	1B03, 1BB3
GEOG	1HA3, 1HB3
GERONTOL	1A03 (Health, Aging and Society)
HEALTHST	1A03 (Health, Aging and Society)
INQUIRY	1SS3
LABR ST	1A03, 1C03
POL SCI	1G06
PSYCH	1XX3
RELIG ST	1B06, 1D06, 1J03
SOC WORK	1A06

NOTES

1. Completion of INQUIRY 1SS3 in Level I is strongly recommended.
2. Students are responsible for ensuring that they meet the prerequisites for any course they wish to take from the course lists.
3. Students considering a graduate program in Psychology should consult an academic advisor to plan a program of study that meets admission requirements for such programs. Additional courses may be required in Mathematics and other Science subjects.
4. Students are required to complete a minimum of six units of Level IV courses from Course List 1 or 2.
5. Students may take a maximum of 12 units of Level IV courses from Course List 1.

COURSE LIST 1

Students are responsible for ensuring that they have successfully completed any prerequisite courses and are strongly encouraged to consult with an academic advisor in planning their course of studies.

PSYCH	2AA3, 2B03, 2C03, 2S03, 3AB3, 3AC3, 3B03, 3BA3, 3CB3, 3CC3, 3CD3, 3JJ3, 3N03
SOCIOL	2C06, 2D06, 2E06, 2Q06, 2U06, 3C03, 3CC3, 3G03, 3HH3, 3KK3, 3U03, 3X03, 3Z03, 4A03, 4E03, 4GG3, 4R03, 4U03, 4W03

COURSE LIST 2

Students must choose from at least two subject areas.

ANTHROP	2H03, 2R03, 2X03, 3RR3, 4AE3
ECON	2A03, 2CC3, 2F03, 2T03
GEOG	2LI3, 2HI3, 3EP3, 3HH3, 3LT3, 3UP3, 3UR3, 4HC3, 4HD3, 4HH3, 4HP3, 4UH3, 4UT3
GERONTOL	3D03, 3M03, 3N03, 4I03
HLTH AGE	3H03
LABR ST	2E03, 2G03, 3E03
POL SCI	3BB3, 3F03, 3G03, 3KK3, 3V03, 4XX3
RELIG ST	2C03, 2H03, 2M03, 2N03, 2QQ3, 2TT3, 2WW3, 3AA3, 3C03, 3EE3, 3F03, 3FF3, 3LL3, 3UU3, 3ZZ3
SOC SCI	2O03, 2P03, 2Q03, 2R03
SOC WORK	3H03, 3O03, 4B03, 4C03, 4I03

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	SOC SCI 2J03, 2K03, 3YY3, 3ZZ3
6 units	SOC SCI 4ZZ6
18 units	Psychology from Course List 1 (See *Note 4* above.)
18 units	Sociology from Course List 1 (See *Notes 4 and 5* above.)
18 units	from Course List 2 including at least two subject areas (See *Note 4* above.)
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 must be included. Electives may be taken from courses in Course List 1. (See *Note 5* above.)

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 MUGSI/SOLAR is available to them.

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.**

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 or POL SCI 3C03 may use these units toward the Course List requirement.

COURSE LIST

ANTHROP	2B03, 2H03, 2VV3, 2W03, 3Y03
SOC WORK	4I03

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, 3J03 or POL SCI 3C03 may use these units toward the Course List requirement.

COURSE LIST

INDIG ST 1A03	Introduction to Indigenous Studies
INDIG ST 1AA3	Introduction to Contemporary Indigenous Studies
INDIG ST 2A03	Indigenous Peoples' Spirituality
INDIG ST 2AA3	Indigenous Knowledge and Methodology
INDIG ST 2B03	History of Indigenous Peoples' Sovereignty
INDIG ST 2C03	Contemporary Indigenous Societies and Issues: Selected Topics Topic 2009-2010: TBA
INDIG ST 2D03	Traditional Indigenous Ecological Knowledge
INDIG ST 3C03	Study of Iroquois First Nations in Contemporary Times
INDIG ST 3CC3	Contemporary Indigenous Societies: Selected Topics Topic 2009-2010: TBA
INDIG ST 3D03	Contemporary Native Literature in Canada
INDIG ST 3E03	Contemporary Native Literature in the United States
INDIG ST 3G03	Indigenous Creative Arts and Drama: Selected Topics Topic 2009-2010: TBA
INDIG ST 3H03	Indigenous Medicine I - Philosophy
INDIG ST 3HH3	Indigenous Medicine II - Practical
INDIG ST 3K03	Indigenous Human Rights
INDIG ST 3L03	Indigenous Independent Study
CAYUGA 1Z03	Introduction to Cayuga Language and Culture
CAYUGA 2Z03	Intermediate Cayuga
MOHAWK 1Z03	Introduction to Mohawk Language and Culture
MOHAWK 2Z03	Intermediate Mohawk
OJIBWE 1Z03	Introduction to Ojibwe Language and Culture
OJIBWE 2Z03	Intermediate Ojibwe
ANTHROP 2B03	Indigenous Peoples of North America
ANTHROP 2H03	Environment and Culture
ANTHROP 2VV3	The Ancient Maya
ANTHROP 2W03	The Aztecs and Incas
ANTHROP 3Y03	Aboriginal Community Health and Well-Being
SOC WORK 4I03	Social Work and Indigenous Peoples

REQUIREMENTS

24 units total

6 units	from INDIG ST 1A03, 1AA3, CAYUGA 1Z03, MOHAWK 1Z03, OJIBWE 1Z03
18 units	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 enrolment restrictions.

Archaeology

Coordinator

Eduard Reinhardt *(Geography and Earth Sciences)*

Committee of Instruction

Joe Boyce *(Geography and Earth Sciences)*
Aubrey Cannon *(Anthropology)*
Tristan Carter *(Anthropology)*
Laura Finsten *(Anthropology)*
Michele George *(Classics)*
Celina Gray *(Classics)*
Alexandra Retzleff *(Classics)*
Kostalena Michelaki *(Anthropology)*
Hendrik Poinar *(Anthropology)*
W. Jack Rink *(Geography and Earth Sciences)*
Henry Schwarcz *(Geography and Earth Sciences)*

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 2RP3	Religion and Power in the Past
ANTHROP 2O03	Themes in the Archaeological History of North America
ANTHROP 2VV3	The Maya before Columbus
ANTHROP 2W03	The Aztecs and Incas
ANTHROP 3AS3	Archaeology and Society
ANTHROP 3CA3	Ceramic Analysis
ANTHROP 3CC6	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 3PP3	Paleopathology
ANTHROP 3X03	Zooarchaeology
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 Sanctuaries
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 2GI3	Introduction to GIS
EARTH SC 3CC3	Earth's Changing Climate
EARTH SC 3DD3	Geoarchaeology of the Underwater Realm
EARTH SC 3E03	Sedimentary Environments
EARTH SC 3GI3	Advanced Raster GIS
EARTH SC 3P03	Environmental Paleontology
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 4GI3	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 3DD3	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 2J03	Introduction to Judaism
RELIG ST 2VV3	The Bible As Literature
RELIG ST 2X03	Judaism, the Jewish People and the Birth of the Modern World
RELIG ST 2YY3	The Bible and Film
RELIG ST 3A03	Modern Jewish Thought
RELIG ST 3DD3	The Jewish World in New Testament Times
RELIG ST 3GG3	Topics in Jewish Studies
RELIG ST 3J03	Jews, Christians and Others in Antiquity
RELIG ST 3K03	The Bible through the Ages
RELIG ST 3M03	Psalms and Wisdom in the Bible
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 3I03	The International Relations of the European Powers, 1870-1945

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 3AA3	International Politics in the Postwar Period
POL SCI 3KK3	Genocide: Sociological and Political Perspectives
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
SOCIOL 2E06	Racial and Ethnic Group Relations
SOCIOL 3KK3	Genocide: Sociological and Political Perspectives
SOCIOL 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. 23541.

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 4BB6	Modern Japan
HISTORY 4G06	Modern China
HISTORY 4GG6	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 2L03	Life, Work and Teachings of Mahatma Gandhi
RELIG ST 2P06	Japanese Civilization
RELIG ST 2TT3	Religion and Popular Culture in Contemporary Japan
RELIG ST 3AA3	Popular Religion in the Indian Tradition
RELIG ST 3E03	Japanese Religions
RELIG ST 3L03	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 3UU3	Buddhism in East Asia
RELIG ST 4H03	Topics in Asian Religions

COURSES WITH SIGNIFICANT ASIAN CONTENT

HISTORY 2HH3	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 2M03	Death and Dying: Comparative Views
RELIG ST 2QQ3	Cults in North America
RELIG ST 2WW3	Health, Healing and Religion
RELIG ST 3FF3	Gender and Religion

LANGUAGE COURSES

JAPANESE 1Z06	Beginner's Intensive Japanese
JAPANESE 2Z03	Intermediate Intensive Japanese I
JAPANESE 2ZZ3	Intermediate Intensive Japanese II
JAPANESE 3Z03	Advanced Intensive Japanese I
JAPANESE 3ZZ3	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 3AA3	The Modern French-Canadian Novel
FRENCH 4U03	Gender and Migration in the Contemporary Quebec Novel
HISTORY 2T03	Survey of Canadian History, Beginnings to 1885
HISTORY 2TT3	Survey of Canadian History, 1885 to the Present
HISTORY 3CG3	Canadian in a Global Age, 1914 to the Present
HISTORY 3CW3	Canada in a World of Empires, 1492-1919
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. to 1920
HISTORY 3WW3	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 2O03	Themes in the Archaeological History of North America
ANTHROP 3Y03	Aboriginal Community Health and Well-Being
ECON 2CC3	Health Economics and Its Application to Health Policy
ECON 2K03	Economic History of Canada
GEOG 2RC3	Canada
GEOG 3UP3	Geography of Planning
GEOG 4UH3	Urban Housing
INDIG ST 3J03	Government and Politics of Indigenous People
LABR ST 1A03	An Introduction to the Canadian Labour Movement
LABR ST 3C03	Labour Law and Policy
POL SCI 1G06	Politics and Government
POL SCI 2D03	Canadian Citizenship: Institutional Foundations
POL SCI 2F03	Politics, Power and Influence in Canada
POL SCI 2L03	Bureaucracy in Canadian Politics
POL SCI 3FF3	Canadian Foreign Policy
POL SCI 3GG3	Federalism: Theoretical, Constitutional and Institutional Issues
POL SCI 3J03	Honours Topics in Canadian Politics and Canadian Public Policy
POL SCI 3K03	Migration and Citizenship: Canadian, Comparative and Global Perspectives
POL SCI 3NN6	Public Law
POL SCI 3S03	Local Government and Politics in Canada
POL SCI 3SP3	Service Delivery in the Modern Canadian City: Placement Experience
POL SCI 3Z03	Canadian Public Sector: Implementation of Policies
POL SCI 4O06	Canadian Public Policy
POL SCI 4T06	Topics in Canadian Politics
SOC WORK 2B03	Social Welfare: General Introduction
SOC WORK 3H03	Justice and Social Welfare
SOC WORK 4C03	Racism and Social Marginalization in Canadian Society
SOC WORK 4O03	Social Work with Communities
SOC WORK 4U03	Immigration, Settlement and Social Work
SOC WORK 4W03	Child Welfare
SOCIOL 3PP3	Canadian Sociological Theory

Please see the Course Listings section for a detailed description of the above courses.

CERTIFICATE AND DIPLOMA PROGRAMS

CENTRE FOR CONTINUING EDUCATION

Located at The Downtown Centre, 50 Main Street East, Hamilton, 2nd Floor, the Centre for Continuing Education (CCE) offers Certificate and Diploma programs, professional development workshops, Microsoft E-Learning classes and corporate training programs. Courses are offered in the evenings, on weekends and by distance to accommodate working students. For details, please contact the Centre for Continuing Education at extension 24321 or http://www.mcmaster.ca/conted/.

CERTIFICATE AND DIPLOMA PROGRAMS APPROVED FOR ADVANCED CREDIT

All CCE Certificates and Diplomas have been approved by the Senate of McMaster 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. Classes are offered in the evenings, on weekends and through distance education to accommodate working students.

ACCOUNTING, DIPLOMA IN {8956}
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).

ADDICTION CAREWORKER, DIPLOMA IN {8951}
Maximum Credit Toward Degree Studies - 24 units
This 10 course program complements a degree in Health Studies, Nursing, Psychology, Sociology or Social Work as a specialization in Addictions. All courses are approved by The Canadian Addiction Counsellors Certification Federation (CACCF) for education hours towards professional certification.

ADDICTION STUDIES, CERTIFICATE IN {8922}
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 {8939}
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 online only.

CERTIFIED CLINICAL RESEARCH ASSOCIATE, CERTIFICATE IN {8924}
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.

HUMAN RESOURCES MANAGEMENT, DIPLOMA IN {8958}
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 HRPA™ to become eligible to write the certification exam for the Certified Human Resources Professional (CHRP™) designation.

MANAGEMENT STUDIES (GENERAL), DIPLOMA IN {8929}
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, IT PROJECT MANAGEMENT, BUSINESS ANALYSIS OR SOURCING MANAGEMENT), DIPLOMA IN {8929}
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 {8917}
Maximum Credit Toward Degree Studies - 24 units
This eight-course program is designed to help students develop and/or enhance the skills required to work in a marketing role.

METALLURGY OF IRON AND STEEL CERTIFICATE {8991}
Maximum Credit Toward Degree Studies- 15 units
This six-course program provides a comprehensive overview of the metallurgical principles involved in the extraction, refining and manufacturing of ferrous products.

POLICE STUDIES, DIPLOMA IN {8921}
Maximum Credit Toward Degree Studies - 24 units
This eight-course 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.

PUBLIC RELATIONS, CERTIFICATE IN {8915}
Maximum Credit Toward Degree Studies - 15 units
This six-course program is designed to provide mostly elective studies to help students gain the knowledge and skills needed to excel within a public relations/communication role.

PUBLIC RELATIONS MANAGEMENT, DIPLOMA IN {8916}
Maximum Credit Toward Degree Studies - 24 units
This nine-course program is designed to help students develop public relations/communications skills and become a strategic thinker who is an asset to their organizations' management team.

WEB DESIGN AND DEVELOPMENT, CERTIFICATE/DIPLOMA IN {8932/8930}
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 institutes:

- 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 Marketing
- Canadian Institute of Management (CIM)
- Certified General Accountants Association of Ontario (CGA)
- Certified Management Accountants of Ontario (CMA)
- Credit Institute of Canada
- Credit Union Institute of Canada (CUIC)
- Global Risk Management Institute
- Human Resources Professionals Association (HRPA™)
- 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 {8901}
- Computing and Information Technology {8902}
- Energy Engineering Technology {8903}
- Manufacturing Engineering Technology {8904}

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 {8911}
- Computing and Information Technology {8912}
- Energy Engineering Technology {8913}
- Manufacturing Engineering Technology {8914}

MCMASTER UNIVERSITY TECHNOLOGY LEADERSHIP CERTIFICATE {8925}

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 LEADERSHIP DIPLOMA {8926}

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 is offered by the School of Geography and Earth Sciences and is intended for students with little or no basic academic 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/certificate/index.html or by contacting the GIS Laboratory, School of Geography and Earth Sciences at maynard@mcmaster.ca

CERTIFICATE IN GIS (GEOGRAPHIC INFORMATION SYSTEMS) {8947}

The Certificate in GIS program requires students to take six undergraduate courses which will provide expertise and applied skills in desktop GIS tools, remote sensing and spatial statistics for multidisciplinary applications.

For information concerning other Diploma programs offered at the University, please see the *Post-Professional Health Sciences Education Programs* in the *Faculty of Health Sciences* section as well as the *Diploma in Music Performance* in the *Faculty of Humanities* section of this Calendar.

COURSE LISTINGS

The courses listed in this section include all courses approved for the undergraduate curriculum for the 2009-2010 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. Please note that the three digit number in brackets following each subject title refers to the administrative code assigned to that subject.

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 {010}

WEB ADDRESS: http://www.socsci.mcmaster.ca/anthro/

Chester New Hall, Room 524

Ext. 24423

Faculty as of January 15, 2009

Chair

Aubrey Cannon

Professors

Aubrey Cannon/B.A. *(Simon Fraser)*, Ph.D. *(Cambridge)*
John J. Colarusso/*(Linguistics and Languages)* B.A. *(Cornell)*, M.A. *(Northwestern)*, Ph.D. *(Harvard)*
Laura Finsten/B.A. *(Western Ontario)*, M.A. *(Calgary)*, Ph.D. *(Purdue)*
D. Ann Herring/B.A., M.A., Ph.D. *(Toronto)*
Wayne Warry/B.A., M.A. *(McMaster)*, Ph.D. *(ANU)*

Adjunct Professors

Regna Darnell/*(Western Ontario)* B.A. *(Bryn Mawr)*, M.A., Ph.D. *(Pennsylvania)*
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)*
Dawn Martin-Hill/B.A., M.A., Ph.D. *(McMaster)*/Director, Indigenous Studies Program
Christina Moffat/B.Sc. *(Toronto)*, B.A., Ph.D. *(McMaster)*
Hendrik Poinar/B.Sc., M.Sc. *(California)*, Ph.D. *(Germany)*/Canada Research Chair in Paleogenomics
Petra Rethmann/B.A. *(Vienna)*, M.A. *(Munich)*, Ph.D. *(McGill)*

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)*
Gary A. Warrick/*(Wilfrid Laurier)*, B.A *(McMaster)*, M.A. *(Simon Fraser)*, Ph.D. *(McGill)*

Assistant Professors

Maria-Ines 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 Padiak/B.Sc., Ph.D. *(Toronto)*
Kee Howe Yong/M.Phil., Ph.D. *(CUNY)*

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 *Department of Anthropology* in the *Faculty of Social Sciences* section of this Calendar.

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 1Z03 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
Crosslist: 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 CRISES 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 2DD3 PRIMATE BEHAVIOUR
A survey of current issues in primate behaviour, including taxonomy, demography, social structure, reproduction, play cognition and sociobiology. Students will conduct a zoo observation study.
Three hours (lecture and discussion); one term
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 2FF3 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 Kelts 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
Crosslist: 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 and 1AA3 (or 1A06); or permission of the Department.
Crosslist: LINGUIST 2LL3
This course is administered by the Department of Linguistics and Languages.

ANTHROP 2O03 THEMES IN THE ARCHAEOLOGICAL HISTORY OF NORTH AMERICA
An examination of the origins and development of the major indigenous cultural groups of prehistoric North America.
Three hours (lectures and discussion); one term
Prerequisite: Three units of Anthropology. ANTHROP 1B03 or 2PA3 is strongly recommended.

ANTHROP 2PA3 INTRODUCTION TO PREHISTORIC ARCHAEOLOGY
An introduction to the goals and methods of archaeological research with a focus on specific problems in human prehistory.
Three hours (lectures, labs, discussion); one term
Prerequisite: Three units of Level I Anthropology
This course is required of all students registered in an Honours Program in Anthropology.

ANTHROP 2PC3 ARCHAEOLOGY AND POPULAR CULTURE
This course uses popular representations of archaeology from Agatha Christie to Indiana Jones to critically review the discipline's practice and practitioners from past to present.
Two hours (lectures); one hour (tutorial); one term
Prerequisite: Three units of Level I Anthropology

ANTHROP 2R03 RELIGION, MAGIC AND WITCHCRAFT
Selected issues in the study of religion, magic and witchcraft, science and the supernatural. Perspectives from history, psychology and sociology also will be discussed.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1A03 or 2F03

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 2U03 PLAGUES AND PEOPLE
A consideration of the role played by infectious disease in human evolution. The social and biological outcomes of major epidemics and pandemics, past and present, will be explored.
Two hours (lecture), one hour (tutorial); one term

ANTHROP 2VV3 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
Crosslist: LINGUIST 3A03
This course is administered by the Department of Linguistics and Languages.

ANTHROP 3AS3 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 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.
Crosslist: HEALTHST 3CC3

ANTHROP 3CA3 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 3DD3 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
2009-2010 Topic: Current debates in Eastern Mediterranean prehistory the topic varies with each instructor (e.g. one class may examine Ancient Mesoamerican 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 3F03 ANTHROPOLOGY AND THE "OTHER"
As a discipline, anthropology is effectively predicated on the notion of the "other". This course asks about the constructions, representations, and political uses of the "other."
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03

ANTHROP 3G03 COMPARATIVE MYTHOLOGY
The reconstruction of lost mythic traditions by means of comparative techniques drawn from historical linguistics. The Indo-European traditions of Eurasia will be examined.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2G03 or permission of the instructor

ANTHROP 3H03 ANTHROPOLOGICAL DEMOGRAPY
This course offers an introduction to the study of population dynamics (birth, death, migration) and population structure. It focuses on issues particularly pertinent to anthropological studies of past and present populations.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2E03

ANTHROP 3HI3 THE ANTHROPOLOGY OF HEALTH, ILLNESS AND HEALING
This course examines health, illness and healing in cross-cultural perspective and introduces students to medical anthropology concepts, including the cultural construction of illness and health.
Three hours (lectures and small and large group discussion)
Prerequisite: Registration in Level III or above of any program. ANTHROP 2E03 or 2F03 is strongly recommended.
Antirequisite: ANTHROP 3Z03, 3ZZ3

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
Crosslist: LINGUIST 3I03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

ANTHROP 3II3 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
Crosslist: LINGUIST 3II3
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

ANTHROP 3IS3 INDEPENDENT STUDY IN ANTHROPOLOGY
Independent study of a research problem through published materials and/or fieldwork. 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 and permission of the instructor
ANTHROP 3IS3 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 and discussion); one term
Prerequisite: ANTHROP 2PA3

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
Crosslist: LINGUIST 3M03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

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 3PP3 PALEOPATHOLOGY
The origins and evolution of human diseases and methods of identifying disease in ancient human remains.
Three hours (lectures, discussion and lab); one term
Prerequisite: ANTHROP 2FF3

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 3RR3 SEX, GENDER AND INEQUALITIES
Gender is a window into culturally specific definitions and values, such as the division of labour, opportunities and resource allocation. This course is a cross cultural examination of gender.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 1A03 and registration in Level III or above of any program

ANTHROP 3T03 POWER AND RESISTANCE
A critical examination of power in post-colonial conflicts. Examines concepts and case studies of local resistance to economic globalization, the re-defining of nationalities and the spread of universalizing cultures.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2F03 and registration in any program in 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 I**
The topic varies with each instructor (e.g. one class may examine Current 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 communities, processes of community revitalization and recent government policy initiatives.
Three hours (lecture and discussion); one term
Crosslist: HEALTHST 3YY3

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
2009-2010 Topic: Aesthetic of the Gift Economy
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
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 4EE3 ADVANCED TOPICS IN ARCHAEOLOGY II
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 practica or library research. Students will be required to write up the results of their inquiry in scholarly form. It is incumbent upon the student to secure arrangements with the supervising instructor prior to registration in this course; otherwise, no grade will be submitted.
One term
Prerequisite: Registration in any program in Anthropology

ANTHROP 4GG3 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 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
2009-2010 Topic: TBA
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
2009-2010 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.
Prerequisite: ANTHROP 2L03, 3A03
Antirequisite: ANTHROP 4LA3, LINGUIST 4LA3
Crosslist: LINGUIST 4LB3
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 3I03, 3M03
Antirequisite: ANTHROP 4LA3, LINGUIST 4LA3
Crosslist: LINGUIST 4LC3
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 context and a survey of the uses of anthropology in schools.
Three hours (seminar); one term
Prerequisite: Registration in any Honours program in the Faculty of Social Sciences

ANTHROP 4Q03 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 systematic; 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, paleonutrition and biological distance analyses.
Three hours (lectures and discussion); one term
Prerequisite: ANTHROP 2FF3

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 3I03, 3M03, LINGUIST 3I03, 3M03
Crosslist: LINGUIST 4XX3
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.

ART {028}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~sota/
Togo Salmon Hall, Room 414
Ext. 27671

Courses and programs in Art are administered within the School of the Arts of the Faculty of Humanities.

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. 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 (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 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 School of the Arts programs in the Faculty of Humanities section of the Calendar. When applying for admission using the OUAC application, applicants who wish to study Art should select MH for the OUAC code and choose STUDIO ART 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 2AA3 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 3D03 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 CRIVICISM
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 investigations exploring the interconnections between print media and painting. Studio methods promoting environmental responsibility and safety will be practised through a range of processes including silkscreen, xante photo-imaging, bookmaking, monotypes, stencilling, relief, intaglio and painting processes.
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 3J03 CREATIVE COLLABORATIVE PROJECT
This course provides an opportunity for cross-discipline and cross-faculty interdisciplinary projects combining art with another area of study. Discussions, lectures, workshops and creative collaborative projects are included in this course.
Four hours; one term
Prerequisite: Registration in Level III or IV of any Honours Program and permission of the School of the Arts. Students must submit a written proposal to the Director of the School of the Arts in April of the preceding academic year.

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 {029}

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
Crosslist: CMST 2I03

ART HIST 2B03 ANCIENT ART I
The architecture, sculpture and painting of the Greek and Hellenistic worlds.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: CLASSICS 2B03
This course is administered by the Department of Classics.

ART HIST 2C03 ANCIENT ART II
The architecture, sculpture and painting of the Roman world.
Three lectures; one term
Prerequisite: ART HIST 2B03
Crosslist: 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: ART HIST 1A03 or 1AA3; and 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
Crosslist: 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
Antirequisite: CMST 2X03, DRAMA 2X06
Crosslist: THTR&FLM 2F03
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
Crosslist: CMST 2O03, PHILOS 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 2Z03 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 3AA3 CONTEMPORARY ART AND VISUAL CULTURE
An examination of international art and visual culture applying theoretical approaches such as modernism, postmodernism, feminism, masculism, 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.

ART HIST 3B03 ASPECTS OF CANADIAN ART
A survey of the visual arts in Canada from the earliest explorations and settlements to the present.
Three lectures; one term
Prerequisite: Registration in Level III or IV of any program
Alternates with ART HIST 3D03.

ART HIST 3D03 SEVENTEENTH-CENTURY ART
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.

ART HIST 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
Crosslist: CLASSICS 3G03
Alternates with ART HIST 3H03.
This course is administered by the Department of Classics.

ART HIST 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: ART HIST 2B03
Crosslist: CLASSICS 3H03
Alternates with ART HIST 3G03.
This course is administered by the Department of Classics.

ART HIST 3I03 ITALIAN PAINTING AND SCULPTURE 1400-1580
An advanced level lecture course dealing with selected artists and works from the Early Renaissance to Mannerism.
Three lectures; one term
Prerequisite: Registration in Level II or above. Prior completion of ART HIST 2I03 is recommended
Alternates with ART HIST 3S03.

ART HIST 3J03 ISSUES IN 19TH-CENTURY ART AND VISUAL CULTURE
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 3AA3.

ART HIST 3L03 THEORIZING CULTURE THROUGH PERFORMANCE
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, 3AA3, CMST 2G03, 2P03, 2S03, THTR&FLM 2C03, 2D03, 2E03
Crosslist: CMST 3L03, THTR&FLM 3I03
This course is administered by Theatre & Film.
Offered in alternate years.

ART HIST 3P03 ISSUES IN STUDIO CRITICISM
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 preset 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.*

ART HIST 3S03 ART AND CIVILIZATION AT THE DAWN OF THE ITALIAN RENAISSANCE 1200-1400
A study of Italian art and civilization in the age of transition between the Middle Ages and the Renaissance.
Three lectures; one term
Prerequisite: Registration in Level II or above. Prior completion of ART HIST 2I03 is recommended
Alternates with ART HIST 3I03.

ART HIST 3XX3 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 relationships to other art forms, narrative, genre and authorship.
Two lectures, plus one weekly film screening; one term
Prerequisite: ART HIST 2G03
Antirequisite: CMST 3XX3
Crosslist: THTR&FLM 3L03
This course is administered by Theatre & Film.

ART HIST 3Z03 CHINESE ART AND VISUAL CULTURE 200-750
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 2Z03

ART HIST 4AA3 SEMINAR IN CONTEMPORARY ART AND VISUAL CULTURE
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 3AA3 or 3J03; and registration in Level III or IV of an Honours program in Art or Art History
ART HIST 4AA3 may be repeated, if on a different topic, to a total of six units.
Offered in alternate years.

ART HIST 4BB3 SEMINAR IN ANCIENT ART
Consult the School of the Arts concerning the topic to be offered.
Seminar (two hours); one term
Prerequisite: ART HIST 2B03, 2C03 and registration in Level III or IV of an Honours program in Art History
Crosslist: CLASSICS 4BB3
ART HIST 4BB3 may be repeated, if on a different topic, to a total of six units.
This course is administered by the Department of Classics.

ART HIST 4C03 SEMINAR IN ART AND VISUAL CULTURE 900-1400
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 3Z03 is recommended.
Offered in alternate years.
ART HIST 4C03 may be repeated, if on a different topic, to a total of six units.

ART HIST 4E03 SEMINAR IN ART AND VISUAL CULTURE 1400 - 1750
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, Art History or Multimedia. Prior completion of one of ART HIST 3D03, 3I03 or 3S03 is recommended.
Offered in alternate years.
ART HIST 4E03 may be repeated, if on a different topic, to a total of six units.

ART HIST 4H03 SEMINAR IN ART AND VISUAL CULTURE 1750 TO THE PRESENT
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 3AA3 or 3J03 is recommended.
Offered in alternate years.
ART HIST 4H03 may be repeated, if on a different topic, to a total of six units.

ART HIST 4O06 THESIS
Supervised study of a problem in the history of art of special interest to the student.
Tutorials; two terms
Prerequisite: Registration in Level IV of any Honours program in Art History; and a grade of at least A- in a previous course in the chosen field; and permission of the School of the Arts

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 GALLERIES AND MUSEUMS
A study of the history and methods of institutions created for the purpose of collecting, preserving, displaying and interpreting art objects.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a program in Art or Art History
Offered in alternate years.

ARTS AND SCIENCE {027}

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, 2009

Narayanaswamy Balakrishnan *(Mathematics and Statistics)*
Richard Butler *(Biology)*
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)*
Howard Jones *(Philosophy)*
Atif Kubursi *(Economics)*
Miroslav Lovric *(Mathematics and Statistics)*
Patangi K. Rangachari *(Medicine)*
Stefan Rodde *(Philosophy)*
Victor Satzewich *(Sociology)*
Colin B. Seymour *(Medical Physics and Applied Radiation Sciences)*
Peter G. Sutherland *(Physics and Astronomy)*
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 Arts 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.
Antirequisite: MATH 1A03, 1AA3, 1X03, 1XX3
ARTS&SCI 1D06 serves as a prerequisite for all upper level Mathematics, Statistics, Computer Science and Physics courses, for which MATH 1A06 or MATH 1AA3 is a prerequisite.

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 2A06

ARTS&SCI 3BB3 TECHNOLOGY AND SOCIETY II
The Social Control of Technology. The dominant mechanisms of the social control of technology will be studied. Includes an examination of assessment methods and the role of ethics.

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 3CI3 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 3CJ3 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, news 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, news 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 Program Office.

ARTS&SCI 3L03 THE INDIAN 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
Crosslist: RELIG ST 3L03
This course is administered by the Department of Religious Studies.

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
Crosslist: RELIG ST 3S03, JAPAN ST 3S03
This course is administered by the Department of Religious Studies.

ARTS&SCI 4A06 INDIVIDUAL STUDY
This course consists of study under the supervision of a McMaster faculty member. Proposal deadline is March 1; information package is available from the Arts & Science Program Office.

ARTS&SCI 4A09 INDIVIDUAL STUDY
This course consists of study under the supervision of a McMaster faculty member. Proposal deadline is March 1; information package is available from the Arts & Science Program 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 from the Arts & Science Program Office.

ARTS&SCI 4C09 THESIS
This course consists of original research under the supervision of a McMaster faculty member. Proposal deadline is March 1; information package is available from the Arts & Science 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 Program Office.

ASIAN STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

ASTRONOMY

(SEE PHYSICS AND ASTRONOMY)

AUTOMOTIVE AND VEHICLE TECHNOLOGY

(SEE TECHNOLOGY, AUTOMOTIVE AND VEHICLE TECHNOLOGY)

BIOCHEMISTRY AND BIOMEDICAL SCIENCES {040}

WEB ADDRESS: http://www.fhs.mcmaster.ca/biochem/
Health Sciences Centre, Room 4H45
Ext. 22059

Faculty as of January 15, 2009

Chair

Eric Brown

Associate Chairs

Ray Truant/Research
Michelle MacDonald/Undergraduate Studies
Justin Nodwell/Graduate Studies

Professors

David W. Andrews/B.Sc. *(Ottawa)*, Ph.D. *(Toronto)*/Senior Canada Research Chair
Mickie Bhatia/B.Sc. *(McMaster)*, Ph.D. *(Guelph)*/Canada Research Chair
Eric D. Brown/B.Sc., M.Sc., Ph.D. *(Guelph)*/Canada Research Chair
John P. Capone/B.Sc. *(Western Ontario)*, Ph.D. *(McMaster)*
Radhey S. Gupta/B.Sc. *(Agra)*, M.Sc. *(New Delhi)*, Ph.D. *(Bombay)*
John A. Hassell/B.Sc. *(Brooklyn College)*, Ph.D. *(Connecticut)*
Paul Higgs/Ph.D. *(Cambridge)*/Senior Canada Research Chair
Gerard D. Wright/B.Sc., Ph.D. *(Waterloo)*/Senior Canada Research Chair
Daniel S.C. Yang/B.Sc., M.Sc. *(Alberta)*, Ph.D. *(Pittsburgh)*
Boris S. Zhorov/M.Sc., Ph.D., D.Sc. *(St. Petersburg)*

Associate Professors

Paul J. Berti/B.Sc. *(Waterloo)*, M.Sc. *(Ottawa)*, Ph.D. *(McGill)*
Russell E. Bishop/B.Sc., Ph.D. *(Alberta)*
Lori L. Burrows/B.Sc., Ph.D. (Guelph)
Cécile Fradin/B.Sc., M.Sc. *(Ecole Normale Supérieure, Paris)*, Ph.D. *(Université Pierre et Marie Curie, Paris)*/Canada Research Chair
Yingfu Li/B.Sc. *(Anhui, China)*, M.Sc. *(Beijing Agr.)*, Ph.D. *(Simon Fraser)*/Canada Research Chair
Justin R. Nodwell/B.Sc., Ph.D. *(Toronto)*
Bernardo L. Trigatti/B.Sc., Ph.D. *(McMaster)*
Ray Truant/B.Sc., Ph.D. *(Toronto)*

Assistant Professors

Tony Collins/B.Sc., Ph.D. *(Edinburgh)*
Brian K. Coombes/B.Sc., Ph.D. *(McMaster)*
Bradley W. Doble/B.Sc., Ph.D. *(Manitoba)*/Canada Research Chair
Jonathan Draper/Ph.D. *(Sheffield)*
Alba Guarné/B.Sc., M.Sc., Ph.D. *(Barcelona)*
Murray S. Junop/B.Sc., Ph.D. *(Western Ontario)*
Michelle L. MacDonald/B.Sc., Ph.D. *(McMaster)*
Nathan Magarvey/B.Sc. *(Dalhousie)*, Ph.D. *(Minnesota)*
Giuseppe Melacini/B.Sc., Ph.D. *(Milan)*
Joaquin Ortega/B.Sc. *(Zaragoza)*, Ph.D. *(Universidad Autónoma de Madrid)*
Felicia Vulcu/B.Sc., Ph.D. *(McMaster)*
Geoffrey Werstuck/B.Sc., Ph.D. *(McMaster)*
Christopher Wynder/B.Sc. *(Western Ontario)*, Ph.D. *(Rockefeller)*/Canada Research Chair

Associate Members

Stephanie A. Atkinson/*(Pediatrics)* B.A. *(Western Ontario)*, Ph.D. *(Toronto)*
Jonathan L. Bramson/*(Pathology)* B.Sc., Ph.D. *(McGill)*
John D. Brennan/*(Chemistry)* B.Sc., Ph.D. *(Toronto)*/Canada Research Chair
Jack Gauldie/*(Pathology)* B.Sc. *(McMaster)*, Ph.D. *(University College, London)*
Mark Larche/*(Medicine)* Ph.D. *(University of London)*
Brian F. Leber/*(Medicine)* B.Sc., M.D.C.M. *(McGill)*, F.R.C.P.C.
Karen Mossman/*(Pathology)* B.Sc. *(Guelph)*, Ph.D. *(Alberta)*
Gurmit Singh/*(Pathology)* B.Sc., Ph.D. *(Dalhousie)*
Sheila Singh/B.Sc. *(McGill)*, M.D. *(McMaster)*, Ph.D. *(Toronto)*
Jeffrey I. Weitz/B.Sc., M.D. *(Ottawa)*

Courses *If no prerequisite is listed, the course is open.*

BIOCHEM 2B03 NUCLEIC ACID STRUCTURE AND FUNCTION
Fundamental 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 1AA3, credit or registration in CHEM 2BA3 or 2OA3, registration in Honours Biochemistry, Honours Chemical Biology or Honours Molecular Biology and Genetics; or registration in Honours Physics (Biophysics Specialization)
Antirequisite: BIOCHEM 3G03

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, one tutorial; second term
Prerequisite: BIOCHEM 2B03, one of CHEM 2PA3, 2R03 or CHEM BIO 2P03, credit or registration in CHEM 2BB3 or 2OB3, registration in Honours Biochemistry, Honours Chemical Biology or Honours Molecular Biology and Genetics; or registration in Honours Physics (Biophysics Specialization)
Antirequisite: BIOCHEM 3G03

BIOCHEM 2EE3 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.

BIOCHEM 2L06 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, 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 2B03 or 2BB3 and registration in Honours Arts & Science and Biochemistry, Honours Biochemistry or Honours Physics (Biophysics Specialization)
Antirequisite: BIOCHEM 3L03
Crosslist: MOL BIOL 2L06

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 http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm.
Prerequisite: BIOCHEM 2B03, 2BB3; and registration in Honours Biochemistry or Honours Molecular Biology. Permission of the Department is required.

BIOCHEM 3C03 CELLULAR BIOCHEMISTRY
Biochemical basis of complex cellular processes such as compartmentalization, vesicular traffic, movement and programed 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 & Science and Biochemistry or Honours Physics (Biophysics Specialization)

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; second term
Prerequisite: BIOCHEM 2B03, 2BB3
Antirequisite: BIOCHEM 2EE3, LIFE SCI 2EE3

BIOCHEM 3G03 PROTEINS AND NUCLEIC ACIDS
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
Not open to students registered in an Honours Biochemistry or Honours Molecular Biology program.

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

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: Credit or registration in BIOCHEM 3D03; or BIOCHEM 2EE3 and 3G03; or a grade of at least C+ in BIOCHEM 2EE3; or HTH SCI 2E03

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 & Science and Biochemistry or an Honours Biochemistry Specialization
Antirequisite: BIOLOGY 3V03, MOL BIOL 3V03
Enrolment is limited.

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.

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.

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 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 CA of at least 8.0. For further information, please refer to http://www.fhs.mcmaster.ca/biochem/Undergraduate.htm.
Antirequisite: BIOCHEM 4C03, 4F09, 4L03, 4P03
Enrolment is limited.

BIOCHEM 4C03 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

BIOCHEM 4E03 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 or MOL BIOL 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 or 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
Enrolment 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: BIOCHEM 3D03; or BIOCHEM 3G03 and registration in a Chemical Engineering program; or HTH SCI 2E03

BIOCHEM 4J03 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, 4II3; or permission of the instructor
Antirequisite: MOL BIOL 4J03
Crosslist: HTH SCI 4J03
This course is administered by the Bachelor of Health Sciences (Honours) Program.

BIOCHEM 4LL3 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 Honours Biochemistry (Biotechnology and Genetic Engineering Specialization); or BIOCHEM 3G03 and registration in a Chemical Engineering program
Antirequisite: BIOCHEM 4L03
Crosslist: CHEM ENG 4LL3

BIOCHEM 4N03 MOLECULAR MEMBRANE BIOLOGY
Properties and structures of membranes, molecular components of biological membranes and their interactions, strategies for signal transduction cascades, 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.
Enrolment 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 cell biological studies.
Three lectures; first term
Prerequisite: BIOCHEM 3D03; or BIOCHEM 2EE3 and 3G03; or HTH SCI 2E03
Not offered in 2009-2010.

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; first term
Prerequisite: One of CHEM 2R03, MATLS 2B03 or PHYSICS 2H04. PHYSICS 3S03 is recommended.
Crosslist: PHYSICS 4S03
This course is administered by the Department of Physics and Astronomy.

BIOCHEM 4Y03 GENOMES AND EVOLUTION
Molecular evolution and comparative analysis of genomes. Bacterial evolution, phylogenetics, origins of eukaryotes. Organelles and their genomes. Comparison of the human genome with other species. Use of microarrays and proteomics.
Three lectures; second term
Prerequisite: BIOCHEM 2B03 or 3G03
Antirequisite: BIOLOGY 4DD3, MOL BIOL 4DD3

BIOLOGY

WEB ADDRESS: http://www.biology.mcmaster.ca
Life Sciences Building, Room 215A
Ext. 23049

Faculty as of January 15, 2009

Chair

Pat Chow-Fraser

Associate Chairs

Roger Jacobs/Undergraduate Studies
André Bédard/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

André 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. *(Dalhousie)*, Ph.D. *(Alberta)*/Senior Canada Research Chair
Delsworth G. Harnish/*(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. *(Calgary)*, M.Sc., Ph.D. *(Toronto)*
Jurek Kolasa/M.Sc., Ph.D. *(Poznan)*
Colin A. Nurse/B.E.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. *(Kanpur)*, Ph.D. *(California-Davis)*
Elizabeth A. Weretilnyk/B.Sc., Ph.D. *(Alberta)*

Adjunct Professor

Pierre Laurent/B.M. *(Lille)*, L.S. *(Nancy)*, Sc.D. *(Sorbonne)*

Associate Professors

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. Igdoura/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

Gary Chiang/B.Sc., M.Sc., Ph.D. *(Toronto)*
David A. Galbraith/B.Sc., M.Sc. *(Guelph)*, Ph.D. *(Queen's)*
James C. McGeer/B.Sc., M.Sc. *(British Columbia)*, Ph.D. *(Dundee)*
James S. Pringle/A.B. *(Dartmouth)*, M.S. *(New Hampshire)*, Ph.D. *(Tennessee)*
Glen VanDerKraak/B.Sc., M.Sc. *(Manitoba)*, Ph.D. *(British Columbia)*

Assistant Professors

Kimberley Dej/B.Sc. *(Toronto)*, Ph.D. *(Johns Hopkins)*
Jonathan Dushoff/B.Sc. *(Pennsylvania)*, Ph.D. *(Princeton)*
Marie Elliot/B.Sc., Ph.D. *(Alberta)*/Canada Research Chair
Ben Evans/B.S. *(Tufts)*, M.S., M.Phil., Ph.D. *(Columbia)*
Bhagwati Gupta/B.Sc. *(Banaras Hindu)*, M.Sc. *(Jawaharlal Nehru)*, Ph.D. *(TATA Institute)*/Canada Research Chair

Chad T. Harvey/B.Sc. *(Guelph)*, M.Sc. *(Auburn)*, Ph.D. *(Wisconsin-Madison)*
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

George Bijelic/B.Sc., M.Sc. *(McMaster)*
Alison Cowie/L.I. Biol. *(Bromley)*, M.Sc. *(McMaster)*
Lori Goff/B.Sc., M.Sc. *(Guelph)*
Marvin Gunderman/B.Sc., M.Sc. *(McMaster)*
John Paul King/B.Sc. *(Memorial)*, M.Sc. *(McMaster)*
Thelma Leech/B.Sc., M.Sc. *(Guelph)*, M.Sc.(T.) *(McMaster)*
Raymond Procwat/B.Sc. *(McMaster)*, B.Ed. *(Toronto)*

Note:

Students are strongly encouraged not to take BIOLOGY 1A03 and 1M03 in the same term.

BIOLOGY {050} ...

Courses *If no prerequisite is listed, the course is open.*

BIOLOGY 1A03 CELLULAR AND MOLECULAR BIOLOGY
Structure, molecular composition and function in sub-cellular and cellular systems.
Three lectures, one lab (three hours); one term
Prerequisite: Grade 12 Biology U or BIOLOGY 1P03 and registration in any Level I program in the Faculty of Science or any program above Level I; or registration in Arts & Science I, Chemical Engineering and Bioengineering, or Electrical and Biomedical Engineering
Corequisite: SCIENCE 1A00 if not already completed
Not open to students with credit or registration in ISCI 1A24.
Students are strongly encouraged not to take BIOLOGY 1A03 and 1M03 in the same term.

BIOLOGY 1M03 BIODIVERSITY, EVOLUTION AND HUMANITY
Fundamental evolutionary and ecological concepts with particular reference to the diversity of life.
Three lectures, three hour seminar; one term
Prerequisite: Grade 12 Biology U or BIOLOGY 1P03
Antirequisite: BIOLOGY 1AA3
Not open to students with credit or registration in ISCI 1A24.
Students are strongly encouraged not to take BIOLOGY 1A03 and 1M03 in the same term.

BIOLOGY 1P03 INTRODUCTORY BIOLOGY
Introduction to basic biological principles for students without Grade 12 Biology U.
Three lectures, one tutorial (two hours); one term
Not open to students with credit in Grade 12 Biology U.

BIOLOGY 1X03 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: Credit or registration in BIOLOGY 1M03 (or 1AA3) or HTH SCI 1E06, and credit or registration in MATH 1A03 (or 1X03) or 1AA3 (or 1XX3), 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, 1M03 (or 1AA3); or ISCI 1A24
Antirequisite: MED PHYS 4XX3, SCIENCE 4XX3
Not open to students with credit or registration in BIOLOGY 3P03, 3U03, 3UU3 or to students registered in the B.Sc.N., the Bachelor of Health Sciences (Honours), or Bachelor of Health Sciences (Honours) — Biomedical Sciences Specialization program.

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 tutorial (two hours); one term
Prerequisite: BIOLOGY 1A03, 1M03 (or 1AA3), CHEM 1AA3; or ISCI 1A24
Antirequisite: HTH SCI 2K03, MOL BIOL 2B03
Crosslist: LIFE SCI 2B03

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, 1M03 (or 1AA3), CHEM 1AA3; or ISCI 1A24; and registration in an Honours program in the Faculty of Science, or a program in Arts & Science, Health Sciences or Kinesiology.
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 1M03 (or 1AA3) and either BIOLOGY 1A03 or ENVIR SC 1B03; or ISCI 1A24

BIOLOGY 2EE3 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, 1M03 (or 1AA3), CHEM 1AA3 and credit or registration in one of CHEM 2BA3, 2E03, 2OA3, 2OC3; or registration in Level III Chemical Engineering and Bioengineering

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 1M03 (or 1AA3) or ISCI 1A24
Crosslist: LIFE SCI 2F03

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 (or LIFE SCI 2F03); and registration in Level II or III of any program in the Faculty of Science, Health Sciences or the Arts & Science Program. Please note, BIOLOGY 3G03 is open only to students registered in the Biodiversity Specialization of the Honours Biology Program.
Antirequisite: BIOLOGY 2I03
Not offered in 2009-2010.

BIOLOGY 2L03 EXPERIMENTAL DESIGN IN BIOLOGY
An active learning approach to experiencing how research is conceived, executed, interpreted and communicated in Biology. Principles and case studies in lectures are matched with hands-on application in the lab.
Two lectures, one lab (three hours); one term
Prerequisite: Registration in Level II or III of any Honours Biology, Honours Molecular Biology and Genetics or Honours Molecular Biology program

BIOLOGY 2YY3 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: One of BIOLOGY 1X03, COMP SCI 1MD3, PHYSICS 2G03
Offered in alternate years.
Not offered in 2009-2010.

BIOLOGY 2Z03 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: One of BIOLOGY 1X03, COMP SCI 1MD3, PHYSICS 2G03
Offered in alternate years.
Offered in 2009-2010.

BIOLOGY 3AA3 FUNDAMENTAL CONCEPTS OF PHARMACOLOGY

Drug interactions with living organisms; absorption and elimination of drugs, variations in drug action, drug toxicity, receptor structure and function, and signal transduction pathways.
Three lectures, one tutorial (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. BIOLOGY 3P03 is strongly recommended.
Not open to students with credit in BIOCHEM 4Q03 or registration in Honours Biology and Pharmacology.

BIOLOGY 3B03 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) or LIFE SCI 2B03; and BIOLOGY 2D03

BIOLOGY 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) or LIFE SCI 2B03. BIOLOGY 2A03 is strongly recommended.
Enrolment is limited.
Not offered in 2009-2010.

BIOLOGY 3FF3 EVOLUTION

The major theoretical concepts and empirical findings in micro- and macroevolution are surveyed.
Three lectures, one tutorial; one term
Prerequisite: BIOLOGY 2C03

BIOLOGY 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).

BIOLOGY 3I03 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) or LIFE SCI 2B03; and BIOLOGY 2C03

BIOLOGY 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) or LIFE SCI 2B03. BIOLOGY 2A03 is strongly recommended.
Enrolment is limited.
Not offered in 2009-2010.

BIOLOGY 3MM3 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 1A03 and 1AA3) or both KINESIOL 1Y03 and 1YY3

BIOLOGY 3P03 CELL PHYSIOLOGY

Analysis of cell function with an emphasis on electrical properties, ion transport proteins, signalling via second messengers, mechanisms of cell homeostasis, and epithelial transport.
Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2A03 or PSYCH 2F03, or both BIOLOGY 1A03 (or ISCI 1A24) and six units from KINESIOL 1A03, 1AA3 (or 1A06), 1Y03, 1YY3; and credit or registration in one of BIOCHEM 2A06, 2BB3 or 3G03

BIOLOGY 3R03 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. 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. For information on Field Biology, please refer to the Biology web site at http://www.biology.mcmaster.ca and click on Field Biology.
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 215A. Some modules have additional prerequisites.
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 3SS3 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 (or LIFE SCI 2F03)

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 4XX3, SCIENCE 4XX3
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 3UU3 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 4XX3, SCIENCE 4XX3
Not open to students registered in the Faculty of Health Sciences or with credit or registration in HTH SCI 2F03 or 2FF3.

BIOLOGY 3ZZ3 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
Offered in 2009-2010.

BIOLOGY 4AA3 CONSERVATION BIOLOGY

Examination of how biological principles, mainly from population biology and genetics can be applied to conserving diversity in the natural world.
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 3B03 and 3H03 are recommended.
Offered in alternate years.
Offered in 2009-2010.

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. 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.biology.mcmaster.ca/bio_ugrad.htm and click on BIOLOGY 4C09, or contact the Course Administrator.
Prerequisite: Registration in Level IV of any Honours Biology program and permission of the Course Administrator, Life Sciences Building, Room 215A. Students are expected to have a C.A. of at least 8.5.
Enrolment is limited.

BIOLOGY 4E03 POPULATION GENETICS

Conceptual foundations of evolutionary theory and principles of population genetics.
Three lectures; or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2C03, 3FF3; and registration in Level III or above of any Honours program
Antirequisite: BIOLOGY 3J03

BIOLOGY 4EE3 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: BIOLOGY 2C03, 3FF3 and registration in Level III or above of any Honours program
Not offered in 2009-2010.

BIOLOGY 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. Arrangements to take BIOLOGY 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.biology.mcmaster.ca/bio_ugrad.htm and click on BIOLOGY 4F06, or contact the Course Administrator.
Prerequisite: Registration in Level IV of any Honours Biology program and permission of the Course Administrator, Life Sciences Building, Room 215A. Students are expected to have a C.A. of at least 8.5.
Enrolment is limited.

BIOLOGY 4J03 FIELD BIOLOGY II

A second field module chosen from those offered by faculty from McMaster and other Ontario Universities' Biology Departments. This module must differ from any completed for credit in BIOLOGY 3R03, 4JJ3. 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. For information on Field Biology, please refer to the Biology web site at http://www.biology.mcmaster.ca and click on Field Biology.
Prerequisite: BIOLOGY 1A03, 1AA3 (or 1M03), or one of ENVIR SC 1A03, 1B03, 1G03 or ISCI 1A24; and permission of the Course Administrator, Life Sciences Building, Room 215A. Some modules have additional prerequisites.
Enrolment is limited.

BIOLOGY 4JJ3 FIELD BIOLOGY III

A third field module chosen from those offered by faculty from McMaster and other Ontario Universities' Biology Departments. This module must differ from any completed for credit in BIOLOGY 3R03, 4J03. 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. For information on Field Biology, please refer to the Biology web site at http://www.biology.mcmaster.ca and click on Field Biology.
Prerequisite: BIOLOGY 1A03, 1AA3 (or 1M03), or one of ENVIR SC 1A03, 1B03, 1G03 or ISCI 1A24; and permission of the Course Administrator, Life Sciences Building, Room 215A. Restricted to students who have completed Level III Honours Biology (Biodiversity Specialization). Some modules have additional prerequisites.
Enrolment is limited.

BIOLOGY 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: BIOLOGY 2EE3 or 3E03; and registration in Level III or above of any Honours program. Credit or registration in BIOLOGY 3O03 is strongly recommended.
Not offered in 2009-2010.

BIOLOGY 4T03 NEUROBIOLOGY

Selected topics in neurobiology at the molecular and cellular level including growth factors and neuronal development, ion channels, neurotransmitter functions, learning and memory, and neurological disorders.
Two lectures, one tutorial (three hours); one term
Prerequisite: BIOLOGY 3P03 and registration in Level III or above of any Honours program. One or more of BIOLOGY 3H03, 3HH3, 3UU3, PSYCH 2F03, 3FA3 is also recommended.
Offered in alternate years.
Not offered in 2009-2010.

BIOLOGY 4U03 RADIATION BIOLOGY

The effects of radiation on biological material at the molecular, cellular, tissue and whole organism level.
Three lectures; or two lectures, one tutorial; one term
Prerequisite: One of BIOLOGY 2B03, 2C03, LIFE SCI 2B03 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 Health Physics Co-op

BIOLOGY 4X03 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 BIOLOGY 3MM3, 3P03, 3U03, 3UU3; and registration in Level III or above of any Honours program
Enrolment is limited.

BIOLOGY 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: BIOLOGY 2F03 (or LIFE SCI 2F03) and credit or registration in one of BIOLOGY 3G03, 3SS3, 3TT3 and registration in Level III or above of any Honours program

MOLECULAR BIOLOGY {365} ...

Courses *If no prerequisite is listed, the course is open.*

MOL BIOL 3A03 CURRENT TOPICS IN MOLECULAR BIOLOGY AND GENETICS

A review of current literature in molecular biology and genetics. A combination of lectures and student presentations on selected topics.
One lecture, one tutorial (two hours); one term
Prerequisite: Registration in Honours Biology, Honours Molecular Biology or Honours Molecular Biology and Genetics
Not offered in 2009-2010.

MOL BIOL 3CC3 GENOMICS AND SYSTEMS BIOLOGY

Formerly BIOLOGY 3CC3
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: BIOLOGY 2B03 (or MOL BIOL 2B03) or LIFE SCI 2B03, and BIOLOGY 2C03, 2EE3, 3O03; or registration in Honours Computational Biology
Antirequisite: BIOLOGY 3CC3

MOL BIOL 3H03 MOLECULAR BIOLOGY OF THE NUCLEUS

Formerly BIOLOGY 3H03
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) or LIFE SCI 2B03
Antirequisite: BIOCHEM 3B03, BIOLOGY 3H03

MOL BIOL 3HH3 ORGANIZATION OF THE CYTOPLASM
Formerly BIOLOGY 3HH3
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) or LIFE SCI 2B03
Antirequisite: BIOLOGY 3HH3

MOL BIOL 3I03 INDEPENDENT RESEARCH PROJECT
Students will conduct an independent research study in a faculty member's laboratory. For further information, please refer to http://www.biology.mcmaster.ca/bio_ugrad.htm.
8-10 hours per week (scheduling to be arranged by supervisor); one term
Prerequisite: Registration in Honours Molecular Biology or Honours Molecular Biology and Genetics. BIOLOGY 2L03 is recommended preparation. 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 9.0.
Enrolment is limited.

MOL BIOL 3M03 FUNDAMENTAL CONCEPTS OF DEVELOPMENT
Formerly BIOLOGY 3M03
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) or LIFE SCI 2B03; and BIOLOGY 2C03
Antirequisite: BIOLOGY 3M03

MOL BIOL 3O03 MICROBIAL GENETICS
Formerly BIOLOGY 3O03
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 2EE3
Antirequisite: BIOLOGY 3O03

MOL BIOL 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 IV of any Honours Biology, Honours Molecular Biology or Honours Molecular Biology and Genetics program.
Prerequisite (Effective 2010-2011): Credit or registration in BIOLOGY 3O03; and registration in Level III or IV of Honours Molecular Biology and Genetics
Antirequisite: BIOCHEM 3P03, BIOLOGY 3V03
Enrolment is limited.

MOL BIOL 3Y03 PLANT RESPONSES TO THE ENVIRONMENT
Formerly BIOLOGY 3Y03
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) or LIFE SCI 2B03; and BIOLOGY 2C03, 2D03
Antirequisite: BIOLOGY 3Y03

MOL BIOL 4DD3 MOLECULAR EVOLUTION
Formerly BIOLOGY 4DD3
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 2D03 or BIOLOGY 3FF3; and registration in Level III or above of any Honours program
Antirequisite: BIOCHEM 4Y03, BIOLOGY 4DD3
Offered in alternate years.

MOL BIOL 4GG9 SENIOR CO-OP THESIS
Formerly BIOLOGY 4GG9
A thesis based upon a research project in an area of molecular biology and genetics carried out under the direction of a member of the Department of Biology. Arrangements to take MOL BIOL 4GG9, 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.biology.mcmaster.ca/bio_ugrad.htm.
Prerequisite: Registration in Level IV of Honours Molecular Biology and Genetics Co-op or Honours Biology (Genetics Specialization Co-op); and permission of the Course Administrator, Life Sciences Building, Room 215A.
Antirequisite: BIOLOGY 4GG9, HTH SCI 3H03, 4A09, 4B06
Enrolment is limited.

MOL BIOL 4H03 MOLECULAR BIOLOGY OF CANCER
Cancer at the cellular and molecular level. Topics include: properties of cancer cells, activation of proto-oncogenes, function of oncoproteins, transgenic mouse models, and tumour viruses, tumour suppressor genes.
Three lectures, one tutorial; one term
Prerequisite: One of BIOCHEM 3D03, 3G03, BIOLOGY 3H03, 3HH3; and registration in Level III or above of any Honours program

MOL BIOL 4P03 MEDICAL MICROBIOLOGY
Formerly BIOLOGY 4P03
Infectious diseases: identification, epidemiology and treatment.
Two lectures, one tutorial (three hours); one term
Prerequisite: BIOLOGY 2EE3 and registration in Level III or above of any Honours program. Credit or registration in BIOLOGY 3O03 is strongly recommended.
Antirequisite: BIOLOGY 4P03

MOL BIOL 4RR3 HUMAN GENETICS
Formerly BIOLOGY 4R03
The human genome and genetic medicine. Topics include normal and pathological cytology; the human genome project; gene mapping, linkage and therapy.
Two lectures, one tutorial (two hours); one term
Prerequisite: BIOLOGY 3I03 and registration in Level III or above of any Honours program
Antirequisite: BIOLOGY 4R03

MOL BIOL 4XX3 WORKSHOP IN MOLECULAR GENETICS
Formerly BIOLOGY 4XX3
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: BIOLOGY 2EE3; and registration in Honours Biology (Genetics Specialization or Microbiology and Biotechnology Specialization), Honours Biology (Genetics Specialization Co-op), Honours Molecular Biology and Genetics or Honours Molecular Biology and Genetics Co-op; and permission of the instructor. Application for permission must be received by March 31st of the academic year prior to registration.
Antirequisite: BIOLOGY 4XX3
Enrolment is limited.

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 {080}

WEB ADDRESS: http://www.chemeng.mcmaster.ca/
John Hodgins Engineering Building, Room 374
Ext. 24957

Faculty as of January 15, 2009

Chair
A. N. Hrymak

Distinguished University Professors

John L. Brash/B.Sc., Ph.D. *(Glasgow)*, D.Hon.C. *(Paris Nord)*, F.B.S.E., F.R.S.C., P.Eng
John F. MacGregor/B.Eng. *(McMaster)*, M.Sc., Ph.D. *(Wisconsin)*, F.A.S.A., F.C.A.E., P.Eng.

Professors

James M. Dickson/B.A.Sc., M.A.Sc. *(Waterloo)*, Ph.D. *(Virginia Tech.)*. P. Eng.
Andrew N. Hrymak/B.Eng. *(McMaster)*, Ph.D. *(Carnegie Mellon)*, P.Eng., F.C.I.C.
Rafik O. Loutfy/B.Sc., M.Sc. *(Ain Shams)*, Ph.D. *(Western Ontario)*, M.B.A. *(Toronto)*, F.C.I.C.
Vladimir Mahalec/Dipl. Ing. *(Zagreb)*, Ph.D. *(Houston)*
Robert H. Pelton/B.Sc., M.Sc. *(Guelph)*, Ph.D. *(Bristol)*/Senior Canada Research Chair
Christopher L. E. Swartz/B.Sc.Eng. *(Cape Town)*, Ph.D. *(Wisconsin)*, P.Eng., /Dofasco Chair in Process Automation and Information Technology
Philip E. Wood/B.A.Sc. *(Waterloo)*, Ph.D. *(California Institute of Technology)*, F.C.I.C., P.Eng.
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

Carlos Filipe/B.S. *(Universidade Catolica Portuguesa)*, Ph.D. *(Clemson)*
Raja Ghosh/B.S., M.S. *(Jadavpur)*, D.Phil. *(Oxford)*/Canada Research Chair
David Potter/B.Sc., Ph.D. *(Waterloo)*
Heather Sheardown/B.Eng. *(McMaster)*, Ph.D. *(Toronto)*, P.Eng.
Michael Thompson/B.Sc., B.Eng., M.Eng. *(McMaster)*, Ph.D. *(Waterloo)*, P.Eng.

Adjunct Associate Professors

Theodora Kourti/Dipl. Eng. (Chemical) *(Aristotle)*, Ph.D. *(McMaster)*
Qiang Liu/B.S, MS., *(University of Science and Technology, China)*, Ph.D. (Laval)
Yiliang Wu/B.Sc. *(Sichuan)*, M.Sc. *(University of Science and Technology, China)*, Ph.D. *(Tokyo Institute of Technology)*

Assistant Professors

Benoit Chachuat/B.Eng. *(ENGEES National Engineering School)*, M.Sc. *(Louis Pasteur)*, Ph.D. *(Lorraine National Institute of Technology)*
Todd Hoare/B.Sc. *(Queen's)*, Ph.D. *(McMaster)*
Kim Jones/B.A.Sc. *(Waterloo)*, M.Sc. *(Guelph)*, Ph.D. *(Toronto)*
Prashant Mhaskar/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) Kostanski/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 McDermid/(Mechanical Engineering) B.A.Sc. *(Queen's)* 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 Molecular Biology and Genetics
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 2I03 MEASUREMENTS
Operational characteristics of physical and chemical sensors, statistics of sampling and analysis, measurement error and data acquisition theory. Measurement of pressure, temperature, flow, strain and voltage. Technical writing and communication.
Two lectures, one lab (three hours); second term
Prerequisite: Registration in Level II of any Chemical Engineering program or permission of the Department

CHEM ENG 3BK3 BIO-REACTION ENGINEERING
Kinetics of cellular processes, microbial processes and enzyme reactions including those of immobilized cells and enzymes. Cell culturing. Bioreactor design. Bioprocess development including downstream processing.
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 3BM3 BIOSEPARATIONS ENGINEERING
Introduction to bioseparations engineering, cell disintegration, precipitation based 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 2Q04, or both MATH 2Z03 and 2ZZ3

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 3D03

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 2Q04, or both MATH 2Z03 and 2ZZ3, 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 3D03 and credit or registration in CHEM ENG 2A04 and 3O04

CHEM ENG 3M04 MASS TRANSFER AND STAGEWISE OPERATIONS
Stagewise operations, diffusion, mass transfer coefficients, distillation, differential contacting and absorption.
Three lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 2F04

CHEM ENG 3O04 FLUID MECHANICS
The laws of statics and dynamics in both compressible and incompressible fluids. Equations of conservation and modern turbulence and boundary layer theory applied to submerged and conduit flow. Similitude, unsteady flow, measuring devices and fluid machinery.
Three lectures, one tutorial (three hours); first term
Prerequisite: MATH 2M06 (or 2M03 and 2MM3), or both MATH 2P04 and 2Q04, or both MATH 2Z03 and 2ZZ3; and registration in a Chemical Engineering, Materials Science, Materials Engineering or Engineering Physics (Nuclear Engineering and Energy Systems Stream) program

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 2Q04, or both MATH 2Z03 and 2ZZ3; and credit or registration in CHEM ENG 2A04, 3E04, 3K04, 3O04
Antirequisite: CHEM ENG 3P03

CHEM ENG 3Q03 INTRODUCTION TO POLYMER SCIENCE
An overview of important synthetic and natural polymers with emphasis on polymer structure, the chemistry of polymer formation. An introduction to polymer characterization.
Three lectures; second term
Prerequisite: One of CHEM 2E03, 2OA3, 2OB3, 2WW2

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, multi-response estimation, design of experiments including factorial and optimal designs. Special emphasis on methods appropriate to engineering problems.
Three lectures; one 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 on 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 details on existing algorithms and software to solve problems.
Two lectures, one tutorial (two hours); second term
Prerequisite: CHEM ENG 3E04, 3G04, 3M04, 3O04; 3P03 (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 4LL3 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, 4BB6, 4F09, 4G03, 4L03
Crosslist: BIOCHEM 4LL3
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, 3O04, 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 trouble shooting. Students will work individually and in groups on problem-based projects.
Three lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 3K04, 3M04, 3O04, 3P03 (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 3O04, ENG PHYS 3O03, 3O04 or MECH ENG 3O04

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 3O04 or MECH ENG 3O04

CHEM ENG 4Y04 SENIOR INDEPENDENT PROJECT
A research and design project with students working independently under the direction of a Faculty member.
Two labs (three hours); both terms. The hours assigned can be freely scheduled to suit those involved in a particular project and may include computation classes, laboratory work, discussions, or individual study.
Prerequisite: Registration in 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.N. Bourns Science Building, Room 156
Ext. 23490

Faculty as of January 15, 2009

Chair

Brian E. McCarry

Associate Chair

Jacques Barbier

Professors

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)*
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. McCarry/B.Sc. *(British Columbia)*, Ph.D. *(Stanford)*, F.C.I.C./Stephen A. Jarislowsky 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. Stöver/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-Chapel Hill)*/Canada Research Chair
Paul J. Berti/B.Sc. *(Waterloo)*, M.Sc. *(Ottawa)*, Ph.D. *(McGill)*
Alfredo Capretta/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)*
Peter Kruse/Dipl. Chem. *(FSU-Jena)*, Ph.D. *(California-San Diego)*
Yingfu Li/B.Sc. *(Anhui, China)*, M.Sc. *(Beijing Agr.)*, Ph.D. *(Simon Fraser)*/Canada Research Chair
Nathan A. Magarvey/B.Sc. *(Dalhousie)*, Ph.D. *(Minnesota)*
Jim McNulty/B.Sc., M.Sc., Ph.D. *(Toronto)*
Giuseppe Melacini/B.Sc., Ph.D. *(Milan)*
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)*
Philippa Lock/B.Sc., Ph.D. *(McMaster)*
Yurij Mozharivskyj/B.Sc., M.Sc. *(Lviv State)*, Ph.D. *(Iowa State)*
Kalaichelvi Saravanamuttu/B.Sc., Ph.D. *(McGill)*

Associate Members

Raman Chirakal/*(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)*
Daniel S.C. Yang/*(Biochemistry and Biomedical Sciences)* B.Sc., M.Sc. *(Alberta)*, Ph.D. *(Pittsburgh)*
Shiping (Stephen) Zhu/*(Chemical Engineering and Materials Science and Engineering)* B.Eng. *(Zhejiang)*, Ph.D. *(McMaster)*, P.Eng.

Department Notes:

1. CHEM 1AA3 is a prerequisite for CHEM 2E03 and CHEM 2E03 is a prerequisite for BIOCHEM 2EE3.
2. Students seeking permission and/or a seat authorization for a Chemistry course must submit an application for academic permission to the Department of Chemistry well in advance of the start of the term.

CHEMICAL BIOLOGY {076} ....

Courses *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 Life Sciences or Honours Molecular Biology program
Antirequisite: CHEM 2A03, 2N03, CHEM BIO 2AA3
Not open to students registered in Honours Chemical Biology.

CHEM BIO 2AA3 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: Registration in Honours Chemical Biology
Antirequisite: CHEM 2A03, 2N03, CHEM BIO 2A03

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 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: Registration in Honours Chemical Biology.
Prerequisite (Beginning 2010-2011): CHEM 1AA3 with a grade of at least C- and registration in Honours Chemical Biology
Antirequisite: CHEM 2BA3, 2E03, 2OA3, 2OC3
Students with credit in CHEM 2E03 will forfeit credit upon completion of this course.

CHEM BIO 2OB3 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: One of CHEM 2OA3, 2OC3 or CHEM BIO 2OA3; and registration in Honours Chemical Biology
Antirequisite: CHEM 2BB3, 2OB3, 2OD3

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, Honours Life Sciences or Honours Molecular Biology program
Antirequisite: CHEM 2PA3, 2PB3, 2R03, EARTH SC 2Q03, GEO 2Q03, HTH SCI 2P01, PHYSICS 2H04

CHEM BIO 2Q03 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 3L03 CHEMICAL BIOLOGY LABORATORY II
A research project will be formulated and addressed using the tools of Chemical Biology.
One lecture, one lab; one term
Prerequisite: CHEM BIO 2L03

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, CHEM BIO 2OB3
Antirequisite: CHEM 3FF3
May be offered in alternate years.

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, CHEM BIO 2OB3
May be offered in alternate years.
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.

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, metallodrugs, and radiopharmaceuticals.
Three lectures; one term
Prerequisite: CHEM 3II3
May be offered in alternate years.
First offered in 2010-2011.

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: CHEM BIO 3OA3
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: CHEM BIO 3OA3
May be offered in alternate years.
First offered in 2010-2011.

CHEMISTRY {070} ....

Courses

If no prerequisite is listed, the course is open.

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 a Level I program in the Faculty of Science or Engineering I, Arts & Science I, Health Sciences I, any program above Level I; or a grade of at least 80% in Grade 12 Chemistry U; or CHEM 1R03
Corequisite: SCIENCE 1A00 if not already completed
Antirequisite: CHEM 1E03
Not open to students with credit or registration in ISCI 1A24.

CHEM 1AA3 INTRODUCTORY CHEMISTRY II
A discussion of organic chemistry, chemical kinetics, acid-base equilibrium, 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: CHEM 1A03 or 1E03
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, CHEM BIO 2A03, 2AA3

CHEM 2AA3 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 1AA3 or ISCI 1A24
Antirequisite: CHEM 2BA3, 2OA3, 2OC3, CHEM BIO 2OA3
CHEM 2E03 is not a prerequisite for further courses in Organic Chemistry.

CHEM 2II3 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 1AA3 or ISCI 1A24
Antirequisite: CHEM 2I03, 2WW2

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 1AA3 and registration in an Honours Program. Students with a grade of less than C- in CHEM 1AA3 are encouraged to seek counselling before attempting this course.
Prerequisite (Beginning 2010-2011): ISCI 1A24; or CHEM 1AA3 with a grade of at least C- and registration in an Honours program; or CHEM 1AA3, registration in an Honours program and permission of the Department. (See *Department Note 2.*)
Antirequisite: CHEM 2BA3, 2E03, 2OC3, CHEM BIO 2OA3
Students with credit in CHEM 2E03 will forfeit credit upon completion of this course.
Not open to students registered in Honours Chemical Biology.

CHEM 2OB3 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: One of CHEM 2OA3, 2OC3, CHEM BIO 2OA3
Antirequisite: CHEM 2BB3, 2OD3, CHEM BIO 2OB3
Not open to students registered in Honours Chemical Biology.

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 1AA3 or ISCI 1A24.
Prerequisite (Beginning 2010-2011): ISCI 1A24; or CHEM 1AA3 with a grade of at least C- and registration in an Honours program; or CHEM 1AA3, registration in an Honours program and permission of the Department. (See *Department Note 2.)*
Antirequisite: CHEM 2BA3, 2E03, 2OA3, CHEM BIO 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: One of CHEM 2OA3, 2OC3, CHEM BIO 2OA3
Antirequisite: CHEM 2BB3, 2OB3, CHEM BIO 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 1AA3 or ISCI 1A24; and CHEM 2PC3 or MATH 1B03
Antirequisite: CHEM 2PA3, 2R03, 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 2WW2 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 ISCI 1A24; and registration in a program administered by the Department of Materials Science and Engineering
Antirequisite: CHEM 2I03, 2II3, 3II3, 3Q03

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: One of CHEM 2AA3, CHEM BIO 2A03, 2AA3
Antirequisite: CHEM 3A03

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 2I03 and one of CHEM 2BB3, 2E03, 2OB3; or registration in Level III or IV of a Chemical Engineering program

CHEM 3II3 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 1AA3
Antirequisite: CHEM 3Q03, 2WW2

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

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

CHEM 3OA3 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: One of CHEM 2OB3, 2OD3, CHEM BIO 2OB3
Antirequisite: CHEM 3D03, CHEM 3F03
May be offered in alternate years.
Offered in 2009-2010.

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 3BA3

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, 3ZZ3
May be offered in alternate years.
Offered in 2010-2011.

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 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
Last offered in 2008-2009.

CHEM 4AA3 RECENT ADVANCES IN ANALYTICAL CHEMISTRY
Recent advances in analytical chemistry will include an introduction to chemometrics and multivariate analysis, as well as new developments in separation science and mass spectrometry.
Three lectures; one term
Prerequisite: CHEM 3AA3
Antirequisite: CHEM 4P03
May be offered in alternate years.
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 3BA3
Last offered in 2009-2010.

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 4DD3 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 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, Mössbauer and vibrational spectroscopy are covered. Inquiry directed problems and topics illustrate applications in contemporary inorganic chemistry.
Three lectures, one tutorial; one term
Prerequisite: CHEM 2II3, 3II3
Antirequisite: CHEM 4S03
May be offered in alternate years.
Offered in 2009-2010.

CHEM 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, metallodrugs, and radiopharmaceuticals.
Three lectures, one tutorial; one term
Prerequisite: CHEM 3II3
May be offered in alternate years.
First offered in 2010-2011.

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 2II3, 3II3
Antirequisite: CHEM 4C03
May be offered in alternate years.
Offered in 2009-2010.

CHEM 4II3 TRANSITION METAL ORGANOMETALLIC CHEMISTRY AND CATALYSIS
Organometallic complexes and their reactivity, with a view towards catalyst design. An inquiry project is included.
Three lectures, one tutorial; one term
Prerequisite: CHEM 2II3, 3II3
Antirequisite: CHEM 3P03
May be offered in alternate years.
First offered in 2010-2011.

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: CHEM BIO 3OA3
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, CHEM BIO 2OB3
Antirequisite: CHEM 4PP3
May be offered in alternate years.
Offered in 2009-2010.

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 2PD3, 3PA3
May be offered in alternate years.

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 3PA3
May be offered in alternate years.
First offered in 2010-2011.

CHINESE

(SEE LINGUISTICS AND LANGUAGES, CHINESE)

CIVIL ENGINEERING {120}

WEB ADDRESS: http://www.eng.mcmaster.ca/civil/
John Hodgins Engineering Building, Room 301
Ext. 24287 or 24315

Faculty as of January 15, 2009

Chair

A. Ghani Razaqpur

Professors

Brian Baetz/B.A.Sc., M.A.Sc. *(Toronto)*, Ph.D. *(Duke)*, P.Eng.
Samir E. Chidiac/B.Eng., M. Eng., Ph.D. *(McMaster)*, P.Eng.

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 Pietruszczak/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
K.S. Sivakumaran/B.Sc. *(Sri Lanka)*, M.Eng. *(Asian Inst. Tech.)*, Ph.D. *(Calgary)*, P.Eng.
Dieter Stolle/B.Eng., M.Eng., Ph.D. *(McMaster)*, P.Eng.
Ioannis K. Tsanis/Dip.Civ.Eng. *(Aristoteles, Thessaloniki)*, M.A.Sc., Ph.D. *(Toronto)*, P.Eng.
John C. Wilson/B.Eng., M.Eng. *(McMaster)*, Ph.D. *(Caltech)*, P.Eng.

Associate Professors

Paulin Coulibaly/B.A.Sc., M.A.Sc. *(Nice)*, Ph.D. *(Laval)*, P.Eng.
Sarah Dickson/B.A.Sc., Ph.D. *(Waterloo)*, P.Eng.
Peijun Guo/B.Sc., M.Sc., Ph.D. *(SWJTU)*, Ph.D. *(Calgary)*, P.Eng.
Yiping Guo/B.Sc. *(Zhejiang)*, M.A.Sc., Ph.D. *(Toronto)*, P.Eng.
Michael J. Tait/B.E.Sc., Ph.D. *(Western Ontario)*, P.Eng.

Assistant Professor

Wael El-Dakhakhni/B.Sc. *(Ain Shams)*, M.Sc., Ph.D. *(Drexel)*, P.Eng., Martini, Mascarin and George Chair in Masonry Design

Adjunct Professors

John Emery/B.Sc., Ph.D. *(British Columbia)*, P.Eng.
Dean Inglis/B.Eng., Ph.D. *(McMaster)*
Syed Moin/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 noncircular and thin-walled sections; unsymmetric bending and eccentric axial loading, shear stresses and unsymmetric loading of thin-walled members; transformation of stress and strain; 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 ENGINEER 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 hydrologic 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: EARTH SC 3U03, ENVIR SC 3U03, GEO 3U03

CIV ENG 2O04 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; and credit or registration in MATH 2M06 (or 2M03 and 2MM3) or both MATH 2Z03 and 2ZZ3

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: ENGINEER 2Q04, MECH ENG 2Q03, 2Q04, 2QR4

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, 2O04

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
Corequisite: 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; first 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 3GR3.

CIV ENG 3GR3 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 states 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 2O04; 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); second 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 3SR3

CIV ENG 3SR3 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 3U03 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, flocculation, 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 4HH3 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
Antirequisite: CIV ENG 4H03, GEO 4D03
Crosslist: GEOG 4LT3
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 4S04

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. The hours assigned can be scheduled to suit a particular project and may include computation classes, laboratory work, discussion or individual study. Offered overseas as part of the Study Abroad Program.
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

CIVIL 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, 2009

Chair

Michele G. George

Professor

Paul Murgatroyd/B.A., M.A. *(Cambridge)*, Ph.D. *(London)*

Associate Professors

Claude Eilers/B.A. *(Saskatchewan)*, M.A. *(McMaster)*, D.Phil. *(Oxford)*
Michele G. George/B.A. *(Toronto)*, M.A., Ph.D. *(McMaster)*
Evan Haley/A.B. *(Dartmouth)*, Ph.D. *(Columbia)*

Assistant Professors

Sean Corner/B.A., M.A. *(Oxford)*, Ph.D. *(Princeton)*
Daniel McLean/B.A. *(S. Carolina)*, Ph.D. *(Pennsylvania)*
Spencer Pope/B.A. *(Middlebury College)*, Ph.D. *(Brown)*

Department Note:

The following courses are available as electives to qualified students in any program:

a) **Classical Archaeology and Art History**
CLASSICS 1A03, 2B03, 2C03, 3B03, 3G03, 3H03, 3Q03, 3S03

b) **Ancient History and Society**
CLASSICS 2K03, 2LA3, 2LB3, 2LC3, 2LD3, 3EE3, 3HH3, 3M03, 3X03

c) **Ancient Philosophy**
CLASSICS 2P06, 4K03

d) **Classical Literature in Translation**
CLASSICS 2D03, 2E03, 2Y03, 2YY3, 3EE3, 3I03, 3M03, 3YY3, 3Z03

e) **Greek Language and Literature**
GREEK 1Z03, 1ZZ3, 2A03, 2AA3, 3A03, 3B03, 4AA3, 4B03, 4BB3

f) **Latin Language and Literature**
LATIN 1Z03, 1ZZ3, 2A03, 2AA3, 3A03, 3B03, 4AA3, 4B03, 4BB3

CLASSICS {130} ...

No language other than English is required for courses listed under Classics.

Courses *If no prerequisite is listed, the course is open.*

CLASSICS 1A03 INTRODUCTION TO CLASSICAL ARCHAEOLOGY
A study of the history and methodology of Greek and Roman archaeology illustrated with materials 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, beginning with the heroes and heroines of the Trojan War. Texts such as Homer, Virgil and tragedies 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, 1LL3, HISTORY 1L03, 1LL3
Crosslist: HISTORY 1M03

CLASSICS 2B03 ANCIENT ART I
The architecture, sculpture and painting of the Greek and Hellenistic world.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: ART HIST 2B03

CLASSICS 2C03 ANCIENT ART II
The architecture, sculpture, and painting of the Roman world.
Three lectures; one term
Prerequisite: CLASSICS 2B03
Crosslist: 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 Virgil.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: COMP LIT 2M03

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
Antirequisite: CMST 2Y03
Crosslist: THTR&FLM 2G03

CLASSICS 2K03 THE SOCIETY OF GREECE AND ROME
An examination 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
Crosslist: HISTORY 2K03

CLASSICS 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.
Three lectures; one term
Prerequisite: CLASSICS 1M03 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2L03, HISTORY 2L03
Crosslist: HISTORY 2LA3
Alternates with CLASSICS 2LC3.

CLASSICS 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.
Three lectures; one term
Prerequisite: CLASSICS 2LA3 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2L03, 3LL3, HISTORY 2L03, 3LL3
Crosslist: HISTORY 2LB3
Alternates with CLASSICS 2LD3.

CLASSICS 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.
Three lectures; one term
Prerequisite: CLASSICS 1M03 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2LL3, HISTORY 2LL3
Crosslist: HISTORY 2LC3
Alternates with CLASSICS 2LA3.

CLASSICS 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.
Three lectures; one term
Prerequisite: CLASSICS 2LC3 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2LL3, HISTORY 2LL3
Crosslist: HISTORY 2LD3
Alternates with CLASSICS 2LB3.

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
Crosslist: PHILOS 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
Antirequisite: CLASSICS 2H03
Crosslist: COMP LIT 2Y03
Offered in alternate years.

CLASSICS 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
Crosslist: COMP LIT 2YY3
Offered in alternate years.

CLASSICS 3B03 TOPICS IN CLASSICAL ARCHAEOLOGY
Studies of Classical material culture and archaeological sites.
Three lectures; one term
Prerequisite: Six units from CLASSICS 1A03, 2B03, 2C03 or registration in Level III or above of a program in Classics
CLASSICS 3B03 may be repeated, if on a different topic, to a total of six units.
Offered on an irregular rotation basis.

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
Crosslist: 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
Crosslist: 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
Crosslist: ART HIST 3H03
Alternates with CLASSICS 3G03.

CLASSICS 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 CLASSICS 2K03, 2LC3, 2LD3, 2LL3, or registration in Level III or above of a program in Classics
Crosslist: HISTORY 3HH3
Not open to students with credit in CLASSICS 3MM3 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 Classics
Crosslist: 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, or registration in Level III or above of a program in Classics
Crosslist: 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
Crosslist: 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
Crosslist: 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 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 CLASSICS 2K03, 2LC3, 2LD3, 2LL3 or registration in Level III or above of a program in Classics
Crosslist: HISTORY 3X03
Offered in alternate years.

CLASSICS 3YY3 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
Crosslist: COMP LIT 3YY3
Offered in alternate years.

CLASSICS 3Z03 SATIRE
A study of Greek and especially Roman satirical writing in translation, with a stress on attack, entertainment and preaching.
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
Crosslist: COMP LIT 3Z03
Not open to students with credit in CLASSICS 3I03 or COMP LIT 3I03 if the topic was SATIRE.
Offered in alternate years

CLASSICS 4B03 SEMINAR IN CLASSICAL ARCHAEOLOGY
Consult the Department concerning the topic to be offered.
Seminar (two hours); one term
Prerequisite: Six units from CLASSICS 1A03, 2C03, 3Q03, 3S03 and registration in Level III or above of an Honours program in Classics
CLASSICS 4B03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4BB3 SEMINAR IN ANCIENT ART
Consult the Department concerning the topic to be offered.
Seminar (two hours); one term
Prerequisite: CLASSICS 2B03, 2C03 and registration in Level III or above of an Honours program in Classics
Crosslist: ART HIST 4BB3
CLASSICS 4BB3 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, 3HH3, 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.

CLASSICS 4K03 ANCIENT PHILOSOPHY
A critical study of one or more ancient Greek philosophers such as Parmenides, Plato, Aristotle.
Seminar (two hours); one term
Prerequisite: CLASSICS 2P06 and registration in Level III or above
Crosslist: PHILOS 4K03
Offered in alternate years.
This course is administered by the Department of Philosophy.

CLASSICS 4T03 INDEPENDENT STUDY
Reading and research in Classics, supervised by a department member and culminating in a major paper to be evaluated by the supervisor, with confirmation by a second reader. See Department for more detailed guidelines.
Tutorials; two terms
Prerequisite: Registration in Level IV of any Honours program in Classics with a Cumulative Average of at least 9.5, and permission of the Department

GREEK {270} ...

Notes:

1. Students should note that the Department has classified its Greek language courses under the following categories:
   Introductory Level Language Courses
   GREEK 1Z03, 1ZZ3
   Intermediate Level Language Courses
   GREEK 2A03, 2AA3
2. Students with Grade 12 Greek U should normally register in GREEK 2A03, but with special permission, may register in either GREEK 1Z03 or 1ZZ3.

Courses *If no prerequisite is listed, the course is open.*

GREEK 1Z03 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 1ZZ3 BEGINNER'S INTENSIVE ANCIENT GREEK II
This course continues the study of the grammar of Ancient Greek begun in Greek 1Z03.
Four hours (lectures and tutorials); one term
Prerequisite: GREEK 1Z03. 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 1Z03 and 1ZZ3 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 1ZZ3 with a grade of at least C-. Students using this course as a Humanities I requirement will register for GREEK 2A03 and 2AA3

GREEK 2AA3 INTERMEDIATE GREEK II
A study of selected passages from Greek authors designed to develop 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 3AA3 GREEK PROSE
Selected readings in one or more Greek prose authors.
Three lectures; one term
Prerequisite: Six units of Level II Greek
Antirequisite: GREEK 4AA3
GREEK 3AA3 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
Offered in alternate years.
GREEK 3B03 may be repeated, if on a different author/work, to a total of six units.

GREEK 3BB3 TOPICS IN GREEK LITERATURE
Consult the Department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Level II Greek
Antirequisite: GREEK 4BB3
GREEK 3BB3 may be repeated, if on a different topic, to a total of six units.

GREEK 3C03 GREEK DRAMA
Selected readings from Greek tragedy and/or comedy.
Three lectures; one term
Prerequisite: Six units of Level II Greek
Antirequisite: GREEK 4B03
Offered in alternate years.
GREEK 3C03 may be repeated, if on a different author/work, to a total of six units.

GREEK 4T03 INDEPENDENT STUDY IN GREEK
Selected readings from Greek authors supervised by a member of the Department.
Tutorials; one term
Prerequisite: Six units of Level II Greek and registration in Level III or IV of any Honours program in Classics, and permission of the Department
Antirequisite: GREEK 4K03
GREEK 4T03 may be repeated, if on a different topic, to a total of six units.

LATIN {310} ...

Notes:

1. Students should note that the Department has classified its Latin language courses under the following categories:
   Introductory Level Language Courses
   LATIN 1Z03, 1ZZ3
   Intermediate Level Language Courses
   LATIN 2A03, 2AA3
2. Students with Grade 12 Latin U should normally register in LATIN 2A03, but with special permission, may register in either LATIN 1Z03, 1ZZ3.

Courses *If no prerequisite is listed, the course is open.*

LATIN 1Z03 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 1ZZ3 BEGINNER'S INTENSIVE LATIN II
This course continues the study of Latin grammar begun in LATIN 1Z03.
Four hours (lectures and tutorials); one term
Prerequisite: LATIN 1Z03. 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 1Z03 and 1ZZ3 and introduces students to the reading of simple passages from Latin authors.
Three lectures; one term
Prerequisite: Grade 12 Latin U; or LATIN 1ZZ3 with a grade of at least C-. Students using this course as a Humanities I requirement will register for LATIN 2A03 and 2AA3.

LATIN 2AA3 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 3AA3 LATIN PROSE
Selected readings in one or more Latin prose authors.
Three lectures; one term
Prerequisite: Six units of Level II Latin
Antirequisite: LATIN 4AA3
LATIN 3AA3 may be repeated, if on a different author/work, to a total of six units.

LATIN 3B03 LATIN EPIC
Readings from Virgil, and/or other epic authors.
Three lectures; one term
Prerequisite: LATIN 2A03, 2AA3
Offered in alternate years.
LATIN 3B03 may be repeated, if on a different author/work, to a total of six units.

LATIN 3BB3 TOPICS IN LATIN LITERATURE
Consult the Department for the topic to be offered.
Three lectures; one term
Prerequisite: Six units of Level II Latin
Antirequisite: LATIN 4BB3
LATIN 3BB3 may be repeated, if on a different topic, to a total of six units.

LATIN 3C03 LATIN LOVE POETRY
Readings in Latin Love Poetry.
Three lectures; one term
Prerequisite: LATIN 2A03, 2AA3
Antirequisite: LATIN 4B03
Offered in alternate years.
LATIN 3C03 may be repeated, if on a different author/work, to a total of six units.

LATIN 4T03 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.
Antirequisite: LATIN 4K03
LATIN 4T03 may be repeated, if on a different topic, to a total of six units.

COLLAB

(SEE NURSING, NURSING CONSORTIUM (A) (FORMERLY (D)) STREAM)

COMMERCE {140}

WEB ADDRESS: http://www.degroote.mcmaster.ca/
DeGroote School of Business, Room 104
Ext. 24433

Faculty as of January 15, 2009

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
John Medcof

Chair, Information Systems Area
Khaled Hassanein

Chair, Operations Management Area
Prakash Abad

Professors

Prakash L. Abad/B.Tech. *(Indian Institute of Technology)*, M.S., M.B.A., Ph.D. *(Cincinnati)*/(Management Science)
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)
Trevor W. Chamberlain/B.Sc. *(California-Berkeley)*, M.B.A. *(McGill)*, Ph.D. *(Toronto)*, C.A./(Finance)/Chair, Finance and Business Economics Area
Y.C. Lilian Chan/B.B.A. *(Chinese University of Hong Kong)*, Ph.D. *(Virginia Polytechnic)* C.M.A., F.C.M.A./(Accounting)/Chair, Accounting and Financial Management Services Area

M.W. Luke Chan/B.Sc. *(Prince Edward Island)*, M.A., Ph.D. *(McMaster)*/(Finance and Business Economics)/Associate Vice-President (International Affairs)
C. Sherman Cheung/B.S. (*Louisiana State*), M.S., Ph.D. (*Illinois*)/(Finance and Business Economics)
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
Clarence C.Y. Kwan/Ph.D. *(Ottawa)*, M.B.A. *(McMaster)*, Ph.D. *(Toronto)*, P.Eng./(Finance)
John W. Medcof/B.A. *(New Brunswick)*, M.A., Ph.D. *(Toronto)*/(Organizational Behaviour)/Chair, Human Resources and Management Area
Ali R. Montazemi/H.N.D. *(Teesside 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 Nainar/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)
Toru Yoshikawa/B. Law. *(Meiji)*, M.A. *(Western Michigan)*, M.A. *(Toronto)*, Ph.D. *(York)*/(Marketing and International Business)
Yufei Yuan/B.S. *(Fudan)*, Ph.D. *(Michigan)*/(Information Systems)
Isik U. Zeytinoglu/B.A., M.A. *(Bogazici)*, M.S., Ph.D. *(Pennsylvania)*/(Management and Industrial Relations)

Associate Professors

Nick Bontis/B.A., Ph.D. *(Western Ontario)*/(Business Policy)/Director, Undergraduate Programs
Narat Charupat/B.A. *(Thammasat)*, M.B.A. *(Drexel)*, Ph.D. *(York)*/(Finance)
Catherine Connelly/B.Com. *(McMaster)*, M.Sc., Ph.D. *(Queen's)*/(Organizational Behaviour)
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, MeRC/Chair, Information Systems
Elkafi 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)
Manish Kacker, B.A. *(Delhi)*, P.G.D.M. (M.B.A.) *(India Institute of Management)*, Ph.D. *(Northwestern)*/(Strategic Market Leadership and Health Services Management)/AIC Professor in Strategic Business Studies
Kiridaran Kanagaretnam/B.Sc *(Peradeniya)*, M.S.E.E. *(Purdue)*, Ph.D. *(Syracuse)*, C.M.A./(Accounting)
Rosemary Luo/B.Eng. (Business) *(Beijing)*, M.A. *(McMaster)*, Ph.D. *(Western Ontario)*/(Finance)
Susan McCracken/B.Com. (Queen's), Ph.D.*(Waterloo)*, C.A./(Accounting and Financial Management Services)
Peter Miu/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)
Glen Randall/B.A., M.A., M.B.A. *(McMaster)*, Ph.D. *(Toronto)*/(Business Policy)
Jiaping Qiu/B.A. *(Xiamen)*, M.Sc. (Hong Kong University of Science and Technology), Ph.D. *(Toronto)*/(Finance)
Sourav Ray/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)
Kevin Tasa/B.Com. *(Saskatchewan)*, M.Sc., Ph.D. *(Toronto)*/(Human Resource Management)/Director, M.B.A. Program
D. Wayne Taylor/B.A. *(Toronto)*, M.P.A., Ph.D. *(York)*/(Business and Public Policy)
Willi Wiesner/B.A. *(Wilfrid Laurier)*, M.A.Sc., Ph.D. *(Waterloo)*/(Human Resources)

Assistant Professors

Anna Danielova/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)
Horng-Tzu Hao/B.B.A. *(Tamkang)*, M.B.A. (SUNY-Buffalo)/(Accounting)
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)
Mandeep Malik/B.A. *(Panjab)*, M.A. *(Canberra)*/(Marketing)
Teal McAteer/B.Comm. *(Queen's)*, M.I.R., Ph.D. *(Toronto)*/(Human Resources and Management)
Emad Mohammad/B.A. *(Kuwait)*, M.B.A., Ph.D. *(Georgia State)*/(Accounting)
Marvin G. Ryder/B.A., B.Sc. *(Carleton)*, M.B.A. *(McMaster)*/(Marketing and Business Policy)
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
Ruhai Wu/B.A., M.S. *(Tsinghua)*, M.S., Ph.D. *(Texas)*/Strategic Market Leadership and Health Services Management
Honglin Zhu/B.A. *(Peking)*, Ph.D. *(Singapore)*/Strategic Market Leadership and Health Services Management

Industry Professor

Paul K. Bates/C.M.A.,(Financial Management Services)/Dean

Lecturers

Rita Cossa/H.B.B.A. *(Wilfrid Laurier)*, M.B.A. *(McMaster)*/(Marketing)
Kevin Hill/B.B.A.(*New Brunswick*), M.Sc.(*Concordia*)/(Human Resources and Management)
Tiina Salisbury/B.Com., M.B.A. *(McMaster)*/(Management Science and Information Systems)
Eckhard Schumann/B.Comm. *(Johnnesburg)*, C.A./(Forensic and Investigative Accounting)
Linda Stockton/M.B.A. *(McMaster)*/(Marketing and International Business)
Peter Vilks/B.Sc.E.E. *(Suny-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, 2BC3 (or 3BC3), 2FA3, 2KA3, 2MA3 (or 2QB3), 2QA3, 3FA3, 3MC3. 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.
3. The Commerce courses for the Minor in Finance, the Minor in Accounting and Financial Management Services and the Minor in Information Systems are open to students admitted to the Minor. Please take note that all prerequisites for these courses must also be satisfied. Students taking COMMERCE 2AA3 and 2FA3 as Minor in Accounting or Minor in Accounting and Financial Management Services courses will also be required to have obtained a minimum grade of B- in ECONOMICS 1A06 or an average of at least 7.0 in ECON 1B03 and 1BB3 as a prerequisite.
4. 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 maxi-

mum of 18 units), space permitting excluding COMMERCE 4AG3*, 4AH3*, 4AI3*, with the permission of the Academic Programs Office. (See the *Admission Requirements* section of this Calendar under the heading *Continuing Students*.)

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

Other than those graduates specified above, Commerce courses are not open to Continuing Students.

5. Level II and Level III Commerce courses are generally scheduled for three one-hour lectures per week; one term. Level IV Commerce courses are generally scheduled for two lectures per week (a two-hour lecture and a one-hour lecture); one term.
6. **Level IV Commerce requirements: the six units of Level III or IV Commerce courses noted in the *School of Business* section of this Calendar can only be taken by Level IV Commerce students in their final year.**
7. COMMERCE 2SB3 is not a mandatory non-Commerce elective for the Commerce programs.

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 and technological - 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 online 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 one of ECON 1A06, 1B03, 2G03, 2X03, and registration in any four or five-level non-Commerce program. (See *Note 2* above.)

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. (See *Note 2* above.)

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. (See *Note 2* above.)
Antirequisite: KINESIOL 3L03

COMMERCE 2BC3 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. (See *Note 2* above.)
Antirequisite: COMMERCE 3BA3, 3BB3, 3BC3

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. Students in a four- or five-level non-Commerce program must have at least B- in one of ECON 1A06, 1B03, 2G03, 2X03. (See *Note 2* above.)
Not open to students with credit or registration in ECON 2I03.

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 1BA3, 1MA3, 1MC3, 1SA3, 1TA3, ENGINEER 1D04, MMEDIA 1A03; and registration in any Commerce or four or five-level non-Commerce program or non-Engineering and Management program. (See *Note 2* above.)
Antirequisite: COMMERCE 2QB3, 3QB3

COMMERCE 2MA3 INTRODUCTION TO MARKETING
This course introduces the conceptual underpinnings and operational facets of marketing with a primarily consumer (as opposed to industrial) focus.
Prerequisite: ECON 1A06 or 1B03 and registration in any Commerce, Engineering and Management or Honours Business Informatics program; or a grade of at least B- in one of ECON 1A06, 1B03, 2G03, 2X03, and registration in any four or five-level non-Commerce program. (See *Note 2* above.)

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. (See *Note 2* above.)
Antirequisite: ECON 2B03, ELEC ENG 3TQ4, ENG PHYS 3W04, HTH SCI 1F03, 2A03, NURSING 2R03, 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 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. (See *Note 7* above.)
Crosslist: 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 3AB3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)
Antirequisite: COMMERCE 4AB3

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 2I03; and registration in any Commerce, Engineering and Management, Honours Business Informatics or four or five-level non-Commerce program. (See *Note 2* above.)

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 2I03; 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 2MA3 but is more applied in nature and covers the 4 P's in greater depth. It also has a heavier industrial and service sector component, and relies more on practical, real world cases. A major field project (student teams working with companies) is a critical part of the course.
Prerequisite: COMMERCE 2MA3 and registration in any Commerce, Engineering and Management or four or five-level non-Commerce program. (See *Note 2* above.)

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 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

COMMERCE 3QC3 PRODUCTION/OPERATIONS MANAGEMENT
An introduction to the production/operations function with emphasis on the use of quantitative analysis to assist decision-making. Topics include: layout of facilities, aggregate planning, scheduling, inventory control and quality control.
Prerequisite: COMMERCE 3QA3 and registration in any Commerce program
Antirequisite: COMMERCE 4QA3, MECH ENG 4C03

COMMERCE 3S03 MANAGEMENT SKILLS DEVELOPMENT
The purpose of this course is to provide the necessary cognitive and behavioural skills that students need to develop themselves as competent managers through the acquisition and practice of personal, interpersonal, and group skills.
Prerequisite: Commerce 2BC3 (or 3BC3) and registration in any Commerce program
Antirequisite: COMMERCE 2S03
First offered in 2010-2011.
Please see Programs in the DeGroote School of Business section of this Calendar.

COMMERCE 4AA3 MANAGERIAL ACCOUNTING II
A consideration of advanced topics in management planning and control including cost behaviour determination, production planning, innovation in costing, cost allocations, variance analysis and performance evaluation for responsibility centres.
Prerequisite: COMMERCE 2AB3 (or 3AA3); and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4AC3 FINANCIAL ACCOUNTING IV
An advanced accounting course considering specific problems of accounting for the corporate entity, such as, business combinations, intercorporate investments, consolidated financial statements, accounting for foreign operations and foreign currency transactions, segment reporting.
Prerequisite: Credit or registration in COMMERCE 3AC3 (or 4AB3); and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4AD3 INTRODUCTION TO AUDITING
An examination of the attest function in accounting including ethical, legal, and statutory influences in the development of auditing standards. Control structure and audit evidence will be examined.
Prerequisite: COMMERCE 3AB3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4AE3 ACCOUNTING INFORMATION SYSTEMS
This course emphasizes the understanding of the roles of accounting information and information technology in managerial decision-making, operational support, stewardship, and organizational competitiveness. Applications of concepts will be emphasized.
Prerequisite: COMMERCE 3AB3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4AF3 ACCOUNTING THEORY
A review of accounting theory as a background for applying underlying concepts to current accounting problems. The course emphasizes current literature.
Prerequisite: Credit or registration in COMMERCE 3AC3 (or 4AB3); and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4AX3 SPECIAL TOPICS IN ACCOUNTING
Various topics in Accounting are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.
For information on course offerings, please refer to the School of Business web site at http://www.degroote.mcmaster.ca/UG/register.html or contact the Academic Programs Office, DSB 104.
Prerequisite: Announced at the time of offering
COMMERCE 4AX3 may be repeated, if on a different topic, to a total of six units.

COMMERCE 4BB3 PERSONNEL SELECTION
This course exposes students to staffing issues in the Canadian context. Topics include job analysis, methods of recruitment and selection, human rights legislation and decision-making strategies.
Prerequisite: COMMERCE 2BC3 (or 3BC3), 3BB3; and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4BC3 COLLECTIVE BARGAINING
A survey of the nature, determinants, and impact of collective bargaining in Canada. Both the procedural and substantive aspects of collective bargaining will be studied.
Prerequisite: One of COMMERCE 2BC3 (or 3BC3), LABR ST 2A03 or 2A06; and registration in any Commerce, Engineering and Management or Labour Studies program. (B.Com. students - see *Note 6* above.)

COMMERCE 4BD3 SETTLEMENT OF INDUSTRIAL DISPUTES
The nature and the role of industrial conflict as well as the techniques which have been developed to control the incidence of conflict in union-management situations.
Prerequisite: One of COMMERCE 2BC3 (or 3BC3), LABR ST 2A03 or 2A06; and registration in any Commerce, Engineering and Management or Labour Studies program. COMMERCE 4BC3 is recommended. (B.Com. students - see *Note 6* above.)

COMMERCE 4BE3 COMPENSATION/REWARD SYSTEMS
Key issues in designing effective pay systems are discussed. Topics include: job evaluation, market pay surveys, pay structures, performance incentives, knowledge pay and employee benefits.
Prerequisite: COMMERCE 2BC3 (or 3BC3) or 3BB3; and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4BF3 LABOUR LAW AND POLICY
An analysis of the concepts and fundamentals of Canadian labour law and analysis of Canadian labour policy.
Prerequisite: COMMERCE 2BC3 (or 3BC3); and registration in any Commerce or Engineering and Management program. Subject to space availability. (B.Com. students - see *Note 6* above.)
Crosslist: LABR ST 3C03
This course is administered by Labour Studies.

COMMERCE 4BG3 PUBLIC SECTOR COLLECTIVE BARGAINING
This course examines unionization and collective bargaining for employees in the public sector. Topics include: bargaining issues, bargaining outcomes and impasse resolution.
Prerequisite: COMMERCE 2BC3 (or 3BC3); and registration in any Commerce or Engineering and Management program. Subject to space availability. (B.Com. students - see *Note 6* above.)
Crosslist: LABR ST 4C03

COMMERCE 4BI3 TRAINING AND DEVELOPMENT
This course provides a framework for establishing, revising and examining training programs in organizations. Topics include: needs assessment, development of training objectives, planning and delivery of instruction, learning principles and evaluation of training.
Prerequisite: COMMERCE 2BC3 (or 3BC3) or 3BB3; and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4BK3 THE MANAGEMENT OF TECHNOLOGY
An introduction to the innovative management of technology including the integration of the firm and technology strategy, external sourcing of technology and the internationalization of technology management.
Prerequisite: COMMERCE 2BA3; and registration in any Commerce, Engineering and Management or Honours Business Informatics program. (B.Com. students - see *Note 6* above.)
Not open to students with credit in COMMERCE 4BX3, if taken in January 1998 or 1999.

COMMERCE 4BL3 OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT
This course enhances students' knowledge on managing occupational health and safety, teaches research skills, and assists students in developing strategies for creating healthy workplaces.
Prerequisite: COMMERCE 2BC3 (or 3BC3) 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 4BX3, if the topic was Occupational Health and Safety (2004-2005).

COMMERCE 4BM3 STRATEGIC HUMAN RESOURCE PLANNING
This course provides an understanding of the essential elements of Human Resource Planning processes in organizations. Students will acquire knowledge in analyzing, assessing and programming for human resource requirements of the organizational business plans and strategies.
Prerequisite: COMMERCE 2BC3 (or 3BC3) 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 4BX3, if the topic was Strategic Human Resource Planning (2004-2005 and 2005-2006).

COMMERCE 4FA3 APPLIED CORPORATE FINANCE
This course examines the application of financial theory to a variety of problems in corporate finance. The appropriate use of valuation principles and techniques, and the design of corporate strategies intended to create shareholder wealth, are considered.
Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4FD3 FINANCIAL INSTITUTIONS
This course examines, from a managerial perspective, the major types of financial institutions in Canada: chartered banks, trust companies, insurance companies, investment banks and other institutional investors.
Prerequisite: COMMERCE 3FA3 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 finance policy. Topics covered include rational investment decisions, asset pricing, efficient markets, financial decisions and the role of information in financial decision-making.
Prerequisite: COMMERCE 3FA3 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 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 or ECON 2I03; and registration 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 PERSONAL FINANCIAL PLANNING AND ADVISING
Students will examine financial planning concepts by undertaking a major integrative project. This course is strongly recommended for students working towards the CFP designation.
Prerequisite: COMMERCE 4FL3 or 4FP3 (or 4FX3 if taken in 2004-2005 or 2005-2006); and registration in any Commerce or Engineering and Management program. (B. Com. students - see *Note 6* above.)

COMMERCE 4FN3 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 or ECON 2I03; and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4FQ3 WORKING CAPITAL MANAGEMENT
The course will apply the principles and concepts of financial theory to problems and decisions associated with short-term (working) capital and how it affects firm liquidity, default risk and shareholder wealth.
Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B. Com. students - see *Note 6* above.)

COMMERCE 4FR3 INSURANCE AND RISK MANAGEMENT
The course covers different types of insurance, including life, health and disability, home, property and automobile insurance. Risk management is a life-long process that involves five steps: identification, evaluation, control, financing and monitoring.
Prerequisite: COMMERCE 2FA3 or ECON 2I03; and registration in any Commerce or Engineering and Management program. (B. Com. students - see *Note 6* above.)

COMMERCE 4FS3 PENSION, RETIREMENT AND ESTATE PLANNING
The course examines financial needs at retirement including inflation and taxation. It also examines methods of accessing savings at retirement. Estate planning ensures that assets are distributed with the wishes of the testator and the needs of the beneficiaries.
Prerequisite: COMMERCE 2FA3 or ECON 2I03; and registration in any Commerce or Engineering and Management program. (B. Com. students - see *Note 6* above.)

COMMERCE 4FT3 REAL ESTATE FINANCE AND INVESTMENT
Concepts and techniques introduced in the course include investing, financing, appraising, consulting, managing real estate portfolios, leasing, managing property, analyzing site locations and managing corporate real estate assets.
Prerequisite: COMMERCE 3FA3 and registration in any Commerce or Engineering and Management program. (B. Com. students - see *Note 6* above.)

COMMERCE 4FU3 BEHAVIOURAL FINANCE: THE PSYCHOLOGY OF MARKETS
An introduction to the emerging field of behavioural finance. Psychology and finance are integrated in studying how investors' emotions affect stock prices and markets.
Prerequisite: COMMERCE 3FA3 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.
For information on course offerings, please refer to the School of Business web site at http://www.degroote.mcmaster.ca/UG/register.html or contact the Academic Programs Office, DSB 104.
Prerequisite: Announced at time of offering
COMMERCE 4FX3 may be repeated, if on a different topic, to a total of six units.

COMMERCE 4KD3 DATABASE DESIGN MANAGEMENT AND APPLICATIONS
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 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 2BA3 and registration in any Commerce or Honours Business Informatics 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 or Honours Business Informatics program; or registration in any Engineering and Management program. (B.Com. students - see *Note 6* above.)
Antirequisite: COMMERCE 4QH3

COMMERCE 4KX3 SPECIAL TOPICS IN INFORMATION SYSTEMS
Various topics in information systems are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of course offering.
For information on course offerings, please refer to the School of Business web site at http://www.degroote.mcmaster.ca/UG/register.html or contact the Academic Programs Office, DSB 104.
Prerequisite: Commerce 2KA3 and registration in any Commerce or Engineering and Management program. (B. Com. students - see *Note 6* above.)
COMMERCE 4KX3 may be repeated, if on a different topic, to a total of six units.

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.)

COMMERCE 4MD3 BUSINESS MARKETING
An overview of business marketing including: derived demand, vendor analysis, the multiple buying unit, value analysis, competitive bidding, industrial design, key accounts, and trade shows.
Prerequisite: COMMERCE 3MC3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 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: COMMERCE 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 COMMERCE 4MX3, if the topic was Sales Management.

COMMERCE 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: COMMERCE 3MC3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 4PA3 BUSINESS POLICY: STRATEGIC MANAGEMENT
As the capstone to the program, this case course is designed to unify the student's learning experience by exploring the formulation and implementation of corporate strategy.
Prerequisite: COMMERCE 3MC3; and registration in Level IV of a Commerce program or Level V of an Engineering and Management program

COMMERCE 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, 3J04, 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: COMMERCE 3QC3

COMMERCE 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 COMMERCE 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.

COMMERCE 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: COMMERCE 3QA3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)
Enrolment is limited.

COMMERCE 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: COMMERCE 3MC3; and registration in Level IV of a Commerce program or Level V of any Engineering and Management program
Antirequisite: COMMERCE 4PE3

COMMERCE 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 COMMERCE 3AB3 and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)
Antirequisite: COMMERCE 4PB3

COMMERCE 4SC3 ADVANCED CANADIAN TAXATION
This course continues the study of Canadian federal income taxation with an in-depth coverage of selected provisions of the Income Tax Act pertaining to business activities, particularly the activities of corporations.
Prerequisite: COMMERCE 4SB3 (or 4PB3); and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)
Antirequisite: COMMERCE 4PC3

COMMERCE 4SD3 COMMERCIAL LAW
This course emphasizes those areas of law which are most relevant to business activity. Particular attention is given to the law relating to contracts and business organizations. Other areas of study include: sources of law, the judicial process, real and personal property, torts, agency, credit and negotiable instruments.
Prerequisite: Registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)
Antirequisite: COMMERCE 4PD3

COMMERCE 4SE3 ENTREPRENEURSHIP
The problems and experiences encountered in starting and developing new enterprises will be studied. A cornerstone of the course is the development of a detailed business plan for a local entrepreneur.
Prerequisite: COMMERCE 3FA3; and COMMERCE 3MA3 or 3MC3; and registration in any Commerce or Engineering and Management program. (B.Com. students - see *Note 6* above.)

COMMERCE 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 or Engineering and Management program. (B.Com. students - see *Note 6* above.)
Antirequisite: JAPAN ST 4S03

COMMERCE 4SY3 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 ...

COMMERCE 4AG3 ADVANCED ACCOUNTING TOPICS
This course extends the knowledge base of earlier accounting courses and deals with specific advanced accounting topics, such as the conceptual framework, standard setting, not-for-profit accounting and fiduciary accounting.
Prerequisite: COMMERCE 4AC3, 4AF3; 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.

COMMERCE 4AH3 ADVANCED AUDITING
This course considers a number of advanced topics concerning both the auditor and the audit profession. It builds on the knowledge of the audit task derived in earlier courses as well as on the technical skills and breadth of knowledge obtained in earlier accounting courses.
Prerequisite: COMMERCE 4AC3, 4AD3; 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.

COMMERCE 4AI3 COMPUTER CONTROL AND AUDITING
This course introduces the student to the field of EDP auditing through lectures, readings and hands-on experience with EDP audit software.
Prerequisite: COMMERCE 4AC3, 4AD3; 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, 2009

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)*
Geoffrey Rockwell/B.A. *(Haverford College)*, M.A., Ph.D. *(Toronto)*

Associate Professors

Christina Baade/(Communication Studies and Multimedia; School of the Arts) B.Mus. *(Northwestern)*, M.Mus., Ph.D. *(Wisconsin-Madison)*
Robert S. Hamilton/M.F.A. (S.A.I.C.), M.F.A. *(Jan van Eyck Acadamie)*
Violetta Igneski/*(Communication Studies and Multimedia; Philosophy)* B.A., M.A. *(Western Ontario)*, Ph.D. *(Toronto)*
Andrew Mactavish/B.A. *(Mount Saint Vincent)*, M.A. *(Dalhousie)*, Ph.D. *(Alberta)*
Liss Platt/B.F.A. *(Connecticut)*, M.F.A. *(California-San Diego)*
Alexandre Sévigny/*(Communication Studies and Multimedia; French)* B.A. *(York)*, M.A., Ph.D. *(Toronto)*

Assistant Professors

Christine Quail/(Communication Studies) B.A., M.A. *(Pennsylvania)*, Ph.D. *(Oregon)*
Philip Savage/B.A. *(Carleton)*, M.A. *(Simon Fraser)*, Ph.D. *(York)*
Stéfan Sinclair/B.A. *(British Columbia)*, M.A. *(Victoria)*, Ph.D. *(Queen's)*

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 {165} ...

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
Antirequisite: ANTHROP 2Z03, GEO 2HR3, GEOG 2MA3, GERONTOL 2C03, HEALTHST 2B03, HLTH AGE 2A06, 3Z06, SOCIOL 2Z03

CMST 2B03 QUALITATIVE METHODS IN COMMUNICATIONS RESEARCH
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 2BB3 INTRODUCTION TO CULTURE AND COMMUNICATION
An introduction to 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 2CC3 DEVELOPMENTS IN HUMAN COMMUNICATION: PAST AND PRESENT
A survey of human communication throughout history and across cultures. This course will include discussions of orality and literacy; manuscript, print and electronic media; and human communication through visual images.
Three hours; one term
Prerequisite: Registration in Level II or above of a program in Communication Studies
Antirequisite: CMST 1B03

CMST 2DD3 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 or Multimedia

CMST 2E03 THE NATURE OF TEXTS: FROM SLANG TO FORMAL DISCOURSE
The course will investigate a variety of styles and registers from the conversational to the literary and academic.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: 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
Antirequisite: SOTA 2G03
Crosslist: THTR&FLM 2P03

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
Crosslist: WOMEN ST 2J03

CMST 2I03 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
Crosslist: ART HIST 2A03
This course is administered by the School of the Arts.

CMST 2K03 POLITICAL 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 re-structuring and corporate consolidation.
Three lectures; one term
Prerequisite: Registration in Level II or above of a program in Communication Studies or Multimedia

CMST 2N03 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.
Crosslist: ART HIST 2F03, MMEDIA 2F03

CMST 2O03 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
Crosslist: ART HIST 2H03, PHILOS 2H03
Offered in alternate years.
This course is administered by the Department of Philosophy.

CMST 2P03 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: DRAMA 1A03, 1AA3 (or 1A06); or THTR&FLM 1A03, 1B03
Antirequisite: DRAMA 2D03
Crosslist: COMP LIT 2D03, THTR&FLM 2C03
This course is administered by the School of the Arts.

CMST 2Q03 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
Crosslist: MUSIC 2A03
Offered in alternate years.
This course is administered by the School of the Arts.

CMST 2R03 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
Antirequisite: MUSIC 2AA3
Crosslist: MUSIC 2II3
This course is administered by the School of the Arts.

CMST 2S03 NEW MEDIA AND PERFORMANCE
This course will explore critical issues in new media and examine the ways in which new media shape the creation, 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 Theatre and Film Studies or Communication Studies or Multimedia
Antirequisite: DRAMA 2B03
Crosslist: THTR&FLM 2E03
This course is administered by the School of the Arts.

CMST 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
Crosslist: MUSIC 2F03, THTR&FLM 2T03
This course is administered by the School of the Arts.

CMST 3AA3 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 3B03 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 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 visual modalities such as film, video, television, advertising, et cetera.
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, 2I03, THTR&FLM 1B03 or both WOMEN ST 1A03 and 1AA3 (or 1A06)
Crosslist: THTR&FLM 3P03, WOMEN ST 3BB3
This course is administered by Women's Studies.

CMST 3C03 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 program in Communication Studies or Multimedia; or SOCIOL 2L03 and registration in a Sociology program
Crosslist: SOCIOL 3C03
This course is administered by the Department of Sociology.

CMST 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 and Film Studies. Completion of CMST 2X03 or THTR&FLM 2F03 is recommended.
Crosslist: COMP LIT 3L03, CSCT 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
Crosslist: 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
Crosslist: PHILOS 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
Crosslist: 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
Antirequisite: ANTHROP 3X03
Crosslist: LINGUIST 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 3JJ3 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 2I03

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
Crosslist: ART HIST 3L03, THTR&FLM 3I03
Offered in alternate years.
This course is administered by Theatre & Film.

CMST 3MM3 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 III or above
Crosslist: 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
Crosslist: 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 3QQ3 SELECTED TOPICS IN COMMUNICATION STUDIES
Topics of current interest to communication scholars with particular reference to their empirical and analytical relevance. Students should consult the Department regarding the topics covered in any academic year.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above

CMST 3S03 TELEVISION AND SOCIETY
This course will examine television as a socio-cultural and political phenomenon. This course will involve theoretical and empirical analysis of the television industry, production, texts and genres, and audiences. Major debates in television studies will be addressed.
Three hours; one term
Prerequisite: Registration in Level III or above of a program in Communication Studies

CMST 3SS3 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 2F03
Crosslist: 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
Crosslist: SOTA 3B03
This course is administered by the School of the Arts.

CMST 3UU3 INDEPENDENT FILM AND VIDEO
An exploration of artists' film and video produced outside of dominant institutions, including such practises 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 2F03
Crosslist: 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
Antirequisite: ANTHROP 3PL3
Crosslist: LINGUIST 3P03
This 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
Crosslist: 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 9.0

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 4FF3 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. THTR&FLM 2F03 is recommended.
Crosslist: THTR&FLM 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 4G03 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
Antirequisite: ANTHROP 4BL3
Crosslist: LINGUIST 4B03
This course is administered by the Department of Linguistics and Languages.

CMST 4I03 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 (lectures and lab); one term
Prerequisite: LINGUIST 1A03, 1AA3 and six units of Linguistics courses above Level I; or permission of the Department of Linguistics and Languages
Crosslist: LINGUIST 4D03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

CMST 4M03 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 2BB3 and registration in Level IV of a program in Communication Studies

CMST 4N03 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 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, with topic determined by instructor. Topics may include 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, 4Q03 or 4QQ3.

CMST 4QQ3 ADVANCED TOPICS IN COMMUNICATION II
Students will learn about specific areas or aspects of research in communication studies, with topic determined by instructor. Topics may include 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, 4Q03 or 4QQ3.

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
Crosslist: 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 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, 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
Crosslist: LINGUIST 4S03
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 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
Crosslist: LINGUIST 4T03
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.

MULTIMEDIA {294} ...

WEB ADDRESS: http://csmm.humanities.mcmaster.ca/
Togo Salmon Hall, Room 331
Ext. 23488

Courses
If no prerequisite is listed, the course is open.

MMEDIA 1A03 MULTIMEDIA AND DIGITAL SOCIETY
Students will be introduced to the history, theory and design of digital technologies for multimedia. This course is designed to help students better understand and participate in todays digital society.
One lecture (two hours), one tutorial; one term

MMEDIA 1B03 THE DIGITAL IMAGE
An introduction to design and visual communication, with emphasis on creating and critiquing digital images. Students will use photo-imaging and web design software in order to complete design assignments.
One lecture (two hours), one tutorial; one term
Antirequisite: ENGINEER 2GA3, MMEDIA 1BE3

MMEDIA 2A03 DESIGN FUNDAMENTALS
This course develops and explores both technical and conceptual aspects of digital-based design fundamentals. Students will read and apply design criticism, create original works of design and participate in group projects.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program

MMEDIA 2B03 INTRODUCTION TO DIGITAL VIDEO
Introduction to techniques in video production and post-production, with emphasis on camerawork, lighting, sound recording, and digital editing. Readings, screenings and discussions will support the creation and critique of digital video projects.
Three hours (lecture and lab); one term
Prerequisite: Registration in a Multimedia program
Antirequisite: ENGINEER 2GB3, MMEDIA 2BE3

MMEDIA 2E03 VECTOR GRAPHICS
This course explores both technical and conceptual aspects of vector graphics. Students will use computer drawing and illustration tools to create design projects within the context of contemporary design practices.
One lecture (two hours), one tutorial; 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.
Crosslist: ART HIST 2F03, CMST 2N03

MMEDIA 2G03 INTRODUCTION TO DIGITAL AUDIO
Introduction to techniques in sound recording and digital audio editing, focusing on uses of audio in Multimedia projects. Readings, presentations and discussions will support the creation and critique of digital audio.
Three hours (lecture and lab); one term
Prerequisite: Registration in a Multimedia program or registration in Level II or above of a Music program
Crosslist: 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 2K03 INFORMATION TECHNOLOGY CONCEPTS
Students will study essentials in computer architecture and data network services for multimedia. Critical readings and class discussions will include the history of computing, networking and the internet.
One lecture (two hours), one tutorial; one term
Prerequisite: Registration in a Multimedia program
Antirequisite: MMEDIA 2C03, 3G03

MMEDIA 3A03 ADVANCED MULTIMEDIA
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 MULTIMEDIA CRITICISM AND THEORY
Multimedia criticism and theory on a topic to be determined by instructor. Topics may include: Computers and Culture, On-line Social Networking, Immersive Technologies and Contemporary Arts Practice, and Privacy and Surveillance in the Electronic Age.
Three hours; one term
Prerequisite: Registration in Level III or IV of a Multimedia program or a program in Communication Studies

MMEDIA 3C03 ADVANCED DIGITAL AUDIO
This course covers advanced techniques in digital audio creation, editing and delivery within the context of a range of Multimedia practices. Readings and discussions will support the creation and critique of digital audio.
Three hours (lecture and lab); one term
Prerequisite: MMEDIA 2G03 or MUSIC 2Z03
Crosslist: MUSIC 3Z03

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 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: MMEDIA 2H03 and registration in a Multimedia program

MMEDIA 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/critique digital video projects.
Three hours (lecture and lab); one term
Prerequisite: MMEDIA 2B03 and registration in a Multimedia program

MMEDIA 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

MMEDIA 3M03 PROGRAMMING FUNDAMENTALS
This course exposes students to core programming concepts relevant to a wide range of interactive multimedia works. Students will create simple web applications that incorporate server-side scripting and client-side functionality.
Three hours (lecture and lab); one term
Prerequisite: MMEDIA 3A03 and registration in a Multimedia program

MMEDIA 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 5* under the heading Multimedia in the Faculty of Humanities section of the Calendar.)

MMEDIA 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: MMEDIA 4A03 and registration in Level IV of a Multimedia program. (See *Program Note 5* under the heading Multimedia in the Faculty of Humanities section of the Calendar.)

MMEDIA 4F03 TOPICS IN MULTIMEDIA PRODUCTION
Advanced multimedia production in a topic to be determined by instructor. Topics may include: mobile application development, digital game design, autonomic computing, visualization, interactive installation art, video, animation, photography.
Three hours (lecture and lab); one term
Prerequisite: Registration in Level IV of a Multimedia program

MMEDIA 4J03 BUILDING SOCIAL WEB APPLICATIONS
Students will learn to design and build media-rich, social networking web applications with a significant server-side component (including interaction with a database) and an interactive client-side component (using Javascript libraries).
Three hours (lecture and lab); one term
Prerequisite: MMEDIA 3A03, 3M03 and registration in Level IV of a Multimedia program

COMPARATIVE LITERATURE {142}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~complit

The Combined Honours Program in Comparative Literature is being phased out. No new registrants will be accepted after September 2008. Students who entered a program prior to September 2008 should refer to their degree audit or contact an Academic Advisor in the Office of the Dean in the Faculty of Humanities to discuss their program requirements.

Faculty as of January 15, 2009

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 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 2D03 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
Antirequisite: DRAMA 2D03, 2D06
Crosslist: CMST 2P03, THTR&FLM 2C03
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 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, Cultural Studies and Critical Theory or English
Antirequisite: CMST 2M03
Crosslist: CSCT 2M03, ENGLISH 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, 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, Cultural Studies and Critical Theory or English
Antirequisite: CMST 2MM3
Crosslist: CSCT 2MM3, ENGLISH 2MM3
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
Crosslist: 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
Crosslist: RELIG ST 2VV3
This course is administered by the Department of Religious Studies.

COMP LIT 2M03 GREEK AND ROMAN MYTHOLOGY
A study of the myths of Greek and Roman gods and heroes, their explanation according to theories on the nature of myths and their use by Greek and Roman authors particularly Homer and Virgil.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: CLASSICS 2D03
This course is administered by the Department of Classics.

COMP LIT 2S03 SPLIT SCREEN MODERN GERMANY THROUGH CINEMA
This course looks at contemporary German culture and national identity through the most representative West and East German films of the past decades.
Two hours plus one film screening per week; one term
Prerequisite: Registration in Level II or above
Antirequisite: COMP LIT 4J03, GERMAN 4J03, THTR&FLM 4J03
Crosslist: GERMAN 2S03, THTR&FLM 2S03
Offered on an irregular rotation basis.
This course is administered by the Department of Linguistics and Languages.

COMP LIT 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
Antirequisite: CLASSICS 2H03
Crosslist: CLASSICS 2Y03
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
Crosslist: CLASSICS 2YY3
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
Crosslist: CSCT 3AA3, ENGLISH 3AA3, WOMEN ST 3HH3
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3BB3 NORTHROP FRYE 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 3DD3, TOPICS IN LITERARY 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 twentieth-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
Crosslist: 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 a program in Comparative Literature
Crosslist: CSCT 4KK3, ENGLISH 4KK3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

COMP LIT 3G03 EUROPEAN DRAMA
A study of representative plays by major European dramatists from the 18th century to the present.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: ENGLISH 3GG3
This course is administered by the Department of English and Cultural Studies.

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
Crosslist: ENGLISH 3S03
This course is administered by the Department of English and Cultural Studies.

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
Crosslist: 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
Crosslist: ENGLISH 3I06
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 folktale and their implications for our understanding of other literary genres.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: ENGLISH 3F03
This course is administered by the Department of English and Cultural Studies.

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
Crosslist: 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.
Seminar (two hours); one term
Prerequisite: Registration in a program in Comparative Literature
Antirequisite: PEACE ST 3MM3
Crosslist: CSCT 4IP3, ENGLISH 4IP3, PEACE ST 4IP3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

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
Crosslist: CSCT 3Q03, ENGLISH 3Q03
This course is administered by the Department of English and Cultural Studies.

COMP LIT 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, Cultural Studies and Critical Theory or English. COMP LIT 3Q03, CSCT 3Q03 or ENGLISH 3Q03 is recommended.
Crosslist: CSCT 3QQ3, ENGLISH 3QQ3
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
Crosslist: 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 exarnines 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
Crosslist: 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 the major novels by Dostoevsky and Tolstoy.
Three lectures; one term
Prerequisite: Registration in Level II or above

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
Antirequisite: CMST 3TT3, DRAMA 3TT3
Crosslist: THTR&FLM 3QQ3
Offered on an irregular rotation basis.
This course is administered by the School of the Arts.

COMP LIT 3YY3 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
Crosslist: CLASSICS 3YY3
Offered in alternate years.
This course is administered by the Department of Classics.

COMP LIT 3Z03 SATIRE
A study of Greek and especially Roman satirical writing in translation, with a stress on attack, entertainment and preaching.
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
Crosslist: CLASSICS 3Z03
Not open to students with credit in COMP LIT 3I03 or CLASSICS 3I03 if the topic was SATIRE.
Offered in alternate years.
This course is administered by the Department of Classics.

COMP LIT 4A03 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
Crosslist: ENGLISH 4ER3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

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
Antirequisite: PEACE ST 4D03
Crosslist: CSCT 4PR3, ENGLISH 4PR3, PEACE ST 4PR3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

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 4II3 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

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, 2009

Chair

Martin von Mohrenschildt

Professors

Ivan Bruha/Dipl. Ing. *(CVUT, Prague)*, RNDr *(Charles, Prague)*, Ph.D. *(CVUT, Prague)*
William M. Farmer/B.A. *(Notre Dame)*, M.A., M.S., Ph.D. *(Wisconsin-Madison)*, P.Eng.
Frantisek Franek/M.Sc., R.N.Dr. *(Charles, Prague)*, Ph.D. *(Toronto)*
Ryszard Janicki/M.Sc. *(Warsaw)*, Ph.D., D.Hab. *(Polish Acad. Sci.)*
Thomas S.E. Maibaum/B.Sc. *(Toronto)*, Ph.D. *(London)*, F.I.E.E., F.R.S.A., C.Eng., P.Eng.
Sanzheng Qiao/B.S., M.S. *(Shanghai Teacher's College)* M.S., Ph.D. *(Cornell)*
Jeffery I. Zucker/B.Sc. *(Witwatersrand)*, Ph.D. *(Stanford)*

Associate Professors

Christopher Anand/B.Math. *(Waterloo)*, M.Sc., Ph.D. *(McGill)*
Jacques Carette/B.Math. *(Waterloo)*, M.Sc. *(Montreal)*, Ph.D. *(Paris-Sud)*
Antoine Deza/M.Eng. *(Ecole Nationale des Ponts et Chaussées, Paris)*, Ph.D. *(Tokyo Institute of Technology)*, P.Eng.
Douglas G. Down/B.A.Sc., M.A.Sc. *(Toronto)*, Ph.D. *(Illinois-Urbana)*, P.Eng.
Wolfram Kahl/M.Sc. *(Oxford)*, Dr.rer.nat. *(University of the German Armed Forces, Munich)*
George Karakostas/Dipl. Eng. *(Patras)*, M.S.A., Ph.D. *(Princeton)*, P.Eng.
Ridha Khedri/Dipl.Eng. *(Tunis)*, M.Sc., Ph.D. *(Laval)*, P.Eng.
Mark S. Lawford/B.Sc. *(Queen's)*, M.A.Sc., Ph.D. *(Toronto)*, P.Eng.
Ryan Leduc/B.Eng *(Victoria)*, M.A.Sc., Ph.D. *(Toronto)*, P.Eng.
Jan Modersitzki/Dipl.Math., Ph.D. *(Hamburg)*, Hab. *(Lübeck)*
Ned Nedialkov/B.Sc. *(Sophia, Bulgaria)*, M.Sc., Ph.D. *(Toronto)*
W.F. Skipper Poehlman/B.S. *(Niagara)*, B.Sc. *(Brock)*, M.Sc., Ph.D. *(McMaster)*, P.Eng.
Emil Sekerinski/Dipl.Inf., Dr.rer.nat. *(Karlsruhe)*
Spencer Smith/B.Eng.C.S., M.Eng., Ph.D. *(McMaster)*, P.Eng.
Michael Soltys/B.Sc., M.Sc., Ph.D. *(Toronto)*
Martin von Mohrenschildt/Dipl.Math., Dr.Sc.Math. *(ETH-Zürich)*, P.Eng.
Alan Wassyng/B.Sc., B.Sc., M.Sc., Ph.D. *(Witwatersrand)*, P.Eng.

Assistant Professor

Kamran Sartipi/B.Sc., M.Sc. *(Tehran)*, Ph.D. *(Waterloo)*

COMPUTER SCIENCE {145} ...

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 has been phased out.

2. Students wishing to pursue 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 1BA3 INTRODUCTION TO COMPUTING AND COMPUTER USE FOR BUSINESS

Organization of microcomputers and introduction to cornputer 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 1TA3
Not open to students with credit or registration in ISCI 1A24.

COMP SCI 1FC3 MATHEMATICS 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, 1N03, 1X03, 1Z04
Antirequisite: SFWR ENG 2DM3

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: One of MATH 1K03, Grade 12 Advanced Functions and Introductory Calculus U, Grade 12 Calculus and Vectors
Antirequisite: ENGINEER 1D04
Not open to students with credit or registration in 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, 1Z04
Not open to students with credit or registration in 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 1BA3, 1SA3, ENGINEER 1D04
Not open to students with registration in the Faculty of Business or with credit or registration in COMP SCI 1MA3, 1MC3, HUMAN 2E03, ISCI 1A24.

COMP SCI 2C03 DATA STRUCTURES AND ALGORITHMS

Searching, sorting, dynamic programming, greedy algorithms, abstract data structures, balanced trees, hashing, graphs, design principles, complexity, organization of libraries.
Three lectures, one tutorial (one hour); second term
Prerequisite: COMP SCI 1FC3 or SFWR ENG 2DM3; and COMP SCI 2SC3 or SFWR ENG 2S03
Antirequisite: COMP ENG 2SI4, COMP SCI 2MD3, 3DA3, ELEC ENG 2SI4, SFWR ENG 2C03, 2C04

COMP SCI 2CA3 COMPUTER ARCHITECTURE AND ORGANIZATION

Measures of performance, instruction set architecture, computer arithmetic, datapath and control, pipelining, the memory hierarchy, I/O systems, multiprocessor systems, multimedia extensions and graphic processors.
Three lectures, one tutorial (two hours every other week); first term
Prerequisite: COMP SCI 1MD3 or ENGINEER 1D04
Antirequisite: COMP ENG 3DR4, 4DM4, COMP SCI 3MG3, SFWR ENG 3G03, 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 hours (lectures, discussion, group project, seminars); first term
Prerequisite: Registration in Level II or above of Honours Computer Science or Honours Business Informatics
Antirequisite: SFWR ENG 3I03
Not open to students with credit or registration in ISCI 1A24.

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 2DI4, ELEC ENG 2DI4, SFWR ENG 2DA3, 2DA4, 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 2SC3 PRINCIPLES OF PROGRAMMING

Fundamental concepts of imperative programming (procedures, statements, control structures, iteration, recursion, exceptions); basic data structures (references, records, arrays, dynamic structures); basic concepts of operating systems.
Three lectures, one tutorial (one hour); first term
Prerequisite: COMP SCI 1MD3 or ENGINEER 1D04
Antirequisite: COMP ENG 2SH4, SFWR ENG 2S03

COMP SCI 3CN3 COMPUTER NETWORKS AND SECURITY

Physical networks, TCP/IP protocols, switching methods, network layering and components, network services. Information security, computer and network security threats, defense mechanisms, encryption.
Three lectures, one lab (three hours every other week); second term
Prerequisite: Credit or registration in COMP SCI 3MH3 or SFWR ENG 3BB4
Antirequisite: SFWR ENG 4C03

COMP SCI 3DB3 DATA BASES

Data modelling, integrity constraints, principles and design of relational databases, relational algebra, SQL, query processing, transactions, concurrency control, recovery, security and data storage.
Three lectures, one tutorial (one hour); second term
Prerequisite: One of COMP SCI 1FC3, SFWR ENG 2DM3, 2E03
Antirequisite: COMP SCI 4EB3, 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 3GC3 COMPUTER GRAPHICS

Mathematical foundations, the graphics pipeline, geometrical transformations, 3D visualization, clipping, illumination and shading models and the impact of graphics on society.
Three lectures, one tutorial (two hours every other week); first term
Prerequisite: Registration in Honours Computer Science or Honours Business Informatics
Crosslist: SFWR ENG 3GC3

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: Credit or registration in one of COMP SCI 2ME3, SFWR ENG 2AA4, 3K04, 3M04
Antirequisite: COMP ENG 4SN4, 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 2ME3 or 2O03
Antirequisite: SFWR ENG 3E03

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, one tutorial (one hour); first term
Corequisite: Credit or registration in one of COMP SCI 3EA3, SFWR ENG 3A04, 3K04
Antirequisite: COMP SCI 4EF3, SFWR ENG 3R03, 3RA3, 4EF3

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
Design of multi-computer systems for computation-intensive applications and high-reliability applications, including clustering, array processing and supercomputer systems. Application of multi-computer systems to distributed computing problems.
Three lectures, one lab (three hours every other week); second term
Prerequisite: Credit or registration in COMP SCI 3MH3 or SFWR ENG 3BB4. Completion of COMP SCI 3CN3 is recommended.
Antirequisite: SFWR ENG 4F03

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
Crosslist: SFWR ENG 4E03

COMP SCI 4HC3 HUMAN COMPUTER INTERACTION
Design of user interfaces. Principles of good interface design. Human input. Displaying complex data using graphics and virtual reality. Modes and mode awareness problem. Health issues, information overload. Special purpose graphics hardware. Interface design tools; on-line help systems.
Three lectures, one tutorial (one hour); first term
Prerequisite: COMP SCI 3MH3 or SFWR ENG 3BB4
Antirequisite: SFWR ENG 4D03

COMP SCI 4MN3 SCIENTIFIC COMPUTATION
Computer arithmetic, stability, sensitivity. Numerical methods for polynomial manipulation, interpolation, data fitting, integration, differentiation, solving linear and non-linear systems, orginary differential equations and eigenvalue problems.
Three lectures, one tutorial (one hour); first term
Prerequisite: MATH 1ZZ5; or both MATH 1AA3 and 1B03; or both MATH 1H03 and 1NN3
Antirequisite: COMP ENG 3SK3, 3SK4, SFWR ENG 3X03

COMP SCI 4O03 OPERATIONS RESEARCH
Modelling and solutions for engineering optimization problems using Linear and Integer Programming, including transportation and assignment problems, multi-objective problems and scheduling. Solution methods include primal-dual schemes (algorithms), simplex, branch and bound, and heuristics.
Three lectures, one tutorial (one hour); second term
Prerequisite: COMP SCI 3DA3 or SFWR ENG 2C03
Crosslist: SFWR ENG 4O03

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: Credit or registration in COMP SCI 3MI3 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 3MI3 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, one tutorial (one hour); first term
Prerequisite: One of MATH 2A03, 2M06 (or 2M03 and 2MM3), 2Q04, or 2ZZ3
Crosslist: SFWR ENG 4TE3

COMP SCI 4TI3 FUNDAMENTALS OF IMAGE PROCESSING
Discrete-time signals and systems, digital filter design, photons to pixels, linear filtering, edge-detection, non-linear filtering, multi-scale transforms, motion estimation.
Three lectures; first term
Prerequisite: Registration in Level III or above of a program offered by the Department of Computing and Software

COMP SCI 4WW3 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: 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 4ZP6 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 {517} ...

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 2AA4 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
Searching, sorting, dynamic programming, greedy algorithms, abstract data structures, balanced trees, hashing, graphs, design principles, complexity, organization of libraries.
Three lectures, one tutorial (one hour); second term
Prerequisite: COMP SCI 1FC3 or SFWR ENG 2DM3; and COMP SCI 2SC3 or SFWR ENG 2S03
Antirequisite: COMP ENG 2SI4, COMP SCI 2C03, 2MD3, 3DA3, ELEC ENG 2SI4, SFWR ENG 2C04

SFWR ENG 2DA4 DIGITAL SYSTEM PRINCIPLES AND LOGIC CO-DESIGN FOR SOFTWARE ENGINEERING
Systematic design procedures; combinatorial 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 lab (three hours); first term
Prerequisite: Registration in a program in Software Engineering
Corequisite: SFWR ENG 2DM3
Antirequisite: COMP ENG 2DI4, COMP SCI 2MF3, ELEC ENG 2DI4, SFWR ENG 2D03, 2DA3

SFWR ENG 2DM3 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 1ZZ5; or MATH 1AA3 and 1B03
Antirequisite: COMP SCI 1FC3, 2E03, 2F03

SFWR ENG 2FA3 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 2DM3
Antirequisite: SFWR ENG 2E03, 2F03

SFWR ENG 2MX3 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 2Z03; and registration in MATH 2ZZ3 or credit in MATH 2M06 (or 2M03 and 2MM3) or 2P04

SFWR ENG 2S03 PRINCIPLES OF PROGRAMMING
Fundamental concepts of imperative programming (procedures, statements, control structures, iteration, recursion, exceptions); basic data structures (references, records, arrays, dynamic structure); basic concepts of operating systems.
Three lectures, one tutorial (one hour); first term
Prerequisite: COMP SCI 1MD3 or 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 2AA4, 2C03
Antirequisite: COMP SCI 3EA3

SFWR ENG 3BB4 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 3MH3, SFWR ENG 3SH3

SFWR ENG 3DX3 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
Use of assembler language. I/O and storage devices. Highly optimized code. Low level representation of control and data structures. Device drivers.
Three lectures, one tutorial (one hour); second term
Prerequisite: One of ENG PHYS 2E04, SFWR ENG 2DA3 or 2DA4
Antirequisite: COMP ENG 3DJ4, COMP SCI 2MF3

SFWR ENG 3GA3 COMPUTER ARCHITECTURE AND GRAPHICS PROCESSORS
Measures of performance, instruction set architecture, computer arithmetic, datapath and control, pipelining, the memory hierarchy, I/O systems, multiprocessor systems, multimedia extensions and graphic processors.
Three lectures, one tutorial (two hours every other week); first term
Prerequisite: COMP SCI 1MD3 or ENGINEER 1D04
Antirequisite: COMP ENG 3DR4, 4DM4, COMP SCI 2CA3, 3MG3, SFWR ENG 3G03

SFWR ENG 3GB3 MODELLING FOR VIRTUAL REALITY
Design of time-evolution of/in three dimensional spaces. Dynamical systems (discrete and continuous). Physical and artificial systems. Design patterns of 4D modelling.
Three lectures, one tutorial (two hours every other week); second term
Prerequisite: ENGINEER 3GA3 or MMEDIA 2HE3; and registration in Software Engineering (Game Design)

SFWR ENG 3GC3 COMPUTER GRAPHICS
Mathematical foundations, the graphics pipeline, geometrical transformations, 3D visualization, clipping, illumination and shading models and the impact of graphics on society.
Three lectures, one tutorial (two hours every other week); first term
Prerequisite: Registration in a program in Software Engineering
Crosslist: COMP SCI 3GC3

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: Registration in Level II or above of a Software Engineering or Mechatronics Engineering program
Antirequisite: COMP SCI 2CS3
Not open to students with credit or registration in ISCI 1A24.

SFWR ENG 3K04 SOFTWARE DEVELOPMENT
Software design process. Professional responsibility. Using specifications. Documentation. Module Specification. 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 2SI4, ELEC ENG 2SI4, SFWR ENG 2S03
Antirequisite: COMP SCI 3EA3, 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: Credit or registration in one of COMP SCI 3EA3, SFWR ENG 3A04 or 3K04
Antirequisite: COMP SCI 3SR3, 4EF3, SFWR ENG 3R03, 4EF3

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 3A04

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; second term
Prerequisite: One of COMP SCI 2ME3, SFWR ENG 2AA4, 3K04, 3M04
Antirequisite: COMP ENG 4SN4, COMP SCI 3MH3, 3SH3, 4SH3, SFWR ENG 3BB4

SFWR ENG 3X03 SCIENTIFIC COMPUTATION AND MATHEMATICAL SIMULATION
Computer arithmetic, stability, sensitivity. Numerical methods for polynomial manipulation, interpolation, data fitting, integration, differentiation, solving linear and non-linear systems, ordinary differential equations and eigenvalue problems.
Three lectures, one tutorial (one hour); first term
Prerequisite: MATH 1ZZ5; or both MATH 1AA3 and 1B03; or both MATH 1H03 and 1NN3
Antirequisite: COMP ENG 3SK3, 3SK4, COMP SCI 4MN3

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. Data acquisition. Applications in real-time control.
Three lectures, one lab (three hours every other week); first term
Prerequisite: SFWR ENG 3BB4 or 3SH3; and SFWR ENG 3DX3
Antirequisite: SFWR ENG 4A03, 4GA3

SFWR ENG 4C03 COMPUTER NETWORKS AND SECURITY
Physical networks, TCP/IP protocols, switching methods, network layering and components, network services. Information security, computer and network security threats, defense mechanisms, encryption.
Three lectures, one lab (three hours every other week); second term
Prerequisite: COMP SCI 3MH3 or SFWR ENG 3BB4
Antirequisite: COMP SCI 3CN3

SFWR ENG 4D03 DESIGN OF HUMAN COMPUTER INTERFACES
Design of user interfaces. Principles of good interface design. Human input. Displaying complex data using graphics and virtual reality. Modes and mode awareness problem. Health issues, information overload. Special purpose graphics hardware. Interface design tools; on-line help systems.
Three lectures, one tutorial (one hour); first term
Prerequisite: Credit or registration in COMP SCI 3MH3 or SFWR ENG 3BB4
Antirequisite: COMP SCI 4HC3

SFWR ENG 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
Crosslist: COMP SCI 4E03

SFWR ENG 4F03 DISTRIBUTED COMPUTER SYSTEMS
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 lab (three hours every other week); second term
Prerequisite: Credit or registration in COMP SCI 3MH3 or SFWR ENG 3BB4. Completion of SFWR ENG 4C03 is recommended.
Antirequisite: COMP SCI 4CD3

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 4G03, 4GP6, 4H03

SFWR ENG 4GA3 REAL-TIME SYSTEMS AND COMPUTER GAME 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. Data acquisition. Applications in real-time networking, quality of service and multimedia.
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
Human sensory perception, learning and cognition. Game aesthetics. Precise control and feedback mechanisms. Use of music and sounds. Critical analysis of existing interfaces. Alternate input devices.
Three lectures, one tutorial (three hours every other week); second term
Prerequisite: SFWR ENG 4D03 and registration in Software Engineering (Game Design)

SFWR ENG 4GG0 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

SFWR ENG 4GO0 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

SFWR ENG 4GP6 SOFTWARE DESIGN IV - CAPSTONE OMPUTER 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, seminar); two terms
Prerequisite: Registration in Level IV of Software Engineering (Game Design)
Antirequisite: SFWR ENG 4G03, 4G06, 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; second term
Prerequisite: SFWR ENG 2MX3. STATS 3N03 or 3Y03 is recommended.

SFWR ENG 4M03 DATABASES
Data modelling, integrity constraints, principles and design of relational databases, relational algebra, SQL, query processing, transactions, concurrency control, recovery, security and data storage.
Three lectures, one tutorial (one hour); second term
Prerequisite: One of COMP SCI 1FC3, SFWR ENG 2DM3 or 2E03
Antirequisite: COMP SCI 3DB3, 4EB3, SFWR ENG 3H03

SFWR ENG 4O03 OPERATIONS RESEARCH
Modelling and solutions for engineering optimization problems using Linear and Integer Programming, including transportation and assignment problems, multi-objective problems and scheduling. Solution methods include primal-dual schemes (algorithms), simplex, branch and bound, and heuristics.
Three lectures, one tutorial (one hour); second term
Prerequisite: COMP SCI 3DA3 or SFWR ENG 2C03
Crosslist: COMP SCI 4O03

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: One of MATH 2A03, 2M06 (or 2M03 and 2MM3), 2Q04 or 2ZZ3
Crosslist: COMP SCI 4TE3

CULTURAL STUDIES AND CRITICAL THEORY {133}

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 (note prerequisite for this course)
CSCT 3X03	Contemporary Native Literature in the United States (note prerequisite for this course)
CSCT 3Y03	Children's Literature
CSCT 3YY3	Contemporary Youth Culture

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
Crosslist: 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
Crosslist: ENGLISH 1BB3

CSCT 2C03 THE CULTURAL STUDY OF MUSIC
An introduction to the role music plays in shaping culture, with particular emphasis on constructions of identity. Topics may include music and everyday life, geopolitical conflict, new media/technology and national identity.
Three hours; one term
Prerequisite: Registration in a Combined Honours program in Cultural Studies and Critical Theory
Antirequisite: MUSIC 1Y03

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
Crosslist: 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 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 Cultural Studies and Critical Theory or Women's Studies
Crosslist: 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
Antirequisite: CMST 2M03
Crosslist: COMP LIT 2E03, ENGLISH 2M03

CSCT 2MM3 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
Antirequisite: CMST 2MM3
Crosslist: COMP LIT 2EE3, ENGLISH 2MM3

CSCT 2P03 MODERNITY/POSTMODERNITY/VISUALITY
This course will examine modernity and postmodernity through an exploration of a variety of theorethical 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 critically to decode the operations of race in literary and cultural texts.
Three hours; one term
Prerequisite: Registration in a program in Cornparative Literature, Cultural Studies and Critical Theory, Peace Studies or Women's Studies
Crosslist: COMP LIT 3RR3, 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
Crosslist: COMP LIT 3AA3, ENGLISH 3AA3, WOMEN ST 3HH3

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.
Crosslist: CMST 3CC3, COMP LIT 3L03, 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
Crosslist: 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
Crosslist: 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
Crosslist: 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 3Q03 or ENGLISH 3Q03 is recommended.
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: ENGLISH 4AA3
Departmental permission required.

CSCT 4AR3 RHETORIC, CULTURE, CATASTROPHE: AIDS AND ITS REPRESENTATIONS
An examination of selected novels, films, autobiographical writings and theoretical texts about AIDS, with an emphasis on the cultural discourses surrounding the AIDS crisis.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: ENGLISH 4AR3
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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: 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 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 a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: 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
Crosslist: ENGLISH 4CF3
Departmental permission required.

CSCT 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 a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: ENGLISH 4CJ3
Departmental permission required.

CSCT 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 a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: ENGLISH 4HC3
Departmental permission required.

CSCT 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 a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: ENGLISH 4ID3
Departmental permission required.

CSCT 4IP3 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.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in Cultural Studies and Critical Theory
Antirequisite: PEACE ST 3MM3
Crosslist: COMP LIT 3MM3, ENGLISH 4IP3, PEACE ST 4IP3
Departmental permission required.

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
Crosslist: ENGLISH 4J03, WOMEN ST 4J03
Departmental permission required.
This course is administered by Women's Studies.

CSCT 4KK3 KAFKA AFTER KAFKA
This course examines the influence of Franz Kafkas fiction on writers, critics and film makers of the 20th century.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: COMP LIT 3EE3, ENGLISH 4KK3
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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: ENGLISH 4PA3
Departmental permission required.

CSCT 4PR3 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.
Seminar (two hours); two terms
Prerequisite: Registration in Level IV of an Honours program in Cultural Studies and Critical Theory
Antirequisite: PEACE ST 4D03
Crosslist: COMP LIT 4D03, ENGLISH 4PR3, PEACE ST 4PR3
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.
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: ENGLISH 4WA3, WOMEN ST 4WA3
Departmental permission required.

CSCT 4WI3 WOMAN AND THE NATION IN INDIAN POPULAR CINEMA
An examination of Indian popular cinema (Bollywood) and its construction of the nation through representations of women. Themes may include: partition, religion, sexuality, minority, caste, diaspora.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of a Combined Honours program in Cultural Studies and Critical Theory
Crosslist: ENGLISH 4WI3
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
Crosslist: ENGLISH 4WL3
Departmental permission required.

EARTH SCIENCES

(SEE GEOGRAPHY AND EARTH SCIENCES)

ECONOMICS {150}

WEB ADDRESS: http://www.mcmaster.ca/economics/

Kenneth Taylor Hall, Room 426

Ext. 22765

Faculty as of January 15, 2009

Chair

Michael R. Veall

Associate Chair

William Scarth

Professors

Martin Dooley/B.A. *(Indiana)*, M.S., Ph.D. *(Wisconsin-Madison)*
Peter J. George/C.M., O.Ont., B.A., M.A., Ph.D. *(Toronto)*, D.U. *(Ottawa)*, D. Hon. C. *(Lviv)*, D Litt. *(Nipissing)*, LLD. *(Toronto)*
Jeremiah E. Hurley/B.A. *(John Carroll)*, M.A., Ph.D. *(Wisconsin-Madison)*
Stephen R.G. Jones/B.A. *(Cambridge)*, Ph.D. *(California-Berkeley)*
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. Math. *(Waterloo)*, M.A., Ph.D. *(Western Ontario)*
Kenneth H. Norrie/B.A. *(Saskatchewan)*, M.Phil., Ph.D. *(Yale)*
A. Abigail Payne/B.A. *(Denison)*, J.D. *(Cornell)*, Ph.D. *(Princeton)*
Jeffrey S. Racine/B.A., M.A. *(McMaster)*, Ph.D. *(Western Ontario)*/Senator William McMaster Chair in Econometrics
William M. Scarth/B.A. *(Queen's)*, M.A. *(Essex)*, Ph.D. *(Toronto)*
Byron G. Spencer/B.A. *(Queen's)*, Ph.D. *(Rice)*
Michael R. Veall/B.A. *(McMaster)*, M.A. *(Western Ontario)*, Ph.D. *(M.I.T.)*

Adjunct Professor

Robert Dimand/B.A. *(McGill)*, M.A., M.Phil., Ph.D. *(Yale)*

Associate Professors

Paul Contoyannis/B.Sc., M.Sc., Ph.D. *(University of York)*
Katherine Cuff/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 Montréal)*, M.A., Ph.D. *(Queen's)*

Adjunct Associate Professor

Thomas F. Crossley/B.Sc. *(Queen's)*, M.A., Ph.D. *(McMaster)*
Paul Grootendorst/*(Clinical Epidemiology and Biostatistics)* B.A. *(Victoria)*, M.A. *(Queen's)*, Ph.D. *(McMaster)*

Assistant Professors

Philip DeCicca/B.A. *(Cornell)*, M.P.A. *(Syracuse)*, Ph.D. *(Michigan)*
Svetlana Demidova/M.Sc. *(Moscow State)*, M.A. *(New Economic School, Russia)*, Ph.D. *(Pennsylvania State)*
Michel Grignon/M.A. *(ENSAE)*, Ph.D. *(EHESS)*
Seungjin Han/B.Econ. *(Korea University)*, M.A. *(McGill University)*, Ph.D. *(Toronto)*
Hannah Holmes/M.A.*(McMaster)*
Maxim Ivanov/M.Sc. *(Tomsk)*, M.A. *(New Economic School, Russia)*, Ph.D. *(Pennsylvania State)*
Peter J. McCabe/A.B. *(Boston College)*, Ph.D. *(Northwestern)*
Bridget O'Shaughnessy/M.A.*(York)*
Shintaro Yamaguchi/Ph.D. *(Wisconsin-Madison)*

Adjunct Assistant Professors

Sule Alan/B.Sc. *(Middle East Technical)*, M.A. *(York)*, Ph.D. *(McMaster)*
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 2I03 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. Some, but not all, graduate programs in Economics require ECON 3G03, 4T03 and 4TT3. For this reason, students interested in an M.A. in Econimics 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 analysis of contemporary economic problems.
Three lectures; one term
Antirequisite: ECON 1A06
ECON 1B03 and 1BB3 can be taken in either order or concurrently.

ECON 1BB3 **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 1B03 and 1BB3 can be taken in either order or concurrently.

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 1BB3(or 1A06)
Crosslist: 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, 1BB3; and one of MATH 1F03, 1K03, Grade 12 Calculus and Vectors U (or Grade 12 Advanced Functions and Introductory Calculus U); and STATS 1L03 or Grade 12 Mathematics of Data Management U
Antirequisite: COMMERCE 2QA3, EARTH SC 2MB3, ENVIR SC 2MB3, GEO 2S03, 3S03, GEOG 2MB3, HTH SCI 1F03, SOC SCI 2J03, STATS 1A03, 1CC3
Not open to students with credit or registration in ARTS&SCI 2R06, CHEM ENG 4C03, HTH SCI 2A03, POL SCI 3N06, PSYCH 2R03, 2RA3, 2RB3, 2RR3, SOCIOL 3H06, STATS 2D03, 2MB3, 3N03, 3Y03, or if COMMERCE 2QA3 is a program requirement.

ECON 2CC3 **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
Crosslist: HEALTHST 2C03
Not open to students registered in an Economics program or with credit or registration in ECON 2G03, 2X03 or 3Z03. Students excluded from ECON 2CC3 or those wishing to do further work in Health Economics are referred to ECON 3Z03.
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. Students may be involved in academic placements within the community.
Three lectures; one term
Prerequisite: ECON 1B03 and 1BB3 (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 1BB3 (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: ECON 1B03 (or 1A06); and one of MATH 1F03, 1K03, Grade 12 Calculus and Vectors U (or Grade 12 Advanced Functions and Introductory Calculus U); and credit or registration in MATH 1M03 or equivalent
Antirequisite: ECON 2X03

ECON 2GG3 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: ECON 1BB3 (or 1A06); and one of MATH 1F03, 1K03, Grade 12 Calculus and Vectors U (or Grade 12 Advanced Functions and Introductory Calculus U). Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2H03.

ECON 2HH3 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 2I03 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 1BB3 (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: ECON 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 1BB3 (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)
Antirequisite: ECON 3N03

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 trade unions and the state.
Three lectures; one term
Prerequisite: ECON 1B03 and 1BB3 (or 1A06)
Crosslist: LABR ST 3B03

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: ECON 1B03 (or 1A06); and one of MATH 1F03, 1K03, Grade 12 Calculus and Vectors U (or Grade 12 Advanced Functions and Introductory Calculus U); and credit or registration in MATH 1M03 or equivalent
Antirequisite: ECON 2G03
Open to students registered in Commerce programs only.

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
Antirequisite: ECON 3C06

ECON 3C03 PUBLIC SECTOR ECONOMICS: TAXATION
Theory and practice of public finance: analysis and comparison of the efficiency, equity and distribution effects of the taxation of income, wealth and expenditure, analysis of social insurance, intergovernmental fiscal relations.
Three lectures; one term
Prerequisite: ECON 2G03 or 2X03
Antirequisite: ECON 3C06

ECON 3D03 LABOUR ECONOMICS
Introduction to the economics of the labour market; demand for labour by the firm and industry; supply of labour by the individual; investment in human capital.
Three 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 (eg. writing, library, internet, data), and the subsequent application of the skills to an economic issue.
Three hours; one term
Prerequisite: ECON 2B03; and either registration in Level III or Level IV of an Honours Economics program or an average of 7.0 in ECON 2G03, 2GG3, 2H03 and 2HH3 and a grade of at least C in each

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), 2GG3, 2H03, 2HH3

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 3HH3 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: ECON 2G03 or 2X03; and ECON 2H03

ECON 3R03 THE HISTORY OF ECONOMIC GROWTH
The study of the growth of per capita incomes from 1000 to 2000 A.D. Institutional change, trade and science and technology are emphasized.
Three hours (lectures and discussion); one term
Prerequisite: ECON 2H03
Not open to students with credit in ECON 3Y03 if the topic was "History of Economic Growth"

ECON 3S03 INDUSTRIAL ORGANIZATION
A study of the structure, conduct and performance of industrial markets.
Three lectures; one term
Prerequisite: ECON 2G03 or 2X03
Antirequisite: ECON 3N06

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
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, COMMERCE 2QA3, ENVIR SC 2MB3, GEO 2S03, GEOG 2LL3, 2MB3, 2N03, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, 2RA3, 2RB3, 2RR3, SOC SCI 2J03, 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 3O06, 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, 2J03, 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: ECON 2GG3, 2HH3, 3F03; and ECON 3U03 or 3O06; and either registration in an Honours Economics program or an average of 7.0 in ECON 2G03, 2GG3, 2H03 and 2HH3 and a grade of at least C in each

ECON 4B03 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: 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 B- in ECON 3O06 or 3U03 or another course that is approved by a departmental counselor

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, 2HH3
Antirequisite: ECON 3A03

ECON 4TT3 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, 2HH3
Antirequisite: ECON 3AA3

ELECTRICAL AND COMPUTER ENGINEERING

WEB ADDRESS: http://www.ece.mcmaster.ca/
Information Technology Building, Room A111
Ext. 24347

Faculty as of January 15, 2009

Chair

David W. Capson

Associate Chair (Undergraduate Programs)

James P. Reilly

Associate Chair (Graduate Studies)

Thia Kirubarajan

Professors

David W. Capson/B.Sc.Eng. *(New Brunswick)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.
M. Jamal Deen/B.Sc. *(Guyana)*, M.S., Ph.D. *(Case Western Reserve)*, F.I.E.E.E., F.E.C.S., F.A.A.A.S., F.E.I.C., F.I.N.A.E., F.C.A.E., F.R.S.C., Canada Research Chair in Information Technology
Wei-Ping Huang/B.S. *(Shandong)*, M.S. *(Science and Technology of China)*, Ph.D. *(M.I.T.)*
X. Li/B.S. *(Shandong)*, M.S. *(Wuhan Research Institute of Posts and Telecommunications)*, Ph.D. *(Northern Jiaotong)*, P.Eng.
James P. Reilly/B.A.Sc. *(Waterloo)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.
Peter M. Smith/B.Eng.Mgt., M.Eng., Ph.D. *(McMaster)*, P.Eng.
Ted H. Szymanski/B.A.Sc., M.A.Sc., Ph.D. *(Toronto)*, P.Eng., L.R. Wilson/Bell Canada Enterprises Chair in Data Communications
Terrence D. Todd/B.A.Sc., M.A.Sc., Ph.D. *(Waterloo)*, P.Eng., NSERC/RIM/CITO Chair on Pico-Cellular Wireless Internet Access Networks
Kon Max Wong/B.Sc. (Eng.), Ph.D., D.Sc. (Eng.) *(London)*, D.I.C. *(Imperial College, London)*, P.Eng., C.Eng., F.I.E.E., F.Inst.P., F.S.S., F.I.E.E.E., F.C.A.E., F.R.S.C. Canada Research Chair in Signal Processing
X. Wu/B.Sc. *(Wuhan, China)*, Ph.D. *(Calgary)*, NSERC-DALSA Industrial Research Chair in Digital Cinema

Adjunct Professors

Eloi Bosse/B.Sc.A., M.Sc. *(Laval)*, Ph.D. *(Carleton)*, Ph.D. *(Laval)*
Laurel Carney/S.B., M.S., Ph.D. *(Wisconsin)*
Robert Elliott/B.A., M.A. *(Oxford)*, Ph.D. *(Cambridge)*
Alex B. Gershman/M.Eng.Sc., Ph.D. *(Nizhny Novgorod)*, F.I.E.E.E.
Jim Lee/B.Sc. *(Calgary)*, M.A.Sc. *(Toronto)*, Ph.D. *(Carleton)*
Tom (Z-Q.) Luo/B.Sc. *(Peking)*, Ph.D. *(M.I.T.)*, P.Eng., F.I.E.E.E.
Mark Haacke/B.Sc, M.Sc., Ph.D. *(Toronto)*
Ben Ong/B.Sc., Ph.D. *(McGill)*
Pierre Valin/B.A., B.Sc., M.Sc., Ph.D. *(Harvard)*

Associate Professors

M. Bakr/B.Sc., M.Sc. *(Cairo)*, Ph.D. *(McMaster)*, P.Eng.
I. Bruce/B.Eng., Ph.D. *(Melbourne)*, P. Eng.
T. Davidson/B.Eng. *(Western Australia)*, D. Phil. *(Oxford)*, P.Eng., Canada Research Chair in Communication Systems
Hubert deBruin/B.Eng., M.Eng., Ph.D. *(McMaster)*, P.Eng.
T.R. Field/B.A. *(Cambridge)*, D. Phil. *(Oxford)*
Y. Haddara/B.Eng. *(Memorial)*, M.Sc., Ph.D. *(Stanford)*, P.Eng.
T. Kirubarajan/B.A., M.A. *(Cambridge)*, M.S., Ph.D. *(Connecticut)* Canada Research Chair in Information Fusion
S. Kumar/B.Eng. *(Mysore)*, M.S., Ph.D. *(Indian Institute of Science)*, Ph.D. *(Osaka)*
Nicola Nicolici/B.Eng. *(Technical University Timisoara)*, Ph.D. *(Southampton)*, P.Eng.
N. Nikolova/Dipl. Ing. *(Technical University of Varna)*, Ph.D. *(University of Electrocommunications, Tokyo)*, P.Eng., Canada Research Chair High Frequency Electromagnetics
S. Shirani/B.Sc. *(Isfahan University of Technology)*, M.Sc. *(Amirkabir University of Technology)*, Ph.D. *(British Columbia)*, P.Eng.

Adjunct Associate Professors

Z. (Jack) Ding, B.Sc., M.A.Sc., Ph.D. *(Northwestern Polytechnic University, P.R. China)*
Qu Jin/B.Eng., M.Eng. *(Dalian Maritime)*, Ph.D. *(McMaster)*
Michael McDonald/B.Sc., M.Sc. *(Queen's)*, Ph.D. *(Western Ontario)*

Assistant Professors

C.H. Chen/B.A.Sc. *(National Central, Taiwan)*, M.A.Sc. *(Simon Fraser)*, Ph.D. *(McMaster)*
J. Chen/B.Eng. *(Jiao Tong, Shanghai)*, M.Sc., Ph.D. *(Cornell)*, Barber-Gennum Endowed Chair in Information Technology
T.E. Doyle/B.Sc., B.E.Sc., M.E.Sc., Ph.D. *(Western Ontario)*, P.Eng.
S. Dumitrescu/B.Sc., Ph.D. *(Bucharest)*
M. Howlader/B.Eng. *(Bangladesh)*, M.Sc., Ph.D. *(Kyushu, Japan)*
S. Hranilovic/B.A.Sc. *(Waterloo)*, M.A.Sc., Ph.D., P.Eng. *(Toronto)*
A. Jeremic/Dipl.Ing. *(Belgrade)*, M.Sc., Ph.D. *(Illinois-Chicago)*
D. Jones/B.Sc. *(Western Ontario)*, Ph.D. *(Stanford)*
M. Noseworthy/B.Sc., M.Sc., Ph.D. *(Guelph)*
A. Patriciu/B.Sc., M.Sc.CompSci *(Craiova, Romania)*, M.Sc.MechEng., Ph.D. *(John Hopkins)*
S. Sirouspour/B.Sc., M.Sc. *(Sharif University of Technology, Iran)*, Ph.D. *(British Columbia)*, P.Eng.
J.K. Zhang/B.S., M.S., Ph.D. *(Xidian)*
D. Zhao/B.S. *(Northern Jiaotong, Beijing)*, Ph.D. *(Waterloo)*, P.Eng.

Adjunct Assistant Professors

Mihai Margarit/M.Sc. *(Bucharest)*, Ph.D. *(Simon Fraser)*
Nagula Sangary/B.Sc. *(Texas A & M)*, M.Eng., Ph.D. *(McMaster)*
Mathini Sellathurai/B.Sc. *(Peradeniya)*, Ph.D. *(McMaster)*
Derek C. Schuurman/B.A.Sc., M.A.Sc. *(Waterloo)*, Ph.D. *(McMaster)*
Nick Stranges/B.Eng., M.Eng., Ph.D. *(McMaster)*

Associate Members

Mehran Anvari/*(Surgery)* M.B., B.S. *(Newcastle Upon Tyne)*, Ph.D. *(Adelaide)*, F.R.C.S.C., F.A.C.S.
Suzanna Becker/*(Psychology)* B.A., M.Sc. *(Queen's)*, Ph.D. *(Toronto)*
William Ross Datars/*Physics and Astronomy)* B.Sc., M.Sc. *(McMaster)*, Ph.D. *(Wisconsin)*
Troy Farncombe/*(Medical Imaging)* B.Sc., M.Sc., Ph.D. *(British Columbia)*
Jan Huizinga/*(Medicine)* B.Sc., M.Sc., Ph.D. *(Groningen, Netherlands)*
Markad V. Kamath/*(Medicine)* M.S., Ph.D. *(Indian Institute of Technology, Madras)*, Ph.D. *(McMaster)*
Rafael Kleiman/*(Engineering Physics)* M.Sc., Ph.D. *(Cornell)*
Andrew Knights/*(Engineering Physics)* B.Sc. *(DeMontfort)*, Ph.D. *(East Anglia)*
Allan D. Spence/*(Mechanical Engineering)* B.Math., M.A.Sc. *(Waterloo)*, Ph.D. *(British Columbia)*, P.Eng.

Lecturers

Nafia Al-Mutawaly/B.Sc., M. Eng., Ph.D. *(McMaster)*
Drazena Brocilo/B.Eng., M.Eng., Ph.D. *(McMaster)*

Adjunct Lecturer

Tom Lang/B.Eng., M.Eng. *(McMaster)*

COMPUTER ENGINEERING {144} ...

Courses

COMP ENG 2DI4 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 2MF3, ELEC ENG 2DI4, SFWR ENG 2D03, 2D04, 2DA3, 2DA4

COMP ENG 2DP4 MICROPROCESSOR SYSTEMS
Introduction to computer organizations; algorithmic state machine design; microprocessor-based system design including memory and peripheral interfaces; interrupt systems; software development tools; machine-level coding and programming.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: COMP ENG 2DI4 or ELEC ENG 2DI4
Antirequisite: COMP ENG 3DJ4

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 2SC3, SFWR ENG 2S03

COMP ENG 2SI4 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 2SH4
Antirequisite: COMP SCI 2C03, 2MD3, 3DA3, ELEC ENG 2SI4, SFWR ENG 2C03, 2C04

COMP ENG 3DQ4 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.
Three lectures, one lab (three hours) every week; first term
Prerequisite: COMP ENG 2DI4 or ELEC ENG 2DI4; and COMP ENG 2DP4 or 3DJ4
Enrolment may be limited for Electrical and Electrical and Biomedical engineers.

COMP ENG 3DR4 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 a survey of advanced architectures.
Three lectures, one tutorial one lab (three hours) every other week; second term
Prerequisite: COMP ENG 3DQ4
Antirequisite: COMP SCI 2CA3, SFWR ENG 3GA3

COMP ENG 3SK3 COMPUTER-AIDED ENGINEERING
Numerical analysis; linear and nonlinear systems; least squares and QR factorization; polynomials, optimization; numerical integration and differentiation; interpolation; engineering applications.
Three lectures, one tutorial; second term
Prerequisite: ELEC ENG 2CJ4 or 2CJ5; and MATH 2P04 or 2Z03
Antirequisite: COMP ENG 3SK4, SFWR ENG 3X03

COMP ENG 4DK4 COMPUTER COMMUNICATION NETWORKS
Introduction to switching and communication networks; packet switching; shared media access and LANs; error control; network layer operation and the Internet; ISDN; wireless networks; performance and simulation.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 3TQ4

COMP ENG 4DM4 COMPUTER ARCHITECTURE
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 3DJ4 or 3DR4
Antirequisite: COMP SCI 2CA3, SFWR ENG 3G03, 3GA3

COMP ENG 4DN4 ADVANCED INTERNET COMMUNICATIONS
Advanced internet protocols; routing, security, encryption; quality of service; ATM, RSVP, video and voice over IP; terminals, gateways and gatekeepers; wireless networks; WDM systems; optical crossconnects.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: COMP ENG 4DK4

COMP ENG 4DS4 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 3DQ4
Enrolment may be limited for Electrical and Electrical and Biomedical engineers.

COMP ENG 4EK4 MICROELECTRONICS
CMOS and MOSFET 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 3EJ4
Antirequisite: COMP ENG 4EK3, ELEC ENG 4EK3

COMP ENG 4OJ4 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 of any program in the Department of Electrical and Computer Engineering; or permission of the instructor
Antirequisite: COMP ENG 4OJ3, ELEC ENG 4OJ3

COMP ENG 4TL4 DIGITAL SIGNAL PROCESSING
Classical filter theory; DFT and FFT; FIR and IIR digital filters; effects of finite precision; implementation of DSP systems; adaptive filtering; spectral analysis, signal compression.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 3TP4, 3TQ4
Corequisite: ELEC ENG 3TQ4 (For students registered in Electrical and Biomedical Engineering only)
Antirequisite: ELEC ENG 4TL4

COMP ENG 4TN4 IMAGE PROCESSING
Digital image formation and representation; filtering, enhancement and restoration; edge detection; discrete image transforms; encoding and compression; segmentation; recognition and interpretation; 3D imagery; applications.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 3TP4, 3TQ4
Antirequisite: COMP ENG 4TN3

ELECTRICAL ENGINEERING {170} ...

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 2CI5 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, one lab every week; first term
Prerequisite: Registration in a Computer Engineering or Electrical Engineering program
Antirequisite: ELEC ENG 2CI4

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.
Four lectures, one tutorial (one hour); second term
Prerequisite: ELEC ENG 2CI4 or 2CI5
Antirequisite: ELEC ENG 2CJ5

ELEC ENG 2EI5 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, one lab every week; second term
Prerequisite: ELEC ENG 2CI4 or 2CI5
Antirequisite: ELEC ENG 2EI4

ELEC ENG 2FH3 ELECTROMAGNETICS I
Mathematical foundations of electromagnetics (selected topics of vector calculus); electrostatics, magnetostatics and conduction; introduction to time-varying fields through Faraday's law.
Three lectures, one tutorial; second term
Prerequisite: ELEC ENG 2CI4 or 2CI5; and PHYSICS 1E03
Antirequisite: ELEC ENG 3FI4

ELEC ENG 3BA3 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; first term
Prerequisite: Registration in Level III Electrical and Biomedical Engineering

ELEC ENG 3BB3 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; second term
Prerequisite: Registration in Level III Electrical and Biomedical Engineering

ELEC ENG 3CL4 INTRODUCTION TO CONTROL SYSTEMS
Modelling of control systems in the continuous-time domain; state space representations; model linearization; performance of control systems in time and frequency; stability; control design.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: One of ELEC ENG 3CK3, 3TP3 or 3TP4

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, one lab every other week; first term
Prerequisite: ELEC ENG 2CJ4 or 2CJ5; and ELEC ENG 2EI4 or 2EI5

ELEC ENG 3FK4 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, one lab every other week; first term
Prerequisite: ELEC ENG 2FH3 or ENG PHYS 2A04
Antirequisite: ELEC ENG 3FI4

ELEC ENG 3PI4 POWER DEVICES AND SYSTEMS
Power circuits; transformers; magnetic circuits; three phase connections; single phase motors; polyphase machines; synchronous generators and motors, induction motors; dc motors; design of industrial systems.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 2CJ4 or 2CJ5; and ELEC ENG 2CI4 or 2CI5; and ELEC ENG 3FI4 or 3FK4

ELEC ENG 3TP3 SIGNALS AND SYSTEMS
Fourier transforms, properties; Laplace transforms and inversion; input-output relations of linear systems; discrete time systems.
Two lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 2CJ4 and registration in the Electrical and Biomedical Engineering program
Corequisite: ELEC ENG 3TP4, MECH ENG 4R03
Offered in 2009-2010 only.

ELEC ENG 3TP4 SIGNALS AND SYSTEMS
Complex variables and integration in the complex plain; Fourier transforms, properties; Laplace transforms and inversion; input-output relations of linear systems; discrete time systems.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 2CJ4
Antirequisite: ELEC ENG 3TP3, MECH ENG 4R03

ELEC ENG 3TQ4 PROBABILITY AND RANDOM PROCESSES
Probability theory, random variables, expectations; random processes, autocorrelation, power spectral densities; filtering of random processes; noise in communication systems.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: MATH 2P04 or 2Z03
Antirequisite: COMMERCE 2QA3

ELEC ENG 3TR4 COMMUNICATION SYSTEMS
Review of continuous-time signals and systems; amplitude modulation, phase and frequency modulation schemes; digital modulation; stochastic processes; noise performance.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 3TP4, 3TQ4; or ENG PHYS 3W04

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; 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; ultrasonics and other medical imaging.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: One of ELEC ENG 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, one 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.
Two lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 2FH3, 3TP4

ELEC ENG 4BI6 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 4OI4, 4OI5, ELEC ENG 4BI4, 4B15, 4OI4, 4OI5

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; first term
Prerequisite: ELEC ENG 3TP4

ELEC ENG 4EL4 INTRODUCTION TO NANOTECHNOLOGY
Theory and hands-on laboratory experience in nanoelectronics, nanophontonics and nanomechatronics. Topics include nanomaterials, nanogrowth, self-assembly, nanoimprint lithography, nanomanipulation, nanopackaging and reliability.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: COMP ENG 4EK4

ELEC ENG 4EM4 PHOTONIC DEVICES AND SYSTEMS
Fundamentals of light. Optical fibers and their propagation characteristics. Lasers and photo-diodes. Optical amplifiers and modulators. Photonic networks.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 3EJ4
Antirequisite: ELEC ENG 4EM3

ELEC ENG 4FJ4 MICROWAVE ENGINEERING
Transmission lines, waveguides, microwave network analysis via S-parameters, impedance matching, resonators, power dividers, directional couplers, microwave filters, microwave sources, active components and circuits.
Three lectures, one tutorial, one lab every other week; first term
Prerequisite: ELEC ENG 3FI4 or 3FK4

ELEC ENG 4OI6 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 4OI4, 4OI5, ELEC ENG 4BI4, 4BI5, 4OI4, 4OI5

ELEC ENG 4OJ4 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 of any program in the Department of Electrical and Computer Engineering; or permission of the instructor
Antirequisite: COMP ENG 4OJ3, 4OJ4, ELEC ENG 4OJ3

ELEC ENG 4PK4 POWER ELECTRONICS
Power circuits with switches; basic rectifier circuits; commutation; choppers; 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 3PI4

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

ELEC ENG 4TM4 DIGITAL COMMUNICATIONS II
This course continues the study of modern communications systems following ELEC ENG 4TK4. Topics include wireless communications systems, multiple antenna systems, channel models and error control coding.
Three lectures, one tutorial, one lab every other week; second term
Prerequisite: ELEC ENG 4TK4

ENERGY ENGINEERING TECHNOLOGIES

(SEE TECHNOLOGY, ENERGY ENGINEERING TECHNOLOGIES)

ENGINEERING (GENERAL) {600}

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

Note:

Enrolment in these courses is limited to students registered in an Engineering program.

Courses

ENGINEER 1A00 INTRODUCTION TO 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.
Web modules
Prerequisite: Registration in any Engineering program
Antirequisite: ENG TECH 1A00, NURSING 1A00, SCIENCE 1A00
This course must be completed before registering in any Level II Engineering program.

ENGINEER 1C03 ENGINEERING DESIGN AND GRAPHICS
Graphical visualization and communication; technical sketching, 2D and 3D computer-aided design; use of solid modelling software.
One lecture, one tutorial (two hours), one lab (three hours); first or second term
Prerequisite: Registration in any Engineering program
Antirequisite: ENGINEER 1C04

ENGINEER 1D04 ENGINEERING COMPUTATION
Development and analysis of simple algorithms. Implementation of algorithms in computer programming language. Design and testing of computer programs.
One lecture, one tutorial (two hours), one lab (three hours); first or second term
Prerequisite: Registration in any Engineering program
Antirequisite: COMP SCI 1MA3, 1MC3, 1SA3, 1TA3

ENGINEER 1EE0 INTRODUCTION TO THE ENGINEERING CO-OP PROGRAM
Orientation to Engineering Co-op programs, self-assessment exercises, job and employer research, cover letter and resume writing, interviewing skills and work place professionalism.
Five sessions; first or second term
Prerequisite: Registration in a Co-op program in the Faculty of Engineering
Not open to students in their final level.

ENGINEER 1HB3 INTRODUCTION TO BRAZILIAN HISTORY AND CULTURE
Introduction to Brazilian history and culture. Offered overseas as part of the Study Abroad Program.
Three lectures, four labs (field trips); one term (summer)
Prerequisite: Permission of the Associate Dean (Academic) of Engineering

ENGINEER 1P03 INTRODUCTION TO PROFESSIONAL ENGINEERING
Introduction to professional engineering including ethics, health and safety, roles and responsibilities to society, engineering communication; design skills; group design projects.
One lecture first term; one lecture, one tutorial (two hours) second term; both terms
Prerequisite: Registration in any Engineering program
Antirequisite: ENGINEER 4HJ1

ENGINEER 1PB3 BASIC PORTUGUESE LANGUAGE FOR ENGINEERS
Basic Portuguese vocabulary and grammar, with emphasis on technical Portuguese. Offered overseas as part of the Study Abroad Program.
Three lectures, four labs (field trips); one term (summer)
Prerequisite: Permission of the Associate Dean (Academic) of Engineering

ENGINEER 1RR3 RUSSIAN LANGUAGE AND CULTURE FOR ENGINEERS
Basic Russian vocabulary and grammar, with emphasis on technical Russian. Introduction to Russian culture and the modern history of engineering in Russia. Offered overseas as part of the Study Abroad Program.
Three lectures, four labs (field trips); one term (summer)
Prerequisite: Permission of the Associate Dean (Academic) of Engineering

ENGINEER 2AR3 CONVERSATIONAL RUSSIAN FOR ENGINEERS
Continuation of the study of the Russian language with emphasis on extending skills for technical conversation, reading and writing. Includes field trips within Russia. Offered overseas as part of the Study Abroad Program.
Six lectures, four labs (field trips); one term (summer)
Prerequisite: RUSSIAN 2AA3 and permission of the Associate Dean (Academic) of Engineering

ENGINEER 2GA3 THE DIGITAL IMAGE FOR SOFTWARE ENGINEERING
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 lab (two hours); first term
Prerequisite: Registration in the Software Engineering (Game Design) program or permission of the Department
Antirequisite: MMEDIA 1B03, 1BE3

ENGINEER 2GB3 DIGITAL MEDIA (AUDIO AND VIDEO) 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.
One lecture (two hours), one lab (two hours); second term
Prerequisite: ENGINEER 2GA3
Antirequisite: MMEDIA 2B03, 2BE3

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.
Three lectures; second term
Prerequisite: Registration in Level II or above of any Engineering program except Engineering Physics
Antirequisite: ENGINEER 2V04, ENG PHYS 2H04, MECH ENG 2W04, PHYSICS 2H04

ENGINEER 2MM3 ELECTRICAL CIRCUITS AND POWER
Fundamentals of electromechanical energy conversion. Motors and generators, transformers, single and polyphase power circuits, synchronous and induction machines, power measurements.
Two lectures and one lab or tutorial; first or second term
Prerequisite: PHYSICS 1E03; and registration in either MATH 2M06 (or 2M03 and 2MM3) or both MATH 2P04 and 2Q04
Antirequisite: ENGINEER 3M03

ENGINEER 2P04 ENGINEERING MECHANICS 'A'
Principles of statics as applied to deformable solid bodies. Stress and strain, elastic behaviour of simple members under axial force, bending and torsion. Principal stresses; deflection of beams; statical indeterminacy.
Three lectures, plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first term
Prerequisite: PHYSICS 1D03
Antirequisite: MECH ENG 2P04

ENGINEER 2Z03 MATHEMATICS III FOR ENGINEERS
Ordinary differential equations, systems of linear ordinary differential equations, Laplace transforms, eigenvalues and eigenvectors, engineering applications. Offered overseas as part of the Study Abroad Program.
Six lectures, six labs (two hours); one term (summer)
Prerequisite: MATH 1ZZ5 and permission of the Associate Dean (Academic) of Engineering
Antirequisite: MATH 2C03, 2M03, 2M06, 2P04, 2Z03

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.
Three lectures, six labs (two hours); one term (summer)
Prerequisite: MATH 2Z03 and permission of the Associate Dean (Academic) of Engineering
Antirequisite: MATH 2A03, 2M06, 2MM3, 2Q04, 2ZZ3

ENGINEER 3GA3 INTRODUCTION TO ANIMATION FOR SOFTWARE ENGINEERING
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.
One lecture (two hours), one lab (two hours); first term
Prerequisite: ENGINEER 2GB3 or MMEDIA 2BE3
Antirequisite: MMEDIA 2H03, 2HE3

ENGINEER 3JR4 PROBABILITY AND STATISTICS FOR ENGINEERS
Introduction to probability, data analysis, statistical inference, regression, correlation and analysis of variance, applications to engineering. Offered overseas as part of the Study Abroad Program.
Six lectures; one term (summer)
Prerequisite: Registration in Level II or above of any program in Engineering and permission of the Associate Dean (Academic) of Engineering
Antirequisite: MATH 3J04, STATS 3J04, 3N03, 3Y03

ENGINEER 3N03 ELECTRONICS AND INSTRUMENTATION
Semiconductor devices; diodes, transistors and silicon-controlled rectifiers. Transistor characteristic and load lines. Amplifier circuits with and without feedback. Rectifier and passive filter circuits. Operational amplifiers and active filters. Digital circuits, Microcomputers, Interfacing.
Two lectures, one tutorial (two hours) or one lab (three hours); second term
Prerequisite: One of ENGINEER 2M04, 2MM3 or 3M03

ENGINEER 3PM3 INTERNATIONAL PROJECT AND SUPPLY CHAIN MANAGEMENT
Emphasis is on challenges and solutions of international project management. Topics include cultural difference and the role of information and communication technologies; international supply chain management.
Two lectures, one tutorial (two hours); one term
Prerequisite: Registration in an Engineering and International Studies or Engineering and Society 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.
Two lectures, one tutorial; second term
Prerequisite: Registration in Level III or above of any Engineering program except Engineering and Society
Antirequisite: ENGINEER 4H03, ENG PHYS 2S03, 4C03

ENGINEER 4B03 ENGINEERING ECONOMICS
Engineering criteria for decision-making. Money flow. Financial ventures. Personal financing. Total project investment. Production and operations costs. Economic analysis. Financial attractiveness.
Three hours (lectures, applications, discussions); second term
Prerequisite: Registration in Level IV or V of an Engineering program
Antirequisite: CHEM ENG 4N04, ENGINEER 2B03
Not open to students registered in an Engineering and Management program.

ENGINEER 4FO0 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.
Three lectures; first term
Prerequisite: ENGINEER 3GA3 or MMEDIA 2HE3
Antirequisite: MMEDIA 3E03, 3EE3

ENGINEER 4H03 ENGINEERING: ITS HISTORY AND CONTEMPORARY CONTEXT
History of engineering from antiquity to modern times, with special emphasis on scientific technology. Cultural significance of engineering to civilization. Nature and problems of industrial technology. Benefits and risks of technological progress. Engineering as a learned profession.
Three lectures; first term
Prerequisite: Registration in Level III, IV, or V of any Engineering program except Engineering and Society
Antirequisite: ENGINEER 4A03, ENG PHYS 2S03, 4C03

ENGINEER 4HJ1 ENGINEERING PROFESSIONALISM AND ETHICS
Licensing requirements for engineers in Ontario, professionalism and ethics, moral reasoning and Code of Ethics, occupational health and safety and general legal issues for engineering.
One lecture
Prerequisite: Permission of the Office of the Associate Dean of Engineering
Antirequisite: ENGINEER 1P03

ENGINEER 4J03 MATERIALS FABRICATION
Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. Processing methods for a wide range of materials, including metals, ceramics and plastics. The analytical basis for understanding and optimizing materials processes. Exercises in mathematical modelling and the use of software packages to optimize processes.
Three lectures; first term
Prerequisite: MATLS 3M03 or MECH ENG 3A03

ENGINEER 4K01 ENGINEERING REPORT FOR EXCHANGE STUDENTS
Exchange students prepare a written report and make an oral presentation on an engineering problem encountered during summer work experience. Written and oral communications and substantive context are assessed.
One seminar/lecture; one term
Prerequisite: Permission of the instructor

ENGINEER 4L00 INTRODUCTION TO THE OVERSEAS WORKPLACE
Short seminars intended to prepare outgoing exchange students for placements overseas. Topics include work place professionalism and report writing.
One seminar/lecture; one term
Prerequisite: Permission of the instructor

ENGINEER 4SC3 INTERNATIONAL SUPPLY CHAIN MANAGEMENT
Supply chain activities in international business: supply chain network design, global sourcing, demand planning, inventory management and global logistics.
Two lectures, one tutorial (two hours); one term
Prerequisite: Registration in an Engineering and International Studies program

ENGINEER 4T04 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
Antirequisite: MATLS 4J04

ENGINEER 4U03 UNIT OPERATIONS AND PROCESSES IN ENVIRONMENTAL ENGINEERING
The process capabilities, hardware and design equations, of the physical, chemical and biological processes used to improve water. Emphasis on processes such as bio-oxidation, clarification, coagulation, sludge dewaterings and disinfection.
Two lectures, one tutorial (two hours); second term
Prerequisite: One of CHEM ENG 3O04, CIV ENG 3M04 or MECH ENG 3O04; and registration in Level IV or above of any Engineering program

ENGINEERING AND MANAGEMENT {185}

WEB ADDRESS: http://www.eng.mcmaster.ca/engandmgt/

John Hodgins Engineering Building, Room A214-C

Ext. 27009

The Engineering and Management Programs are described in the *Faculty of Engineering* section in this Calendar. These programs are administered jointly by the DeGroote School of Business and the Faculty of Engineering and lead to the B.Eng.Mgt. degree.

Program Director

David K. Potter/B.Sc., Ph.D. *(Waterloo)*

Note

Engineering and Management students planning to later enter an accelerated M.B.A. program are advised to take COMMERCE 4KH3 as one of their Commerce electives.

Courses *If no prerequisite is listed, the course is open.*

ENGN MGT 2AA2 COMMUNICATION SKILLS
Writing skills including formal reports; speaking, listening and presentation skills, speeches, technical presentations and electronic communication technology.
One lecture, one tutorial (two hours); one term
Prerequisite: Registration in any Engineering and Management program

ENGN MGT 3AA1 PROJECT MANAGEMENT AND TEAMWORK SKILLS
Project Management: project phases; project scheduling/scheduling software; project monitoring, teamwork evaluation. Teamwork Skills: working in groups, communications in groups. Leadership: leading a group, negotiating.
One seminar/class; one term
Prerequisite: One of CHEM ENG 2G03, CIV ENG 2I03 or ENGN MGT 2AA2; and registration in any Engineering and Management program

ENGN MGT 4A01 ENGINEERING AND MANAGEMENT REPORT
Students prepare a written report and make an oral presentation on an engineering and management problem encountered during summer work experience. Written and oral communications and substantive content are assessed. Guidelines must be obtained from the Program Director before the end of Level III.
One seminar/class; one term
Prerequisite: ENGN MGT 3AA1 and registration in any Engineering and Management program

ENGN MGT 5B03 ENGINEERING AND MANAGEMENT PROJECTS
Capstone course: Students work in multidisciplinary teams to solve an integrated engineering and business problem in an organization. Team, project and client management skills are developed.
One lecture, two tutorials (two hours); one term
Prerequisite: ENGN MGT 4A01 and registration in any Engineering and Management program

ENGINEERING AND SOCIETY {195}

WEB ADDRESS: http://www.eng.mcmaster.ca/engandsoc/
John Hodgins Engineering Building, Room A214-C
Ext. 27679

The Engineering and Society 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 first 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 2009-2010 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 TECHNOLOGY AND SOCIETY
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; and mechanisms for the social control of technology.
Three hours (lectures, discussion, group work, seminars); first term
Prerequisite: ENGSOCTY 2Y03

ENGSOCTY 3Z03 PREVENTIVE ENGINEERING: ENVIRONMENTAL PERSPECTIVES
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 4Y03 SOCIETY CAPSTONE DESIGN
In multi-disciplinary teams, students will complete a capstone design project that incorporates holistic design, social sustainability, community resilience and aesthetic elements.
Two lectures; two hour design studio; second term
Prerequisite: Registration in Level V of any Engineering and Society or Engineering and International Studies program

ENGINEERING PHYSICS {190}

WEB ADDRESS: http://engphys.mcmaster.ca/
John Hodgins Engineering Building, Room A315
Ext. 24545

Faculty as of January 15, 2009

Chair

Paul E. Jessop

Professors

Alexander A. Berezin/B.Sc., M.Sc., Ph.D. *(Leningrad State)*
Daniel T. Cassidy/B.Eng. *(McMaster)*, M.Sc. *(Queen's)*, Ph.D. *(McMaster)*, P.Eng.
Harold K. Haugen/B.Sc. *(Acadia)*, M.Eng. *(McMaster)*, Ph.D. *(Aarhus)*
Paul E. Jessop/B.Sc. *(Waterloo)*, M.A., Ph.D. *(Harvard)*, P.Eng.
Adrian H. Kitai/B.Eng. *(McMaster)*, Ph.D. *(Cornell)*, P.Eng.
Rafael N. Kleiman/SB *(M.I.T.)*, Ph.D. *(Cornell)*
John C. Luxat/B.Sc. *(Cape Town)*, Ph.D. *(Windsor)*, P.Eng.
Peter Mascher/M.Eng., Ph.D. *(Technical University of Graz)*, P.Eng.
John S. Preston/B.Eng. *(McMaster)*, M.Sc., Ph.D. *(Toronto)*, P.Eng.
Chang Q. Xu/B.Sc., M.Sc. *(University of Science and Technology of China)*, D.Eng. *(Tokyo)*

Adjunct Professors

Denis J. Corr/B.Sc., Ph.D. *(Queen's, Belfast)*
David P. Jackson/B.Sc., M.A., M.A.Sc., Ph.D. *(Toronto)*
Nikola K. Popov/B.Eng. *(Kiril and Metodij)*, M.Sc. *(Belgrade)*, Ph.D. *(Zagreb)*
Benjamin Rouben/B.Sc. *(McGill)*, Ph.D. *(M.I.T.)*
Victor G. Snell/B.Sc. *(Manitoba)*, M.Sc., Ph.D. *(Toronto)*
Zhiyi Zhang/B.Sc.E., M.Sc.E. *(National University of Defence Technology)*, Ph.D. *(Zhongshan)*

Associate Professors

Andrew P. Knights/B.Sc. *(DeMontfort)*, Ph.D. *(East Anglia)*
David R. Novog/B.Sc. Eng. *(Mantioba)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.

Adjunct Associate Professor

Glenn D. Harvel/B.Eng., M.Eng., Ph.D. *(McMaster)*

Assistant Professors

Ray R. LaPierre/B.Sc. *(Dalhousie)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.
Qiyin Fang/B.S. *(Nankai)*, M.S., Ph.D. *(East Carolina)*

Adjunct Assistant Professor

Simon Day/B.Sc. *(St. Mary's)*, M.Eng., Ph.D. *(McMaster)*

Associate Members

Chan Y. Ching/*(Mechanical Engineering)* B.S. *(Peridenіya)*, Ph.D. *(Syracuse)*
M. Jamal Deen/*(Electrical and Computer Engineering)* B.Sc. *(Guyana)*, M.Sc., Ph.D. *(Case Western Reserve)*
Yaser M. Haddara/*(Electrical and Computer Engineering)* B.Eng. *(Memorial)*, Ph.D. *(Stanford)*
Mohamed S. Hamed/*(Mechanical Engineering)* B.Sc., M.Sc. *(Alexandria)*, Ph.D. *(Western Ontario)*, P.Eng.
Joseph E. Hayward/*(Radiology)* B.Eng., M.Eng., Ph.D. *(McMaster)*
Fred M. Hoppe/*(Mathematics and Statistics)* B.Sc. *(Toronto)*, M.Sc. *(Weizmann Institute of Science)*, M.A., Ph.D. *(Princeton)*
Jan Dirk Huizinga/*(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.S. *(Niagara)*, B.Sc. *(Brock)*, M.Sc., Ph.D. *(McMaster)*, P.Eng.
Kalaichelvi 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 one of MATH 2M03, 2P04 or 2Z03
Antirequisite: ENG PHYS 2A03

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 analysis 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
Antirequisite: ENGINEER 2H03, 2V04, MATLS 2B03
Crosslist: PHYSICS 2H04

ENG PHYS 2QM3 INTRODUCTION TO QUANTUM MECHANICS
Wave-particle duality, uncertainty principle, Hydrogen atom, Schrödinger Equation for ID systems, barriers and tunnelling, probability, properties of insulators, semiconductors and metals. Examples from experiments.
Three lectures, one tutorial; second term
Prerequisite: Registration in an Engineering Physics or Materials Engineering program

ENG PHYS 2S03 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 3D03 PRINCIPLES OF NUCLEAR ENGINEERING
Introduction to fission and fusion energy systems. Energetics of nuclear reactions, interactions of radiation with matter, radioactivity, design and operating principles of fission and fusion reactors.
Three lectures, 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 2QM3 or PHYSICS 3M03
Antirequisite: ENG PHYS 3F04

ENG PHYS 3G03 OPTICAL INSTRUMENTATION
The course covers the fundamental physics, design and operation of industrial, commercial, consumer and medical applications of photonics.
Three lectures; second term
Prerequisite: ENG PHYS 3E03 or PHYSICS 3N03
Antirequisite: ENG PHYS 4G03, PHOTONIC 4G03

ENG PHYS 3MD3 INTRODUCTION TO MICROSYSTEM DEVICES
New materials, phenomena, and platforms for the design, fabrication, and application of modern and emerging technologies. Includes MicroElectroMechanicalSystems (MEMS), microfluidic, electronic, and photonic 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 2MM3); or MATH 2P04 and 2Q04; or MATH 2Z03 and 2ZZ3
Antirequisite: ENG PHYS 3O03

ENG PHYS 3PN4 SEMICONDUCTOR 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, 4E03

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 2QA3

ENG PHYS 3X03 HUMAN PHYSIOLOGY
Basic introduction and working knowledge of the human body. Includes study of the cellular level of organization.
Three lectures; second term
Prerequisite: Completion of a minimum of 30 units above Level I in any Engineering program
Antirequisite: BIOLOGY 2A03, 3U03, 3U06, 3UU3, 4G06
Not offered in 2009-2010.

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 thermalhydraulics; 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 ORGANIC SEMICONDUCTORS AND ADVANCED SEMICONDUCTOR DEVICES
A quantitative treatment of JFET and MOSFET devices, silicon-based fabrication issues, scaling of today's nanoscale FET devices, and organic FET and OLED devices are discussed.
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
Crosslist: MED PHYS 4I03

ENG PHYS 4K03 OPTICAL COMMUNICATIONS SYSTEMS
Propagation of light in an optical fiber. Semiconductor lasers and detectors for optical communications, Analogue and digital coding. Signal to noise considerations. System design.
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 4MD3 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.
Three lectures; second term
Prerequisite: ENG PHYS 3F03 or 3F04; and credit or registration in one of ENG PHYS 3PN3, 3PN4 or 4E03
Antirequisite: ENG PHYS 4MD4

ENG PHYS 4NE3 ADVANCED NUCLEAR ENGINEERING
Energy generation and conversion, heat transfer and transport in a nuclear reactor. Characteristics and performance of nuclear fuels. Thermal margins and safety limits. Aging of core structural materials. Structural integrity of components.
Three lectures; second term
Prerequisite: ENG PHYS 3D03

ENG PHYS 4P03 NUCLEAR POWER PLANT SYSTEMS AND OPERATION
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.
One term
Prerequisite: Registration in Level IV or above of any Engineering program

ENG PHYS 4S03 LASERS AND ELECTRO-OPTICS
Basic properties of electromagnetic radiation. Optical modulation and detection. Non-linear optics. Multiple-beam interference and coherence. Optical resonators. Laser systems.
Three lectures; first term
Prerequisite: ENG PHYS 3E03 or PHYSICS 3N03
Antirequisite: ENG PHYS 4S04, PHOTONIC 4S04

ENG PHYS 4U04 MODERN AND APPLIED PHYSICS LABORATORY
Selected advanced experiments in two areas of applied physics, chosen from among: lasers and optical communications; microelectronic devices; computer systems; nuclear engineering.
Two labs (three hours); both terms
Prerequisite: ENG PHYS 3W04; and PHYSICS 3B06 or both PHYSICS 3BA3 and 3BB3

ENG PHYS 4X03 INTRODUCTION TO PHOTOVOLTAICS
A review of photovoltaic devices including solar cell operation, characterization, manufacturing, economics and current and next generation technologies.
Three lectures; first term
Prerequisite: One of ELEC ENG 2EI5, ENG PHYS 3PN4, MATLS 3Q03 or PHYSICS 3BA3

ENG PHYS 4Z03 SEMICONDUCTOR MANUFACTURING TECHNOLOGY
Detailed description of fabrication technologies used in the semiconductor industry; computer modelling of device fabrication; analysis of device performance.
Two classroom-based lectures, one computer cluster-based lecture; second term
Prerequisite: ENG PHYS 3F03 or 3F04

ENGINEERING TECHNOLOGY (GENERAL)

(SEE TECHNOLOGY, ENGINEERING TECHNOLOGY)

ENGLISH AND CULTURAL STUDIES {200}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~english/
Chester New Hall, Room 321
Ext. 24491

Faculty as of January 15, 2009

Chair

Mary O'Connor

Distinguished University Professor

James King/B.A. *(Toronto)*, M.A., Ph.D. *(Princeton)*, F.R.S.C.

Professors

Joseph Adamson/B.A. *(Trent)*, M.A., Ph.D. *(Toronto)*
David L. Clark/B.A., M.A., Ph.D. *(Western Ontario)*
Daniel Coleman/B.Ed., M.A. *(Regina)*, Ph.D. *(Alberta)*, Canada Research Chair
Henry Giroux/B.S. *(Maine)*, M.A. *(Appalachian State)*, D. Arts *(Carnegie-Mellon)*/Global Television Network Chair in Communications
Donald C. Goellnicht/B.A. *(Queen's)*, M.A., Ph.D. *(McMaster)*
Mary E. O'Connor/B.A. *(McGill)*, M.A., Ph.D. *(Toronto)*
Helen M. Ostovich/B.A., M.A., Ph.D. *(Toronto)*
Mary Silcox/B.A. *(Western Ontario)*, M.A., Ph.D. *(Queen's)*
Imre Szeman/B.A. *(Queen's)*, M.A. *(Western Ontario)*, Ph.D. *(Duke)*, Senator William McMaster Chair in Globalization and Cultural Studies
Peter Walmsley/B.A., M.A. *(Toronto)*, Ph.D. *(Cambridge)*
Lorraine M. York/B.A., M.A., Ph.D. *(McMaster)*

Associate Professors

Sarah Brophy/B.A. *(Wilfrid Laurier)*, M.A., Ph.D. *(McMaster)*
Jeffery Donaldson/B.A., M.A., Ph.D. *(Toronto)*
Susan Fast/B.M. *(Western Washington)*, M.A., Ph.D. *(Iowa)(Music)*
Catherine Grisé/B.A. *(Trent)*, M.A., Ph.D. *(Western Ontario)*
Melinda Gough/B.A. *(McGill)*, M.A., Ph.D. *(Yale)*
Roger L. Hyman/B.A. *(York)*, M.A., Ph.D. *(Toronto)*
Grace Kehler/B.A. *(Regina)*, M.A., Ph.D. *(Western Ontario)*
Susie O'Brien/B.A. *(Queen's)*, M.A. *(Queensland)*, Ph.D. *(Queen's)*
Anne Savage/B.A. *(Calgary)*, Ph.D. *(London)*
Susan Searls Giroux/B.A., M.A.T. *(Miami University-Oxford, Ohio)*, Ph.D. *(Pennsylvania State)*

Assistant Professors

Chandrima Chakraborty/B.A. *(Calcutta)*, M.A., M.Phil. *(Jawaharlal Nehru)*, Ph.D. *(York)*

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 2J03	Contemporary Popular Culture
ENGLISH 2L03	Shakespeare: Selected Plays
ENGLISH 2N03	Feminist Utopias
ENGLISH 2R03	Monsters and Magic
ENGLISH 3D03	Science Fiction
ENGLISH 3DD3	Contemporary Canadian Drama
ENGLISH 3EE3	African American Literature
ENGLISH 3F03	The Fairy Tale
ENGLISH 3GG3	European Drama
ENGLISH 3H03	Jane Austen
ENGLISH 3RR3	African Literature and Film
ENGLISH 3S03	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 when possible. 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.

ENGLISH 1A03 LITERATURE IN ENGLISH: SHORTER GENRES

A selection of shorter literary texts (short stories, poems, essays) will be studied. Students will be introduced to the elements of various genres and to a variety of interpretive approaches. Considerable emphasis will be placed on the development of critical skills in reading and writing.
Two lectures, one tutorial; one term

ENGLISH 1AA3 LITERATURE IN ENGLISH: LONGER GENRES

A selection of longer literary texts - novels and plays- will be studied. Students will be introduced to the elements of the various genres and to a variety of interpretive approaches. Considerable emphasis will be placed on the development of critical skills in reading and writing.
Two lectures, one tutorial; one term

ENGLISH 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
Crosslist: CSCT 1B03

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
Crosslist: 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
Crosslist: COMP LIT 2F03

ENGLISH 2B06 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
Not open to students with credit or registration in ENGLISH 2G06.

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 2I06.

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 in ENGLISH 2H06 or credit or registration in ENGLISH 2X06 or 2Y06.

ENGLISH 2G06 CANADIAN LITERATURE

Major aspects of the development of Canadian literature from the late 18th century to the mid-20th century. French-Canadian work in translation will be used for comparative purposes.
Three hours; two terms
Prerequisite: Registration in a program in English

ENGLISH 2H06 AMERICAN LITERATURE

A survey of American literature with focus on selected authors, genres or themes.
Three hours; two terms
Prerequisite: Registration in a program in English
Antirequisite: ENGLISH 2X06, 2Y06

ENGLISH 2I06 MODERN BRITISH LITERATURE

A study of representative literature by British writers of the 20th century. Through criticism of poems, plays and fiction, an attempt is made to relate modern British literature to its social, intellectual and cultural context.
Three hours; two terms
Prerequisite: Registration in a program in English

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 Level II or above
Crosslist: 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
Crosslist: 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
Antirequisite: CMST 2M03
Crosslist: COMP LIT 2E03, CSCT 2M03

ENGLISH 2MM3 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 English
Antirequisite: CMST 2MM3
Crosslist: COMP LIT 2EE3, CSCT 2MM3

ENGLISH 2N03 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.
Crosslist: WOMEN ST 2L03
This course is administered by Women's Studies.

ENGLISH 2R03 MONSTERS AND MAGIC
An examination of texts that explore the monstrous and magical, from *Beowulf* to the 17th century, considering their relationship to their own and our culture. Early texts will be read in modern versions.
Three hours; one term
Prerequisite: Registration in Level II or above

ENGLISH 2T03 COMPARATIVE LITERARY STUDIES I
An exploration of selected literary works (read in English translation) from texts of antiquity to the beginnings of modern literature.
Three hours; one term
Prerequisite: Registration in a program in English
Antirequisite: COMP LIT 1A03

ENGLISH 2TT3 COMPARATIVE LITERARY STUDIES II
An exploration of selected literary works (read in English translation, where necessary) from the 18th century on.
Three hours; one term
Prerequisite: Registration in a program in English
Antirequisite: COMP LIT 1AA3

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
Crosslist: COMP LIT 3RR3, CSCT 3A03, PEACE ST 3A03, WOMEN ST 3H03

ENGLISH 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, English or Women's Studies
Crosslist: COMP LIT 3AA3, CSCT 3AA3, WOMEN ST 3HH3

ENGLISH 3C06 MEDIEVAL LITERATURE IN ENGLAND, 1200-1500
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 Art History, Communication Studies, Comparative Literature, English, Multimedia or Theatre & Film Studies. It is recommended that students should already have completed THTR&FLM 2F03.
Crosslist: CMST 3CC3, 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
Crosslist: CSCT 3D03
Not open to students with credit in ENGLISH 3II3, TOPICS IN PROSE, if the topic was Science Fiction.

ENGLISH 3DD3 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
Crosslist: CSCT 3EE3
Not open to students with credit in ENGLISH 3II3: TOPICS IN PROSE, if the topic was African American Fiction.

ENGLISH 3F03 THE FAIRY TALE
An examination of fairy tales from a variety of cultures and historical periods. Students will also explore theories of the folktale and their implications for our understanding of other literary genres.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: COMP LIT 3JJ3

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 3GG3 EUROPEAN DRAMA
A study of representative plays by major European dramatists from the 18th century to the present.
Three lectures; one term
Prerequisite: Registration in Level II or above
Crosslist: COMP LIT 3G03

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 Comparative Literature or English
Crosslist: COMP LIT 3J06

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 3JJ3 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
Crosslist: COMP LIT 3Q03, CSCT 3Q03

ENGLISH 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 English. COMP LIT 3Q03, CSCT 3Q03 or ENGLISH 3Q03 is recommended.
Crosslist: COMP LIT 3QQ3, CSCT 3QQ3

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
Crosslist: COMP LIT 3R06, CSCT 3R06, PEACE ST 3E06

ENGLISH 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
Crosslist: CSCT 3RR3

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.
Crosslist: COMP LIT 3H03

ENGLISH 3V06 STUDIES IN 17TH-CENTURY LITERATURE
A detailed examination of poets and prose-writers of the period, with emphasis on the poetry of Donne, the "metaphysical school", Jonson and Milton.
Three 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
Crosslist: 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
Crosslist: 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
Crosslist: CSCT 3Y03
Not open to students with credit in ENGLISH 3II3, 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.

Note:

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 when possible. The Department is able to offer only a selection of the seminars listed below every year. A list of seminars to be offered will be available prior to registration, which takes place through the Department in March.

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
Crosslist: CSCT 4AA3
Departmental permission required.

ENGLISH 4AR3 RHETORIC, CULTURE, CATASTROPHE: AIDS AND ITS REPRESENTATIONS
An examination of selected novels, films, autobiographical writings and theoretical texts about AIDS, with an emphasis on the cultural discourses surrounding the AIDS crisis.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Crosslist: CSCT 4AR3
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
Crosslist: 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
Crosslist: 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
Crosslist: CSCT 4BB3
Departmental permission is 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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Departmental permission required.

ENGLISH 4ER3 EUROPEAN ROMANTICISM
A study of selected literary texts of European Romanticism, including womens writing of the period. Attention is also given to Romantic aesthetic theory.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Crosslist: COMP LIT 4A03
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
Crosslist: CSCT 4HC3
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
Crosslist: CSCT 4ID3
Departmental permission required.

ENGLISH 4IP3 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.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Antirequisite: PEACE ST 3MM3
Crosslist: COMP LIT 3MM3, CSCT 4IP3, PEACE ST 4IP3
Departmental permission required.

ENGLISH 4J03 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
Crosslist: CSCT 4J03, WOMEN ST 4J03
Departmental permission required.
This course is administered by Women's Studies.

ENGLISH 4KK3 KAFKA AFTER KAFKA
This course examines the influence of Franz Kafkas fiction on writers, critics and film makers of the 20th century.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Crosslist: COMP LIT 3EE3, CSCT 4KK3
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
Crosslist: 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
Crosslist: 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
Crosslist: 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
Crosslist: CSCT 4PA3
Departmental permission required.

ENGLISH 4PR3 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.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Antirequisite: PEACE ST 4D03
Crosslist: COMP LIT 4D03, CSCT 4PR3, PEACE ST 4PR3
Departmental permission required.

ENGLISH 4RD3 RENAISSANCE DRAMA, EXCLUDING SHAKESPEARE
An intensive study of transgression (economic, erotic, social and literary) in popular and elite drama by Shakespeare's contemporaries, including women writers.
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
Crosslist: CSCT 4RS3
Departmental permission required.

ENGLISH 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 an Honours program in English
Crosslist: CSCT 4SF3
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
Crosslist: 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
Crosslist: 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
Crosslist: CSCT 4WA3, WOMEN ST 4WA3
Departmental permission required.

ENGLISH 4WC3 THE WITCHCRAFT CONTROVERSY IN PRINT AND ON STAGE, 1565-1656
An exploration of conflicting attitudes toward witches in England and Scotland, questioning ideological assumptions about gender, class, education, health, social welfare, marriage and sexuality.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENGLISH 4WI3 WOMAN AND THE NATION IN INDIAN POPULAR CINEMA
An examination of Indian popular cinema (Bollywood) and its construction of the nation through representations of women. Themes may include: partition, religion, sexuality, minority, caste, diaspora.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Crosslist: CSCT 4WI3
Departmental permission required.

ENGLISH 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 an Honours program in English
Crosslist: CSCT 4WL3
Departmental permission required.

ENGLISH 4WW3 WOMEN WRITERS OF THE 18TH CENTURY
An exploration of poetry and fiction written by women in the 18th century, with particular attention to the social and philosophical concerns of these writers.
Seminar (two hours); one term
Prerequisite: Registration in Level IV of an Honours program in English
Departmental permission required.

ENVIRONMENTAL SCIENCE

(SEE GEOGRAPHY AND EARTH SCIENCES)

FRENCH {230}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~french

Togo Salmon Hall, Room 532

Ext. 24470

Faculty as of January 15, 2009

Chair

Maroussia Hajdukowski-Ahmed

Professors

Suzanne Crosta/B.A., M.A. *(McMaster)*, Ph.D. *(Toronto)*
Maroussia Hajdukowski-Ahmed/L.ès L., M. ès L., D. de l'U *(Paris-Sorbonne)*
William F. Hanley/B.A. *(Toronto)*, M. ès L. *(Paris-Sorbonne)*, D.Phil. *(Oxford)*

Associate Professors

Michael Kliffer/B.A. *(British Columbia)*, M.A. *(Michigan)*, Ph.D. *(Cornell)*
Gabriel Moyal/B.A. *(McGill)*, M.A., Ph.D. *(Toronto)*
Anna St. Leger Lucas/B.A. *(Nottingham)*, M.A. Ph.D. *(British Columbia)*
Alexandre Sévigny/B.A. *(York)*, M.A., Ph.D. *(Toronto)*
John C. Stout/B.A. *(British Columbia)*, Ph.D. *(Princeton)*

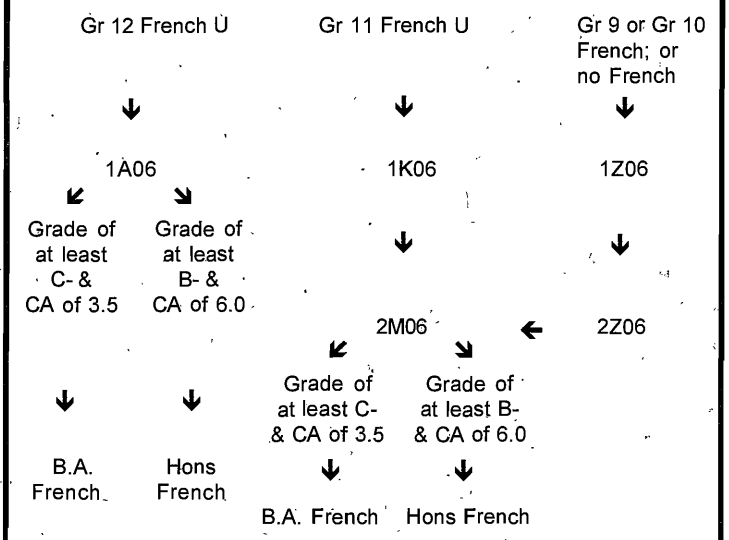
Assistant Professors

Paula Banks/B.A., M.A., Ph.D. *(Toronto)*
Stéphanie Posthumus/B.A. *(Calvin College)*, M.A. *(Queen's)*, Ph.D. *(Western Ontario)*
Jane A.C. Rush/B.A. *(Toronto)*, M.A., Ph.D. *(California-Los Angeles)*

Program Coordinator, Continuing Education

Hélène Gallier-Morgan/D.U.E.L., L. ès L., M. ès L., D.E.A. *(Paris-Sorbonne)*

ENTRY INTO LEVEL I COURSES AND FRENCH PROGRAMS



Departmental Notes:

1. Students with Grade 12 French U or the equivalent who feel that their French skills may be below the level required for entry into French 1A06 should contact the French Department to take an online placement test which will properly assess their level.
2. 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.
3. 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). (See *Note 1* above.) 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 INTENSIVE REVIEW OF FRENCH
Intensive review of basic structures and vocabulary to develop proficiency in oral and written French. The sequel to this course is FRENCH 2M06 (equivalent to FRENCH 1A06) (See *Notes 2 and 3* above.).
Five hours (one hour lecture, three tutorials, one hour of independent online activities); two terms
Prerequisite: Grade 11 French U. 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, 2Z06, Grade 12 French U
Not open to students with credit or registration in FRENCH 2M06.

FRENCH 1Z06 BEGINNER'S INTENSIVE FRENCH I
An intensive course for developing basic skills in both written and spoken French. The normal sequel to this course is FRENCH 2Z06.
Five hours (two hours lectures, three hours independent personal computer lab assignments); two terms
Prerequisite: This course is designed for students with no background in French or with Grade 9 or 10 French.
Antirequisite: Grade 11 or 12 French U, FRENCH 1A06, 1K06.
Not open to Immersion students or 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 I
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 2JJ3 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 2Z06
Antirequisite: FRENCH 1A06
Not open to students with credit or registration in FRENCH 2B03.

FRENCH 2Z06 BEGINNER'S INTENSIVE FRENCH II
A sequel to FRENCH 1Z06. Review of grammatical structures. Expansion of vocabulary. Conversation practice. Study of texts with class 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 1Z06
Antirequisite: FRENCH 1K06, 1N06
Not open to students with credit or registration in FRENCH 1A06, 1B06, 2B03, 2M06.

FRENCH 3AA3 THE MODERN FRENCH-CANADIAN NOVEL
Representative novels by contemporary authors with emphasis upon the relationship between technique and meaning.
Three hours; one term
Prerequisite: Six units of French above Level I, excluding FRENCH 2M06 and 2Z06

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 CIVILIZATION AND CULTURE
An introduction to contemporary French society through oral discussions and presentations.
Three hours; one term
Prerequisite: FRENCH 2BB3. Not available to Francophone students with native fluency.

FRENCH 3GG3 FRENCH LANGUAGE PRACTICE: TRANSLATION FROM FRENCH TO ENGLISH
The emphasis will be on inferencing 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 2Z06

FRENCH 3KK3 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 2Z06

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 2Z06

FRENCH 3QQ3 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 2Z06

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 2Z06
Antirequisite: FRENCH 2W03

FRENCH 3WW3 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 2Z06
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 2Z06

FRENCH 3Z03 AFRICAN AND CARIBBEAN FRENCH LITERATURES
An introduction to French African and Caribbean 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, 3CC3; 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 2Z06

FRENCH 4F03 SEXUAL GAMES: THE ART OF SEDUCTION DURING THE ANCIEN REGIME
A study of seduction as theme as well as rhetorical device in major works of the Ancien Regime (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 2Z06

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 4H03 may be repeated, if on a different topic, to a total of six units.

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, Poètes maudits).
Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2Z06

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 2Z06

FRENCH 4LL3 TOPICS IN FRENCH AFRICAN AND CARIBBEAN FRENCH LITERATURES

Previous topics include: Contemporary Caribbean Writers, Literature of Senegal. 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 2Z06.
FRENCH 4LL3 may be repeated, if on a different topic, to a total of six units.

FRENCH 4MM3 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 2Z06

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 2Z06

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 fulfilment 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 any 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.
Prerequisite: Registration in Level IV of an Honours program in French and permission of the FRENCH 4T03 Committee

FRENCH 4U03 GENDER AND MIGRATION IN THE CONTEMPORARY QUEBEC NOVEL

A study of the interface between gender and other factors such as culture, race, age, socio-historical context, sexuality, as they affect identity and its textual representation in the contemporary Quebec novel by migrant authors.
Seminar (two hours); one term
Prerequisite: 12 units of French above Level I, excluding FRENCH 2M06 and 2Z06

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 2Z06
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 2Z06; 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 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 2Z06
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, 2009

Director

Pavlos S. Kanaroglou

Associate Directors

Altaf Arain
Robert D. Wilton

Distinguished University Professor

John D. Eyles/B.A., M.Sc. *(L.S.E.)*, Ph.D. *(London)*

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. *(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. *(Athens)*, 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)*
William A. Morris/B.Sc. *(Leeds)*, Ph.D. *(Open University)*
Bruce Newbold/B.A., Ph.D. *(McMaster)*
W. Jack Rink/B.Sc., Ph.D. *(Florida State)*
J. Michael Waddington/B.Sc. *(McMaster)*, M.Sc., Ph.D. *(York)*
Lesley A. Warren/B.Sc., Ph.D. *(Toronto)*

Associate Professors

Altaf Arain/B.E. *(Pakistan)*, M.S., Ph.D. *(Arizona)*
Joe Boyce/B.Sc. *(McMaster)*, M.Sc., Ph.D. *(Toronto)*
Paulin Coulibaly/B.A.Sc., M.A.Sc. *(Nice)*, Ph.D. *(Laval)*
Antonio Paez/B.Sc. *(Mexico)*, M.Sc., Ph.D. *(Tohoku)*
Walter Peace/B.A., M.A., Ph.D. *(McMaster)*
Eduard Reinhardt/B.A., Ph.D. *(Carleton)*
Darren Scott/B.A. *(St. Mary's)*, M.A. *(Western Ontario)*, Ph.D. *(McMaster)*
James Smith/B.Sc., M.Sc *(Guelph)*, Ph.D. *(Waterloo)*
Allison Williams/M.A. *(Toronto)*, Ph.D. *(York)*
Robert D. Wilton/B.A. *(Hull)*, M.A., Ph.D. *(Southern California)*

Assistant Professor

Maureen Padden/B.Sc., M.Sc. *(Waterloo)*, Ph.D. *(Geological Institute, Swiss Federal Institute of Technology)*
Greg Slater/B.Sc., M.Sc., Ph.D. *(Toronto)*/Canada Research Chair
Niko Yiannakoulias/B.A., M.A., Ph.D. *(Alberta)*

Associate Members

Gavin Andrews/*(Health, Aging and Society)* B.A. *(Wales)*, Ph.D. *(Nottingham)*

Stephen Birch/*(Clinical Epidemiology and Biostatistics)* B.A. *(Sheffield)*, M.Sc. *(Bath)*, D.Phil. *(York)*
Jing M. Chem/B.Sc. *(Nanjing Institute of Meteorology)*, Ph.D. *(Reading)*
Sarah Dickson/*(Civil Engineering)* B.A.Sc., Ph.D. *(Waterloo)*, P.Eng.
Beverly D. Leipert/B.A., B.S.N. (Saskatchewan), M.S.N. *(British Columbia)*, Ph.D. *(Alberta)*
Lynne Lohfeld/*(Clinical Epidemiology & Biostatistics)* B.A. *(William Smith)*, M.S. *(Wisconsin)*, Ph.D. *(Connecticut)*
Corinne Schuster-Wallace/*(UNU-INWEH)* B.Sc. *(Leicester)*, Ph.D. *(Wilfrid Laurier)*
Colin B. Seymour/DCR (RT) *(Guy's Hospital)*, B.L. *(King's Inn)*, Ph.D. *(Trinity College, Dublin)*/Chair, Committee of Instruction, Honours Medical and Health Physics Co-op
John C. Weaver/*(History)* B.A. *(Queen's)*, M.A., Ph.D. *(Duke)*

Note:

Former Geo courses are now listed as Earth Science (EARTH SC), Environmental Science (ENVIR SC) or Geography (GEOG) courses. Students having credit in Geo courses may not take the corresponding course under any of the above-mentioned designations. To determine the new designation of a former Geo course, please see below.

Former Course Code	New Course Code Earth Sciences	New Course Code Geography
GEO 1HS3		GEOG 1HA3
GEO 1HU3		GEOG 1HB3
GEO 2A03	EARTH SC 2EI3+	
GEO 2B03	EARTH SC 2B03*	
GEO 2C03	EARTH SC 2C03*	
GEO 2E03	EARTH SC 2E03*	
GEO 2G03	EARTH SC 2G03*	
GEO 2GG3	EARTH SC 2GG3	
GEO 2HA3		GEOG 2LI3
GEO 2HC3		GEOG 2RC3
GEO 2HD3		GEOG 3UG3
GEO 2HG3		GEOG 3HP3
GEO 2HR3		GEOG 2MA3
GEO 2HU3		GEOG 2RU3
GEO 2I03	EARTH SC 2GI3*+	
GEO 2K03	EARTH SC 2K03	
GEO 2MM3	EARTH SC 2MM3	
GEO 2Q03	EARTH SC 2Q03*	
GEO 2W03	EARTH SC 2W03*	
GEO 2WW3	EARTH SC 2WW3	
GEO 3A03		GEOG 3EP3*
GEO 3AA3	EARTH SC 3AA3	
GEO 3CC3	EARTH SC 3CC3*	
GEO 3DD3	EARTH SC 3DD3	
GEO 3E03	EARTH SC 3E03*	
GEO 3FE3	EARTH SC 3FE3	
GEO 3HE3		GEOG 3ER3
GEO 3HD3		GEOG 3LT3
GEO 3HF3		GEOG 3MF3
GEO 3HG3		GEOG 4HP3
GEO 3HH3		GEOG 3HH3
GEO 3HJ3		GEOG 3RJ3
GEO 3HR3		GEOG 3RW3
GEO 3HT3		GEOG 3UP3
GEO 3HZ3		GEOG 3UR3
GEO 3I03	EARTH SC 4GI3*+	
GEO 3IN3	EARTH SC 3IN3	
GEO 3J03	EARTH SC 3J03*	
GEO 3K03	EARTH SC 3K03	
GEO 3L03	EARTH SC 3L03*	
GEO 3O03	EARTH SC 3O03*	
GEO 3P03	EARTH SC 3P03	
GEO 3R03	EARTH SC 3RD3	
GEO 3R03		GEOG 3MR3
GEO 3S03	EARTH SC 2MB3*+	
GEO 3U03	EARTH SC 3U03*	
GEO 3V03	EARTH SC 3V03	
GEO 3W03	EARTH SC 3W03*	
GEO 3Y03	EARTH SC 3SR3*+	
GEO 3Z03	EARTH SC 3Z03	
GEO 4A03	EARTH SC 4EA3*	
GEO 4B03	EARTH SC 4B03*	
GEO 4C03	EARTH SC 4C03*	
GEO 4CC3	EARTH SC 4MR3+	
GEO 4D03		GEOG 4LT3
GEO 4E03	EARTH SC 4E03	
GEO 4FE3	EARTH SC 4FE3	
GEO 4FF3	EARTH SC 4FF3	
GEO 4G03	EARTH SC 4G03*	
GEO 4HF3		GEOG 4MF3
GEO 4HH3		GEOG 4HH3*
GEO 4HZ3		GEOG 4UH3
GEO 4I03	EARTH SC 3GI3*+	
GEO 4IN3	EARTH SC 4IN3	
GEO 4J03	EARTH SC 4J03	
GEO 4O03	EARTH SC 4O03	
GEO 4Q03	EARTH SC 4Q03	
GEO 4R06	EARTH SC 4MT6+	
GEO 4S03	EARTH SC 3SA3*+	
GEO 4T03	EARTH SC 4T03	
GEO 4W03	EARTH SC 4W03*	
GEO 4WW3	EARTH SC 4WB3*	
GEO 4Z03	EARTH SC 4Z03	

* Course is also cross-listed with the corresponding Environmental Science course.
\+ Course is also cross-listed with the corresponding Geography course.

School Notes:

1. The Honours Earth and Environmental Sciences programs allow students to select a specialist stream in aqueous environmental geochemistry (formerly geochemistry), earth sciences (formerly geosciences) or environmental hydrology and climate (formerly hydrosciences) 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 II to ensure that their course choices are appropriate.
2. Courses that are exclusively GEOG are considered non-science.
3. Students are advised that not all courses will be offered in every year.

EARTH SCIENCES {169} ...

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
Crosslist: 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 ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24
Antirequisite: GEO 2B03
Crosslist: ENVIR SC 2B03

EARTH SC 2C03 SURFACE CLIMATE PROCESSES AND ENVIRONMENTAL INTERACTIONS
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
Antirequisite: GEO 2C03
Crosslist: ENVIR SC 2C03

EARTH 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
Antirequisite: GEO 2E03
Crosslist: ENVIR SC 2E03

EARTH SC 2EI3 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 1HS3, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24
Antirequisite: GEO 2A03
Crosslist: GEOG 2EI3

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. ENVIR SC 1G03 is strong recommended.
Prerequisite (Beginning 2010-2011): ENVIR SC 1G03 or ISCI 1A24
Antirequisite: GEO 2G03
Crosslist: ENVIR SC 2G03

EARTH SC 2GG3 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 2GG3

EARTH SC 2GI3 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 ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1D03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03. One of ENVIR SC 1G03, GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3 is recommended.
Prerequisite (Beginning 2010-2011): One of ENVIR SC 1G03, GEOG 1HA3, 1HB3 (GEO 1HS3, 1HU3)
Antirequisite: GEO 2I03
Crosslist: ENVIR SC 2GI3, GEOG 2GI3

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 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, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24. One of EARTH SC 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of EARTH SC 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: ECON 2B03, GEO 3S03, SOC SCI 2J03
Crosslist: ENVIR SC 2MB3, GEOG 2MB3

EARTH SC 2MM3 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. ENVIR SC 1G03 is strongly recommended.
Prerequisite (Beginning 2010-2011): ENVIR SC 1G03 and registration in Level II or above
Antirequisite: GEO 2MM3

EARTH 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
Antirequisite: CHEM BIO 2P03, CHEM 2PA3, 2PB3, 2PD3, 2R03, GEO 2Q03
Crosslist: ENVIR SC 2Q03

EARTH SC 2W03 PHYSICAL HYDROLOGY: SURFACE
Hydrological processes including precipitation, snowmelt, hillslope runoff, streamflow and hydrological data analysis.
Two lectures, one lab (two hours); one term
Prerequisite: One of ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1D03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03; and one of ENVIR SC 1A03, 1B03, 1G03
Antirequisite: GEO 2W03
Crosslist: ENVIR SC 2W03

EARTH SC 2WW3 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. One of BIOLOGY 1M03 (or 1AA3), ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of BIOLOGY 1M03 (or 1AA3), ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24
Antirequisite: GEO 2WW3

EARTH SC 3CC3 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, 1HU3, GEOG 1HA3, 1HB3; ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24; and registration in Level III or above. One of BIOLOGY 1M03 (or 1AA3), ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of BIOLOGY 1M03 (or 1AA3), ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24; and registration in Level III or above
Antirequisite: GEO 3CC3
Crosslist: ENVIR SC 3CC3

EARTH SC 3DD3 GEOARCHAEOLOGY OF THE UNDERWATER REALM
Methods in underwater exploration; geoarcheological 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. ENVIR SC 1G03 is strongly recommended.
Prerequisite (Beginning 2010-2011): ENVIR SC 1G03 or ISCI 1A24; and registration in Level III or above
Antirequisite: GEO 3DD3

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
Antirequisite: GEO 3E03
Crosslist: ENVIR SC 3E03

EARTH SC 3FE3 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 EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03; and registration in Level III or above of Honours Earth and Environmental Sciences; and permission of the instructor
Antirequisite: GEO 3FE3

EARTH SC 3GI3 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 4I03
Crosslist: ENVIR SC 3GI3, GEOG 3GI3

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 2C00; 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 should 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 2F03, EARTH SC 2B03, 2C03, ENVIR SC 2B03, 2C03, GEO 2B03, 2C03

Antirequisite: GEO 3J03

Crosslist: ENVIR SC 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 AQUATIC BIOGEOCHEMISTRY

This course introduces students to the chemical, physical, geological and biological interactions controlling lake behaviour, through lectures and direct hands-on sampling and analyses of samples. A mandatory afternoon field trip (during laboratory period) is held in September to collect samples from Lake Ontario.

Students enrolling in this course must pay both the incidental fees as prescribed by the School and the 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.

Antirequisite: GEO 3L03, 4L03

Crosslist: ENVIR SC 3L03

Enrolment is limited.

EARTH SC 3O03 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, GEO 2Q03; or registration in an Honours Chemistry program

Antirequisite: GEO 3O03

Crosslist: ENVIR SC 3O03

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 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 develops 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 3R03, GEOG 3MR3

EARTH SC 3SA3 APPLIED SPATIAL STATISTICS

Advanced treatment of geographic data and organization, descriptive and inferential spatial statistics.

Two lectures, one lab (two hours); one term

Prerequisite: One of EARTH SC 2MB3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3, SOC SCI 2J03, STATS 1CC3, 2B03. One of EARTH SC 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3; and one of EARTH SC 2MB3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3 are strongly recommended.

Prerequisite (Beginning 2010-2011): One of EARTH SC 2MB3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3

Antirequisite: GEO 4S03

Crosslist: ENVIR SC 3SA3, GEOG 3SA3

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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3

Antirequisite: GEO 3Y03

Crosslist: ENVIR SC 3SR3, GEOG 3SR3

EARTH SC 3T03 GEOCHEMISTRY OF MINERALS AND ROCKS

Chemistry of the earth including formation of the solar system and the earth, water rock chemical interaction at the earth's surface, chemistry of environmentally-sensitive minerals, techniques for analysing minerals and rocks.

Three lectures; one term

Prerequisite: EARTH SC 2K03 (GEO 2K03); and EARTH SC 2Q03 (GEO 2Q03) or ENVIR SC 2Q03

Antirequisite: GEO 3Q03

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

Antirequisite: CIV ENG 2J04, GEO 3U03

Crosslist: ENVIR SC 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 or 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 ISCI 1A24, MATH 1A03, 1B03, 1K03, 1LS3, 1M03, 1N03

Antirequisite: GEO 3W03

Crosslist: ENVIR SC 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 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 during lab time.
One lecture (two hours), one lab (four hours); one term
Prerequisite: One of EARTH SC 2W03, 3J03, ENVIR SC 2W03, 3J03, GEO 2W03, 3B03, 3J03
Antirequisite: GEO 4B03
Crosslist: ENVIR SC 4B03

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
Antirequisite: GEO 4C03
Crosslist: ENVIR SC 4C03

EARTH SC 4E03 COASTAL ENVIRONMENTS
Topics in coastal systems evolution with an emphasis on the Holocene. A mandatory field trip (5 to 7 days in duration) to collect data followed by laboratory analysis will be included.
Students enrolling in this course must pay both the incidential fees as prescribed by the School and the regular tuition fees.
Two lectures, one lab (three hours); one term
Prerequisite: One of EARTH SC 3E03, ENVIR SC 3E03, GEO 3E03
Antirequisite: GEO 4E03

EARTH 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 2EI3, GEO 2A03, GEOG 2EI3; 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
Antirequisite: GEO 4A03
Crosslist: ENVIR SC 4EA3, GEOG 4EA3

EARTH SC 4FE3 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 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 in the School of Geography and Earth Sciences
Antirequisite: GEO 4FE3

EARTH SC 4FF3 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 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 4FF3
EARTH SC 4FF3 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. A mandatory local field trip will be included.
Students enrolling in this course must pay both the incidential fees as prescribed by the School and the regular tuition fees.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, 2G03, ENVIR SC 2E03, 2G03, GEO 2E03, 2G03
Antirequisite: GEO 4G03
Crosslist: ENVIR SC 4G03

EARTH SC 4GI3 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 3I03
Crosslist: ENVIR SC 4GI3, GEOG 4GI3

EARTH SC 4IN3 THESIS 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.
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 2C00; 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 should 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 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, 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
Crosslist: ENVIR SC 4L03

EARTH SC 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
Antirequisite: EARTH SC 4MT6, GEO 4CC3, 4R06
Crosslist: GEOG 4MR3

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 course coordinator. One of EARTH SC 3RD3, GEO 3R03, GEOG 3MR3 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of EARTH SC 3RD3, GEO 3R03, GEOG 3MR3; and registration in Level IV or above in an Honours program in the School of Geography and Earth Sciences; and a CA of at least 7.5; and permission of the course coordinator. Students intending to enrol in this course must submit an application to the course 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 after February 1. Students will be informed of acceptance of their application on March 15 subject to fulfillment of the CA requirement.
Antirequisite: EARTH SC 4MR3, GEO 4CC3, 4R06, GEOG 4MR3
Crosslist: GEOG 4MT6
Enrolment is limited.

EARTH SC 4O03 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 3O03, ENVIR SC 3O03, GEO 3O03
Antirequisite: GEO 4O03
Crosslist: ENVIR SC 4O03

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 4V03 MINERAL EXPLORATION GEOPHYSICS
Principles of geophysical methods employed in mineral exploration. Use of gravity, magnetic and radiometric methods for surface and sub-surface geological mapping. Application to specific mineral deposit types.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03; and EARTH SC 3V03 or GEO 3V03

EARTH SC 4W03 HYDROLOGIC MODELLING
Principles of numerical modelling and examination of selected hydrologic models including deterministic, conceptual and statistical models.
One lecture (two hours), one lab (two hours); one term
Prerequisite: One of EARTH SC 2W03, 3W03, ENVIR SC 2W03, 3W03, GEO 2W03, 3W03
Antirequisite: GEO 4W03
Crosslist: ENVIR SC 4W03

EARTH SC 4WB3 CONTAMINANT HYDROGEOLOGY
Physical and chemical aspects of the fate and transport of contaminants in soils and groundwater, including fundamental processes, multiphase flow and groundwater remediation.
Three lectures; one term
Prerequisite: Credit or registration in EARTH SC 3W03 (GEO 3W03) or ENVIR SC 3W03
Antirequisite: EARTH SC 4WW3, ENVIR SC 4WW3, GEO 4WW3
Crosslist: ENVIR SC 4WB3

EARTH SC 4Z03 MARINE GEOPHYSICS
Principles of geophysical exploration of lakes and marine environments. Applications in geoscience research, resource exploration and underwater archaeology.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, ENVIR SC 2E03, GEO 2E03; and EARTH SC 3V03 or GEO 3V03
Antirequisite: GEO 4Z03, 4ZZ3

ENVIRONMENTAL SCIENCE {211} ...

Courses *If no prerequisite is listed, the course is open.*

ENVIR SC 1A03 CLIMATE AND WATER
An introduction to the processes involved in weather, climate and surface and subsurface waters with a focus on the human impacts on these processes.
Three lectures, 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
Antirequisite: GEO 2B03
Crosslist: EARTH SC 2B03

ENVIR SC 2C03 SURFACE CLIMATE PROCESSES AND ENVIRONMENTAL INTERACTIONS
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
Antirequisite: GEO 2C03
Crosslist: EARTH SC 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
Antirequisite: GEO 2E03
Crosslist: EARTH SC 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. ENVIR SC 1G03 is strongly recommended.
Prerequisite (Beginning 2010-2011): ENVIR SC 1G03 or ISCI 1A24
Antirequisite: GEO 2G03
Crosslist: EARTH SC 2G03

ENVIR SC 2GI3 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 ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03. One of ENVIR SC 1G03, GEOG 1HA3, 1HB3 (GEO 1HS3, 1HU3) is recommended.
Prerequisite (Beginning 2010-2011): One of ENVIR SC 1G03, GEOG 1HA3, 1HB3 (GEO 1HS3, 1HU3)
Antirequisite: GEO 2I03
Crosslist: EARTH SC 2GI3, GEOG 2GI3

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, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24. One of EARTH SC 2GI3 (GEO 2I03), ENVIR SC 2GI3, GEOG 2GI3 is strongly recommneded.
Prerequisite (Beginning 2010-2011): One of EARTH SC 2GI3 (GEO 2I03), ENVIR SC 2GI3, GEOG 2GI3
Antirequisite: ECON 2B03, GEO 3S03, SOC SCI 2J03
Crosslist: EARTH SC 2MB3, GEOG 2MB3

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
Antirequisite: CHEM BIO 2P03, CHEM 2PA3, 2PB3, 2PD3, 2R03, GEO 2Q03
Crosslist: EARTH SC 2Q03

ENVIR SC 2W03 PHYSICAL HYDROLOGY: SURFACE
Hydrological processes including precipitation, snowmelt, hillslope run-off, streamflow and hydrological data analysis.
Two lectures, one lab (two hours); one term
Prerequisite: One of MATH 1A03, 1AA3, 1B03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03, and one of ENVIR SC 1A03, 1B03, 1G03; or ISCI 1A24
Antirequisite: GEO 2W03
Crosslist: EARTH SC 2W03

ENVIR SC 3CC3 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, 1HU3, GEOG 1HA3, 1HB3, ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24, and registration in Level III or above. One of BIOLOGY 1M03 (or 1AA3), ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of BIOLOGY 1M03 (or 1AA3), ENVIR SC 1A03, 1B03, 1G03, ISCI 1A24; and registration in Level III or above.
Antirequisite: GEO 3CC3
Crosslist: EARTH SC 3CC3

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
Antirequisite: GEO 3E03
Crosslist: EARTH SC 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 2EI3, GEO 2A03, GEOG 2EI3; or registration in an Honours Biology, an Engineering and Society program, an Honours Integrated Science program or an Honours program in the School of Geography and Earth Sciences
Antirequisite: GEO 3A03
Crosslist: GEOG 3EP3

ENVIR SC 3GI3 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 4I03
Crosslist: EARTH SC 3GI3, GEOG 3GI3

ENVIR 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
Antirequisite: GEO 3J03
Crosslist: EARTH SC 3J03

ENVIR SC 3L03 PHYSICAL AND CHEMICAL PROCESSES IN FRESHWATER ENVIRONMENTS
Introduction to the chemical, physical, geological and biological interactions controlling lake behaviour, through lectures and direct hands-on sampling and analyses of samples.
A mandatory afternoon field trip (during laboratory time) is held in September to collect samples from Lake Ontario. Students enrolling in this course must pay both the incidental fees as prescribed by the School and the 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.
Antirequisite: GEO 3L03, 4L03
Crosslist: EARTH SC 3L03
Enrolment is limited.

ENVIR SC 3ME3 ENVIRONMENTAL STUDIES FIELD CAMP
Within the context of a field project, this course introduces students to field techniques in environmental science and to the potential effects of environmental issues on human health and well-being.
The field camp component occurs outside of the regular academic term, usually two weeks preceding the start of term in September. Details and applications are available in January through the School of Geography and Earth Sciences. Students enrolling in this course must pay both the incidental fees as prescribed by the School and the regular tuition fees.
One term
Prerequisite: One of EARTH SC 2B03, 2E03, 2EI3, 2G03, 2Q03, ENVIR SC 2B03, 2E03, 2G03, 2Q03, GEO 2A03, 2B03, 2E03, 2G03, GEOG 2EI3; and registration in Level III or above of Honours Biology and Environmental Sciences, Honours Environmental Sciences, Honours Geography and Environmental Studies; and permission of the instructor. One of EARTH SC 2Q03 (GEO 2Q03), ENVIR SC 2Q03 is recommended.
Crosslist: GEOG 3ME3

ENVIR SC 3O03 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
Antirequisite: GEO 3O03
Crosslist: EARTH SC 3O03

ENVIR SC 3SA3 APPLIED SPATIAL STATISTICS
Advanced treatment of geographic data and organization, descriptive and inferential spatial statistics.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2MB3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3, STATS 1CC3, 2B03, SOC SCI 2J03. One of EARTH SC 2GI3, ENVIR SC 2GI3 (GEO 2I03), GEOG 2GI3 and one of EARTH SC 2MB3, ENVIR SC 2MB3, GEOG 2MB3 (or GEO 3S03) are strongly recommended.
Prerequisite (Beginning 2010-2011): One of EARTH SC 2MB3, ENVIR SC 2MB3, GEOG 2MB3 (or GEO 3S03)
Antirequisite: GEO 4S03
Crosslist: EARTH SC 3SA3, GEOG 3SA3

ENVIR 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 3Y03
Crosslist: EARTH SC 3SR3, GEOG 3SR3

ENVIR 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
Antirequisite: CIV ENG 2J04, GEO 3U03
Crosslist: EARTH SC 3U03

ENVIR 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 ISCI 1A24, MATH 1A03, 1B03, 1K03, 1LS3, 1M03, 1N03
Antirequisite: GEO 3W03
Crosslist: EARTH SC 3W03

ENVIR 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 during lab time.
One lecture (two hours), one lab (four hours); one term
Prerequisite: One of EARTH SC 2W03, 3J03, ENVIR SC 2W03, 3J03, GEO 2W03, 3J03
Antirequisite: GEO 4B03
Crosslist: EARTH SC 4B03

ENVIR 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
Antirequisite: GEO 4C03
Crosslist: EARTH SC 4C03

ENVIR 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 2EI3, GEO 2A03, GEOG 2EI3; 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
Antirequisite: GEO 4A03
Crosslist: EARTH SC 4EA3, GEOG 4EA3

ENVIR SC 4G03 GLACIAL SEDIMENTS AND ENVIRONMENTS
The development and movement of glaciers, glacial depositional processes and sedimentary successions in terrestrial, lacustrine and marine environments. A mandatory local field trip will be included.
Students enrolling in this course must pay both the incidential fees as prescribed by the School and the regular tuition fees.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2E03, 2G03, ENVIR SC 2E03, 2G03, GEO 2E03, 2G03
Antirequisite: GEO 3G03, 4G03
Crosslist: EARTH SC 4G03

ENVIR SC 4GI3 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 ENVIR SC 2GI3, EARTH SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 3I03
Crosslist: EARTH SC 4GI3, GEOG 4GI3

ENVIR SC 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 ENVIR SC 3EP3, GEO 3A03, 3HH3, GEOG 3EP3, 3HH3 or permission of the instructor
Antirequisite: GEO 4HH3
Crosslist: GEOG 4HH3, HEALTHST 4E03

ENVIR 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, 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
Crosslist: EARTH SC 4L03

ENVIR SC 4O03 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 3O03, ENVIR SC 3O03, GEO 3O03
Antirequisite: GEO 4O03
Crosslist: EARTH SC 4O03

ENVIR SC 4W03 HYDROLOGIC MODELLING
Principles of numerical modelling and examination of selected hydrologic models including deterministic, conceptual and statistical models.
One lecture (two hours), one lab (two hours); one term
Prerequisite: One of EARTH SC 2W03, 3W03, ENVIR SC 2W03, 3W03, GEO 2W03, 3W03
Antirequisite: GEO 4W03
Crosslist: EARTH SC 4W03

ENVIR SC 4WB3 CONTAMINANT HYDROGEOLOGY
Physical and chemical aspects of the fate and transport of contaminants in soils and groundwater, including fundamental processes, multiphase flow and groundwater remediation.
Three lectures; one term
Prerequisite: Credit or registration in EARTH SC 3W03 (GEO 3W03) or ENVIR SC 3W03
Antirequisite: EARTH SC 4WW3, ENVIR SC 4WW3, GEO 4WW3
Crosslist: EARTH SC 4WB3

GEOGRAPHY {240} ...

Courses

If no prerequisite is listed, the course is open.

GEOG 1HA3 HUMAN GEOGRAPHIES: SOCIETY AND CULTURE
Introduction to human-environment relations and spatial analysis with special emphasis on urban, social, health and cultural environments.
Two lectures, one lab (two hours); one term
Antirequisite: GEO 1HS3

GEOG 1HB3 HUMAN GEOGRAPHIES: CITY AND 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 (two hours); one term
Antirequisite: GEO 1HU3

GEOG 2EI3 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 1HS3, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24
Antirequisite: GEO 2A03
Crosslist: EARTH SC 2EI3

GEOG 2GI3 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 ISCI 1A24, MATH 1A03, 1AA3, 1B03, 1D03, 1LS3, SOC SCI 2J03, STATS 1CC3, 2B03. One of ENVIR SC 1G03, GEOG 1HA3, 1HB3 (GEO 1HS3, 1HU3) is recommended.
Prerequisite (Beginning 2010-2011): One of ENVIR SC 1G03, GEOG 1HA3, 1HB3 (GEO 1HS3, 1HU3)
Antirequisite: GEO 2I03
Crosslist: ENVIR SC 2GI3, EARTH SC 2GI3

GEOG 2HI3 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
Crosslist: HEALTHST 2HI3

GEOG 2LI3 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 2HA3

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, 3Z06, 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 ENVIR SC 1A03, 1B03, 1G03, GEO 1HS3, 1HU3, GEOG 1HA3, 1HB3, ISCI 1A24. One of EARTH SC 2GI3 (GEO 2I03), ENVIR SC 2GI3, GEOG 2GI3 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of EARTH SC 2GI3 (GEO 2I03), ENVIR SC 2GI3, GEOG 2GI3
Antirequisite: ECON 2B03, GEO 3S03, SOC SCI 2J03
Crosslist: EARTH SC 2MB3, ENVIR SC 2MB3

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. Completion of GEOG 1HA3 or 1HB3 is recommended.
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. Completion of GEOG 1HA3 or 1HB3 is recommended.
Antirequisite: GEO 2HU3

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 America 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 2EI3, GEO 2A03, GEOG 2EI3
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 2EI3, GEO 2A03, GEOG 2EI3; or registration in an Honours Biology, an Engineering and Society program, an Honours Integrated Science program or an Honours program in the School of Geography and Earth Sciences
Antirequisite: GEO 3A03
Crosslist: ENVIR SC 3EP3

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 3GI3 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 4I03
Crosslist: EARTH SC 3GI3, ENVIR SC 3GI3

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
Crosslist: HEALTHST 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: GEOG 2HI3, HEALTHST 2HI3
Antirequisite: GEO 2HG3, GERONTOL 2HG3, HEALTHST 2HG3
Crosslist: HLTH AGE 3HP3

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 3ME3 ENVIRONMENTAL STUDIES FIELD CAMP
Within the context of a field project, this field camp introduces students to field techniques in environmental science and to the potential effects of environmental issues on human health and well-being.
The field camp component occurs outside of the regular academic term, usually two weeks preceding the start of term in September. Details and applications are available in January through the School of Geography and Earth Sciences.
Students enrolling in this course must pay both the incidential fees as prescribed by the School and the regular tuition fees.
One term
Prerequisite: One of EARTH SC 2B03, 2E03, 2EI3, 2G03, 2Q03, ENVIR SC 2B03, 2E03, 2G03, 2Q03, GEO 2A03, 2B03, 2E03, 2G03, GEOG 2EI3; and registration in Level III or above of Honours Biology and Environmental Sciences, Honours Environmental Sciences, Honours Geography and Environmental Studies; and permission of the instructor. One of EARTH SC 2Q03, ENVIR SC 2Q03, GEO 2Q03 is recommended.
Crosslist: ENVIR SC 3ME3

GEOG 3MF3 FIELD STUDY IN HUMAN GEOGRAPHY
An introduction to field research in human geography.
Most of this course occurs outside the regular academic term, usually in one of the two weeks prior to the start of term in September. Details and applications are available in March.
Students enrolling in this course must pay both the incidential fees as prescribed by the School as well as the regular tuition fee.
One term
Prerequisite: GEO 2HR3 or GEOG 2MA3; 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 3RJ3 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. Completion of GEOG 1HA3 or 1HB3 is recommended.
Antirequisite: GEO 3HJ3

GEOG 3RW3 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
Prerequisite: Completion of GEOG 1HA3 or 1HB3 is recommended.
Prerequisite (Beginning 2010-2011): Registration in Level III or above. Completion of GEOG 1HA3 or 1HB3 is recommended.
Antirequisite: GEO 3HR3
GEOG 3RW3 may be repeated, if on a different topic, with permission of the School of Geography and Earth Sciences.

GEOG 3SA3 APPLIED SPATIAL STATISTICS
Advanced treatment of geographic data and organization, descriptive and inferential spatial statistics.
Two lectures, one lab (two hours); one term
Prerequisite: One of EARTH SC 2MB3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3, STATS 1CC3, 2B03, SOC SCI 2J03. One of EARTH SC 2GI3 (GEO 2I03), ENVIR SC 2GI3, GEOG 2GI3 and one of EARTH SC 2MB3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3 are strongly recommended.
Prerequisite (Beginning 2010-2011): One of EARTH SC 2MB3, ENVIR SC 2MB3 (GEO 3S03), GEOG 2MB3
Antirequisite: GEO 4S03
Crosslist: EARTH SC 3SA3, ENVIR SC 3SA3

GEOG 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 3Y03
Crosslist: EARTH SC 3SR3, ENVIR SC 3SR3

GEOG 3UG3 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 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 2LI3, 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
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 2EI3, GEO 2A03, GEOG 2EI3; 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
Antirequisite: GEO 4A03
Crosslist: EARTH SC 4EA3, ENVIR SC 4EA3

GEOG 4GH3 GEOMATICS OF HEALTH AND URBAN SOCIAL PROBLEMS
This course will introduce the ways in which geographic information and analysis can be applied to a variety of topics in health and urban social problems, particularly crime. Topics include risk estimation, hot-spot detection and investigation, and geographic profiling of serial crime.
Two lectures, one lab (two hours); one term
Prerequisite: GEOG 2GI3, 2MB3; and one of GEOG 2HI3, 2UI3, 3HH3 or 3HP3

GEOG 4GI3 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 2GI3, ENVIR SC 2GI3, GEO 2I03, GEOG 2GI3
Antirequisite: GEO 3I03
Crosslist: EARTH SC 4GI3, ENVIR SC 4GI3

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 2UI3; and one of GEO 3HH3, GEOG 2HI3, 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 ENVIR SC 3EP3, GEO 3A03, 3HH3, GEOG 3EP3, 3HH3; or permission of the instructor
Antirequisite: GEO 4HH3, HEALTHST 4E03
Crosslist: ENVIR SC 4HH3, HEALTHST 4M03

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: GEOG 2HI3; and one of COMMERCE 2QA3, ENVIR SC 2MB3, GEO 3S03, GEOG 2MB3, 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 3HG3

GEOG 4LP3 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 2LI3

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 3HD3 or GEOG 3LT3
Antirequisite: CIV ENG 6H03, GEO 4D03
Crosslist: CIV ENG 4HH3

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: GEO 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
Antirequisite: EARTH SC 4MT6, GEO 4CC3, 4R06, GEOG 4MT6
Crosslist: EARTH SC 4MR3

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 course coordinator. One of EARTH SC 3RD3, GEO 3R03, GEOG 3MR3 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of EARTH SC 3RD3, GEO 3R03, GEOG 3MR3; and registration in Level IV or above in an Honours program in the School of Geography and Earth Sciences; and a CA of at least 7.5; and permission of the course coordinator. Students intending to enrol in this course must submit an application to the course 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 after February 1. Students will be informed of acceptance of their application on March 15 subject to fulfillment of the CA requirement.
Antirequisite: EARTH SC 4MR3, GEO 4CC3, 4R06, GEOG 4MR3
Crosslist: EARTH SC 4MT6
Enrolment 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 3HZ3, GEOG 3UG3, 3UR3
Antirequisite: GEO 4HZ3

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 2UI3

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. 27227

Faculty as of January 15, 2009

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)*
Celia Rothenberg/*(Religious Studies)* B.A. *(Wellesley)*, M.A. *(Oxford)*, Ph.D. *(Toronto)*
Chris Sinding/*(Social Work)* B.A. *(Western Ontario)*, M.A. *(McMaster)*, 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)*
Martin Hering/*(Political Science)* B.A., M.A. *(Marburg, Germany)*, Ph.D. *(Johns Hopkins)*

Associate Members

Jane Aronson/*(Social Work)* B.Sc. *(New University of Ulster)*, B.S.W., M.S.W. *(McGill)*, Ph.D. *(Toronto)*
Alan G. Bishop/*(English and Cultural Studies)* B.A. *(Rhodes, S. Africa)*, M.A., D.Phil. *(Oxford)*
Roy Cain/*(Social Work)* B.S.W., M.S.W., Ph.D. *(McGill)*
David Clark/*(English and Cultural Studies)* B.A., M.A., Ph.D. *(Western Ontario)*
William D. Coleman/*(Globalization/Political Science)* B.A. *(Carleton)*, A.M., Ph.D. *(Chicago)*
Laurie C. Doering/*(Pathology and Molecular Medicine)* B.Sc. *(Queen's)* M.Sc., Ph.D. *(Saskatchewan)*
James W. Gladstone/*(Social Work)* B.A. *(McGill)*, M.S.W. *(British Columbia)*, Ph.D. *(Toronto)*
Jeremiah E. Hurley/*(Economics)* B.A. *(John Carroll)*, M.A., Ph.D. *(Wisconsin-Madison)*
Carrie McAiney/*(Psychiatry and Behavioural Neurosciences)* B.A., M.A., Ph.D. *(Waterloo)*
Colin McMullan/*(Geography and Earth Sciences)* B.A. *(Brock)*, Ph.D. *(McMaster)*
Christina Moffat/*(Anthropology)* B.Sc. *(Toronto)*, B.A., Ph.D. *(McMaster)*
Jenny Ploeg/*(Nursing)* B.Sc.N., M.Sc.N. *(Western Ontario)*, Ph.D. *(Toronto)*, R.N.
Ellen B. Ryan/*(Psychiatry)*, B.A., Ph.D. *(McMaster)*
Byron G. Spencer/*(Economics)* B.A. *(Queen's)*, Ph.D. *(Rice)*
David Wright/*(History/Psychiatry)* B.A., M.A. *(McGill)*, D.Phil. *(Oxford)*

Note:

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.

HEALTH, AGING AND SOCIETY {272} ...

Note:

While it is not a requirement, it is strongly recommended that students in the B.A. program complete HLTH AGE 3Z06.

Courses *If no prerequisite is listed, the course is open.*

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 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 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 GEOG 2HI3, HEALTHST 2HI3
Antirequisite: GEO 2HG3, GERONTOL 2HG3, HEATHST 2HG3
Crosslist: GEOG 3HP3
This course is administered by the School of Geography and Earth Sciences.

HLTH AGE 3Z06 RESEARCH METHODS IN HEALTH, AGING AND SOCIETY
This course will examine quantitative and qualitative research 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: ANTHROP 2Z03, CMST 2A03, GEO 2HR3, GEOG 2MA3, GERONTOL 2C03, 3R03, HEALTH ST 2B03, 3G03, HLTH AGE 2A06, 3A03, SOCIOL 2Z03

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 any Gerontology or Health Studies program
Antirequisite: HEALTHST 4C03

HLTH AGE 4Z06 HEALTH, AGING AND SOCIETY THESIS
This course provides an 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.
Two terms
Prerequisite: Registration in Level IV of any Honours Gerontology or Health Studies program; and six units of research methods (GERONTOL 2C03 and either GERONTOL 3R03 or HLTH AGE 3A03; or HEALTHST 2B03 and either HEALTHST 3G03 or HLTH AGE 3A03) or HLTH AGE 2A06; and SOC SCI 2J03 or another approved statistics course.
Prerequisite (Beginning 2010-2011): Registration in Level IV of any Honours Gerontology or Health Studies program; and six units of research methods (GERONTOL 2C03 and either GERONTOL 3R03 or HLTH AGE 3A03; or HEALTHST 2B03 and either HEALTHST 3G03 or HLTH AGE 3A03) or HLTH AGE 2A06 or 3Z06; and SOC SCI 2J03 or another approved statistics course
Antirequisite: GERONTOL 4A06

GERONTOLOGY {265} ...

Notes:

1. Gerontology students are strongly recommended to complete GERONTOL 2E03 prior to GERONTOL 3B03.
2. GERONTOL 2B03, 2F03, 3F03, 3H03, 3J03, 3K03, 3L03, 3M03, 3N03 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**.

Courses *If no prerequisite is listed, the course is open.*

GERONTOL 1A03 AGING AND SOCIETY
Examines issues in aging from a multidisciplinary perspective including such topics as: myths and stereotypes of aging, social ties in later life and the aging of the Canadian population. Provides a deeper understanding of aging and the changing body, mind and self, as well as the meaning and experiences, challenges and opportunities of aging and later life.
Three hours (lectures, inquiry and experiential components); one term
Antirequisite: GERONTOL 1A06

GERONTOL 2B03 THE AGING BODY
An examination of age-related changes in biology and physiology of the human body.
Three hours (lectures); one term
Prerequisite: GERONTOL 1A03 or 1A06
Not open to students with credit or registration in KINESIOL 4SS3.

GERONTOL 2D03 SOCIAL ASPECTS OF AGING
Explores social aspects of aging at both the individual and societal levels using a variety of approaches such as life course perspective, political economy, social constructionism, self identity, and a feminist perspective of aging.
Three hours (lectures and discussions); one term
Prerequisite: Registration in any Gerontology or Health Studies program, or GERONTOL 1A03 or HEALTHST 1A03; and permission of the Department
Antirequisite: GERONTOL 2A03, 2AA3

GERONTOL 2E03 COMMUNICATION AND COUNSELLING WITH OLDER ADULTS
Focuses on the unique communication and counselling needs of older adults. Explores various communication issues and approaches and enables students to apply client-centred communication techniques.
Three hours (lectures and discussion, includes experiential component); one term
Prerequisite: Registration in any Gerontology program. (See *Note 1* above.)
Antirequisite: GERONTOL 4B03

GERONTOL 2F03 AGING AND HEALTH CARE SYSTEMS
This course examines the available international evidence on the impact of aging on health and long-term care expenditures and organization, as well as the choices various societies are making around issues of aging, health, and long-term care, and the equity issues such choices raise.
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, enrolment 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 Aging and Health Care Systems.

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 1* 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
Not open to students with credit in PSYCH 3DD3.

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, enrolment 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, enrolment 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, painting, 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
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrolment for such students is limited.
Not open to students with credit in GERONTOL 3I03, if the topic was Images of Aging.

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, enrolment 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: SOCIOL 3CC3
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrolment for such students is limited.
Not open to students with credit in GERONTOL 4C03, if the topic was Aging in a Family Context.

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
This course may be taken as elective credit by undergraduate students registered in a non-Gerontology program. However, enrolment for such students is limited.
Not open to students with credit in GERONTOL 4C03, if the topic was Aging and Mental Health.

GERONTOL 3S03 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
GERONTOL 3S03 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, enrolment for such students is limited.

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

GERONTOL 4I03 AGING AND HEALTH
Addresses the biological, psychological and socio-political factors influencing the health of elderly persons from a broad national and international perspective.
Three hours (problem-based tutorial); one term
Prerequisite: Registration in Level IV of any Honours Gerontology or Honours Health Studies program or registration in Level III of any B.A. Gerontology program
This course may be taken by undergraduate students registered in an Honours Health Studies program. However, enrolment for such students is limited.
Not open to students with credit in GERONTOL4D03, if the topic was Aging and Health.

GERONTOL 4J03 AGING AND DISABILITY
Multidisciplinary models of successful aging are applied to older adults with mobility, sensory, and cognitive impairments. Psychological, communication, and spiritual issues are emphasized.
Three hours (seminar); one term
Prerequisite: Registration in Level IV of any Honours Gerontology program
Not open to students with credit in GERONTOL 4C03, if the topic was Aging and Disability.

GERONTOL 4K03 ISSUES IN THE SOCIAL ASPECTS OF AGING
An advanced exploration of social aspects of aging including gender and health, family relationships and retirement.
Three hours (seminar); one term
Prerequisite: Registration in any Gerontology program
Antirequisite: SOCIOL 4PP3

GERONTOL 4S03 SOCIAL POLICY AND THE AGING POPULATION
Critical examination of the social and economic implications of the aging population and the nature of social welfare policy with respect to the elderly.
Three hours (problem-based tutorial); one term
Prerequisite: Registration in Level IV of any Honours Gerontology program or registration in Level III of any B.A. Gerontology Program; and permission of the instructor
Antirequisite: POL SCI 4A03, SOC WORK 4A03, 4L03, 4V03

HEALTH STUDIES {273} ...

Notes:

1. HEALTHST 2C03, 2D03, 2E03, 2H03, 2HG3 and 3Y03 may be taken as electives by students enrolled in Level II and above of a non-Health Studies program.
2. HEALTHST 3D03, 3E03, 3F03, 3H03 and 3HH3 may be taken as electives by students enrolled in Level III and above of a non-Health Studies program. Space for such students is limited.

Courses *If no prerequisite is listed, the course is open.*

HEALTHST 1A03 INTRODUCTION TO HEALTH STUDIES
An introduction to the key themes and questions concerning health and health care from within social sciences perspectives.
Three hours (lectures and tutorials); one term
Antirequisite: HEALTHST 1E03, 1S03, HTH SCI 3B03, SOC SCI 1H03
Not open to students in a Nursing or Midwifery program.

HEALTHST 2AA3 SOCIAL IDENTITY, HEALTH AND ILLNESS
A critical exploration of the role of class, race, gender, ability and age in patterns of health and illness.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of a Health Studies or Gerontology program
Antirequisite: HEALTHST 2A03
This course may be taken by students enrolled in a Gerontology program. However, enrolment for such students is limited.

HEALTHST 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
Crosslist: ANTHROP 2AN3
This course is administered by the Department of Anthropology.

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
Prerequisite: Registration in Level II or above
Crosslist: ECON 2CC3
Not open to students registered in an Economics program or with credit or registration in ECON 2G03, 2X03 or 3Z03.
This course is administered by the Department of Economics.

HEALTHST 2D03 MENTAL HEALTH
An examination of mental health and illness 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
Crosslist: HTH SCI 2I03, WOMEN ST 2H03

HEALTHST 2HI3 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
Crosslist: GEOG 2HI3
This course is administered by the School of Geography and Earth Sciences.

HEALTHST 3AA3 STATE, CIVIL SOCIETY AND HEALTH

This course explores how states, citizens, and civil society act and 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
Crosslist: 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.
Crosslist: 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 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: GEOG 1HA3 or 1HB3
Crosslist: GEOG 3HH3
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
Crosslist: 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
Crosslist: HTH SCI 3Y03, HISTORY 3Y03
This course is administered by the Bachelor of Health Sciences (Honours) program.

HEALTHST 3YY3 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
Crosslist: 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 (lectures and discussion); one term
Prerequisite: Registration in Level IV of an Honours program in the Faculty of Social Sciences. Priority will be given to students in Honours programs in Health Studies and Gerontology.

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
Crosslist: 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
Antirequisite: GEO 4HH3, HEALTHST 4E03
Crosslist: ENVIR SC 4HH3, GEOG 4HH3
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), (E) or (F) Streams or Midwifery, as applicable.

BACHELOR OF HEALTH SCIENCES (HONOURS) {276} ...

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, 2D06, INQUIRY 1SC3
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 PSYCHOBIOLOGY
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 1I06
Antirequisite: PSYCH 1A03
Not open to students with credit or registration in PSYCH 1XX3.

HTH SCI 1I06 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 1I06 must also register in SCIENCE 1A00 when completing their registration.
Not open to students with credit or registration in BIOLOGY 1A03.

HTH SCI 1S00 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 2QA3, HTH SCI 1F03, NURSING 2R03, STATS 1CC3

HTH SCI 2D06 INQUIRY II
This course will use an inquiry-based approach. First semester will initiate the development of a skill set required for life-long learning by studying healthcare issues. Second semester will introduce key concepts in Biochemistry and Molecular Biology to understand genetic, infectious and metabolic diseases.
Three hours; two terms
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program
Antirequisite: HTH SCI 1E06, 2E03
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
Antirequisite: HTH SCI 2D06

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, 1H06, 2L03, KINESIOL 1A03, 1A06, 1AA3, 1X06, 1Y03, 1YY3, MED PHYS 4XX3, SCIENCE 4XX3

HTH SCI 2FF3 HUMAN PHYSIOLOGY AND ANATOMY II
A continuation of HTH SCI 2F03 with an examination of the Immune, Cardiovascular, Respiratory, Gastrointestinal and Uro-Genital Systems.
Two lectures, one tutorial, one lab; one term
Prerequisite: HTH SCI 2F03
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H06, 1HH3, 2LL3, 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: STATS 1CC3 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. This course is evaluated on a Pass or Fail basis
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 1AA3, HTH SCI 1I06; and HTH SCI 2D06 or 2E03
Antirequisite: BIOLOGY 2B03, MOL BIOL 2B03

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

HTH SCI 2P01 PHYSICAL CHEMISTRY
An independent Study Module that will study the thermodynamics of life, chemical and physical equilibria and enzyme kinetics.
Prerequisite: CHEM 1AA3 and registration in Level II of the B.H.Sc. (Honours) Biomedical Sciences Specialization
Antirequisite: CHEM 2PA3, 2PD3, 2R03

HTH SCI 2Q06 FUNDAMENTALS OF GLOBAL HEALTH I
This course will provide various frameworks to contextualize and understand global health issues.
Three hours; two terms
Prerequisite: Registration in Level II of the B.H.Sc. (Honours) program and permission of Assistant Dean, B.H.Sc. (Honours) program

HTH SCI 2S00 PREPARATORY STUDIES FOR BACHELOR OF HEALTH SCIENCES II
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 3AA3 INTRODUCTION TO HEALTH CARE MANAGEMENT
This course is an introduction to theory and practice of business management, applied to a health care setting. Focus will be on multidimensional perspectives of real-world management issues and personal development.
One lecture; one problem-based tutorial (two hours); one term
Prerequisite: Registration in Level III of the B.H.Sc. (Honours) program; or permission of the instructor

HTH SCI 3CC3 THEATRE FOR DEVELOPMENT
This course, rooted in Applied Drama, will enable students to actively participate and explore their creativity, enhancing transferable skills like communication and active listening through drama games and exercises.
Three hours; one term
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program

HTH SCI 3D03 GENETICS IN HEALTH SCIENCES
This course examines basic genetic principles including cytogentics, cancer genetics and metabolic diseases 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

HTH SCI 3GG3 HEALTH SYSTEMS AND HEALTH POLICY
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

HTH SCI 3H03 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 4GG9, 4R09, PHARMAC 4F09, PSYCH 4E09
Not open to students with credit or registration in BIOCHEM 4P03.

HTH SCI 3I03 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

HTH SCI 3J03 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

HTH SCI 3K03 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: One of BIOLOGY 2B03, HTH SCI 2K03 or MOL BIOL 2B03; and registration in Level III

HTH SCI 3L03 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

HTH SCI 3N03 WRITTEN COMMUNICATION IN HEALTH SCIENCES I
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

HTH SCI 3P06 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

HTH SCI 3S03 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 2E03; and registration in Level III or above of the B.H.Sc. (Honours) program

HTH SCI 3T03 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 2E03

HTH SCI 3U03 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

HTH SCI 3UU0 PREPARATORY STUDIES FOR BACHELOR OF HEALTH SCIENCES III
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 3V03 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.

HTH SCI 3W03 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.

HTH SCI 3X02 GENOMIC INFORMATION
Use of computers, graphics, .tif files, Pymol, NCBI 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.

HTH SCI 3Y03 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
Crosslist: HEALTHST 3Y03, HISTORY 3Y03

HTH SCI 3Z01 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.

HTH SCI 4A09 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. (Honours) 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.

HTH SCI 4AA3 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

HTH SCI 4B06 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 4BB3 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

HTH SCI 4D03 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 4D03 may be repeated, if on a different topic, to a total of six units.

HTH SCI 4EE3 EDUCATION PRACTICUM IN HEALTH SCIENCES
An opportunity to explore pedagogy as it relates to best practice in education.
Sessions arranged individually or in small groups; two terms
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program
HTH SCI 4EE3 may be repeated to a total of six units.

HTH SCI 4F03 CLINICAL PRACTICE ENVIRONMENT
This course will include one or more placements for students. In conjunction with these placements, students will be required to compile a report on one or more health care delivery environments. Students must arrange their clinical placement.
This course is evaluated on a Pass/Fail basis.
One term
Prerequisite: HTH 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.

HTH SCI 4G03 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 2FF3 and registration in the B.H.Sc. (Honours) program
Antirequisite: BIOLOGY 4G06

HTH SCI 4GG3 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

HTH SCI 4II3 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 4II3

HTH SCI 4J03 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, 4II3; or permission of the instructor
Antirequisite: MOL BIOL 4J03
Crosslist: BIOCHEM 4J03

HTH SCI 4JJ3 BUILDING 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

HTH SCI 4K03 HUMAN PATHOPHYSIOLOGY
The 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 2FF3 or permission of the instructor

HTH SCI 4KK3 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: HTH SCI 4K03

HTH SCI 4LL3 INTEGRATED HEALTH SYSTEMS
Consideration of the issues inherent to the integration of current conventional medical approaches with other healing systems.
Three hours; one term
Prerequisite: Registration in Level III or above of the B.H.Sc. (Honours) program

HTH SCI 4M03 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

HTH SCI 4MM3 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

HTH SCI 4NN3 WRITTEN COMMUNICATION 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: HTH SCI 3N03

HTH SCI 4O03 PRINCIPLES OF VIRUS PATHOGENESIS
Current theories and knowledge on mechanisms that relate to virus pathogenesis and evasion of host cell responses.
Two lectures, one tutorial; one term
Prerequisite: HTH SCI 3I03, 3K03 and registration in Level III or above

HTH SCI 4PP3 MOTOR CONTROL - THEORIES AND MODELS
Students will investigate control of human movement by exploring theories of motor control and the models derived from those theories presently in use by motor control neuroscientists.
Three hours, one lab; one term
Prerequisite: HTH SCI 4V03

HTH SCI 4QQ3 COMMUNICATION SKILLS PRACTICUM
An opportunity to explore pedagogy as it relates to best practice in education.
Sessions arranged individually or in small groups; two terms
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program
HTH SCI 4QQ3 may be repeated to a total of six units.

HTH SCI 4RR3 DRUGS, DEVICES AND DESIRES: A HISTORICAL EXPLORATION
A problem-based approach will help students deconstruct the technological imperatives underlying modern medical practice which relies extensively on sophisticated instruments, procedures and drugs to diagnose and treat disease.
Three hours; one term
Prerequisite: Registration in Level IV of the B.H.Sc. (Honours) program or permission of the instructor

HTH SCI 4SS6 GROUP PROCESS PRACTICUM
An opportunity to explore theory and apply concepts of group dynamics and processes as it relates to best practice education.
Sessions arranged individually or in small groups; two terms
Prerequisite: Permission of the Assistant Dean, B.H.Sc. (Honours) program

HTH SCI 4T03 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 Pass/Fail 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 HTH SCI 4U06 may be repeated to a total of 12 units for both courses.

HTH SCI 4TT3 RESEARCH ETHICS PRACTICUM
An opportunity through peer tutoring and small group inquiry based learning to explore theory and apply concepts related to research ethics.
Three hours; two terms
Prerequisite: Permission of the instructor

HTH SCI 4U06 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 Pass/Fail 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 HTH SCI 4T03 may be repeated to a total of 12 units for both courses.

HTH SCI 4UU0 PREPARATORY STUDIES FOR BACHELOR OF HEALTH SCIENCES IV
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 4V03 CONTROL OF HUMAN MOVEMENT
The topics in this course will include basic neurophysiology and control of sensation, proprioception, reflex and voluntary movement. Throughout 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

HTH SCI 4VV3 SPACE, EXPLORATION AND REMOTE CARE MEDICINE
The focus will be on human life sciences data on short and long duration spaceflight and analog sites as they apply to exploration to the Moon and Mars and other remote environments.
Four hours; one term
Prerequisite: Registration in Level IV; and one of BIOLOGY 2A03, HTH SCI 1D06, 1H06, or both HTH SCI 2F03 and 2FF3, or both HTH SCI 2L03 and 2LL3, or both KINESIOL 1Y03 and 1YY3

HTH SCI 4W03 SPECIAL TOPICS IN HEALTH SCIENCES II
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 4W03 may be repeated, if on a different topic, to a total of six units.

HTH SCI 4X03 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 life-long 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 3Q03, 3QQ3, INQUIRY 3S03, SCIENCE 2L03, 3S03, SOC SCI 2L03

HTH SCI 4Y03 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

HTH SCI 4YY3 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: HTH SCI 3W03
First offered in 2011-2012.

HEALTH SCIENCES {276} (ENGINEERING, MIDWIFERY, NURSING) ...

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), (E) or (F) Streams or Midwifery, as applicable.

Courses

HTH SCI 1AA3 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 Nursing I or permission of the instructor
Antirequisite: HTH SCI 1A06, 1CC6, 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 1CC6 INTIGRATED BIOLOGICAL BASES OF NURSING PRACTICE I
Students will apply principles of cellular biology, biochemistry and human anatomy and physiology essential to the assessment and understanding of health care challenges.
Lecture (two hours), seminar (two hours), one on-line tutorial; 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, 1AA3, 1BB3, 1CC7, 1ZZ4, 3BB3
First offered in 2010-2011.

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 on-line 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, 1AA3, 1BB3, 1CC6, 1ZZ4, 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, 3UU3, HTH SCI 2F03, 2FF3, KINESIOL 1A03, 1A06, 1AA3, 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 Nursing I or permission of the instructor
Antirequisite: BIOLOGY 1J03, 2A03, HTH SCI 1B07, 1H03, 1HH3, 2F03, 2FF3, 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 2BB3 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 2C06 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 challenges.
Lecture (two hours), seminar (two hours), one journal club (one hour), one on-line tutorial; one term
Prerequisite: HTH SCI 1CC6 or 1CC7
Antirequisite: HTH SCI 2AA2, 2B08, 2BB2, 2C07, 2CC2, 2DD2, 2H03, 2HH3
First offered in 2010-2011.

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, 2C06, 2CC2, 2DD2, 2H03, 2HH3

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 1AA3, 1BB3 (or 1A06), 1H03, 1HH3 (or 1H06) and registration in Level II of the B.Sc.N. (A) or Level III of the B.Sc.N. (F) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C06, 2C07, 2DD2

HTH SCI 2HH3 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 1AA3, 1BB3 (or 1A06), 1H03, 1HH3 (or 1H06) and registration in Level II of the B.Sc.N. (A) or Level III of the B.Sc.N. (F) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C06, 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
Crosslist: 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: endocrine, central nervous system, hearing, taste, smell, vision, autonomic nervous system, skin, peripheral nervous system, and locomotion (musculo-skeletal).
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, 1AA3, 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, 1H06, 1HH3, 2FF3, KINESIOL 1A03, 1A06, 1AA3, 1X06, 1Y03, 1YY3, MED PHYS 4XX3

HTH SCI 2M03 REPRODUCTIVE PHYSIOLOGY

This course emphasizes intrinsic and extrinsic methods of regulation of reproduction and also provides the basis for understanding alterations from normal mechanisms including the influence of medical conditions.
One tutorial (three hours); term one
Prerequisite: HTH SCI 1D06
Antirequisite: MIDWIF 2D03

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.
Lectures/seminars (two hours each) guided self-study (two hours); one term
Prerequisite: Registration in Level II of the B.Sc.N. (A), (B) 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 who entered 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), (E) or (F) Stream; or Level III or IV 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 replications, 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 1AA3 and registration in Level III of the B.Sc.N. (A) Stream; or permission of the instructor. Students who entered in 2008 should register for this course.
Antirequisite: HTH SCI 1A06, 1BB3, 1CC6, 1CC7
First offered in 2010-2011.

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), (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 or 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. Given in both problem based tutorial format and through distance education. Enrolment in tutorial format is limited.
Problem based tutorial or equivalent (four hours); independent study at a clinical site (six hours); one term
Prerequisite: A minimum of one year clinical work experience in a health care profession or permission of the instructor
Antirequisite: NURSING 4B06

HTH SCI 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.
Three hours (seminar and clinical lab); one term
Prerequisite: HTH SCI 4B06, 4DD6, 4I03, 4HH3, 4Z03
Antirequisite: NURSING 4FF3

HTH SCI 4H03 ISSUES IN GLOBAL HEALTH

An introduction to the determinants of inequalities in the health of select populations in Canadian and international contexts as viewed through the lenses of historical development, political economy and medical anthropology.
Three hours (lecture/seminar); 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 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 environments. 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 4HH3

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 3C04 and registration in Level IV of any stream of the B.Sc.N. program; or permission of the instructor
Antirequisite: HTH SCI 4L03, 4L04

HTH SCI 4L03 NURSING RESEARCH

A professional practice course designed to enhance the students understanding of the research process. Emphasis is placed on the student potential role as a research collaborator in projects related to professional practice.
Lecture (one hour); 24 - 36 hours research practicum; one term
Prerequisite: One of HTH SCI 3C04, NURSING 3T04 or permission of the instructor
Antirequisite: HTH SCI 4L02
First offered in 2012-2013.

HTH SCI 4S03 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.
Tutorial groups, independent reading (three hours), individual or group service learning projects (three hours); one term
Prerequisite: HTH SCI 3B03 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 4G03 if the topic was Poverty and Homelessness.

HTH SCI 4Z03 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 4Z03

HEALTH STUDIES

(SEE HEALTH, AGING AND SOCIETY)

HEBREW

(SEE RELIGIOUS STUDIES, HEBREW)

HISPANIC STUDIES

(SEE LINGUISTICS AND LANGUAGES, SPANISH)

HISTORY {290}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~history/
Chester New Hall, Room 619
Ext. 24270

Faculty as of January 15, 2009

Chair

Kenneth Cruikshank

Distinguished University Professor

John C. Weaver/B.A. *(Queen's)*, M.A., Ph.D. *(Duke)*

Professors

Virginia Aksan/B.A. *(Allegheny College)*, M.L.S. *(California-Berkely)*, M.A., Ph.D. *(Toronto)*
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

Associate Professors

Megan Armstrong/B.A. *(Toronto)*, M.A. *(Queen's)*, Ph.D. *(Toronto)*
Karen Balcom/B.A. *(Carleton)*, M.A. *(Dalhousie)*, Ph.D. *(Rutgers)*
Nancy B. Bouchier/B.A., M.A., Ph.D. *(Western Ontario)*
Kenneth Cruikshank/B.A. *(Carleton)*, M.A., Ph.D. *(York)*
Juanita De Barros/B.A. *(Toronto)*, M.A., Ph.D. *(York)*
Ruth Frager/B.A. *(Rochester)*, M.A., Ph.D. *(York)*
Evan W. Haley/A.B. *(Dartmouth)*, Ph.D. *(Columbia)*
Bonny Ibhawoh/B.A. *(Bendel)*, M.A. *(Ibadan)*, Ph.D. *(Dalhousie)*
Stephen Heathorn/B.A. *(Toronto)*, M.A. *(McMaster)*, Ph.D. *(Toronto)*
Martin Horn/B.A. *(Western Ontario)*, M.A. *(McMaster)*, Ph.D. *(Toronto)*
Stephen Streeter/B.S. *(Bates)*, M.A. *(SUNY-Stonybrook)*, M.A. *(California-Riverside)*, Ph.D. *(Connecticut)*
Pamela Swett/A.B. *(Bryn Mawr)*, M.A., Ph.D. *(Brown)*
David Wright/B.A., M.A. *(McGill)*, D. Phil. *(Oxford)*

Assistant Professors

Michael Egan/B.A., M.A. *(Simon Fraser)*, Ph.D. *(Washington State)*
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 Member

Richard S. Harris/*(Geography and Earth Sciences)* B.A. *(Cambridge)*, M.A. *(Ohio State)*, Ph.D. *(Queen's)*

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.humanities.mcmaster.ca/~history/) in March for a list of courses that will be offered in the following academic year.
3. Enrolment in any Level IV History seminar will be limited to approximately 15 students. Students must be registered in an Honours History program to enrol in any Level IV History seminar. Preference will be given in order to students according to the following categories: Level IV Honours History and Combined Honours in History; Level III Honours History and Combined Honours in History; Level 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.

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 1AA3 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 1BB3 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
Antirequisite: CLASSICS 1L03, 1LL3, HISTORY 1L03, 1LL3
Crosslist: CLASSICS 1M03
This course is administered by the Department of Classics.

HISTORY 2A03 MODERN MIDDLE EASTERN SOCIETIES
A survey of the political and cultural history of the Middle East from 1800 to the present, with emphasis on contemporary social problems emerging from post-WWI colonialism, nationalism, Islamism and Arab-Israeli relations.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 3AA3, PEACE ST 3F03
Crosslist: PEACE ST 2F03

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
Crosslist: 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 2I06

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 2I06

HISTORY 2EE3 SCIENCE AND TECHNOLOGY IN WORLD HISTORY
An introduction to the manner in which science and technology influence society and how society influences 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 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
Crosslist: RELIG ST 2FF3

HISTORY 2II3 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
Antirequisite: HISTORY 3Q03, PEACE ST 3G03
Crosslist: PEACE ST 2II3

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
Crosslist: 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: HISTORY 1M03 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2L03; HISTORY 2L03
Crosslist: CLASSICS 2LA3
Alternates 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: HISTORY 2LA3 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2L03, 3LL3, HISTORY 2L03, 3LL3
Crosslist: CLASSICS 2LB3
Alternates 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: HISTORY 1M03 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2LL3, HISTORY 2LL3
Crosslist: CLASSICS 2LC3
Alternates with HISTORY 2LA3.
This course is administered by the Department of Classics.

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: HISTORY 2LC3 and registration in Level II or above of any program; or registration in a program in Classics
Antirequisite: CLASSICS 2LL3, HISTORY 2LL3
Crosslist: CLASSICS 2LD3
Alternates 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 2N03 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
Antirequisite: HISTORY 3T03

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 of an Honours program in History or permission of the instructor

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
Crosslist: PEACE ST 2S03

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 2UU3 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
Antirequisite: HISTORY 3Z03, RELIG ST 3Z03
Crosslist: RELIG ST 2X03
This course is administered by the Department of Religious Studies.

HISTORY 3A03 THE OTTOMANS AND THE WORLD AROUND THEM
Lectures will address the universal aspects as well as the cultural differences of this unique pre-modern society.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3CG3 CANADIANS IN A GLOBAL AGE, 1914 TO THE PRESENT
This course considers ways in which global developments influenced and were influenced by Canadian peoples, with a thematic emphasis on selected developments such as wars and revolutions, the development of international alliances and organizations, and the spread of mass communication and consumer culture.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above

HISTORY 3CW3 CANADA IN A WORLD OF EMPIRES, 1492-1919
A thematic exploration of the interactions of European and North American cultures and societies in the northern half of the continent, with special attention to the fate of European imperial projects, ideologies and institutions in the new world.
Three hours (lectures and discussion); one term
Prerequisite: 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
Crosslist: 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
Crosslist: 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 3G03 BUSINESS HISTORY: THE CANADIAN EXPERIENCE IN INTERNATIONAL PERSPECTIVE
An examination of major developments in the formation of the modern corporation and the international business system, including a consideration of the impact of the business system on Canadian society.
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 3H03 ITALIAN RENAISSANCE, 1300-1600
An examination of the nature and influence of one of the most important cultural episodes in European history. Topics will include the Italian merchant and urban life, political culture, humanism, art and architecture.
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
Crosslist: 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
Crosslist: PEACE ST 3I03

HISTORY 3II3 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 3II3

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 3JJ3 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 3KK3 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 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 HISTORY 2K03, 2L03, 2LA3, 2LB3 or registration in Level III or above of a program in Classics
Crosslist: CLASSICS 3M03
Offered in alternate years.
This course is administered by the Department of Classics.

HISTORY 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 HISTORY 2K03, 2L03, 2LA3, 2LB3; or registration in Level III or above of a program in Classics
Crosslist: CLASSICS 3MA3
HISTORY 3MA3 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 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 HISTORY 2K03, 2LC3, 2LD3, 2LL3; or registration in Level III or above of a program in Classics
Crosslist: CLASSICS 3MB3
HISTORY 3MB3 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 3NN3 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
Crosslist: 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 3QQ3 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 3S03 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 the 19th- and 20th-century developments in North America.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level III or above
Crosslist: KINESIOL 3A03

HISTORY 3SA3 SOUTH ASIA
Lectures will explore the most significant cultural, political, social and intellectual themes of the regions history.
Three lectures; one term
Prerequisite: Registration in Level II or above

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 3UU3 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 3W03 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
Antirequisite: HISTORY 3X03
Crosslist: WOMEN ST 3G03

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
Antirequisite: HISTORY 3X03
Crosslist: WOMEN ST 3GG3

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
Crosslist: 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
Crosslist: 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
Crosslist: HEALTHST 3Y03, HTH SCI 3Y03
This course is administered by the Bachelor of Health Sciences (Honours) program.

HISTORY 3YY3 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
Antirequisite: HISTORY 3RR3, PEACE ST 3RR3
Crosslist: PEACE ST 3YY3

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
Antirequisite: RELIG ST 2XX3
Crosslist: RELIG ST 3ZZ3
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 Canadians and Indigenous peoples. It will also explore the efforts of human rights advocates.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2J06, 2TT3, 2UU3 or 3N03; and registration in Level III or IV of an Honours program in History
Departmental permission required.

HISTORY 4AA6 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 3SS3; 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 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, 2II3, 2QQ3, 2S03, 3H06, 3HH3, 3I03, 3Q03, 3QQ3, 3R03; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4DD6 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, 2JJ3, 3BB3 or 3O03; 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 2GG3 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 2A03, 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, 2RR3 or 3WW3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4JJ6 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, 3FF3, 3II3 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 required.

HISTORY 4L06 THE CULTURAL HISTORY OF LONDON, 1840-1970
Topics to be examined include: London as centre of empire; sexuality and urban spectatorship; housing and transportation; architectural controversy and governance issues; leisure activities and neighbourhood life.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2MM3, 3RR3 or 3YY3; and registration in Level III or IV of any Honours program in History
Departmental permission 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, 2UU3, 3O03; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4O06 RUSSIA AND REVOLUTION
The Soviet experiment 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 2II3, 2Q03, 2QQ3, 2S03, 3H06, 3QQ3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4P06 CONTEMPORARY EUROPE
Topics in the history of Europe during the 20th Century.
Seminar (two hours); two terms
Prerequisite: Six units from HISTORY 2FF3, 2II3, 2QQ3, 2S03, 3FF3, 3H06, 3I03, 3Q03, 3QQ3, 3R03, 3YY3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4Q06 RELIGION AND SOCIETY IN LATE ANTIQUITY
Selected themes in late Roman and early Christian history.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2CC3, 2DD3, 2F03, 2I06, 2K03, 2L03, 2LA3, 2LB3, 2LC3, 2LD3, 2LL3, 3C03, 3CC3, 3F03, 3H03, 3HH3, 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 3UU3; 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, 2N03, 3F03, 3H03, 3T03; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4U06 INDEPENDENT RESEARCH
A reading and/or research program under the supervision of one member of the Department. A major paper is required, as well as a formal oral examination.
Prerequisite: Registration in Level IV of any Honours program in History with a CA of at least 9.0; and permission of the Department
Departmental permission required.

HISTORY 4W06 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, 2RR3, 2T03 or 2TT3; and registration in Level III or IV of any Honours program in History
Departmental permission required.

HISTORY 4YY6 THE WORLD WARS
An examination of the two world wars of the twentieth century. Topics may include the military, political, social, economic and intellectual history of the conflicts.
Seminar (two hours); two terms
Prerequisite: One of HISTORY 2II3, 2QQ3, 2S03, 3FF3, 3I03, 3Q03, 3R03 or 3YY3; and registration in Level III or IV of any Honours program in History
Antirequisite: HISTORY 4Y06
Departmental permission required.

HUMANITIES (GENERAL) {295}

Courses *If no prerequisite is listed, the course is open.*

HUMAN 2A03 FOREIGN CULTURE THROUGH FILM AND MUSIC
An exploration of contemporary major European and Japanese cultures through film, music and popular media. Topics covered might include cultural stereotypes, communication styles, advertising and interpersonal and international relations.
Two hours plus one film screening per week; one term
Prerequisite: Registration in Level II or above
Crosslist: LINGLANG 2A03
This course is administered by the Department of Linguistics and Languages.

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 1B06, CMST 2W03, PHILOS 2R03
HUMAN 2C03 is administered by the Department of Philosophy.

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 defining 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, CNH-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 defining 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, CNH-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

Hamilton Hall, Room 103

Ext. 27426

Director

D.J. Martin-Hill/B.A., M.A., Ph.D. *(McMaster)*

Committee of Instructors

A. Darnay, *Ojibwe Language Instructor*/B.A. *(McMaster)*, B.Ed. *(Nipissing)*, B.A. *(Algoma)*
T. Deer, *Mohawk Language Instructor*
H. King/B.A., M.A. *(Queen's)*
R. Monture/B.A., M.A. *(McMaster)*

Associate Elders

W. Cooke, *Ojibwe*
A. General, *Confederacy Chief, Six Nations*
N. General, *Faithkeeper, Six Nations*
B. Skye, *Elder-in-Residence, Six Nations*

President's Committee on Indigenous Issues

Co-Chairs

Rebecca Jamieson *(Six Nations Community Representative)*
Daniel Coleman *(McMaster University Representative)*

INDIGENOUS STUDIES {298} ...

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
Antirequisite: 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
Antirequisite: 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 1Z03, MOHAWK 1Z03, OJIBWE 1Z03; or permission of the instructor
Antirequisite: INDIG ST 2A06

INDIG ST 2AA3 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 interdisciplinary 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 1Z03, MOHAWK 1Z03, OJIBWE 1Z03; 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 1Z03, MOHAWK 1Z03, OJIBWE 1Z03; or permission of the instructor

INDIG ST 2C03 CONTEMPORARY INDIGENOUS SOCIETIES AND ISSUES: SELECTED TOPICS

2009-2010 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 1Z03, MOHAWK 1Z03, OJIBWE 1Z03; or permission of the instructor
INDIG ST 2C03 may be repeated, if on a different topic, to a total of six units.

INDIG ST 2D03 TRADITIONAL INDIGENOUS ECOLOGICAL KNOWLEDGE

This course is a study of the ecological teachings of Indigenous peoples and of their relationships with the natural environment in historical and contemporary times.
Three hours (lectures and seminars); one term
Prerequisite: INDIG ST 1A03, 1AA3; or one of CAYUGA 1Z03, MOHAWK 1Z03, OJIBWE 1Z03; or permission of the instructor
Not open to students with credit in INDIG ST 3CC3, if the topic was Traditional Indigenous Ecological Knowledge.

INDIG ST 3C03 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 of Level II Indigenous Studies or permission of the instructor

INDIG ST 3CC3 CONTEMPORARY INDIGENOUS SOCIETIES: SELECTED TOPICS

2009-2010 Topic: TBA
An intensive examination of selected political, economic, or social problems faced by selected Indigenous peoples.
Three hours (lectures and seminars); one term
Prerequisite: Six units Level II Indigenous Studies or permission of the instructor
INDIG ST 3CC3 may be repeated, if on a different topic, to a total of six units.

INDIG ST 3D03 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 of Level II Indigenous Studies or six units of Level II English or permission of the instructor
Crosslist: CSCT 3W03, ENGLISH 3W03, PEACE ST 3W03

INDIG ST 3E03 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
Crosslist: CSCT 3X03, ENGLISH 3X03, PEACE ST 3X03

INDIG ST 3G03 INDIGENOUS CREATIVE ARTS AND DRAMA: SELECTED TOPICS

2009-2010 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 of Level II Indigenous Studies or permission of the instructor
INDIG ST 3G03 may be repeated, if on a different topic, to a total of nine units.

INDIG ST 3H03 INDIGENOUS MEDICINE I - PHILOSOPHY

This course will examine the Aboriginal concepts of health and wellness. The wholistic 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 of Level II Indigenous Studies or permission of the instructor
Not open to students with credit in INDIG ST 3CC3, if the topics were Traditional Approaches to Healing and Wellness or Indigenous Peoples Health. This course is administered by and offered at Six Nations Polytechnic, Ohsweken, Ontario.
Non-McMaster students who are interested in taking this course must seek a Letter of Permission from the Office of the Associate Dean of their own faculty.

INDIG ST 3HH3 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
Not open to students with credit in INDIG ST 3CC3, if the topics were Traditional Approaches to Healing and Wellness or Indigenous Peoples Health. This course is administered by and offered at Six Nations Polytechnic, Ohsweken, Ontario.
Non-McMaster students who are interested in taking this course must seek a Letter of Permission from the Office of the Associate Dean of their own faculty.

INDIG ST 3J03 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
Crosslist: POL SCI 3C03

INDIG ST 3K03 INDIGENOUS HUMAN RIGHTS

A study of government policies and their impact on Indigenous Peoples, specifically Indian Affairs in Canada and the United States. Topics will include individual and collective rights of Indigenous Peoples and the conceptual problems which arise in a Westernized justice system.
Three hours (lectures and seminars); one term
Prerequisite: Six units of Level II Indigenous Studies or permission of the instructor

INDIG ST 3L03 INDIGENOUS INDEPENDENT STUDY
In consultation with the Director of Indigenous Studies, 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 II or III of the Combined B.A. in Indigenous Studies program or permission of the Director

CAYUGA {062} ...

Courses *If no prerequisite is listed, the course is open.*

CAYUGA 1Z03 INTRODUCTION TO CAYUGA LANGUAGE AND CULTURE
This course will study the Cayuga language, in its spoken and written forms, in the context of Iroquoian cultural traditions, values, beliefs and customs.
Three hours (lecture and seminars); one term
Antirequisite: CAYUGA 1Z06
This course is administered by and offered at Six Nations Polytechnic, Ohsweken, Ontario.
Students whom are interested in taking this course, must seek a Letter of Permission from the Office of the Associate Dean from their own faculties.

CAYUGA 2Z03 INTERMEDIATE CAYUGA
This course expands on the vocabulary and the oral skills for the Cayuga language. In addition, the course reviews the written component of the language.
Three hours (lecture and seminars); one term
Prerequisite: CAYUGA 1Z03 or 1Z06
Antirequisite: CAYUGA 2Z06
This course is administered by and offered at Six Nations Polytechnic, Ohsweken, Ontario.
Students whom are interested in taking this course, must seek a Letter of Permission from the Office of the Associate Dean from their own faculties.

MOHAWK {364} ...

Courses *If no prerequisite is listed, the course is open.*

MOHAWK 1Z03 INTRODUCTION TO MOHAWK LANGUAGE AND CULTURE
This course will study the Mohawk language, in its spoken and written forms, in the context of Iroquoian cultural traditions, values, beliefs and customs.
Three hours (lecture and seminars); one term
Antirequisite: MOHAWK 1Z06

MOHAWK 2Z03 INTERMEDIATE MOHAWK
This course expands on the vocabulary and the oral skills for the Mohawk language. In addition, the course reviews the written component of the language.
Three hours (lecture and seminars); one term
Prerequisite: MOHAWK 1Z03 or 1Z06
Antirequisite: MOHAWK 2Z06

OJIBWE {406} ...

Courses *If no prerequisite is listed, the course is open.*

OJIBWE 1Z03 INTRODUCTION TO OJIBWE LANGUAGE AND CULTURE
This course will study the Ojibwe language, in its spoken and written forms, in the context of Ojibwe cultural traditions, values, beliefs and customs.
Three hours (lecture and seminars); one term
Antirequisite: OJIBWE 1Z06

OJIBWE 2Z03 INTERMEDIATE OJIBWE
This course expands on the vocabulary and the oral skills for the Ojibwe language. In addition, the course reviews the written component of the language.
Three hours (lecture and seminars); one term
Prerequisite: OJIBWE 1Z03 or 1Z06
Antirequisite: OJIBWE 2Z06

INQUIRY {297}

Courses *If no prerequisite is listed, the course is open.*

INQUIRY 1HU3 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 1SS3 INQUIRY IN THE SOCIAL SCIENCES
The systematic investigation of any subject requires a set of widely applicable and transferrable 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 {301}

WEB ADDRESS: http://www.science.mcmaster.ca/isci

Burke Science Building, Room 112

Ext. 21565, 21641

Director

Carolyn H. Eyles *(Geography and Earth Sciences)*

ISCI Instructional Team as of January 15, 2009

Luc Bernier *(Geography and Earth Sciences)*
Douglas Boreham *(Medical Physics and Applied Radiation Sciences)*
Andrew Colgoni *(Library)*
Juliet Daniel *(Biology)*
Deda Gillespie *(Psychology, Neuroscience & Behaviour)*
Matheus Grasselli *(Mathematics and Statistics)*
Chad Harvey *(Biology)*
Philippa Lock *(Chemistry)*
Miroslav Lovric *(Mathematics and Statistics)*
Karen Nicholson *(Library)*
Duncan O'Dell *(Physics and Astronomy)*
Andrew Rainbow *(Biology)*
Sarah Symons *(Physics and Astronomy)*

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, Environmental Science, Mathematics, Physics, Psychology Neuroscience and Behaviour and Statistics courses for which any of the following are prerequisites: ASTRON 1F03, BIOLOGY 1A03, 1M03, 1X03, CHEM 1A03, 1AA3, ENVIR SC 1G03, MATH 1A03, 1AA3, 1LS3, PHYSICS 1B03, 1BA3, 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, 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'.
Integrated lectures, labs, tutorials, discussions; two terms
Prerequisite: Registration in Honours Integrated Science I and credit or registration in SCIENCE 1A00

ISCI 2A18 INTEGRATED SCIENCE II
Integrates learning of biochemistry, biology, chemistry, earth science, mathematics, neuroscience and physics. Students will participate in individual and team research projects in field and laboratory settings and will develop skills in research methodology, ethics, scientific instrumentation and scientific literacy.
Integrated lectures, labs, tutorials, discussions; 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).
Integrated lectures, labs, tutorials, discussions; 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 {307}

WEB ADDRESS: http://www.mcmaster.ca/kinesiology
Ivor Wynne Centre, Room 219C
Ext. 24462

Faculty as of January 15, 2009

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)*
Philip G. White/B.Sc. *(London)*, Cert.Ed. *(Carnegie)*, M.Sc., Ph.D. *(Waterloo)*

Associate Professors

Ramesh Balasubramaniam/B.Sc. *(Birla Institute of Technology and Science, Pilani)*, M.S., Ph.D. *(Connecticut)*
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. *(Windsor)*, M.Sc. *(McMaster)*, Ph.D. *(Guelph)*
Robert J. Henderson/B.P.E. *(McMaster)*, M.A., Ph.D, *(Alberta)*
Peter J. Keir/B.Sc., Ph.D. *(Waterloo)*
James Lyons/B.A., M.Sc. *(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)*
James R. Potvin/B.HK. *(Windsor)*, Ph.D. *(Waterloo)*
David C. Wilson/Cert.Ed. *(St. Paul's College)*, B.Ed. *(Bristol)*, M.A. *(York)*

Assistant Professor

Gianni Parise/B.Kin., M.Sc., Ph.D. *(McMaster)*

Associate Members

Vicki Galea/*(Rehabilitation Science)* B.Sc., M.Sc. *(Waterloo)*, Ph.D. *(McMaster)*
Markad V. Kamath/*(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 Pierrynowski/*(Rehabilitation Science)* B.Sc., M.Sc. *(Waterloo)*, Ph.D. *(Simon Fraser)*
Mark A. Tarnopolsky/*(Medicine)* B.P.E., M.D., Ph.D., F.R.C.P. (C), *(McMaster)*
Jean Wessel/*(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 appropriate 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 1YY3 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 3DD3, 3G03, 3I03, 3M03, 3MP3, 3P03, 3S03, 3SS3, 3T03, 3V03, 3Y03 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 3E03 and 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. Honours Biology (Physiology Specialization) students lacking KINESIOL 1Y03 and 1YY3 are strongly encouraged to contact the instructor of KINESIOL 2C03 to discuss possible prerequisite deficiences.
9. Honours Biology (Physiology Specialization) students lacking KINESIOL 1Y03 and 1YY3 are strongly encouraged to contact the instructor of KINESIOL 2CC3 to discuss possible prerequisite deficiences.

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.
Two hours (lectures), one hour (web module), two hours (labs/tutorials); one term
Prerequisite: Registration in Kinesiology I and credit or registration in SCIENCE 1A00
Antirequisite: HTH SCI 1D06, 1H03, 1H06, 1HH3, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A06, 1Y03, 1YY3, MED PHYS 4XX3, SCIENCE 4XX3
Not open to students with credit or registration in BIOLOGY 4G06.

KINESIOL 1AA3 HUMAN ANATOMY AND PHYSIOLOGY II
An examination of the anatomy and physiology of the articular, muscular, gastrointestinal, endocrine, renal and reproductive systems.
Two hours (lectures), one hour (web module), two hours (labs/tutorials); one term
Prerequisite: KINESIOL 1A03; and registration in Kinesiology I; and credit or registration in SCIENCE 1A00
Antirequisite: HTH SCI 1D06, 1H03, 1H06, 1HH3, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A06, 1Y03, 1YY3, MED PHYS 4XX3, SCIENCE 4XX3
Not open to students with credit or registration in BIOLOGY 4G06.

KINESIOL 1C03 PHYSICAL ACTIVITY EPIDEMIOLOGY AND HEALTH
Introduction to the study of physical activity epidemiology and examines the relationship between physical activity and health.
Three hours (lectures), one hour (labs/tutorials); 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 (labs/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.
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.
Two hours (lectures), one hour (web module), two hours (labs/tutorials); one term
Prerequisite: Credit or registration in SCIENCE 1A00. Completion of Biology U is strongly recommended.
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 1HH3, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1X06, MED PHYS 4XX3, SCIENCE 4XX3
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.
Two hours (lectures), one hour (web module), two hours (labs/tutorials); one term
Prerequisite: KINESIOL 1Y03 and credit or registration in SCIENCE 1A00.
Antirequisite: BIOLOGY 1J03, HTH SCI 1D06, 1H03, 1HH3, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1X06, MED PHYS 4XX3, SCIENCE 4XX3
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) and registration in Level II of an Honours Kinesiology program; or both KINESIOL 1Y03 and 1YY3, or BIOLOGY 2A03, and registration in Honours Biology (Physiology Specialization). (See *Department Note 8.*)
Antirequisite: KINESIOL 2C06

KINESIOL 2CC3 CARDIORESPIRATORY AND METABOLIC EXERCISE PHYSIOLOGY
Examination of cardiorespiratory function and metabolic regulation during exercise, with emphasis on factors limiting human performance. Adaptations to training will also be considered.
Three hours (lectures), two hours (labs/tutorials); one term
Prerequisite: KINESIOL 1A03 and 1AA3 (or 1A06), 1F03 and registration in Level II of an Honours Kinesiology program; or both KINESIOL 1Y03 and 1YY3, or BIOLOGY 2A03, and registration in Honours Biology (Physiology Specialization). (See *Department Note 9.*)
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, articular, muscular and supportive systems.
Four hours (labs/tutorials); one term
Prerequisite: KINESIOL 1A03, 1AA3 (or 1A06) 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 term
Prerequisite: KINESIOL 1A03, 1AA3 (or 1A06), 1E03 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: KINESIOL 1C03, 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 and discussion); one term
Prerequisite: Registration in Level III or above
Crosslist: HISTORY 3S03
This course is administered by the Department of History.

KINESIOL 3AA3 BIOMECHANICS II
Study of kinematics and kinetics of human movement, including electromyography, fluid and tissue mechanics with applications.
Three hours (lectures, lab); one term
Prerequisite: KINESIOL 2A03 and registration in Level III or above of an Honours Kinesiology program

KINESIOL 3B03 PHYSICAL ACTIVITY FOR CHALLENGED POPULATIONS
An introduction to developmental, emotional, behavioural, learning and orthopedic disabilities with an emphasis on adapting physical activity to meet individual needs. Includes issues related to integration, objectives and design of activity programs.
Three hours (lectures); one term
Prerequisite: Registration in Level III or above of an Honours Kinesiology program

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 an Honours Kinesiology program

KINESIOL 3DD3 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-psychology and eco-tourism.
Prerequisite: Registration in Level III or above
Antirequisite: KINESIOL 4DD3
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 neurophysiology, mechanisms of sensation, reflexes, voluntary movement and theories of motor control.
Three hours (lectures); one term
Prerequisite: KINESIOL 1A03, 1AA3 (or 1A06), 1E03 and registration in Level III or above of an Honours Kinesiology program; or PSYCH 2F03 and registration in Level III or above of an Honours Psychology program
Antirequisite: LIFE SCI 3K03

KINESIOL 3G03 OUTDOOR EDUCATION
An examination of skills, pedagogy and perspectives of outdoor (expeditionary) education, involving a nine day field component before classes begin in September.
Three hours (lectures, tutorials, field experiences); one term
Prerequisite: Registration in Level III or above of an Honours Kinesiology program; or registration in Level III or above of a non-Kinesiology program and permission of the instructor
Antirequisite: KINESIOL 4D03
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 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 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 2E03 or both KINESIOL 2C03 and 2CC3 (or 2C06); and registration in Level III or above of an Honours Kinesiology program
(Approximately $40.00 will be charged for supplies used in labs.)

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 3MP3 COMMUNITY LEADERSHIP IN EDUCATION, 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 of delivering physical activity programs in a broad range of environments.
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 3MP3

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 and registration in Level III or above of an Honours Kinesiology program

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: Registration in Level III or above of an Honours Kinesiology program; or SOCIOL 1A06 and registration in Level III or above
Antirequisite: SOCIOL 2T03
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, Irmgaard Bartenieff, and others. Experiential workshops are used to connect physical and mental health.
Three hours (lectures, practical); 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 3SS3 BODY, MIND, SPIRIT
An exploration of the relationship between body, mind and spirit from the standpoint of eastern and western religious and philosophical thought with special reference to current perspectives on human potential. Course work includes experiential workshops.
Three hours (lectures and seminars); one term
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 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 3U03 HUMAN GROWTH AND MATURATION
In depth analysis of growth and maturation influences on the morphological and functional development of fat, skeletal muscle and bone tissue during childhood, in the context of exercise performance and health.
Two hours (lecture), one hour (seminar); one term
Prerequisite: KINESIOL 2F03 and registration in Level III or above of an Honours Kinesiology program

KINESIOL 3V03 SPORT PSYCHOLOGY
This course examines how psychological factors influence and are influenced by participation and performance in sport. Topics include: personality, motivation, arousal, attitude, perception, aggression, competition, concentration confidence and goal setting.
Three lectures; one term
Prerequisite: Registration in Level III or above
Antirequisite: KINESIOL 4M03
This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology program.

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: BIOLOGY 2A03; or both KINESIOL 1A03 and 1AA3 (or 1A06), 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 4A03 ADVANCED BIOMECHANICS
In-depth study of the mechanics of human movement including the topics of multi-linked segment analysis, individual muscle force estimation, 3-D forces and moments, fluid resistance, optimization, efficiency and power flow. The laboratory component covers the scientific method, data acquisition, instrumentation and numerical methods.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 2A03, 3AA3
Antirequisite: KINESIOL 4A06

KINESIOL 4AA3 APPLIED BIOMECHANICS
A combination of lectures and problem based learning on aspects of human movement facing the modern biomechanist. Topics and problems are taken from occupational, clinical and sport biomechanics.
Three hours (lectures, tutorials); one term
Prerequisite: KINESIOL 2A03, 3AA3
Antirequisite: KINESIOL 4A06

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 2C03, 2CC3 (or 2C06)
Offered in alternate years.

KINESIOL 4BB3 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 physical performance. Emphasis is placed on the body's integrative response to exercise and the influence of physical training, dietary manipulation and altered environmental conditions.
Three hours (lectures, labs); one term
Prerequisite: KINESIOL 2CC3 (or 2C06); or BIOLOGY 2A03, KINESIOL 2CC3 (or 2C06) and registration in Honours Biology (Physiology Specialization)

KINESIOL 4CC3 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 2C03 (or 2C06); or BIOLOGY 2A03, KINESIOL 2C03 (or 2C06) and registration in Honours Biology (Physiology Specialization)

KINESIOL 4EE3 PROFESSIONAL PLACEMENT IN KINESIOLOGY
Students take part in a supervised practical experience that links classroom knowledge to professional practice. Placements are offered in all kinesiology sub-disciplines.
Placement experience equivalent to one day per week (60 hrs.), seminars; one term
Prerequisite: Registration in Level IV of an Honours Kinesiology program; and permission of the course coordinator
Antirequisite: KINESIOL 4X06

KINESIOL 4F03 SELECTED TOPICS IN KINESIOLOGY
Selected topics of contemporary interest with emphasis upon current theory and research. Students are advised to contact the Department of Kinesiology, Undergraduate Office, for descriptions of the courses offered during the current academic year.
Three hours (lectures); one term
Prerequisite: Registration in Level III or above of an Honours Kinesiology program

KINESIOL 4FF3 SELECTED TOPICS IN KINESIOLOGY II
Selected topics of contemporary interest with emphasis upon current theory and research. Students are advised to contact the Department of Kinesiology, Undergraduate Office, for descriptions of the courses offered during the current academic year.
Three hours (lectures); one term
Prerequisite: Registration in Level III or above of an Honours Kinesiology program

KINESIOL 4GG3 CLINICAL BIOMECHANICS
This courses 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 4I03 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 an Honours Kinesiology program

KINESIOL 4J03 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 IWC/224); one term
Prerequisite: KINESIOL 2E03, or both KINESIOL 2C03 and 2CC3 (or 2C06); and KINESIOL 3K03; and registration in Level III or above of an Honours Kinesiology program
(Approximately $35.00 will be charged for supplies used in labs.)

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 an Honours 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 2E03 or 2C06; and registration in Level III or above of an Honours Kinesiology program. KINESIOL 3K03 is strongly recommended.
Prerequisite (Beginning 2010-2011): KINESIOL 2C06 or 2E03; and KINESIOL 3K03; and registration in Level III or above of an Honours Kinesiology program
(Approximately $25.00 will be charged for supplies used in labs.)

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 2C03, 2CC3 (or 2C06) and registration in Level III or above of an Honours 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 an Honours 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 using theories and methods based on modern cognitive neuroscience.
Three hours (lectures, neuroanatomy labs); one term
Prerequisite: KINESIOL 3E03 and registration in Level III or above of an Honours Kinesiology or Honours Psychology program or Honours Life Sciences (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 2C03, 2CC3 (or 2C06), and either KINESIOL 2F03 or 3D03; or BIOLOGY 2A03, KINESIOL 2C03, 2CC3 (or 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 an Honours Kinesiology program with a minimum C.A. of 8.5 and permission of the instructor
Antirequisite: KINESIOL 4RR6, 4RR9

KINESIOL 4RR6 THESIS
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 an Honours Kinesiology program with a minimum C.A. of 8.5; and permission of the instructor
Antirequisite: KINESIOL 4R03, 4RR9

KINESIOL 4RR9 THESIS
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 an Honours 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

KINESIOL 4SS3 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 1A03, 1AA3 (or 1A06), 2C03, 2CC3 (or 2C06), 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: Registration in Level III or above of an Honours Kinesiology program; or 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 1E03 and registration in Level III or above of an Honours Kinesiology program

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 an Honours Kinesiology program and credit or registration in two of KINESIOL 3B03, 4B03, 4I03, 4S03, 4SS3
Antirequisite: KINESIOL 4EE3

LABOUR STUDIES {640}

WEB ADDRESS: http://socserv.mcmaster.ca/labourstudies/

Kenneth Taylor Hall, Room 717

Ext. 24692

Faculty as of January 15, 2009

Director

Donald Wells

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/*(Sociology)* 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 Professor

David Goutor/*(History)* B.A., M.A., Ph.D. *(Toronto)*

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)
Joseph B. Rose/*(Business)* B.B.A. *(Adelphi)*, M.B.A. *(California)*, Ph.D. *(SUNY-Buffalo)*/*(Industrial Relations)*
Robert D. Wilton/*(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)

Adjunct Lecturers

Andrew Jackson/M.Sc., B.Sc. *(London School of Economics)*
Jane Stinson/M.A. *(Carleton)*

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 Director 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 3A03	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

Donald Wells *(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 2D03

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 Director

LABR ST 2B03 SOCIAL WELFARE I: GENERAL INTRODUCTION
Purpose, values underlying development of social welfare programs; Canada's social security system in historical perspective.
Lectures and discussion; one term
Prerequisite: Registration in a Labour Studies program
Crosslist: SOC WORK 2B03
Students in a Labour Studies program must register for this course as LABR ST 2B03.
This course is administered by the School of Social Work.

LABR ST 2BB3 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
Crosslist: 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 Director
Antirequisite: LABR ST 1B03

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 Director
Antirequisite: LABR ST 1Z03

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 terms
Prerequisite: LABR ST 1C03
Priority is given to students registered in a Labour Studies program.

LABR ST 2W03 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 (lectures); one term
Prerequisite: WOMEN ST 1A03 or 1AA3; or PEACE ST 1A03, 1B03; or registration in any Labour Studies program
Crosslist: WOMEN ST 2A03, PEACE ST 2B03
This course is administered by Peace Studies.

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.
Three lectures; one term
Prerequisite: ECON 1A06, or both ECON 1B03 and 1BB3, and registration in a Labour Studies program; or permission of the Director
Crosslist: 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 Director
Crosslist: 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 Director
Crosslist: COMMERCE 4BF3
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 Director
Crosslist: HEALTHST 3C03
Generally offered in alternate years.

LABR ST 3E03 WORK AND WOMEN

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 Director
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 Director
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 Director
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 Power Point 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 tje public, and para-public sectors. The topics covered include the origin and growth of public sector unions, models of public sector bargaining, legal aspects of bargaining rights and impasse resolution, bargaining issues and bargaining outcomes, and empirical studies of the effectiveness of dispute resolution procedures.
Lectures and discussion; one term
Prerequisite: COMMERCE 4BC3 and registration in Level III or IV of a Labour Studies program
Crosslist: COMMERCE 4BG3
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-economies.
Lectures and seminar discussion; one term
Prerequisite: Registration in Level III or IV of a Labour Studies program or permission of the Director
Antirequisite: COMMERCE 4BH3, LABR ST 4D03

LATIN

(SEE CLASSICS, LATIN)

LIFE SCIENCES {514}

WEB ADDRESS: http://www.science.mcmaster.ca/lifesciences

Burke Science Building, Room 129

Ext. 23125

Director

Kimberley Dej *(Biology)*

Life Sciences Committee as of January 15, 2009

Luc Bernier *(Geography and Earth Sciences)*
Brett Beston *(Psychology, Neuroscience & Behaviour)*
Robin Cameron *(Biology)*
Audrey Hicks *(Kinesiology)*
Michelle MacDonald *(Biochemistry and Biomedical Sciences)*

Courses

If no prerequisite is listed, the course is open.

LIFE SCI 2A03 RESEARCH METHODOLOGIES IN LIFE SCIENCES
An examination and application of the scientific method. Selected research problems will be explored to experience different approaches to hypothesis formulation, testing, interpretation and communication in the Life Sciences.
Two lectures, one tutorial (two hours); one term
Prerequisite: Registration in Level II or above of a Life Sciences program

LIFE SCI 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 tutorial (two hours); one term
Prerequisite: BIOLOGY 1A03, CHEM 1AA3; or ISCI 1A24
Antirequisite: HTH SCI 2K03, MOL BIOL 2B03
Crosslist: BIOLOGY 2B03
Not open to students registered in Honours Molecular Biology or any Honours Molecular Biology and Genetics program.
This course is administered by the Department of Biology.

LIFE SCI 2C03 NEURAL COMMUNICATION AND INFORMATION PROCESSING
Basic neuroanatomy, neurochemistry, principles of investigating the nervous system, nerve-communication, and sensory and motor mechanisms in normal and diseased brains.
Three lectures; one term
Prerequisite: Nine units from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03). Completion of BIOLOGY 1A03 is strongly recommended.
Prerequisite (Beginning 2010-2011): BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03); or ISCI 1A24
Antirequisite: PSYCH 2D03, 2F03, 2N03

LIFE SCI 2D03 BEHAVOURAL PROCESSES
An examination of the concepts that underpin animal behaviour and an illustration of how selection pressures have operated to produce the diversity of behaviour that humans and other animals share.
Three lectures; one term
Prerequisite: Nine units from BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03). Completion of BIOLOGY 1M03 is strongly recommended.
Prerequisite (Beginning 2010-2011): BIOLOGY 1A03, 1M03 (or 1AA3), PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03); or ISCI 1A24
Antirequisite: PSYCH 2TT3

LIFE SCI 2EE3 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; one term
Prerequisite: One of CHEM 2BA3, 2E03, 2OA3, 2OC3
Antirequisite: BIOCHEM 3D03
Crosslist: BIOCHEM 2EE3
Not open to students registered in an Honours Biochemistry or the Honours Molecular Biology program.
This course is administered by the Department of Biochemistry and Biomedical Sciences.

LIFE SCI 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 term
Prerequisite: BIOLOGY 1M03 (or 1AA3) or ISCI 1A24
Crosslist: BIOLOGY 2F03
This course is administered by the Department of Biology.

LIFE SCI 2H03 ENVIRONMENTAL LIFE SCIENCE
An understanding of the impact of environmental processes and changes on living organisms (including humans). Topics may include global warming, ecological degradation, elemental cycling, environmental analysis and management, environmental toxicology, bioremediation and bioengineering.
Three lectures/seminars; one term
Prerequisite: One of BIOLOGY 1M03 (or 1AA3), ENV SCI 1A03, 1B03, 1G03 or ISCI 1A24

LIFE SCI 3A03 HEALTH AND DISEASES
A multidisciplinary approach to exploring the emergence, propagation, evolution and impacts of diseases in human populations in the context of environmental change, natural selection, host-pathogen interactions and lifestyle. Topics may include, parasitic, infectious, chronic and lifestyle-associated diseases.
Three lectures/seminars; one term
Prerequisite: LIFE SCI 2A03, 2EE3
First offered in 2010-2011.

LIFE SCI 3B03 NEUROBIOLOGICAL MECHANISMS OF BEHAVIOUR
A multidisciplinary approach to examining the neurobiological mechanisms of behaviour in both normal and "maladaptive" functioning conditions.
Three lectures/seminars; one term
Prerequisite: LIFE SCI 2A03, 2B03, 2C03
First offered in 2010-2011.

LIFE SCI 3C03 BEHAVIOURAL AND EVOLUTIONARY ECOLOGY
A multidisciplinary approach to examining the behaviour of humans and other animals in light of evolutionary and ecological tenets and theories. Topics may include foraging theory, parent-offspring interactions, cross-species analysis and the reconstruction of behavioural phylogenies and sex differences in psychology and behaviour.
Three lectures/seminars; one term
Prerequisite: LIFE SCI 2A03, 2D03, 2F03
First offered in 2010-2011.

LIFE SCI 3D03 ENVIRONMENT AND GLOBAL SUSTAINABILITY
A multidisciplinary approach to studying how the global human population can grow sustainably. Topics will vary and may include environmental factors that influence population growth and development, food production, earths carrying capacity and impacts of climate change.
Two lectures, one workshop; one term
Prerequisite: LIFE SCI 2A03; and LIFE SCI 2F03 or 2H03
First offered in 2010-2011.

LIFE SCI 3K03 NEURAL CONTROL OF HUMAN MOVEMENT
The control of human movement studied in detail from neurophysiological, cognitive and dynamical perspectives. Topics include basic neurophysiology, mechanisms of sensation, reflexes, voluntary movement and theories of motor control.
Three hours (lectures); one term
Prerequisite: BIOLOGY 1A03 or ISCI 1A24; and PSYCH 2F03 or LIFE SCI 2C03; and registration in Level III or above
Antirequisite: KINESIOL 3E03
Not open to students registered in a Kinesiology program.
This course is administered by the Department of Kinesiology.

LIFE SCI 4A03 INDEPENDENT STUDY
An independent study under the supervision of a faculty member.
One term
Prerequisite: Registration in Level IV of an Honours Life Sciences program and permission of the supervising faculty member
Antirequisite: LIFE SCI 4B06, 4C09 SCIENCE 4A03, 4B06, 4C09

LIFE SCI 4B06 INDEPENDENT PROJECT
An independent study under the supervision of a faculty member.
Two terms
Prerequisite: Registration in Level IV of an Honours Life Sciences program and permission of the supervising faculty member
Antirequisite: LIFE SCI 4A03, 4C09, 4D03, SCIENCE 4A03, 4B06, 4C09

LIFE SCI 4C09 INDEPENDENT THESIS
An independent study under the supervision of a faculty member.
Two terms
Prerequisite: Registration in Level IV of an Honours Life Sciences program and permission of the supervising faculty member
Antirequisite: LIFE SCI 4A03, 4B06, 4D03, SCIENCE 4A03, 4B06, 4C09

LIFE SCI 4D03 DIRECTED RESEARCH IN LIFE SCIENCES
Directed study of a research problem through published materials and/or field inquiry and/or data analysis. Students will work in small groups and be expected to write up the results of their inquiry in scholarly form.
One term
Prerequisite: Registration in Level IV of an Honours Life Science program
Antirequisite: LIFE SCI 4B06, 4C09, 4L03, 4M03, 4N03, 4P03, SCIENCE 4B06, 4C09

LIFE SCI 4L03 RESEARCH SEMINAR A
Advanced seminar focusing on selected topics in an area of Life Sciences. Seminars and discussions in small groups; one term.
Prerequisite: Registration in Level IV of an Honours Life Science program
Antirequisite: LIFE SCI 4D03
Not open to students with credit or registration in LIFE SCI 4B06, 4C09.
Enrolment is limited.

LIFE SCI 4M03 RESEARCH SEMINAR B
Advanced seminar focusing on selected topics in an area of Life Sciences. Seminars and discussions in small groups; one term
Prerequisite: Registration in Level IV of an Honours Life Science program
Antirequisite: LIFE SCI 4D03
Not open to students with credit or registration in LIFE SCI 4B06, 4C09.
Enrolment is limited.
First offered in 2011-2012.

LIFE SCI 4N03 RESEARCH SEMINAR C
Advanced seminar focusing on selected topics in an area of Life Sciences. Seminars and discussions in small groups; one term
Prerequisite: Registration in Level IV of an Honours Life Science program
Antirequisite: LIFE SCI 4D03
Not open to students with credit or registration in LIFE SCI 4B06, 4C09.
Enrolment is limited.
First offered in 2011-2012.

LIFE SCI 4P03 RESEARCH SEMINAR D
Advanced seminar focusing on selected topics in an area of Life Sciences. Seminars and discussions in small groups; one term
Prerequisite: Registration in Level IV of an Honours Life Sciences program
Antirequisite: LIFE SCI 4D03
Not open to students with credit or registration in LIFE SCI 4B06, 4C09.
Enrolment is limited.
First offered in 2011-2012.

LINGLANG

(SEE LINGUISTICS AND LANGUAGES, LINGLANG)

LINGUISTICS

(SEE LINGUISTICS AND LANGUAGES, LINGUISTICS)

LINGUISTICS AND LANGUAGES

WEB ADDRESS: http://www.humanities.mcmaster.ca/~linguistics
Togo Salmon Hall, Room 629
Ext. 24388

Faculty as of January 15, 2009

Chair

John F. Connolly

Professors

John J. Colarusso/B.A. *(Cornell)*, M.A. *(Northwestern)*, Ph.D. *(Harvard)*
John F. Connolly/A.B. *(College of the Holy Cross)*, M.A. *(Saskatchewan)*, Ph.D. *(University of London)*
Nina Kolesnikoff/M.A. *(Moscow State)*, Ph.D. *(Alberta)*
Magda Stroinska/M.A. *(Warsaw)*, Ph.D. *(Edinburgh)*

Associate Professors

Iris Bruce/M.A., Ph.D. *(Toronto)*
Vittorina Cecchetto/B.A., M.A., Ph.D. *(Toronto)*
María 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)*
Franco Gallippi/B.A. *(York)*, M.A., Ph.D. *(Toronto)*
Tsuneko Iwai/B.A., M.Ed., Ph.D. *(Toronto)*
Elisabet Service/B.A., M.A., Ph.D. *(Helsinki)*
Antonio Velasquez/B.A. *(Waterloo)*, 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 Chinese, German, Italian, Japanese, Linguistics, Polish, Russian and Spanish (formerly Hispanic Studies). For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 629.
2. The following are courses open as electives to students registered in Level II or above of any undergraduate program.

GERMAN 2AA3	Contemporary German Culture (Taught in English)
GERMAN 2CC3	Germany through the Ages: Culture and Society (Taught in English)
GERMAN 2S03	The Split-Screen - Modern Germany through Cinema (Taught in English)
GERMAN 3C03	Germany after 1945 (Taught in English)
GERMAN 3F03	The German-Canadian Experience (Taught in English)
GERMAN 3H03	The New Europe: A New Germany (Taught in English)
ITALIAN 2B03	Italy through the Camera Lens (Taught in English)
ITALIAN 2I03	From Italy's "Dark Ages" to the Renaissance (Taught in English)
ITALIAN 2M03	Modern Italy in its Writings (Taught in English)
ITALIAN 3C03	The Italian-Canadian Experience (Taught in English)
ITALIAN 3I03	From Italy's Renaissance to the Present (Taught in English)
ITALIAN 3X03	Italy Today (Taught in English)
JAPAN ST 2P03	Japanese Civilization
JAPAN ST 2TT3	Religion and Popular Culture in Contemporary Japan
JAPAN ST 3E03	Japanese Religions
JAPAN ST 3H03	Storytelling in East Asian Religions
JAPAN ST 3UU3	Buddhism in East Asia
LINGLANG 2A03	Foreign Culture through Film and Music
LINGUIST 2E03	The Nature of Texts: From Slang to Formal Discourse

LINGUIST 2FL3	Introduction to Forensic Linguistics
LINGUIST 3G03	The German-Canadian Experience (Taught in English)
LINGUIST 3Y03	The Italian-Canadian Experience (Taught in English)
LINGUIST 3Z03	"Spanglish": A Linguistic and Cultural Study of Spanish in North America (Taught in English)
SPANISH 2A03	Spanish-American Civilization and Culture (Taught in English)
SPANISH 2B03	Visions of Spain and Latin America through Film (Taught in English)
SPANISH 2D03	Multiculturalism and Globalization in the Spanish Middle Ages (Taught in English)
SPANISH 3A03	The Latino "Soul": Gender and Sexualities in Latin America's Culture (Taught in English)
SPANISH 3B03	"Spanglish": A Linguistic and Cultural Study of Spanish in North America (Taught in English)
SPANISH 3C03	Theatre and Performance in Spain (Taught in English)

3. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.

CHINESE {084} ...

Courses in Chinese 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 629.

Courses *If no prerequisite is listed, the course is open.*

CHINESE 1Z06 MANDARIN CHINESE FOR BEGINNERS
An intensive beginner's course in modern standard (Mandarin) Chinese designed for students with no prior knowledge of the language. The focus is on developing proficiency in the skills of listening, speaking, reading and writing. In addition to general knowledge about China and Chinese culture, students will be exposed to some basic Chinese script.
Four hours; two terms
Not open to dialect speakers or to students with credit or registration in Chinese 1ZZ6.
The Department reserves the right to place students in the course most appropriate to their abilities.

CHINESE 1ZZ6 MANDARIN CHINESE FOR DIALECT SPEAKERS
An intensive beginner's course in modern standard (Mandarin) Chinese designed for students who understand a Chinese dialect, Standard Chinese or who have proficiency in Chinese script. Speaking, reading and writing are equally emphasized.
Four hours; two terms
Not open to students with credit or registration in Chinese 1Z06.
Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

CHINESE 2Z06 INTERMEDIATE MANDARIN CHINESE
This course aims to develop students' communicative skills in Mandarin Chinese through speaking, listening, reading and writing practice. Emphasis is on building communicative skills and acquiring fundamental skills to read and write Mandarin in formal and informal contexts.
Four hours; two terms
Prerequisite: One of CHINESE 1Z06, 1ZZ6 or permission of the instructor or Department
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN {260} ...

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 629.

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, 3ZZ3, 4CC3, 4Z03
2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.
3. Students taking courses taught in English for credit towards a Minor in German will be required to do all their reading and writing 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 2Z03, 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.
Three 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 WebCT and multimedia technology. The sequel to this course is GERMAN 2Z03.
Four hours; two terms
Antirequisite: Grade 12 U or M equivalent, GERMAN 1ZZ3
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 2AA3 CONTEMPORARY GERMAN CULTURE (TAUGHT IN ENGLISH)
The course investigates the major cultural and societal differences and similarities among German speaking countries through literature, film, theatre and music.
Three hours; one term
Prerequisite: Registration in Level II or above

GERMAN 2CC3 GERMANY THROUGH THE AGES: CULTURE AND SOCIETY (TAUGHT IN ENGLISH)
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: Registration in Level II or above

GERMAN 2S03 THE SPLIT-SCREEN - MODERN GERMANY THROUGH CINEMA (TAUGHT IN ENGLISH)
This course looks at contemporary German culture and national identity through the most representative West and East German films of the past decades.
Two hours, plus one film screening per week; one term
Prerequisite: Registration in Level II or above
Antirequisite: COMP LIT 4J03, GERMAN 4J03, THTR&FLM 4J03
Crosslist: COMP LIT 2S03, THTR&FLM 2S03
Offered on an irregular rotation basis.

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 2ZZ3.
Three hours; one term
Prerequisite: GERMAN 1Z06
Antirequisite: GERMAN 1B03
Not open to students with credit or registration in GERMAN 2ZZ3.
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 2ZZ3 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, literature and culture. The course is enhanced by the use of WebCT and multimedia technology. The sequels to this course are GERMAN 3Z03 and 3ZZ3.
Three hours; one term
Prerequisite: GERMAN 2Z03
Antirequisite: GERMAN 1BB3
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 3C03 GERMANY AFTER 1945 (TAUGHT IN ENGLISH)
This course will explore the history and culture of modern Germany from 1945 to the present. Students will study important developments by examining selected texts from literature, film and other forms of cultural expression.
Three hours; one term
Prerequisite: Registration in Level II or above

GERMAN 3F03 THE GERMAN-CANADIAN EXPERIENCE (TAUGHT IN ENGLISH)
An investigation of the characteristics of the language and culture of the German-Canadian communities in Canada compared to other countries.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: LINGUIST 3G03

GERMAN 3H03 THE NEW EUROPE: A NEW GERMANY (TAUGHT IN ENGLISH)
In the heart of the "New Europe" lies a "New Germany," united after almost a half-century of division. German literature and film provide an insight into this fascinating multicultural world.
Three hours; one term
Prerequisite: Registration in Level II or above

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 sequels to this course are GERMAN 3ZZ3 and 4Z03.
Three hours; one term
Prerequisite: GERMAN 1BB3 or 2ZZ3
Antirequisite: GERMAN 3E03
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 3ZZ3 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 3G03
Priority is given to students in a program requiring German. Students with native or near native fluency may be required to register in an appropriate alternative.
The Department reserves the right to place students in the course most appropriate to their abilities.

GERMAN 4B03 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 1Z06 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, 3Z03 or 4Z03

GERMAN 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: 12 units of German above Level I and permission of the Department

GERMAN 4Z03 GERMAN LANGUAGE AND CULTURE
This course further develops students' language proficiency and their cultural knowledge/competency. Students study various aspects of contemporary German society and focus on developing advanced reading, writing and speaking skills.
Three hours; one term
Prerequisite: GERMAN 3G03 or 3ZZ3

HISPANIC STUDIES ...

(SEE SPANISH)

ITALIAN {300} ...

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 629.

Notes:

1. Students should note that the Department has classified its Italian language courses under the following categories:
   Introductory Level Language Course
   ITALIAN 1Z06
   Intermediate Level Language Courses
   ITALIAN 1A03, 1AA3, 2Z03, 2ZZ3
   Advanced Level Language Courses
   ITALIAN 3Z03, 3ZZ3, 4B03, 4Z03
2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.
3. Students taking courses in English for credit towards a Minor in Italian will be required to do all their reading and writing 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 1AA3.
Three hours; one term
Prerequisite: Grade 12 U or M equivalent or other equivalent or permission of the Department
Antirequisite: ITALIAN 2Z03
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 2ZZ3
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 1Z06 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 2Z03.
Four hours; two terms
Antirequisite: Grade 12 U or M equivalent, ITALIAN 1CC3, 1DD3, 1ZZ6
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 2B03 ITALY THROUGH THE CAMERA LENS (TAUGHT IN ENGLISH)
The most powerful images from nine films (English subtitles) by famous Italian directors tell the tale of critical moments in contemporary Italy starting from the fatal year of 1943.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: THTR&FLM 2I03

ITALIAN 2I03 FROM ITALY'S "DARK AGES" TO THE RENAISSANCE (TAUGHT IN ENGLISH)
A survey, using multimedia materials, of Italian culture from the fall of an Empire to the rise of Italy's city-states.
Three hours; one term
Prerequisite: Registration in Level II or above

ITALIAN 2M03 MODERN ITALY IN ITS WRITINGS (TAUGHT IN ENGLISH)
A look at the depiction of modern Italian society and life by exploring representative print materials, including contemporary novels, newspapers, advertising and song lyrics.
Three hours; one term
Prerequisite: Registration in Level II or above

ITALIAN 2Z03 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 2ZZ3.
Three hours; one term
Prerequisite: ITALIAN 1Z06
Antirequisite: ITALIAN 1A03
The Department reserves the right to place students in the course most appropriate to their abilities.

ITALIAN 2ZZ3 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 3Z03.
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 3C03 THE ITALIAN-CANADIAN EXPERIENCE (TAUGHT IN ENGLISH)
An investigation of the characteristics of the language and culture of the Italian-Canadian community in Canada compared to those in other countries.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: LINGUIST 3Y03

ITALIAN 3I03 FROM ITALYS RENAISSANCE TO THE PRESENT (TAUGHT IN ENGLISH)
From greatness and decadence to decadence and greatness. A survey, using multimedia materials, of the contradictions in Italian culture from Leonardo da Vinci to Silvio Berlusconi.
Three hours; one term
Prerequisite: Registration in Level II or above
Antirequisite: ITALIAN 4Y03

ITALIAN 3X03 ITALY TODAY (TAUGHT IN ENGLISH)
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: Registration in Level II or above
Offered in alternate years.

ITALIAN 3Z03 ADVANCED ITALIAN I
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 3ZZ3.
Three hours; one term
Prerequisite: ITALIAN 1AA3 or 2ZZ3
Antirequisite: ITALIAN 3A03

ITALIAN 3ZZ3 ADVANCED ITALIAN II
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 4Z03.
Three hours; one term
Prerequisite: ITALIAN 3A03 or 3Z03
Antirequisite: ITALIAN 3D03

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 or 4Z03

ITALIAN 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: 12 units of Italian above Level I and permission of the Department

ITALIAN 4Z03 ITALIAN LANGUAGE AND CULTURE
This course further develops students language proficiency and their cultural knowledge/competency. Students study various aspects of contemporary Italian society and focus on developing advanced reading, writing and speaking skills.
Three hours; one term
Prerequisite: ITALIAN 3D03 or 3ZZ3
Antirequisite: ITALIAN 4A03, 4M03

JAPANESE {305} ...

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 629.

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.*

JAPANESE 1Z06 BEGINNER'S INTENSIVE JAPANESE
An introduction to basic spoken and written discourse skills in Japanese. Acquisition of elementary grammar, kana/kanji scripts and oral communication skills will be emphasized. Open to students with no prior background in Japanese. The sequel to this course is JAPANESE 2Z03.
Four hours; two terms
The Department reserves the right to place students in the course most appropriate to their abilities.

JAPANESE 2Z03 INTERMEDIATE INTENSIVE JAPANESE I
This course aims to further develop students spoken and written discourse skills in Japanese. Acquisition of lower intermediate grammar, additional *kanji* scripts and oral communication skills will be emphasized. The sequel to this course is JAPANESE 2ZZ3.
Three hours; one term
Prerequisite: A grade of at least B- in JAPANESE 1Z06
Not open to students with credit in JAPANESE 2ZZ3.
The Department reserves the right to place students in the course most appropriate to their abilities.

JAPANESE 2ZZ3 INTERMEDIATE INTENSIVE JAPANESE II
This course aims to consolidate students intermediate spoken and written discourse skills. Acquisition of higher intermediate grammar, additional *kanji* scripts and oral communication skills will be emphasized. The sequel to this course is JAPANESE 3Z03.
Three hours; one term
Prerequisite: JAPANESE 2Z03
The Department reserves the right to place students in the course most appropriate to their abilities.

JAPANESE 3Z03 ADVANCED INTENSIVE JAPANESE I
This course aims to further develop students overall communicative skills in Japanese. Acquisition of advanced grammar, further development of vocabulary and *kanji* will be emphasized. Developing oral skills appropriate to contexts will also be emphasized. The sequel to this course is JAPANESE 3ZZ3.
Three hours; one term
Prerequisite: JAPANESE 2ZZ3
Antirequisite: JAPANESE 3A03
The Department reserves the right to place students in the course most appropriate to their abilities.

JAPANESE 3ZZ3 ADVANCED INTENSIVE JAPANESE II
This course aims to further develop students overall communicative skills in Japanese by consolidating acquisition of advanced grammar/vocabulary and *kanji*. Acquisition of advanced level reading and writing skills will also be emphasized. The sequel to this course is JAPANESE 4Z03.
Three hours; one term
Prerequisite: JAPANESE 3A03 or 3Z03
Antirequisite: JAPANESE 3AA3
The Department reserves the right to place students in the course most appropriate to their abilities.

JAPANESE 4A03 ADVANCED READINGS IN CURRENT AFFAIRS IN JAPANESE
This course aims to further develop students reading skills in Japanese through using materials covering topics on current affairs. Readings of newspapers, magazines and materials from the internet will be combined with discussions on the topics.
Three hours; one term
Prerequisite: JAPANESE 3AA3 or 3ZZ3

JAPANESE 4Z03 ADVANCED ORAL PRACTICE IN JAPANESE
This course aims to further develop students spoken discourse skills in Japanese through the viewing of videos, group discussions and cooperative group activities. Further development of grammar/communication strategies/pragmatic and sociolinguistic skills will be emphasized.
Three hours; one term
Prerequisite: JAPANESE 3AA3 or 3ZZ3

JAPANESE STUDIES {306} ...

Courses *If no prerequisite is listed, the course is open.*

JAPAN ST 2P03 JAPANESE CIVILIZATION
Introduction to Japanese history, society, and culture through a study of religious traditions, literature, and art of Japan.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Antirequisite: JAPAN ST 2P06, RELIG ST 2P06
Crosslist: RELIG ST 2P03
This course is administered by the Department of Religious Studies.

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
Crosslist: RELIG ST 2TT3
This course is administered by the Department of Religious Studies.

JAPAN ST 3E03 JAPANESE RELIGIONS
A study of Japanese religions and how they function in Japanese society. Topics will include Shinto, shamanism, Ancestor Worship, Japanese Buddhism and the New Religions of Japan.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. One of RELIG ST 1B06, 2MM6 or JAPAN ST 2P06 is recommended.
Crosslist: RELIG ST 3E03
This course is administered by the Department of Religious Studies.

JAPAN ST 3H03 STORYTELLING IN EAST ASIAN RELIGIONS
An in-depth study of selected examples of story literature in China and Japan with attention to the way religion is represented in them.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Crosslist: RELIG ST 2F03
This course is administered by the Department of Religious Studies.

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
Crosslist: ARTS&SCI 3S03, RELIG ST 3S03
This course is administered by the Department of Religious Studies.

JAPAN ST 3UU3 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
Crosslist: RELIG ST 3UU3
This course is administered by the Department of Religious Studies.

LINGLANG {321} ...

Courses *If no prerequisite is listed, the course is open.*

LINGLANG 2A03 FOREIGN CULTURE THROUGH FILM AND MUSIC
An exploration of contemporary major European and Japanese cultures through film, music and popular media. Topics covered might include cultural stereotypes, communication styles, advertising and interpersonal and international relations.
Two hours plus one film screening per week; one term
Prerequisite: Registration in Level II or above
Crosslist: HUMAN 2A03

LINGUISTICS {312} ...

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 629.

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, 1AA3
Antirequisite: ANTHROP 2AA3

LINGUIST 2D03 RESEARCH METHODS
An introduction to qualitative and quantitative approaches to research in linguistics, including topics such as research ethics, principles of data gathering and analysis, and fundamentals of statistical analysis and inference.
Three hours (lectures and tutorials); one term
Prerequisite: Registration in Level II or III of a program in Linguistics
Antirequisite: LINGUIST 3D03

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
Crosslist: CMST 2E03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 2FL3 INTRODUCTION TO FORENSIC LINGUISTICS
An introduction to the discipline of language and the law. Through a consideration of several famous trials and cases, topics covered include: speaker/voice identification, the language of police interrogations, courtroom language, forensic document investigation, the nature of legal language, the linguist as expert witness.
Three hours; one term
Prerequisite: Registration in Level II or above

LINGUIST 2L03 PHONETICS
A study of the sounds of language and human articulatory capabilities.
Three hours; one term
Prerequisite: LINGUIST 1A03
Crosslist: 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
Crosslist: ANTHROP 2LL3
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
Crosslist: ANTHROP 3A03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3B03 PSYCHOLINGUISTICS
The study of how the human mind understands and produces sounds, words and sentences. The emphasis is on how evidence from psycholinguistic research relates to theoretical linguistics.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3
Crosslist: PSYCH 3BB3
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
Crosslist: PSYCH 3C03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3G03 THE GERMAN-CANADIAN EXPERIENCE (TAUGHT IN ENGLISH)
An investigation of the characteristics of the language and culture of the German-Canadian communities in Canada compared to other countries.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: GERMAN 3F03

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
Crosslist: ANTHROP 3I03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3II3 SEMANTICS
The study of patterns of meaning in language; a critical survey of theories and issues.
Three hours; one term
Prerequisite: ANTHROP 3I03 or LINGUIST 3I03
Crosslist: ANTHROP 3II3
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
Crosslist: 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
Crosslist: CMST 3V03
Offered in alternate years.
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
Crosslist: CMST 3G03
This course is administered by the Department of Linguistics and Languages.

LINGUIST 3Y03 THE ITALIAN-CANADIAN EXPERIENCE (TAUGHT IN ENGLISH)
An investigation of the characteristics of the language and culture of the Italian-Canadian community in Canada, compared to those in other countries.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: ITALIAN 3C03

LINGUIST 3Z03 SPANGLISH: A LINGUISTIC AND CULTURAL STUDY OF SPANISH IN NORTH AMERICA (TAUGHT IN ENGLISH)
Through a variety of media, the students will explore questions such as: How and when do bilinguals use the mix of Spanish and English? Is there a relationship between nationality, race, ethnicity and language given the variations of Spanglish spoken in the USA and in Canada?
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: SPANISH 3B03
Offered in alternate years.

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
Crosslist: CMST 4G03
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
Crosslist: CMST 4I03
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.
Three hours; one term
Prerequisite: LINGUIST 4B03

LINGUIST 4F03 COGNITIVE NEUROSCIENCE OF LANGUAGE
Brain imaging methods have provided remarkable insights into what areas of the brain are involved in linguistic processes. This course will survey the current scientific literature dealing with the neuroimaging of normal and pathological brain function as related to language processes.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a program in Linguistics or Honours Psychology and permission of the Department of Linguistics and Languages
Crosslist: PSYCH 4L03

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; Italiese - 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 4LB3 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
Antirequisite: ANTHROP 4LA3, LINGUIST 4LA3
Crosslist: ANTHROP 4LB3
Offered on an irregular rotation basis.
This course is administered by the Department of Linguistics and Languages.

LINGUIST 4LC3 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 3I03, 3M03
Antirequisite: ANTHROP 4LA3, LINGUIST 4LA3
Crosslist: ANTHROP 4LC3
Offered on an irregular rotation basis.
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 in alternate years.

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
Crosslist: 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 in alternate years.

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
Crosslist: CMST 4S03
Not open to students with credit in LINGUIST 4BB3, TOPICS IN THE APPLICATION OF LINGUISTICS, if the topic was Interpersonal Communication.
Offered in alternate years.

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
Crosslist: 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: LINGUIST 4E03; and registration in Level IV of a program in Linguistics; 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
Crosslist: 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 3BB3, 3C03, 3U03 or 3UU3; and LINGUIST 2D03 or PSYCH 2RA3; and permission of the Department
Crosslist: PSYCH 4Z03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

POLISH {442} ...

Courses in Polish 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 629.

Notes:

1. Students should note that the Department has classified its Polish language courses under the following categories:
   Introductory Level Language Courses
   POLISH 1Z03, 1ZZ3
   Intermediate Level Language Courses
   POLISH 2Z03, 2ZZ3
2. POLISH 1Z03 and 1ZZ3 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 2Z03 or 2ZZ3.

Courses *If no prerequisite is listed, the course is open.*

POLISH 1Z03 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 1ZZ3.
Four hours; one term
Antirequisite: POLISH 2A03
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 1ZZ3 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 2Z03.
Four hours; one term
Prerequisite: One of POLISH 1Z03, 2A03 or permission of the Department
Antirequisite: POLISH 2AA3
The Department reserves the right to place students in the course most appropriate to their abilities.

POLISH 2Z03 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 2ZZ3.
Three hours; one term
Prerequisite: POLISH 1ZZ3 or 2AA3
Antirequisite: POLISH 2Z06, 3A03
The Department reserves the right to place students in the course most appropriate to their abilities.

POLISH 2ZZ3 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 2Z03 or 3A03
Antirequisite: POLISH 2Z06, 3AA3
The Department reserves the right to place students in the course most appropriate to their abilities.

RUSSIAN {490} ...

Courses in Russian 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 629.

Note:

Students should note that the Department has classified its Russian language courses under the following categories:
Introductory Level Language Courses
RUSSIAN 1Z03, 1ZZ3
Intermediate Level Language Courses
RUSSIAN 2Z03, 2ZZ3

Courses *If no prerequisite is listed, the course is open.*

RUSSIAN 1Z03 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 1ZZ3.
Four hours; one term
Antirequisite: Grade 12 U or M equivalent, RUSSIAN 2A03
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.

RUSSIAN 1ZZ3 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 2Z03.
Four hours; one term
Prerequisite: RUSSIAN 1Z03 or 2A03
Antirequisite: Grade 12 U or M equivalent, RUSSIAN 2AA3
The Department reserves the right to place students in the course most appropriate to their abilities.

RUSSIAN 2Z03 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 2ZZ3.
Three hours; one term
Prerequisite: RUSSIAN 1ZZ3 or 2AA3
Antirequisite: RUSSIAN 3A03
Not open to students with credit or registration in RUSSIAN 2ZZ3.
The Department reserves the right to place students in the course most appropriate to their abilities.

RUSSIAN 2ZZ3 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 3AA3
The Department reserves the right to place students in the course most appropriate to their abilities.

SPANISH {540} ...

(Formerly Hispanic Studies)
Courses in Spanish 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 629. Former Hispanic Studies (HISPANIC) courses are now listed as Spanish (SPANISH) courses. Students having credit in Hispanic Studies courses may not take the corresponding course under the Spanish designation. To determine the new Spanish designation of a former Hispanic Studies course, please see the chart below.

Former Course Code	New Course Code
HISPANIC 1A03	SPANISH 1A03
HISPANIC 1AA3	SPANISH 1AA3
HISPANIC 1Z06	SPANISH 1Z06
HISPANIC 2C03	SPANISH 2A03
HISPANIC 2D03	No longer offered
HISPANIC 2DD3	No longer offered
HISPANIC 2L03	SPANISH 2C03
HISPANIC 2X03	No longer offered
HISPANIC 2XX3	No longer offered
HISPANIC 2Z03	SPANISH 2Z03
HISPANIC 2ZZ3	SPANISH 2ZZ3
HISPANIC 3X03	SPANISH 3Z03
HISPANIC 3Y03	SPANISH 3ZZ3
HISPANIC 4A03	No longer offered
HISPANIC 4D03	No longer offered
HISPANIC 4II3	SPANISH 4II3
HISPANIC 4L03	No longer offered
HISPANIC 4M03	No longer offered
HISPANIC 4N03	No longer offered
HISPANIC 4P03	No longer offered
HISPANIC 4Q03	SPANISH 2B03
HISPANIC 4R03	No longer offered
HISPANIC 4V03	SPANISH 3C03
HISPANIC 4XX3	SPANISH 4Z03
HISPANIC 4YY3	SPANISH 4A03

Notes:

1. Students should note that the Department has classified its Spanish language courses under the following categories:
   Introductory Level Language Course
   SPANISH 1Z06
   Intermediate Level Language Courses
   SPANISH 1A03, 1AA3, 2Z03, 2ZZ3
   Advanced Level Language Courses
   SPANISH 3Z03, 3ZZ3, 4A03, 4Z03
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 taking courses taught in English for credit towards a Minor in Spanish will be required to do all their reading and writing in Spanish.

Courses *If no prerequisite is listed, the course is open.*

SPANISH 1A03 INTERMEDIATE SPANISH I
(Formerly HISPANIC 1A03)
The 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 SPANISH 1AA3.
Three hours; one term
Prerequisite: Grade 12 Spanish U or equivalent
Antirequisite: HISPANIC 1A03, 2D03, 2DD3, 2Z03, SPANISH 2Z03
Not open to students with credit or registration in SPANISH 1AA3.
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

SPANISH 1AA3 INTERMEDIATE SPANISH II
(Formerly HISPANIC 1AA3)
The 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 SPANISH 3Z03.

Three hours; one term
Prerequisite: HISPANIC 1A03 or SPANISH 1A03
Antirequisite: HISPANIC 1AA3, 2D03, 2DD3, 2ZZ3, SPANISH 2ZZ3
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

SPANISH 1Z06 BEGINNER'S INTENSIVE SPANISH
(Formerly HISPANIC 1Z06)
This course gives students the ability to express themselves reasonably well in Spanish and acquire the basics of Spanish grammar and gain considerable 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 SPANISH 2Z03.
Four hours; two terms
Antirequisite: Grade 12 Spanish U or equivalent, HISPANIC 1Z06, 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.

SPANISH 2A03 SPANISH-AMERICAN CIVILIZATION AND CULTURE (TAUGHT IN ENGLISH)
(Formerly HISPANIC 2C03)
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 from pre-Columbian to contemporary.
Three hours; one term
Prerequisite: Registration in Level II or above
Antirequisite: HISPANIC 2C03

SPANISH 2B03 VISIONS OF SPAIN AND LATIN AMERICA THROUGH FILM (TAUGHT IN ENGLISH)
(Formerly HISPANIC 4Q03)
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.
Two hours, plus one film screening per week; one term
Prerequisite: Registration in Level II or above
Antirequisite: HISPANIC 4Q03

SPANISH 2C03 INTRODUCTION TO SPANISH AMERICAN LITERATURE (TAUGHT IN ENGLISH)
(Formerly HISPANIC 2L03)
A survey of Spanish American literature from the 15th century to the present. The most significant cultural currents and representative writers will be studied to understand the development of literary genres and the cultural, political and social context in which they flourished.
Three lectures; one term
Prerequisite: HISPANIC 1AA3 (or SPANISH 1AA3); or HISPANIC 2C03, 2Z03 (or SPANISH 2A03, 2Z03)
Antirequisite: HISPANIC 2L03

SPANISH 2D03 MULTICULTURALISM AND GLOBALIZATION IN THE SPANISH MIDDLE-AGES (TAUGHT IN ENGLISH)
This course will examine the political, social, artistic and cultural interactions of the peoples of the Iberian peninsula from the early Visigoths and the Hispano-Romans, to the three-caste society of Christians, Muslims and Jews.
Three lectures; one term
Prerequisite: Registration in Level II or above

SPANISH 2Z03 INTERMEDIATE SPANISH I
(Formerly HISPANIC 2Z03)
First part of an intensive review of the 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 SPANISH 2ZZ3.
Four hours; one term
Prerequisite: HISPANIC 1Z06 or SPANISH 1Z06
Antirequisite: HISPANIC 1A03, 2D03, 2DD3, 2Z03, SPANISH 1A03
Not open to native speakers of Spanish.
The Department reserves the right to place students in the course most appropriate to their abilities.

SPANISH 2ZZ3 INTERMEDIATE SPANISH II
(Formerly HISPANIC 2ZZ3)
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 SPANISH 3Z03.
Four hours; one term
Prerequisite: HISPANIC 2Z03 or SPANISH 2Z03
Antirequisite: HISPANIC 1AA3, 2D03, 2DD3, 2ZZ3, SPANISH 1AA3

SPANISH 3A03 THE LATINO "SOUL": GENDER AND SEXUALITIES IN LATIN AMERICA'S CULTURE (TAUGHT IN ENGLISH)
This course looks at the representation of women and the stereotypical figure of the macho/Latin lover portrayed in various forms of cultural production. With readings as a theoretical base, students will be encouraged to question images of genders as fixed categories of identity in all forms of cultural production.
Three hours; one term
Prerequisite: Registration in Level II or above
Offered in alternate years.

SPANISH 3B03 SPANGLISH: A LINGUISTIC AND CULTURAL STUDY OF SPANISH IN NORTH AMERICA (TAUGHT IN ENGLISH)
Through a variety of media, the students will explore questions such as: How and when do bilinguals use the mix of Spanish and English? Is there a relationship between nationality, race, ethnicity and language given the variations of Spanglish spoken in the USA and in Canada?
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: LINGUIST 3Z03
Offered in alternate years.

SPANISH 3C03 THEATRE AND PERFORMANCE IN SPAIN (TAUGHT IN ENGLISH)
(Formerly HISPANIC 4V03)
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: Registration in Level II or above
Antirequisite: HISPANIC 4V03
Offered on an irregular rotation basis.

SPANISH 3Z03 ADVANCED CONVERSATIONAL AND WRITTEN SPANISH
(Formerly HISPANIC 3X03)
This course is designed to improve the students active command of the language through readings of commentaries on political and social problems as well as cultural themes. Conversational and written skills are stressed by way of discussions, practical situations and written reports.
Three hours; one term
Prerequisite: One of HISPANIC 1AA3, 2DD3, 2ZZ3, SPANISH 1AA3 or 2ZZ3
Antirequisite: HISPANIC 3X03

SPANISH 3ZZ3 BEYOND LITERATURE: SPANISH IN THE CONTEMPORARY WORLD
(Formerly HISPANIC 3Y03)
Through the analysis of selected readings, compositions and translations, the course examines the style and lexicon of communication in a variety of contexts: medical, business, legal, etc.
Three hours; one term
Prerequisite: One of HISPANIC 1AA3, 2DD3, 2ZZ3 or SPANISH 1AA3, 2ZZ3
Antirequisite: HISPANIC 3Y03

SPANISH 4A03 SPANISH TRANSLATION
(Formerly HISPANIC 4YY3)
Practice in the translation into Spanish of a specialized nature (example: administration, business, medical, etc.), leading to the study of comparative aspects of stylistics and syntax.
Three hours; one term
Prerequisite: HISPANIC 3Y03 or SPANISH 3ZZ3
Antirequisite: HISPANIC 4YY3

SPANISH 4II3 INDEPENDENT STUDY
(Formerly HISPANIC 4II3)
The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area in which the student has demonstrated competence.
Prerequisite: 12 units of Hispanic Studies above Level I and permission of the Department
Antirequisite: HISPANIC 4II3

SPANISH 4Z03 SPANISH LANGUAGE AND CULTURE
(Formerly HISPANIC 4XX3)
This course further develops students language proficiency and their cultural knowledge/competency. Students study various aspects of contemporary Spanish language speaking countries and focus on developing advanced reading, writing and speaking skills.
Three hours; one term
Prerequisite: HISPANIC 3X03 or SPANISH 3Z03
Antirequisite: HISPANIC 4XX3

MANUFACTURING TECHNOLOGY

(SEE TECHNOLOGY, MANUFACTURING TECHNOLOGY)

MATERIALS SCIENCE AND ENGINEERING {315}

WEB ADDRESS: http://mse.mcmaster.ca/
John Hodgins Engineering Building, Room 357
Ext. 26626

Faculty as of January 15, 2009

Chair

Nikolas Provatas

Distinguished University Professor

David S. Wilkinson/B.A.Sc. *(Toronto)*, Ph.D. *(Cambridge)*, F.C.I.M., F.A.Cer.S., P.Eng.

Professors

Gianluigi Botton/B.Eng.Phy., Ph.D. *(Ecole Polytechnique)*
Kenneth S. Coley/B.Sc. *(Strathclyde)*, Ph.D., D.I.C. *(Imperial College, London)*
Jeffrey J. Hoyt/B.Sc. *(Cornell)*, M.Sc., Ph.D. *(California-Berkeley)*
Gordon A. Irons/B.A.Sc. *(Toronto)*, Ph.D. *(McGill)*, F.C.I.M., P.Eng., Dofasco Chair in Ferrous Metallurgy
Adrian Kitai/B.Sc. *(McMaster)*, Ph.D. (Cornell), P.Eng.
Anthony Petric/B.A.Sc. *(Toronto)*, Ph.D. *(Ecole Polytechnique)*, P.Eng.
Nikolas Provatas/M.Sc., Ph.D. *(McGill)*
Gu Xu/M.Sc., Ph.D. *(Pittsburgh)*, D.E.S. *(Columbia)*
Igor Zhitomirsky/M.Sc. *(State University, Kalinin)*, Ph.D. *(Karpov Institute, Moscow)*
Shiping Zhu/B.Eng. *(Zhejiang)*, Ph.D. *(McMaster)*, P.Eng.

Adjunct Professors

Hany Aziz/B.Sc. *(Cairo)*, M.Eng., Ph.D. *(McMaster)*
Olivier Bouaziz/M.Sc., Ph.D. *(Grenoble)*
Yves Brechet/D.E.A. *(Ecole Polytechnique)*, Ph.D. *(Grenoble)*
Colin Cooper/B.Met., Ph.D. *(Sheffield)*
Zygmunt J. Jakubek/M.S. *(Cracow)*, Ph.D. *(M.I.T.)*
Mikko Karttunen/M.Sc. *(Fin)*, Ph.D. *(McGill)*
David J. Lloyd/B.Sc., Ph.D. *(Wales)*
Raja K. Mishra/B.Sc. *(Utkai)*, M.Sc. *(IIT Kanpur)*, Ph.D. *(California-Berkeley)*
Beng S. Ong/B.Sc. *(Nanyang)*, Ph.D. *(McGill)*
Zoran D. Popovic/Dipl.Eng., M.Sc. *(Belgrade)*, Ph.D. *(McMaster)*
S.V. Subramanian/B.Sc. *(Banaras)*, M.Met., Ph.D. *(Sheffield)*
Y. (Norman) Zhou/B.A.Sc., M.A.Sc. *(Tsinghua)*, Ph.D. *(Toronto)*, P.Eng.

Associate Professors

Joey Kish/B.Eng., Ph.D. *(McMaster)*
Dmitri V. Malakhov/B.Sc. *(Moscow)*, M.Sc., Ph.D. *(Novosibirsk, Russia)*
Marek Niewczas/M.Sc., Ph.D. *(Krakow)*

Assistant Professor

Hatem S. Zurob/B.Eng., Ph.D. *(McMaster)*, P.Eng.

Associate Members

John E. Greedan/*(Chemistry)* B.A. *(Bucknell)*, Ph.D. *(Tufts)*, F.C.I.C.
Mohamed Hamed/*(Mechanical Engineering)* B.A.Sc., Ph.D. *(Alexandria)*
Adam P. Hitchcock/*(Chemistry)* B.Sc. *(McMaster)*, Ph.D. *(British Columbia)*, F.C.I.C.
Mukash Jain/(Mechanical Engineering) B.E.(IIS), M.A.Sc. *(Windsor)*, Ph.D. *(Washington)*
Ray LaPierre/*(Engineering Physics)* B.Sc. *(Dalhousie)*, M.Eng., Ph.D. *(McMaster)*
Joseph McDermid/*(Mechanical Engineering)* B.A.Sc. *(Queen's)*, M.Eng., Ph.D. *(McGill)*
Kalai Saravanamuttu/*(Chemistry)* B.Sc., Ph.D. *(McGill)*
Henry Schwarcz/*(Geography and Earth Sciences)*, B.A. *(Chicago)*, M.Sc., Ph.D. *(California Institute of Technology)*
Sumanth Shankar/*(Mechanical Engineering)* B.Tech *(Varanasi)*, Ph.D. *(Worcester)*

Courses

If no prerequisite is listed, the course is open.

MATLS 1M03 STRUCTURE AND PROPERTIES OF MATERIALS
An introduction to the structure of both crystalline and amorphous solids; the physical and chemical basis for properties exhibited by materials; an overview of material properties including mechanical, electrical, magnetic and thermal behaviour.
Three lectures; second term
Prerequisite: Registration in any program in the Faculties of Engineering or Science
Antirequisite: ENGINEER 2E03, 2O03, 2O04, MATLS 1A03, 2O03

MATLS 2B03 THERMODYNAMICS OF MATERIALS
Thermodynamics of gases and critical phenomena. The three laws of thermodynamics applied to materials processing. An introduction to statistical thermodynamics.
Three lectures, one tutorial; first term
Prerequisite: CHEM 1A03 or 1E03
Antirequisite: ENG PHYS 2H04, PHYSICS 2H04

MATLS 2D03 SOLUTION THERMODYNAMICS
Thermodynamic activity in solid and liquid systems: Gibbs energy of solutions; binary phase diagrams; equilibrium constant; reaction equilibria in gases; Ellingham diagrams.
Three lectures, one tutorial; second term
Prerequisite: CHEM 1A03 or 1E03; and MATLS 2B03
Antirequisite: MATLS 2B06

MATLS 2H04 MEASUREMENTS AND COMMUNICATION
Basic experimental, simulation and data collection skills relating to materials structure and properties. Written and presentation skills development through lab report writing, assignments and plant visits.
Two three hour laboratories or tutorials per week; both terms
Prerequisite: Registration in a program administered by the Department of Materials Science and Engineering
Antirequisite: MATLS 2H03

MATLS 2X03 CRYSTALLINE STRUCTURE OF MATERIALS
Crystal geometry, point groups, space groups, x-ray diffraction methods for the determination of crystalline structures and chemical compositions, electron and neutron diffraction methods, microanalysis, crystalline defects, physical properties of crystals, crystal growth, phase analysis, phase diagrams, phase transitions, protein crystallography.
Two lectures, one lab (three hours); first term
Prerequisite: Completion of Science I or Engineering I
Antirequisite: MATLS 2X02

MATLS 3B03 MATERIALS PRODUCTION
Surface science and technology related to the preparation of fine particles of minerals, metals and ceramics for industrial production. Application of electrochemistry for diverse materials processing, such as electrometallurgy, thin film production and anodizing.
Three lectures; second term
Prerequisite: MATLS 2D03

MATLS 3C04 THERMODYNAMICS OF MULTICOMPONENT SYSTEMS
Reaction equilibria in solution; stability diagrams; ternary phase diagrams; aqueous and high temperature electrochemistry; use of computerized thermodynamic databases.
Three lectures, one lab (three hours), one tutorial; first term
Prerequisite: MATLS 2D03

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 2O03, MATLS 1A03 or 1M03; and MATH 2M06 (or 2M03 and 2MM3), or both MATH 2A03 and 2C03, or both MATH 2Z03 and 2ZZ3

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: ENGINEER 2P04 and one of ENGINEER 2O03, MATLS 1A03, 1M03, 2O03; 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, 2O03 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 or tutorial, one lab (three hours); first term
Prerequisite: One of ENGINEER 2O03, MATLS 1M03, 2X02 or 2X03

MATLS 4AA3 COMPUTATIONAL THERMODYNAMICS
Thermodynamic modelling. Principles of computational thermodynamics and its applications. Thermo-Calc. Fortran programming. TQ interface and its incorporation into problem-oriented programs.
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.
Not offered in 2009-2010.
Offered in 2010-2011.

MATLS 4C03 MODERN IRON AND STEELMAKING
Theory and practice of iron making. New processes for reduced energy consumption and pollution. Thermodynamics and kinetics of steelmaking. Steel refining. Casting, including new near net shape technologies. Specialty steelmaking.
Three lectures; second term
Prerequisite: Registration in final or penultimate year of any Materials Engineering program or permission of instructor
Corequisite: MATLS 3F03 or 4B04
Offered on an irregular rotation basis.
Not offered in 2009-2010.
Offered in 2010-2011.

MATLS 4D03 MATERIALS AND THE ENVIRONMENT
The environments experienced by engineering materials in service, and economic methods for ensuring theor 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.
Not offered in 2009-2010.
Offered in 2010-2011.

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
Interaction of electrons and photons 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.
Offered in 2010-2011.

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.
Three lectures; first term
Prerequisite: Registration in Level IV of Materials Science or Materials Engineering
Offered on an irregular rotation basis.
Offered in 2009-2010.
Not offered in 2010-2011.

MATLS 4I03 SUSTAINABLE MANUFACTURING PROCESSES
Sustainable development, materials cycles, methods for measuring environmental impact, life cycle analysis, waste treatment and recycling technologies.
Two lectures, one tutorial (one hour); second 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.
Not offered in 2010-2011.

MATLS 4K06 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 nine 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.
Antirequisite: MATLS 4K04

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 4N03 HYDROGEN, SOLAR AND NUCLEAR MATERIALS
Fundamental physics of materials used in non-fossil energy technologies. Solar cells, irradiation damage and nuclear materials, modern battery materials, fuel cells.
Three lectures; first term
Prerequisite: Registration in Level III or above of any program in Materials Engineering or permission of the instructor
Offered on an irregular rotation basis.
Offered in 2009-2010.
Not offered in 2010-2011.

MATLS 4NN3 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 modelling.
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.
Not offered in 2010-2011.

MATLS 4P03 PROPERTIES OF POLYMERIC MATERIALS
Structure of amorphous and crystalline polymeric materials; mechanical, electrical and optical properties, and their modification through processing.
Three lectures; first term
Prerequisite: CHEM 2WW2; and both MATH 2A03 and 2C03, or MATH 2M06 (or 2M03 and 2MM3), or both MATH 2Z03 and 2ZZ3
Offered on an irregular rotation basis.
Offered in 2009-2010.
Not offered in 2010-2011.
Open to Level III and IV students registered in a program in the Faculty of Science or Engineering with permission of the department.

MATLS 4R03 CERAMIC SCIENCE
The unique properties of structural and functional ceramics are explored, including ferroelectric, piezoelectric and magnetic ceramics, clays, porcelains and refractories. The importance of processing for achieving properties is emphasized.
Three lectures; second term
Prerequisite: Registration in a program in Materials Engineering
Offered on an irregular rotation basis.
Offered in 2009-2010.
Not offered in 2010-2011.

MATLS 4T03 **PROPERTIES AND PROCESSING OF COMPOSITES**
Intrinsic properties of matrix materials and fibres; mechanics and thermodynamics of interfaces; mechanical properties and fabrication of engineering composites.
Three lectures; second term
Prerequisite: ENGINEER 3P03 or MATLS 3M03
Offered on an irregular rotation basis.
Offered in 2009-2010.
Not offered in 2010-2011.

MATLS 4Z06 **INDUSTRIAL PROJECTS**
Projects, in cooperation with industry, involving materials design in manufacturing, complemented by lectures in group problem solving and design methodology.
Three labs (three hours each); both terms
Prerequisite: Registration in Level IV or V of any program in Materials Engineering
Antirequisite: MATLS 4Z04

MATHEMATICS AND STATISTICS

WEB ADDRESS: http://www.math.mcmaster.ca/

Hamilton Hall, Room 218

Ext. 27034

Faculty as of January 15, 2009

Chair

Hans Boden

Associate Chairs

Nicholas Kevlahan/Graduate Studies
Dmitry Pelinovsky/Undergraduate Studies

Professors

Stanley Alama/B.Sc. *(Columbia)*, M.Sc., Ph.D. *(Courant, N.Y.U.)*
N. Balakrishnan/B.Sc., M.Sc. *(Madras)*, Ph.D. *(I.I.T., Kanpur)*
Hans Boden/B.S. *(New Hampshire)*, Ph.D. *(Brandeis)*
Lia Bronsard/B.A. *(Montreal)*, M.Sc., Ph.D. *(Courant, NYU)*
Walter Craig/A.B. *(California-Berkeley)*, M.S., Ph.D. *(Courant, N.Y.U.)*/ Senior Canada Research Chair, F.R.S.C.
David Earn/B.Sc., M.Sc. *(Toronto)*, Ph.D. *(Cambridge)*
Deirdre Haskell/B.A. *(Oxford)*, M.S., Ph.D. (Stanford)
Shui Feng/B.Sc., M.Sc. *(Beijing Normal)*, Ph.D. *(Carleton)*
Jean-Pierre Gabardo/B.Sc. *(Université de l'État a Mons)*, Ph.D. *(Maryland)*
Ian Hambleton/B.Sc., M.Sc. *(Toronto)*, Ph.D. *(Yale)*, Britton Professor of Mathematics
Bradd Hart/B.Math. *(Waterloo)*, Ph.D. *(McGill)*
Fred M. Hoppe/B.Sc. *(Toronto)*, M.Sc. *(Weizmann Institute of Science)*, M.A., Ph.D. *(Princeton)*
Thomas R. Hurd/B.Sc. *(Queen's)*, D.Phil. *(Oxford)*
Nicholas Kevlahan/B.Sc. *(British Columbia)*, Ph.D. *(Cambridge)*
Manfred Kolster/Dipl. *(Hamburg)*, Dr. rer. nat. *(Saarbrucken)*, Habil. *(Munster)*
Miroslav Lovric/B.S. *(Zagreb)*, M.S., Ph.D. *(Ohio State)*, 3M Teaching Fellow
Peter D.M. Macdonald/B.Sc., M.Sc. *(Toronto)*, D.Phil. *(Oxford)*, P. Stat
Maung Min-Oo/B.Sc. *(Rangoon)*, Dipl. Math., Dr.rer.nat., Habil. *(Bonn)*
Gregory H. Moore/B.A. *(California-Berkeley)*, M.A., M.Sc., Ph.D. *(Toronto)*
Andrew J. Nicas/B.Sc. *(McGill)*, M.A., Ph.D. *(Princeton)*
Eric T. Sawyer/B.Sc., Ph.D. *(McGill)*/McKay Professor of Mathematics
Matthew A. Valeriote/B.Math. *(Waterloo)*, Ph.D. *(California-Berkeley)*
Roman Viveros-Aguilera/B.A. *(Veracruzana, Mexico)*, M.A. *(National Politechnic Inst., Mexico)*, Ph.D. *(Waterloo)*/Graduate Advisor, Statistics
McKenzie Y.-K. Wang/A.B. *(Princeton)*, Ph.D. *(Stanford)*
Gail S.K. Wolkowicz/B.Sc., M.Sc. *(McGill)*, Ph.D. *(Alberta)*

Adjunct Professor

Abdel H. El-Shaarawi/B.Sc., M.Sc. *(Cairo)*, Ph.D. *(Waterloo)*

Associate Professors

Angelo Canty/B.Sc. *(University College, Cork)*, M.Sc., Ph.D. *(Toronto)*
Aaron Childs/B.Sc., M.Sc., Ph.D. *(McMaster)*
Matheus Grasselli/B.Sc. *(Sao Paolo)*, Ph.D. *(King's College, London)*
Zdislav V. Kovarik/M.Sc. *(Charles, Prague)*, Ph.D. *(Toronto)*
Dmitry E. Pelinovsky/M.S. *(Nizhny Novgorod State, Russia)*, Ph.D. *(Monash)*
Romyar Sharifi/B.A. *(California-Berkeley)*, Ph.D. *(Chicago)*/Canada Research Chair
Patrick Speissegger/M.Sc. *(Swiss Federal Institute of Technology)*, Ph.D. *(Ilinois-Urbana)*/Canada Research Chair

Assistant Professors

Megumi Harada/A.B. *(Harvard)*, Ph.D. *(California-Berkeley)*
David Lozinski/B.Math. *(Waterloo)*, M.Sc., Ph.D. *(Northwestern)*
Traian Pirvu/B.S. *(University of Craiova)*, M.S., Ph.D. *(Carnegie Mellon)*
Bartosz Protas/M.Sc. *(Warsaw University of Technology)*, Ph.D. *(Warsaw University of Technology and Université de Paris)*
Rong Zhu/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)*
Jonathan Dushoff/*(Biology)* B.A. *(Pennsylvannia)*, Ph.D. *(Princeton)*
Stephen Walter/*(Health Sciences)* B.Sc. *(Imperial College, London)*, Ph.D. *(Edinburgh)*, A.R.C.S.

Lecturer

Christopher McLean/B.Sc. *(McMaster)*, M.Sc. *(Toronto)*, M.Sc. *(McMaster)*

Department Notes:

1. 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).
2. Courses in Mathematics and Statistics are not open to students registered in the Bachelor of Technology (B.Tech.) program.

MATHEMATICS {320} ...

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 1K03
Antirequisite: ARTS&SCI 1D06, MATH 1N03, 1X03, 1Z04
Not open to students who have achieved a grade of at least 10 in MATH 1LS3 or 1M03.
Not open to students in Mathematics and Statistics I or an Engineering program or with credit or registration in ISCI 1A24.

MATH 1AA3 **CALCULUS FOR SCIENCE II**
For students in science: 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 1A03 or 1X03; or a grade of at least 10 in MATH 1LS3 or 1M03
Antirequisite: ARTS&SCI 1D06, MATH 1NN3, 1XX3, 1ZZ5
Not open to students in Mathematics and Statistics I or with credit or registration in ISCI 1A24.

MATH 1B03 **LINEAR ALGEBRA I**
Vector spaces given by solutions to linear systems. Linear independence, dimension. Determinants. Eigenvalues, eigenvectors and diagonalisation. 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, 1HH3
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
Normally not open to students who have completed Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions U or Grade 12 Advanced Functions and Introductory Calculus U.

MATH 1LS3 CALCULUS 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, MATH 1A03, 1M03, 1N03, 1X03, 1Z04.
Students with a grade of at least A- in MATH 1LS3 may use it as a substitute 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, 1LS3, 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 STATS 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, 1N03, 1NN3, 1X03

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 1AA3, 1N03, 1NN3, 1XX3

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 1AA3, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A24; and credit or registration in one of MATH 1B03, 1D03, 1H03 or 1HH3
Antirequisite: ENGINEER 2ZZ3, MATH 2M06, 2MM3, 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 1AA3, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A24; and one of MATH 1B03, 1D03, 1H03, 1HH3
Antirequisite: ENGINEER 2Z03, MATH 2M03, 2M06, 2P04, 2Z03

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 1AA3, 1NN3, 1XX3, 1ZZ5, ARTS&SCI 1D06, ISCI 1A24; and credit or registration in one of MATH 1B03, 1D03, 1H03, 1HH3

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, 1N03, 1X03, 1Z04, ARTS&SCI 1D06, ISCI 1A24

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, 1LS3, 1M03, 1N03, 1X03, 1Z04, ARTS&SCI 1D06, ISCI 1A24
Not open to students registered in Science or Engineering programs

MATH 2R03 LINEAR ALGEBRA II
Abstract vector spaces. Linear transformations. Inner product spaces. Spectral theorems. Orthogonal bases, other topics.
Three lectures; one term
Prerequisite: One of MATH 1AA3, 1NN3, 1XX3, ARTS&SCI 1D06, ISCI 1A24; and one of MATH 1B03, 1H03, 1HH3; or MATH 1ZZ5

MATH 2S03 LINEAR ALGEBRA III
Canonical forms, determinants, bilinear forms, groups of linear transformations, other topics selected by the instructor.
Three lectures; one term
Prerequisite: MATH 2R03

MATH 2T03 NUMERICAL LINEAR ALGEBRA
Introduction to MatLab; matrix and vector norms; sensitivity, conditioning, convergence and complexity; direct and iterative methods for linear systems; eigenvalues and eigenvectors; least squares.
Three lectures; one term
Prerequisite: MATH 2R03

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 1A24; and MATH 1B03 or 1D03
Normally not open to students with credit in MATH 2A03, 2M06, 2MM3, 2Q04, 2ZZ3.

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 lab (two hours) every other week; one term
Prerequisite: MATH 1ZZ5
Antirequisite: ENGINEER 2Z03, MATH 2C03, 2M03, 2P04

MATH 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, 2MM3, 2Q04

MATH 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, 2XX3

MATH 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

MATH 3C03 MATHEMATICAL PHYSICS I
Linear algebra and eigenvalue problems; partial differential equations, orthogonal functions, Fourier series; Legendre functions, spherical harmonics.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2MM3, 2Q04, 2X03 or 2Z03; and one of MATH 2C03, 2M03, 2P04 or 2ZZ3. One of PHYSICS 2B06, 2D03 or 2E03 is recommended.
Not open to students with credit or registration in MATH 3FF3.

MATH 3CY3* CRYPTOGRAPHY
Introduction to cryptosystems used in modern security systems: elementary number theory, primality testing and factorization, discrete logarithm, SRA cryptosystems, elliptic curve cryptosystems.
Three lectures; one term
Prerequisite: MATH 2R03

MATH 3D03 MATHEMATICAL PHYSICS II
Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.
Three lectures; one term
Prerequisite: MATH 3C03
Antirequisite: ELEC ENG 3CK3, MATH 3K03
Not open to students with credit or registration in MATH 3X03 or to students registered in Honours Mathematics and Physics.

MATH 3DC3* 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

MATH 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

MATH 3EE3 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

MATH 3F03 ADVANCED DIFFERENTIAL EQUATIONS
Systems of ordinary differential equations, autonomous systems in the plane, phase portraits, linear systems, stability, Lyapunov's method, Poincare-Bendixson theorem, applications.
Three lectures; one term
Prerequisite: MATH 2C03, 2X03 and credit or registration in MATH 2R03

MATH 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

MATH 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

MATH 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

MATH 3H03* NUMBER THEORY
Selected topics from: congruence and residues, continued fractions, approximation of irrationals, 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

MATH 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 co-ordinate systems.
Three lectures; first term
Prerequisite: One of MATH 2M03, 2P04, 2ZZ3 or registration in Level III or IV of a program in the Department of Materials Science and Engineering

MATH 3K03 ENGINEERING MATHEMATICS III
Complex variable theory with applications to electrical and computer engineering.
Three lectures; one term
Prerequisite: MATH 2P04
Antirequisite: ELEC ENG 3CK3, MATH 3D03

MATH 3N03 MATHEMATICAL BIOLOGY
Population dynamics: models of discrete and continuous growth; competition and predation; epidemic models. Partial differential equations: diffusion and pattern formation in biological settings. Biological oscillators.
Three lectures; one term
Prerequisite: MATH 3F03

MATH 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

MATH 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

MATH 3T03 INQUIRY IN TOPOLOGY
Size and shape in topology and analysis, compactness, connectedness, limit sets, theory of dimension, fractals and self-similarity.
Three lectures; one term
Prerequisite: MATH 2XX3

MATH 3TP3* TRUTH AND PROVABILITY: GÖDEL'S INCOMPLETENESS THEOREMS
The goal is to inquire into Gödel's proof of incompleteness; in any sufficiently powerful axiom system there will be statements which are true but not provable.
Three lectures; one term
Prerequisite: MATH 2R03

MATH 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

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 3EE3

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 4G03 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* MATHEMATICS OF FINANCE
Options and forwards, efficient market hypothesis, no arbitrage condition, binomial asset pricing model, portfolio strategies, stochastic processes, conditional expectation, martingales, optimal portfolio selection, exotic options, stochastic interest rate models.
Three lectures; one term
Prerequisite: MATH 2A03 or 2X03; and STATS 2D03

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; second term
Prerequisite: Credit or registration in MATH 3C03 or 3FF3; or permission of the instructor

MATH 4TT3* 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
Antirequisite: MATH 4T03
MATH 4TT3 may be repeated, if on a different topic.

MATH 4V03* APPLIED ANALYSIS
Theory of Distributions, Fourier Transform, fundamental solutions and Green's functions for partial differential operators, uncertainty principle, Poisson summation formula, applications.
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

STATISTICS {542} ...

Department Note:

Students wishing to register in any Mathematics and Statistics specialization must take MATH 1AA3 and 1B03.

Courses

If no prerequisite is listed, the course is open.

STATS 1L03 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 1CC3, 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 COMMERCE 2QA3, ECON 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; influential analysis; model building; one-way and two-way ANOVA; applications.
Three lectures; one term
Prerequisite: STATS 2MB3
Antirequisite: STATS 4B03

STATS 3CI3 COMPUTATIONAL METHODS FOR INFERENCE
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
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 2MB3 and one of MATH 2A03, 2L03, 2Q04, 2X03, 2ZZ3

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 3HS3* 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, 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 3PG3* 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, loglinear models for contingency tables, collapsibility, ordinal associations, multicategory logit models.
Three lectures; one term
Prerequisite: STATS 3A03 or 4B03; and STATS 3D03

STATS 4M03* MULTIVARIATE ANALYSIS
Multivariate distributions: Normal, Wishart, T2 and others; regression, correlation, factor analysis, general linear hypothesis.
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 {330}

WEB ADDRESS: http://www.mech.mcmaster.ca/
John Hodgins Engineering Building, Room 316
Ext. 24294

Faculty as of January 15, 2009

Chair

Saeid Habibi

Professors

Gary Bone/B.Sc. *(Queen's)*, M. Eng., Ph.D. *(McMaster)*, P.Eng.
Ilene Busch-Vishniac/B.Sc. *(Rochester)*, M.Eng., Ph.D. *(M.I.T.)*
Mohamed Elbestawi/B.Sc. *(Alexandria)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.
Saeid Habibi/B.Sc. *(Dundee)*, Ph.D. *(Cambridge)*, P.Eng.
Samir Ziada/B.Sc. *(Cairo)*, M.Eng. *(McMaster)*, Ph.D. *(Lehigh)*, P.Eng.

Adjunct Professors

Doug K. Chang/B.A.Sc. *(Korea)*, M.A.Sc., Ph.D. *(Windsor)*, P.Eng.
Don R. Metzger/B.A.Sc., M.A.Sc., Ph.D. *(Waterloo)*, P.Eng.
Anthony Robinson/B.Eng., M.Eng., Ph.D. *(McMaster)*
Vincent M. Sowa/B.Sc. *(Illinois)*, M.A. *(Purdue)*, Ph.D. *(Waterloo)*
Jimi Tjong/B.A.Sc., M.A.Sc., Ph.D. *(Windsor)*, P.Eng.
Y. (Noman) Zhou/B.A.Sc., M.A.Sc. *(Tsinghua)*, Ph.D. *(Toronto)*, P.Eng.

Associate Professors

Chan Y. Ching/B.S. *(Perideniya)*, Ph.D. *(Syracuse)*, P.Eng.
James Cotton/B.Eng., M.Eng., Ph.D. *(McMaster)*, P.Eng.
Mohamed S. Hamed/B.Sc., M.Sc. *(Alexandria)*, Ph.D. *(Western Ontario)*, P.Eng.
Mukesh K. Jain/B.E. *(IIS)*, M.A.Sc. *(Windsor)*, D.Sc. *(Washington)*, P.Eng.
Philip Koshy/B.E. *(Anna)*, M.Tech., Ph.D. *(IIT Kanpur)*, P.Eng.
Marilyn F. Lightstone/B.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., NSERC/US Steel Canada/Xstrata Zinc Industrial Research Chair in Zinc-Coated Advanced Steels, P.Eng.
Timothy J. Nye/B.A.Sc. *(Waterloo)*, M.A.Sc. *(Ohio State)*, Ph.D. *(Waterloo)*, P.Eng.
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.Mgt. *(McMaster)*, M.Eng. *(Carnegie Mellon)*, Ph.D. *(McMaster)*, P.Eng.
Peidong Wu/B.Sc. *(Zhejiang)*, M.Eng. *(China University of Mining)*, Ph.D. *(Delft)*

Assistant Professors

Robert V. Fleisig/B.A.Sc. *(Waterloo)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.
Eu-Gene Ng/Dipl. Mech. Eng. *(Singapore Polytechnic)*, B.Eng., Ph.D. *(Birmingham)*
Ponnambalam (Ravi) Selvaganapathy/B.S. *(Madurai Kamaraj)*, M.S., Ph.D. *(Michigan)*
Stephen W. Tullis/B.Sc., M.Sc. *(Queen's)*, Ph.D. *(Cambridge)*, P.Eng.
Gregory R. Wohl/B.Sc., M.Sc., Ph.D. *(Calgary)*

Associate Members

Anthony Adili/*(Surgery)* B.Eng.Mgt., M.D. *(McMaster)*, P.Eng.
David W. Capson/*(Electrical and Computer Engineering)* B.Sc. Eng. *(New Brunswick)*, M.Eng., Ph.D. *(McMaster)*, P.Eng.
Justin DeBeer/*(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)*
Mesud Yelbuz/*(Pediatrics)* Ph.D., MD *(Germany)*

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 2B02

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, one tutorial; 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 and registration in Level II of any Mechanical Engineering program
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 2Q03, 2Q04, ENGINEER 2Q04, MECH ENG 2QR4

MECH ENG 2QR4 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 or Mechatronics Engineering program; and permission of the Associate Dean (Academic) of Engineering
Antirequisite: CIV ENG 2Q03, 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 3A03 ENGINEERING MECHANICS
Singularity functions, generalized Hooke's law; shear stress, shear flow in beams; shear centre. Biaxial and unsymmetrical bending, analysis of indeterminate beams and frames using energy methods, impact loads. Buckling of compression members. Introduction to yield criteria.
Three lectures, one tutorial; 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 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: Both MATH 2M03 and 2MM3 (or 2M06), or both MATH 2Z03 and 2ZZ3, or both MATH 2P04 and 2Q04; and registration in any Mechanical Engineering program

MECH ENG 3R03 HEAT TRANSFER
Application of the laws of conduction, convection and radiation to problems in heat transfer. Steady and transient conduction in solids. Laminar and turbulent convection. Radiation heat transfer processes. Heat exchangers.
Three lectures; second term
Prerequisite: Both MATH 2M03 and 2MM3 (or 2M06), or both MATH 2Z03 and 2ZZ3; and 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 methods 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)
Fundamentals of metal removing processes. Mechanics of material removal, tribological aspects of material removal, surface integrity and dimensional optimization of machining economies.
Three lectures; second term
Prerequisite: MECH ENG 3C03

MECH ENG 4E03 MICROELECTROMECHANICAL SYSTEMS (MEMS)
Introduction, microfabrication and micromachining fundamentals, scaling effects, mechanics and transduction at microscale, actuation and sensing methods - Electrostatic, piezoelectric, thermal, electromagnetic, resonant, tunneling and microfluidic techniques. Capacitative sensors, resonators, lab on chip devices, microfluidic devices, micromirrors, assembly techniques for MEMS, microsystem packaging.
Three lectures; second term
Prerequisite: Registration in Level IV or above of a Mechanical Engineering program or permission of the department

MECH ENG 4H03 MECHATRONICS
Integration of mechanical engineering with electronics and computer control. Sensors, actuators (including pneumatic and hydraulic), modelling using building block and state space methods, model-based control, programming of PLCs with practical demonstrations.
Three lectures; second term
Prerequisite: Either MECH ENG 4R03 or SFWR ENG 3DX3 and registration in any Mechanical or Mechatronics Engineering program; or permission of the department

MECH ENG 4I03 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
Computational Methods for Fluid Mechanics and Heat Transfer covering: concepts of modelling and numerical analysis, governing equations of thermo-fluid problems, finite-difference discretization methods. Use of commercial computational software for solving thermo-fluid problems.
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.
First Term: One lecture, two labs (three hours); Second Term: One lecture, two labs (three hours)
Prerequisite: Registration in Level IV Mechanical Engineering; or Level V Mechanical Engineering and Management or Mechanical Engineering and Society

MECH ENG 4O04 SUSTAINABLE ENERGY SYSTEMS
Assessment of current and future energy systems, covering resources, extraction, conversion with emphasis on meeting regional and global energy needs in a sustainable manner. Different renewable and conventional energy technologies and their attributes. Evaluation and analysis of energy technology systems in the context of political, social, economic and environmental goals.
Three lectures, one tutorial; second term
Prerequisite: MECH ENG 2W04, 3O04; or permission of the department

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: ENGINEER 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: ELEC ENG 3CA3, 3CK4, 3TP3, 3TP4

MECH ENG 4S03 INCOMPRESSIBLE FLOW
Introduction to internal and external laminar and turbulent incompressible flows. Topics include turbulent boundary layers, aerodynamics and convective heat transfer.
Three lectures; first term
Prerequisite: MECH ENG 3O04

MECH ENG 4T03 FINITE ELEMENT APPLICATIONS
Theory of the finite element method, element derivation, solution procedures. Applications to static and dynamic mechanical systems using a finite element package.
Two lectures, one tutorial (one hour), one lab (two hours) alternate weeks; first term
Prerequisite: Registration in Level IV or V of any Mechanical Engineering program
Antirequisite: MECH ENG 4TR3

MECH ENG 4TR3 FINITE ELEMENT APPLICATIONS
Theory of the finite element method, element derivation, solution procedures. Applications to static and dynamic mechanical systems using a finite element package. Offered overseas as part of the Study Abroad Program
Two lectures, one tutorial (one hour), one lab (two hours) every other week; one term (summer)
Prerequisite: Registration in Level IV or V of any Mechanical Engineering program; and permission of the Associate Dean (Academic) of Engineering
Antirequisite: MECH ENG 4T03

MECH ENG 4U03 COMPRESSIBLE FLOW AND TURBOMACHINERY
Compressible flows: Fanno and Rayleigh flows, normal and oblique shocks. Turbomachines: axial and radial flow gas and steam turbines, axial and radial flow compressors and fans.
Three lectures; second term
Prerequisite: MECH ENG 2W04, 3O04

MECH ENG 4V03 THERMO-FLUIDS SYSTEMS DESIGN AND ANALYSIS
Design, operation and application characteristics of equipment commonly used in thermal systems. Modelling performance characteristics of piping systems, pumps, compressors, fans, heat exchangers, boilers and cooling towers. System simulation and optimization. Selection criteria of thermal equipment. Design optimization and system performance evaluation.
Three lectures, one tutorial; first term
Prerequisite: MECH ENG 2W04, 3O04, 3R03

MECH ENG 4W03 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
Antirequisite: MECH ENG 3D03

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.
Three lectures, one lab (one hour); second term
Prerequisite: Registration in Level IV or above of any Mechanical or Mechatronics Engineering program
Antirequisite: MECH ENG 4ZR3

MECH ENG 4ZR3 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 {332}

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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 or Software Engineering (Embedded Systems) 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: One of ENG PHYS 2E04, SFWR ENG 2DA3 or 2DA4

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 4MM0 COURSE WORK IN REAL TIME SYSTEMS
Students complete an independent course project in the area of real time systems design with the focus on Mechatronics applications.
One lab (three hours per week); first term
Prerequisite: Permission of the Department of Computing and Software

MECHTRON 4MO0 COURSE WORK IN ROBOTICS
Students complete an independent course project in the area of robotics with the focus on Mechatronics applications.
One lab (three hours per week); first term
Prerequisite: Permission of the Department of Computing and Software

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/

General Sciences Building, Room 116

Ext. 27650, 26159

Faculty as of January 15, 2009

Acting Chair

David R. Chettle

Professors

David R. Chettle/B.Sc., M.Sc., Ph.D. *(Birmingham)*
Michael J. Farquharson/B.Sc. *(Sussex)*, M.Sc. *(Surrey)*, Ph.D. *(University College, London)*
Fiona E. McNeill/B.Sc. *(Edinburgh)*, Ph.D. *(Birmingham)*
Carmel E. Mothersill/B.Sc., Ph.D. *(University College Dublin)*
Michael S. Patterson/B.Sc. *(Queen's)*, M.Sc. *(McMaster)*, Ph.D. *(Toronto)*
Colin B. Seymour/DCR(RT) *(Guy's Hospital)*, B.L. *(King's Inn)*, Ph.D. *(Trinity College Dublin)*

Associate Professors

Douglas R. Boreham/B.Sc. *(Laurentian)*, Ph.D. *(Ottawa)*/Chair, Committee of Instruction, Honours Medical and Health Physics Co-op
Thomas J. Farrell/B.Sc., B.Ed. *(Toronto)*, M.Sc. *(Western Ontario)*, Ph.D. *(McMaster)*
John F. Valliant/B.Sc., Ph.D. *(McMaster)*
Douglas R. Wyman/B.Math *(Waterloo)*, Ph.D. *(McMaster)*

Assistant Professors

Nicholas A. Bock/B.Sc. *(Western Ontario)*, Ph.D. *(Toronto)*
Soo Hyun Byun/B.Sc., M.Sc., Ph.D. *(Seoul National University)*
Joseph E. Hayward/B.Eng., M.Eng., Ph.D. *(McMaster)*
Gianni Parise/B.Kin., M.Sc., Ph.D. *(McMaster)*

Associate Members

Richard G. Butler/*(Pathology)* B.Sc., M.Sc. *(Toronto)*, Ph.D. *(A.N.U. Canberra)*, M.B.A. *(McMaster)*
Troy Farncombe/*(Radiology)* B.Sc. *(Calgary)*, M.Sc., Ph.D. *(British Columbia)*
Andrew J. Rainbow/*(Biology)* B.Sc. *(Manchester)*, M.Sc. *(London)*, Ph.D. *(McMaster)*
Colin E. Webber/*(Radiology)* B.Sc. *(Birmingham)*, M.Phil., Ph.D. *(Surrey)*

Mohawk College of Applied Arts and Technology

Associate Dean, Medical Radiation and Rehabilitation Sciences School of Health Sciences

Lori Koziol/B.App.Sc. (Med IM) *(Charles Sturt)*, Dipl, RTR, RDMS, FSDMS, CRGS

Coordinator, Radiation Therapy Specialization

Lyn Paddon

Coordinator, Radiography Specialization

Caroline Falconi

Coordinator, Ultrasonography Specialization

Darrin Cournoyea

Coordinators, Clinical Education

Caroline Falconi
Melanie Spence-Ariemma

Faculty

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Ajesh Singh/Dipl.H.S., B.App.Sc. (Med Im) *(Charles Sturt)*, M.R.T.(R), RTR
Mary Tuttle/Dipl, M.R.T.(R), RTR, RDMS

MEDICAL AND HEALTH PHYSICS {345} ...

Courses

If no prerequisite is listed, the course is open.

MED PHYS 1E03 PHYSICS IN MEDICINE AND BIOLOGY I
An introduction to the physics underlying techniques used in the diagnosis and treatment of disease. Topics will include atomic and nuclear structure, waves, electromagnetic fields and application to x-radiography, ultrasonography, MRI, PET and radiation therapy.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1LS3, 1X03 and either PHYSICS 1L03 or Grade 12 Physics U; or credit or registration in ISCI 1A24; or permission of the instructor
Antirequisite: MEDRADSC 1C03
Crosslist: SCIENCE 1E03

MED PHYS 2A03 PHYSICS IN MEDICINE AND BIOLOGY II
Applications of introductory physics concepts to medicine and biology emphasizing the analytical techniques of mathematical physics. Centrifugation; chromatography and electrophoresis; ultrasonography; confocal microscopy; photomolecular interactions and optical diagnostic techniques.
Three lectures; one term
Prerequisite: One of MED PHYS 1E03, MEDRADSC 1C03, PHYSICS 1B03, SCIENCE 1E03 or permission of the instructor. Completion of MATH 1AA3 (or 1XX3, 1ZZ5) and one of PHYSICS 1BA3, 1BB3 are strongly recommended.
Prerequisite: (Beginning 2010-2011): MATH 1AA3 (or 1XX3, 1ZZ5) and one of MED PHYS 1E03, MEDRADSC 1C03, PHYSICS 1B03, SCIENCE 1E03; or permission of the instructor. PHYSICS 1BA3 or 1BB3 is recommended.
Crosslist: SCIENCE 2A03

MED PHYS 3R03 COMPUTATIONAL MEDICAL PHYSICS
A problem-based introduction to the use of numerical methods in medical physics.
Three lectures; one term
Prerequisite: Registration in Level III or above of a program in the Faculty of Science
Antirequisite: PHYSICS 3R03

MED PHYS 4A03 MEDICAL PHYSICS COMMUNICATIONS
This is an enquiry course that introduces students to scientific communication in medical physics. The course will educate students in individual research and presentation skills. It will comprise both traditional and self-directed learning.
One lecture (one hour); a full year course for students in the Honours program
Prerequisite: Registration in Level IV or above of a program in the Faculty of Science
Antirequisite: MED PHYS 3I01, 4AA1, 4AB2, 4I01, PHYSICS 3D03, 3DA1, 3DB2, 3I01, 4A03, 4AA1, 4AB2, 4I01

MED PHYS 4AA1 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 3I01, 4A03, PHYSICS 3D03, 3DA1, 3DB2, 3I01, 4A03, 4AA1, 4AB2

MED PHYS 4AB2 MEDICAL PHYSICS COMMUNICATIONS B
Preparation and presentation of report on second work term.
One seminar (one hour); one term
Prerequisite: MED PHYS 4AA1
Antirequisite: MED PHYS 4A03, 4I01, PHYSICS 3D03, 3DA1, 3DB2, 4A03, 4AA1, 4AB2, 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 MED PHYS 1E03, MEDRADSC 1C03, PHYSICS 1BA3, 1BB3 (or 1E03), ISCI 1A24, SCIENCE 1E03 or permission of the instructor
Antirequisite: MED PHYS 3T03

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
Crosslist: ENG PHYS 4I03
This course is administered by the Department of Engineering Physics.

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

MED PHYS 4SZ3 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
Antirequisite: INQUIRY 4SZ3
Crosslist: SCIENCE 4SZ3
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
Antirequisite: BIOLOGY 2A03, 3U03, 3UU3, 4G06, HTH SCI 1D06, 1H03, 1H06, 1HH3, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1Y03, 1YY3
Crosslist: SCIENCE 4XX3

MEDICAL RADIATION SCIENCES {338} ...

WEB ADDRESS: http://www.science.mcmaster.ca/MedRadSci

General Sciences Building, Room 116

Ext. 26256

Department 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.
4. For all clinical practicum courses, the prerequisite skills and patient care courses must have been completed within the previous twelve months; otherwise the student must complete a skills reassessment course during that twelve-month period.

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 I

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 I

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 I
Antirequisite: MED PHYS 1E03

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: Credit or registration in MEDRADSC 1A03 and Medical Radiation Sciences I
Antirequisite: MEDRADSC 2C03

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 2BB3 DIGITAL IMAGING INFORMATICS

Using concepts of digital databases in healthcare, 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: 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.
Three hours (lectures), one hour (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.
Three hours (lecture), one hour (lab/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.
Two hours (lecture), 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.
Two hours (lecture), two labs (two hours each); one term
Prerequisite: MEDRADSC 2D03, 2G03 and registration in Level II of the Radiography Specialization

MEDRADSC 2I03 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 2J15 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. (See *Department Note 4* above.)
This course is evaluated on a Pass/Fail basis.
One term (Offered in Spring/Summer session only)
Prerequisite: MEDRADSC 2A03, 2D03, 2E03, 2F03, 2H03, 2I03, 2X03 and registration in Level II of the Radiography Specialization

MEDRADSC 2K03 SONOGRAPHIC PHYSICS AND INSTRUMENTATION I

Examination of the following topics: principles of ultrasound in tissue, attenuation of sound, pulsed wave ultrasound, transducers, instrumentation, Doppler ultrasound, ultrasound artefacts and quality control.\Three hours (lectures), one hour (lab); one term
Prerequisite: Registration in Level II of the Ultrasonography Specialization

MEDRADSC 2L03 ABDOMINAL ULTRASONOGRAPHY I

A comprehensive study of the relational anatomy, sonographic technique/appearances of normal major abdominal organs and vasculature; pathology, sonographic correlation, clinical presentation and diagnostic tests of the vascular and reticulo-endothelial systems.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: Registration in Level II of the Ultrasonography Specialization

MEDRADSC 2M03 OBSTETRICAL AND GYNECOLOGIC ULTRASONOGRAPHY I

A comprehensive study of the anatomy, physiology of the normal female pelvis including pregnancy. Sonographic technique, normal appearances, patient care and ethical issues will be examined.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: Registration in Level II of the Ultrasonography Specialization

MEDRADSC 2N03 SONOGRAPHIC SKILLS I
Emphasis is on performance of sonography of the abdominal vasculature, liver and biliary systems 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: Credit or registration in MEDRADSC 2K03, 2L03 and registration in Level II of the Ultrasonography Specialization

MEDRADSC 2O03 ABDOMINAL ULTRASONOGRAPHY II
A comprehensive study of pathology and sonographic correlation, clinical presentation and diagnostic tests of hepatic, biliary, pancreatic, urinary tract; relational anatomy, songraphic technique/appearances of normal thyroid.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: MEDRADSC 2K03, 2L03, 2N03 and registration in Level II of the Ultrasonography Specialization

MEDRADSC 2P03 OBSTETRICAL AND GYNECOLOGICAL ULTRASONOGRAPHY II
A comprehensive study of gynecological pathologies and abnormal sonographic appearances of the female pelvis. Pathologies of the obstetrical patient will be examined.
Three hours (lectures); one term
Prerequisite: MEDRADSC 2M03 and registration in Level II of the Ultrasonography Specialization
Antirequisite: MEDRADSC 3PA3

MEDRADSC 2Q03 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, 2M03, 2N03; 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. (See *Department Note 4* above.)
This course is evaluated on a Pass/Fail basis.
One term (Offered in Spring/Summer session only)
Prerequisite: MEDRADSC 2A03, 2K03, 2O03, 2P03, 2Q03 and registration in Level II of the Ultrasonography Specialization

MEDRADSC 2S03 CLINICAL ONCOLOGY I
This course introduces the oncologic concepts that characterize all malignancies. 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 behaviours 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. (See *Department Note 4* above.)
This course is evaluated on a Pass/Fail basis.
One term (Offered in Spring/Summer session only)
Prerequisite: MEDRADSC 2A03, 2D03, 2T03, 2U03, 2W03, 2X03, 2Z03 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 and bodies 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

MEDRADSC 2ZZ0 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.
This course is evaluated on a Pass/Fail basis.
Prerequisite: MEDRADSC 2C03; and one of MEDRADSC 2H03, 2Q03, 2U03; and permission of the department

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
Antirequisite: MEDRADSC 3Z06

MEDRADSC 3C03 MULTIDISCIPLINARY INTERVENTIONAL PROCEDURES
A survey of changing approaches to treating pathologies of various organ systems through intervention using image 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 3DA3 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 3DB3 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 absorptioimetry, 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 3DC3 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 3DD3 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 3DE3 SUBSPECIALTIES IN MEDICAL RADIATION SCIENCES - INTRODUCTION TO MAGNETIC RESONANCE IMAGING

Of magnetic resonance imaging, including instrumentation, image production, selection and control of magnetic fields, pulse sequences, safety and clinical application.
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 ECHOCARADIOGRAPHY

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 3DH3 CARING FOR THE PALLIATIVE PATIENT

The learner will gain an appreciation of the unique needs of the palliative care patient through examination of the many issues faced throughout the death and dying process.
Three hours (lectures); one term (Offered in Spring/Summer session only)
Prerequisite: Registration in Level III of the Radiation Therapy 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 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.
Three hours (lectures), one hour (lab); one term
Prerequisite: MEDRADSC 2D03 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 2I03, 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 cranio-facial 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, anomalous and pathologic conditions of the adrenal glands, abdominopelvic and thoracic cavities, GI tract and specific superficial structures.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: MEDRADSC 2O03, 2R15 and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3N03 VASCULAR ULTRASONOGRAPHY

A comprehensive study of vascular anatomy, physiology, hemodynamics, sonographic interpretation of normal and pathologic conditions in the assessment of the vasculature of the head, neck, abdomen and extremities.
Three hours (lectures), one hour (tutorial); one term
Prerequisite: MEDRADSC 2K03, 2R15 and registration in Level III of the Ultrasonography Specialization

MEDRADSC 3O03 SONOGRAPHIC SKILLS III

Emphasis is on the performance of Doppler sonography in the evaluation of the extracranial arteries, abdominal and peripheral vasculature which includes routine and alternative scanning techniques. Image recognition and critique, communication and ergonomics are also emphasized.
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 3Q03 SONOGRAPHIC PHYSICS AND INSTRUMENTATION II

Recent and emerging technological advances in ultrasound instrumentation such as advanced signal processing, contrast ultrasound imaging and 3D/4D imaging. Bioeffects associated with diagnostic ultrasound will also be covered.
Three hours (lectures), one hour (lab); one term
Prerequisite: MEDRADSC 2K03, 2R15 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, 2W03 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, distinctives 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 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 3Z06 RESEARCH PROJECT

Students conduct an individual research project under the supervision of a faculty member. Students wishing to enrol in this course should contact the Department for further information. Students are expected to have a C.A. of at least 7.0.
Prerequisite: Permission of the Department

MEDRADSC 3ZZ0 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.
This course is evaluated on a Pass/Fail basis.
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. (See *Department Note 4* above.)
This course is evaluated on a Pass/Fail basis.
One term
Prerequisite: MEDRADSC 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. (See *Department Note 4* above.)
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. (See *Department Note 4* above.)
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 {352}

WEB ADDRESS: http://www.fhs.mcmaster.ca/midwifery

Michael G. DeGroote Centre for Learning and Discovery, Room 2210

Ext. 26654

Faculty as of January 15, 2009

Assistant Dean

Eileen Hutton

Professor

Eileen Hutton/B.N.Sc. *(Queen's)*, M.Sc.N., Ph.D. *(Toronto)*

Associate Professors

Derek Lobb/B.Sc. *(Western Ontario)*, M.Sc. *(Guelph)*, Ph.D. *(Toronto)*
Anne Malott/B.Sc.N. *(Windsor)*, M.S.N *(Case Western Reserve)*
Helen McDonald/M.H.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 Professors

Paul Krueger/B.Sc., M.Sc. (*Waterloo*), M.H.Sc., Ph.D. (*Toronto*)
Bridget Lynch/B.A (*Norwich*), R.M.

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 1D03
Antirequisite: 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 INTERPROFESSIONAL PLACEMENTS (EFFECTIVE 2009-2010)
Three one month placements will be organized over the term. One placement will be organized 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 2H15 or 3G15 (or 2B15)

MIDWIF 3D03 HEALTH EDUCATION AND HEALTH PROMOTION
This course will incorporate 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 CLINICAL ISSUES
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
Corequisite: MIDWIF 3A09

MIDWIF 3H15 COMPLICATIONS AND CONSULTATION
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

MIDWIF 3I03 ADVANCED CLINICAL SKILLS I
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.
One term
Prerequisite: MIDWIF 2H15

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 or work collaboratively with other care providers in the provision of care.
One term
Prerequisite: MIDWIF 2H15

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.
One term
Prerequisite: MIDWIF 2H15

MIDWIF 3L03 ADVANCED CLINICAL SKILLS II
Short intensive course of five to six days. The course builds on the skills introduced in MIDWIF 3I03 and focuses on preparing the student for recognizing situations where consultation and transfer of care is required, as well as in being able to initiate and facilitate such consultation.
One term
Prerequisite: MIDWIF 3I03

MIDWIF 4A15 MATERNAL AND NEWBORN PATHOLOGY
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 2C15)
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 3B15)
Antirequisite: MIDWIF 3C12, 3E03

MODERN LANGUAGES AND LINGUISTICS

(SEE LINGUISTICS AND LANGUAGES)

MOHAWK

(SEE INDIGENOUS STUDIES, MOHAWK)

MOLECULAR BIOLOGY

(SEE BIOLOGY)

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.

MUSIC {370} ...

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 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
Not open to students registered in any Music program.

MUSIC 1AA3 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
Not open to students registered 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 1BB3 HISTORY OF WESTERN MUSIC: BAROQUE (1580-1770)
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 1YY3

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 1C03; 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 1E06
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
Crosslist: CMST 2Q03
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 2BB3 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 2YY3

MUSIC 2CC3 HARMONY
A continuation of MUSIC 1CC3. Chromatic harmony and the completed major-minor system.
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 2E06
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
Crosslist: 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 2RR3, 3JJ3

MUSIC 2I3 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
Antirequisite: MUSIC 2AA3
Crosslist: CMST 2R03

MUSIC 2Z03 INTRODUCTION TO DIGITAL AUDIO
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
Crosslist: MMEDIA 2G03
This course is administered by the Department of Communication Studies and Multimedia.

MUSIC 3AA3 ELEMENTARY MUSIC EDUCATION
A survey of elementary music education methods such as those of Kodály, Orff and Suzuki.
Three lectures; one term
Prerequisite: 18 units of Music

MUSIC 3CM3 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 3CT3 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 2CC3 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 3EE3, 3E06, 3EE6
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, 3EE6
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.

MUSIC 3EE3 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 2EE6
Antirequisite: MUSIC 3E03, 3EE6
Lesson fees are charged to students taking MUSIC 3EE3. 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 3EE6 SOLO PERFORMANCE
A continuation of MUSIC 2EE6.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 2EE6
Antirequisite: MUSIC 3EE3, 3E03, 3E06
Lesson fees are charged to students taking MUSIC 3EE6. Lesson fees must be paid by September 1.
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 3M03 STRING METHODS
Basic techniques of playing string instruments. String literature for various educational levels. The instruments studied differ from those studied in MUSIC 4M03.
Two lectures; two terms
Prerequisite: Registration in Honours Music
Alternates with MUSIC 4M03.

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

MUSIC 3P03 PERCUSSION METHODS
Basic techniques of playing percussion instruments. Percussion literature for various educational levels.
Two lectures; one term
Prerequisite: Registration in Honours Music
Alternates with MUSIC 4P03

MUSIC 3SS3 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
Fees are charged to students taking MUSIC 3SS3. Lesson fees must be paid by September 1 for Term 1 and by January 1 for Term 2.

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 3Y03 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 may be repeated, if on a different topic, to a total of six units.

MUSIC 3YY3 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 3YY3 may be repeated, if on a different topic, to a total of six units.

MUSIC 3Z03 ADVANCED DIGITAL AUDIO
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
Crosslist: 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 a 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 3EE6 with a grade of at least A-; and permission of the School of the Arts
Antirequisite: MUSIC 4E03, 4E06, 4EE3, 4EE6
Open only to students pursuing the Diploma in Music Performance. Students requesting this course must apply in writing to the School of the Arts in March.
Fees are charged to students taking MUSIC 4E09. Lesson fees must be paid by September 1.

MUSIC 4EE3 SOLO PERFORMANCE
A continuation of MUSIC 3EE3 or 3EE6.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3EE3 or 3EE6
Antirequisite: MUSIC 4E03, 4E09, 4EE6
Lesson fees are charged to students taking MUSIC 4EE3. 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 4EE6 SOLO PERFORMANCE
A continuation of MUSIC 3EE3 or 3EE6.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3EE3 or 3EE6
Antirequisite: MUSIC 4E06, 4E09, 4EE3
Lesson fees are charged to students taking MUSIC 4EE6. 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 4OC3 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 4OI3.

MUSIC 4OI3 ADVANCED CONDUCTING: INSTRUMENTAL
A continuation of MUSIC 3O03. Refinement and development of conducting techniques. Exploration of in-depth score preparation, rehearsal techniques, odd and shifting meters, subdivision.
Three lectures; one term
Prerequisite: MUSIC 3O03 and registration in Honours Music
Alternates with MUSIC 4OC3.

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 4S03 SPECIAL STUDIES
Advanced supervised study in any area offered and approved by the School of the Arts.
Times to be arranged between the student and instructor; 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.

MUSIC 4SS3 SPECIAL STUDIES IN CHAMBER MUSIC OR ACCOMPANYING II
Advanced supervised studies in chamber music performance or instrumental accompanying.
Times to be arranged between the students and instructor; one term
Prerequisite: MUSIC 3SS3; 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 15th. This course is primarily for students pursuing the Diploma in Music Performance.
Fees are charged to students taking MUSIC 4SS3. Lesson 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
Not open to students with a Diploma or Degree in jazz performance or equivalent.
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 in Music
Alternates with MUSIC 3V03.

MUSIC 4Y03 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.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours Music program
MUSIC 4Y03 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 {371} ...

Courses

If no prerequisite is listed, the course is open.

MUSICCOG 2A03 MUSIC COGNITION
This course presents an overview of music cognition, covering such topics as musical acoustics, melodic and rhythmic systems, and mechanisms of perception and performance in music.
Three lectures; one term
Prerequisite: Registration in any Music Cognition program (B.A., B.Mus., B.Sc.); or PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) and registration in any Honours program; or ISCI 1A24. Completion of Grade 2 Rudiments from the Royal Conservatory of Music is recommended.
Crosslist: PSYCH 2MA3
This course is administered by the Department of Psychology, Neuroscience & Behaviour.

MUSICCOG 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: MUSICCOG 2A03 or PSYCH 2MA3 and registration in any Music Cognition program (B.A., B.Mus., B.Sc.) or Honours Music; or MUSICCOG 2A03 or PSYCH 2MA3, two of PSYCH 2D03, 2E03, 2F03, 2H03, 2NO3, 2TT3 and registration in any Honours program
Antirequisite: PSYCH 3AA3
Crosslist: PSYCH 3MA3
This course is administered by the Department of Psychology, Neuroscience & Behaviour.

MUSICCOG 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: MUSICCOG 2A03 or PSYCH 2MA3 and registration in any Music Cognition program (B.A., B.Mus., B.Sc.) or Honours Music; or MUSICCOG 2A03 or PSYCH 2MA3, two of PSYCH 2D03, 2E03, 2F03, 2H03, 2NO3, 2TT3 and registration in any Honours program.
Crosslist: PSYCH 3MB3
This course is administered by the School of the Arts.

MUSICCOG 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

NURSING

WEB ADDRESS: http://www.fhs.mcmaster.ca/nursing/
Health Sciences Centre, Room 2J36
Ext. 22694

Faculty as of January 15, 2009

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 Browne/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., M.Sc. *(McMaster)*, Ph.D. *(Waterloo)*, R.N.
Basanti Majumdar/B.Sc.(N)., M.Sc.N. *(Delhi)*, M.Ed. *(Columbia)*, Ph.D. *(Michigan)*, R.N.
Janet Pinelli/B.S. *(Boston)*, M.Sc.N. *(Toronto)*, D.N.S. *(Buffalo)*, R.N.

Associate Professors

Nbori Akhtar-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. *(Windsor)*, M.H.Sc. *(McMaster)*, Ph.D. *(Wales)*, 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.
Colleen McKey/B.Sc.N. *(Niagara)*, M.Sc. *(DYouville)*, Ph.D. *(Capella)*, R.N., CHE (Canadian College Health Service Executives)
Ann Mohide/B.Sc.N. *(Toronto)*, M.H.Sc., M.Sc. *(McMaster)*, R.N.
Linda O'Mara/B.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 Valaitis/B.A., B.Sc.N. *(Windsor)*, 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.N. *(McGill)*, M.Sc.N. *(Boston)*, R.N.
Lynda Bentley Poole/B.Sc.N. *(McMaster)*, M.Sc.N. *(Toronto)*, R.N.
Clinton Betts/B.Sc. *(Brock)*, B.Sc.N. *(McMaster)*, M.Ed. *(Brock)*, R.N.
Denise Bryant-Lukosius/B.Sc.N. *(McMaster)*, M.Sc. *(D'Youville)*, Ph.D. *(McMaster)*, R.N.
Michelle Butt/B.Sc., B.N. *(Memorial)*, M.Sc. *(Queen's)*, Ph.D. *(McMaster)*, R.N.
Patricia Caldwell/B.Sc.N. *(McMaster)*, M.Sc. *(Guelph)*, Ph.D. *(McMaster)*, R.N.
Stephanie Campbell/B.Sc.N. *(Guelph)*, M.Sc., Ph.D. *(McMaster)*
Ruth Chen/B.A. *(California-Berkeley)*, M.Sc. *(Yale)*, R.N.
Kirsten Culver/B.Sc. *(Queen's)*, Ph.D. *(McMaster)*, R.N.
Michele Drummond-Young/B.Sc.N., M.H.Sc. *(McMaster)*, R.N.
Anne Ehrlich/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.
Michael Ladouceur/B.S.N. *(Victoria)*, M.P.H. *(Boston)*, R.N.
Yvonne Lawlor/B.N. *(New Brunswick)*, M.Ed. *(Brock)*, R.N.
Jeannette LeGris/B.N. *(Manitoba)*, M.H.Sc. *(McMaster)*, R.N.
Ola Lunyk-Child/B.Sc.N. *(McMaster)*, M.Sc.N. *(Toronto)*, R.N.
Louela Manankil-Rankin/B.Sc.N., M.A. *(Toronto)*, M.Sc. *(McMaster)*, R.N.
Lynn Martin/B.Sc.N. *(McMaster)*, M.Sc.N. *(Western Ontario)*, Ph.D. *(McMaster)*, R.N.
Iris Mujica/B.Sc.N., M.Sc.N. *(McMaster)*, R.N.

Charlotte Noesgaard/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.
Gladys Peachey/B.N., M.Ed. *(Memorial)*, M.H.Sc. *(Toronto)*, Ph.D. *(McMaster)*
Joanna Pierazzo/B.Sc.N., M.Sc.N. *(Western Ontario)*, R.N.
Kristine Rogers/B.Sc.N. *(Ryerson)*, M.N. *(Toronto)*, R.N.
Jennine Salfi/B.Sc.N., M.Sc., Ph.D. *(McMaster)*, R.N.
Ruth Schofield/B.Sc.N., M.Sc. (T) *(McMaster)*, R.N.
Dyanne Semogas/B.N. *(McGill)*, M.N. *(Washington)*, R.N.
Diana Sherifali/B.Sc.N., Ph.D. *(McMaster)*, R.N.
Eric Staples/B.A.A. (N.) *(Ryerson)*, M.S.N. *(D'Youville)*, D.N.P. *(Case Western Reserve)*, R.N.
Olive Wahoush/M.Sc. *(Ulster)*, Ph.D. *(Toronto)*, R.N.

Lecturers

Courtney Evers/B.Sc.N., M.H.Sc. *(McMaster)*, R.N.
Amy Palma/B.Sc., B.Sc.N. *(Toronto)*, M.H.Sc. *(McMaster)*, 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 {390} ...

Courses

NURSING 1A00 INTRODUCTION TO 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.
Web modules
Prerequisite: Registration in the B.Sc.N. Program or the Ontario Primary Health Care Nurse Practitioner Certificate program
Antirequisite: ENGINEER 1A00, ENG TECH 1A00, SCIENCE 1A00

NURSING 1F03 INTRODUCTION TO NURSING AND HEALTH I
This introductory course will familiarize students with ways of knowing in nursing. Students will learn self-directed and person-based learning within a problem-based learning approach to facilitate their learning throughout the B.Sc.N. program.
Three hours, small group tutorial; one term
Prerequisite: Registration in Nursing I
Antirequisite: NURSING 1F04
Normally to be taken concurrently with NURSING 1I02.

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.
Two and one half hours (lecture/problem-based tutorials); four hours (clinical lab); one term
Prerequisite: Registration in Nursing I
Antirequisite: NURSING 1F03, 1I02, 1J02
Last offered in 2009-2010.

NURSING 1G03 INTRODUCTION TO NURSING AND HEALTH II
Students will be introduced to concepts of health and healing and will explore group process theory. They will learn to define clinical questions relevant to nursing and to use evidence-based approach to address these questions.
Three hours per week, small group tutorial; one term
Prerequisite: Registration in Nursing I
Antirequisite: NURSING 1G04
Normally to be taken concurrently with NURSING 1J02.

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 an 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
Antirequisite: NURSING 1G03, 1J02
Last offered in 2009-2010.

NURSING 1I02 INTRODUCTION TO NURSING PRACTICE
This course introduces students to the scope of professional practice and the meaning of caring in nursing. Students will learn beginning assessment, communication, and intervention skills in the clinical laboratory.
This course is evaluated on a Pass/Fail basis.
Lab (four hours); one term
Prerequisite: Registration in Nursing I
Antirequisite: NURSING 1F04
Normally to be taken concurrently with NURSING 1F03.

NURSING 1J02 PROFESSIONAL NURSING PRACTICE I
Students will extend their knowledge of professional practice in the clinical laboratory focusing on healthy adults. Students will apply knowledge of growth and development, professional relationships and narrative enquiry to healthy persons across the lifespan.
This course is evaluated on a Pass/Fail basis.
Clinical lab (four hours); one term
Prerequisite: Registration in Nursing I
Antirequisite: NURSING 1F04, 1G04
Normally to be taken concurrently with NURSING 1G03.

NURSING 1K02 HEALTH AND WELL-BEING OF DIVERSE POPULATIONS I
Health and well-being are explored from multiple perspectives. Students will explore professional responsibilities of civic engagement.
This course is evaluated on a Pass/Fail basis.
32 hours service learning, four lectures (one hour each), four seminars (one hour each); two terms
Prerequisite: Registration in Nursing I or Level II of the B.Sc.N. (E) Stream

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/problem based tutorials), three hours (clinical), self study; one term
Prerequisite: NURSING 1A00 and registration in Level II of the B.Sc.N. (E) Stream

NURSING 2AA4 TRANSITION TO BACCALAUREATE NURSING II
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

NURSING 2I06 INTRODUCTION TO PROFESSIONAL NURSING
Students will be introduced to core concepts related to nursing and health through small-group, problem-based tutorials. Biological, physical, psychological, social science 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. (F) Stream

NURSING 2J04 INTRODUCTION TO NURSING PRACTICE
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.
12 hours (clinical lab); one term
Prerequisite: NURSING 2I06

NURSING 2K02 HEALTH AND WELL-BEING OF DIVERSE POPULATIONS II
This course assists students to gain a further understanding of influences on the health and well-being of diverse populations and to expand their knowledge of professional responsibilities of civic engagement.
This course is evaluated on a Pass/Fail basis.
32 hours service learning, four lectures (one hour each), four seminars (one hour each); two terms
Prerequisite: NURSING 1K02
First offered in 2010-2011.

NURSING 2L03 PROFESSIONAL NURSING PRACTICE I
This course is an applied professional practice course. Students will begin to apply their knowledge and skills to the care of ill clients and families, under supervision. Students will expand their understanding of internal and external influences on the health of individuals and families at the micro and macro level.
This course is evaluated on a Pass/Fail basis.
Eight hours (professional practice and lab); one term
Prerequisite: NURSING 1A00; and NURSING 1G04 or 1J02
Normally to be taken concurrently with NURSING 2M03.

NURSING 2M03 NURSING CONCEPTS IN HEALTH AND ILLNESS I
Integration of nursing, biological, psychological and social sciences theory is developed through work in problem-based tutorials, in which students apply concepts related to nursing, teaching-learning and group processes to a variety of patient situations.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 1F04, 1G04
Antirequisite: NURSING 2M04
Normally to be taken concurrently with NURSING 2L03.

NURSING 2M04 NURSING CONCEPTS IN HEALTH AND ILLNESS I
This course uses a person-based learning within problem-based approach in which students will expand their knowledge of core nursing concepts and will enhance their ability to critique that knowledge.
Three hours (small group tutorial); one hour resource session (multimedia); one term
Prerequisite: NURSING 1F03, 1G03
Antirequisite: NURSING 2M03
Normally to be taken concurrently with NURSING 2L03.
*First offered in 2010-*2011.

NURSING 2N03 NURSING CONCEPTS IN HEALTH AND ILLNESS II
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
Antirequisite: NURSING 2N04
Normally to be taken concurrently with NURSING 2P03.

NURSING 2N04 NURSING CONCEPTS IN HEALTH AND ILLNESS II
An extension of NURSING 2M04, students will deepen their understanding and application of relevant nursing concepts.
Three hours (small group tutorial), one hour resource session (multimedia); one term
Prerequisite: NURSING 2M04
Antirequisite: NURSING 2N03
Normally to be taken concurrently with NURSING 2P03.
First offered in 2010-2011.

NURSING 2P03 PROFESSIONAL NURSING PRACTICE II
A continuation of NURSING 2L03 with applied professional practice in institutional settings.
This course is evaluated on a Pass/Fail basis.
Eight hours (professional practice and lab); one term
Prerequisite: NURSING 2L03
Normally to be taken concurrently with NURSING 2N03.

NURSING 2R03 INTRODUCTION TO STATISTICS FOR NURSING
An introduction to basic parametric and non-parametric statistical methods, including their application to the analysis of data relevant to nursing and health-related research questions. Computer analysis of data using SPSS and interpretation of the statistical results will also be an integral component of the course.
Two hours (lecture), one hour (tutorial); one term
Prerequisite: Registration in Level II of the B.Sc.N. Program or permission of the instructor
Antirequisite: COLLAB 2L03, COMMERCE 2QA3, HTH SCI 1F03, 2A03, SOC SCI 2J03, STATS 1CC3

NURSING 3LL3 CLIENT HEALTH ASSESSMENT
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 3AA3

NURSING 3MM3 COMMUNICATION SKILLS FOR INDIVIDUALS, FAMILIES AND COMMUNITIES
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.

NURSING 3N03 INTRODUCTION TO NURSING CONCEPTS AND THEORIES IN HEALTH AND ILLNESS
Biological, physical, psychological, social sciences, and nursing theory are integrated and applied to health care situations through problem-based learning. Principles and strategies for life-long 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, 3S04

NURSING 3QQ3 PROFESSIONAL COMMUNITY NURSING PRACTICE
A professional practice course in which students learn about community as client across all components of the nursing process. Students learn about promoting the health of a community by collaborating with community partners through the completion of a collaborative community initiative.
Four hours (mixed tutorial and professional practice); one term
Prerequisite: Registration in Level III of any Stream of the B.Sc.N Program; and HTH SCI 2RR3 or 3B03
Antirequisite: NURSING 2Q02, 2Q03

NURSING 3S03 NURSING CONCEPTS IN HEALTH AND ILLNESS III
Biological, physical, psychological, social sciences, and nursing theory are integrated and applied to health care situations through problem-based learning.
Three hours (lecture/problem-based tutorials); one term
Prerequisite: Registration in Level III of any stream of the B.Sc.N. program
Antirequisite: NURSING 3CC3, 3E03, 3N03, 3P03, 3S04
Normally to be taken concurrently with NURSING 3X04 (for (A), (D) and (E) Stream students).

NURSING 3S04 NURSING CONCEPTS IN HEALTH AND ILLNESS III
A continuation of NURSING 2N04, students will apply deepening knowledge of core nursing and interprofessional health care content to individuals, families and communities in increasingly complex situations, analyzing professional practice situations from a variety of perspectives.
Three hours (small group tutorial), one hour resource session (multimedia); one term
Prerequisite: Registration in Level III of the B.Sc.N. (A) or (E) Stream
Antirequisite: NURSING 3CC3, 3E03, 3N03, 3P03, 3S03
Normally to be taken concurrently with NURSING 3QQ3 or 3X04.
First offered in 2011-2012.

NURSING 3T03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV
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, 3S03
Antirequisite: NURSING 3DD3, 3F03, 3Q03, 3T04
Normally to be taken concurrently with NURSING 3Y04 (for (A) Stream students).

NURSING 3T04 NURSING CONCEPTS IN HEALTH AND ILLNESS IV
An extension of NURSING 3S04, students will apply deepening knowledge of core nursing and interprofessional health care content to individuals, families and communities in increasingly complex situations, analyzing professional practice situations from a variety of perspectives.
Three hours (small group tutorial), one hour resource session (multimedia); one term
Prerequisite: NURSING 3S04
Antirequisite: NURSING 3DD3, 3F03, 3Q03, 3T03
Normally to be taken concurrently with NURSING 3QQ3 or 3Y04.
First offered in 2011-2012.

NURSING 3U02 INTEGRATIVE NURSING PRACTICE SEMINAR
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) or (F) Stream
Normally to be taken concurrently with NURSING 3X04 or 3Y04.

NURSING 3VV3 COMMUNITY HEALTH
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) and (F) Streams
Antirequisite: NURSING 3M05, 3VV2
Normally to be taken concurrently with NURSING 3T03.

NURSING 3X04 PROFESSIONAL NURSING PRACTICE III
This is an applied professional practice course in which students gain confidence in their emerging professional practice through a guided clinical practice in increasingly complex and diverse settings.
This course is evaluated on a Pass/Fail basis.
Twelve hours (professional practice and 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 3S03.

NURSING 3Y04 PROFESSIONAL NURSING PRACTICE IV
This is an applied professional practice course in which students gain confidence in their emerging professional practice through a guided clinical practice in increasingly complex and diverse settings.
This course is evaluated on a Pass/Fail basis.
Twelve hours (professional practice and lab); one term
Prerequisite: NURSING 3X04
Normally to be taken concurrently with NURSING 3T03.

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. Enrolment in tutorial format is limited.
Four hours (problem-based tutorial or equivalent); six hours (independent study at a clinical site); one term
Prerequisite: Registered Nurse 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 4DD6

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, 4DD6, 4I03, 4HH3, 4Z03
Antirequisite: HTH SCI 4FF3
Normally to be taken concurrently with NURSING 4K07 or NURSING 4T06.

NURSING 4H03 ISSUES IN GLOBAL HEALTH
An introduction to the determinants of inequalities in the health of select populations in Canadian and international contexts as viewed through the lenses of historical development, political economy and medical anthropology.
Three hours (lecture/seminar); 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, 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 environments. 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 PROFESSIONAL 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.
24 hours (clinical lab, including tutorials); one term
Prerequisite: NURSING 3X04 or 3Y04
Normally to be taken concurrently with NURSING 4P04.

NURSING 4K07 PROFESSIONAL NURSING PRACTICE VI
A continuation of NURSING 4J07.
This course is evaluated on a Pass/Fail basis.
24 hours (clinical lab, including tutorials); one term
Prerequisite: NURSING 4J07
Antirequisite: NURSING 4K10
Normally to be taken concurrently with NURSING 4Q04.

NURSING 4K10 PROFESSIONAL PRACTICE AND THE NEW GRADUATE
As an applied professional practice course, students focus on the integration and application of research, theory and concepts to professional practice, including an introduction to the leadership role in client care. Students are individually placed in a variety of contexts, where they are actively involved in the enactment of the nursing role.
This course is evaluated on a Pass/Fail basis.
24 hours, professional practice and lab (six weeks), 30 hours, professional practice and lab (six weeks); one term
Prerequisite: NURSING 4J07
Antirequisite: NURSING 4K07
Normally to be taken concurrently with NURSING 4Q04.
First offered in 2012-2013.

NURSING 4P04 ADVANCED NURSING CONCEPTS I
Students focus on the integration and application of scientific and humanistic theories and concepts to the exploration and suggested resolution of client/patient case scenarios.
Three and one half hours (student-facilitated tutorials), resource lectures; one term
Prerequisite: Registration in Level IV of any stream of the B.Sc.N. program
Antirequisite: NURSING 4E03
Normally to be taken concurrently with NURSING 4J07, 4S06 or 4T06

NURSING 4Q04 ADVANCED NURSING CONCEPTS II
A continuation of NURSING 4P04. Students focus on the integration and application of relevant concepts and theories to the exploration of professional issues in nursing and the health care system.
Three and one half hours (student-facilitated tutorials), resource lectures; one term
Prerequisite: NURSING 4P04
Antirequisite: NURSING 4F03
Normally to be taken concurrently with NURSING 4K07, 4S06 or 4T06.
Last offered in 2011-2012.

NURSING 4S06 GUIDED NURSING PRACTICE I - COMMUNITY-BASED CARE

An applied nursing practice experience in a community-based health care setting with emphasis on skill development in health promotion, health education and community assessment.
This course is evaluated on a Pass/Fail basis.
Twelve hours (clinical lab), two hours (tutorials); one term
Prerequisite: NURSING 1A00, 3VV3 and registration in Level IV of the B.Sc.N. (B) Stream
Normally to be taken concurrently with either NURSING 4P04 or 4Q04.

NURSING 4T06 GUIDED NURSING PRACTICE II

An applied nursing practice course which emphasizes integration of theory and development of independent decision-making capacity in a selected area of clinical practice basis.
This course is evaluated on a Pass/Fail basis.
Twelve hours (clinical lab), two hours (tutorials); one term
Prerequisite: NURSING 1A00 and registration in Level IV of the B.Sc.N. (B) Stream
Not open to students with credit in NURSING 4L06, 4M06 or 4N06. Normally to be taken concurrently with either NURSING 4P04 or 4Q04.

NURSING 4Z03 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.
Three hours (tutorial); one term
Prerequisite: A minimum of one year clinical work experience in a health care profession and permission of the instructor
Antirequisite: HTH SCI 4Z03

NURSING CONSORTIUM (A) (FORMERLY (D)) STREAM {385} ...

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 (A or E Streams) 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 (McMaster Site).

Courses

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. (A) Stream (Conestoga College site)
Antirequisite: HISTORY 2J06

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. (A) 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. (A) 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. (A) 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. (A) Stream (Conestoga 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. (A) Stream (Conestoga 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. (A) Stream (Conestoga 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. (A) Stream (Conestoga 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) Stream (Conestoga 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. (A) 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. (A) 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. (A) Stream (Conestoga College site)

COLLAB 2J03 DESIRE IN LITERATURE

The historical and cross-cultural coverage of this course will lead to 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. (A) 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) Stream (Conestoga 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. (A) Stream (Conestoga College site)
Antirequisite: ANTHROP 3Z03, 3ZZ3

COLLAB 2N03 ORGANIZATIONAL BEHAVIOUR

This course allows participants to develop and practice the interpersonal skills necessary to work with and/or manage people effectively.
Three hours: one term
Prerequisite: Registration in B.Sc.N (A) Stream (Mohawk College site)
Antirequisite: COMMERCE 2S03

COLLAB 3A03 SOCIOLOGY: SOCIETY, TECHNOLOGY AND SOCIAL ISSUES

An examination of technologies that have influenced society.
Three hours; one term
Prerequisite: Registration in B.Sc.N. (A) Stream (Conestoga 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. (A) Stream (Conestoga College site)

COLLAB 3D03 ILLNESS NARRATIVES IN FICTION AND NON-FICTION
This seminar-based course will use fictional literature (poetry, short stories and excerpts from novels) as well as first-person accounts (writings of actual patients and health-care workers) to explore the psychological, emotional and relational aspects of patient experiences of such conditions as cancer, heart disease, disability, AIDS, mental illness and chronic pain conditions.
Three hours; one term
Prerequisite: Registration in the B.Sc.N. (A) Stream (Conestoga College Site)

COLLAB 4H03 ISSUES IN GLOBAL 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. (A) Stream; and permission of the instructor
Antirequisite: HTH SCI 4H03, NURSING 4H03

NURSING CONSORTIUM

(SEE NURSING, NURSING CONSORTIUM (A) (FORMERLY (D)) STREAM)

OJIBWE

(SEE INDIGENOUS STUDIES, OJIBWE)

ORIGINS {412}

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 are surveyed with emphasis on physical sciences: origin of space-time, elements, structure in the cosmos, and life on Earth and 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
Crosslist: SCIENCE 2B03
Note: Students for whom this course would constitute an elective should register in SCIENCE 2B03.

ORIGINS 2FF3 ORIGINS AND EVOLUTION OF ORGANISMS
A tree-of-life is surveyed internally from the root to terminal branch tips, by evaluating critically the data according to which groups are defined.
Three lectures, one tutorial; one term
Prerequisite: BIOLOGY 1M03 (or 1AA3), CHEM 1A03, MATH 1A03 or 1LS3, PHYSICS 1B03; or permission of the instructor

ORIGINS 2S03 SEMINAR I
Concepts, literature and research skills relevant to origins research are surveyed. Members in or visitors to the Origins Institute will provide readings for discussion.
Seminar (one hour), one tutorial; two terms
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 the Big Bang and how our universe formed are explored.
Three hours; one term
Prerequisite: ORIGINS 2S03 or permission of the instructor
Offered in alternate years.
Not offered in 2009-2010.

ORIGINS 3B03 ORIGINS OF THE ELEMENTS
The nuclear physics, astrophysics and chemistry 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.
Offered in 2009-2010.

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
Offered in alternate years.
Offered in 2009-2010.

ORIGINS 3D03 ORIGINS OF LIFE
Topics in astrobiology are explored: planetary system formation, star system formation, meterorite impacts, geological processes, criteria for defining and sustaining life, and 'extremophile' systems on Earth and, possibly, elsewhere.
Three hours; one term
Prerequisite: ORIGINS 2S03 or permission of the instructor
Offered in alternate years.
Not offered in 2009-2010.

ORIGINS 3E03 ORIGINS OF SPECIES AND BIODIVERSITY
Concepts and techniques that are required to understand how species originate and groups diversify are explored.
Three hours; one term
Prerequisite: ORIGINS 2S03 or permission of the instructor
Offered in alternate years.
Offered in 2009-2010.

ORIGINS 3F03 ORIGIN OF HUMANITY
Concepts and techniques that are required to understand how human beings arose and changed over time are explored.
Three hours; one term
Prerequisite: ORIGINS 2S03 or permission of the instructor
Offered in alternate years.
Not offered in 2009-2010.

ORIGINS 3S03 ORIGINS SEMINAR II
Concepts, literature and research skills relevant to origins research are 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 4A09 ORIGINS RESEARCH THESIS
A student conducts a research project and composes an independent thesis 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).
Tutorial; two terms
Prerequisite: Registration in Level IV of the Origins Research Specialization

PEACE STUDIES {417}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~peace
Togo Salmon Hall, Room 726
Ext. 27734

Director
Bonny Ibhawoh

Committee of Instruction

Chair
Bonny Ibhawoh *(History)*
Virginia Aksan *(History)*
Iris Bruce *(Linguistics and Languages)*
Juanita DeBarros *(History)*
Diane Enns *(Philosophy)*
Martin Horn *(History)*
Julie Hyde *(Peace Studies)*
Anne Pearson *(Religious Studies)*
Susan Searls-Giroux *(English and Cultural Studies)*
Helene Strauss *(English and Cultural Studies)*
Mark Vorobej *(Philosophy)*
Jean Wilson *(Comparative Literature)*

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 concepts 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 movements, 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 conflicts 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 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
Crosslist: HISTORY 2AA3
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 or 1AA3; or registration in Level II or above of any Labour Studies Program
Crosslist: LABR ST 2W03, WOMEN ST 2A03

PEACE ST 2F03 MODERN MIDDLE EASTERN SOCIETIES
A survey of the political and cultural history of the Middle East from 1800 to the present, with emphasis on contemporary social problems emerging from post-WWI colonialism, nationalism, Islamism and Arab-Israeli relations.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above
Antirequisite: PEACE ST 3F03, HISTORY 3AA3
Crosslist: HISTORY 2A03
This course is administered by the Department of History.

PEACE ST 2I03 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
Crosslist: PHILOS 2G03
This course is administered by the Department of Philosophy.

PEACE ST 2II3 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 groups); one term
Prerequisite: Registration in Level II or above
Antirequisite: HISTORY 3Q03, PEACE ST 3G03
Crosslist: HISTORY 2II3
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
Crosslist: 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
Crosslist: COMP 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, concentrating 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
Crosslist: COMP LIT 3R06, CSCT 3R06, ENGLISH 3R06
This course is administered by the Department of English and Cultural Studies.

PEACE ST 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
Crosslist: HISTORY 3I03
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
Crosslist: PHILOS 3P03
Offered in alternate years.
This course is administered by the Department of Philosophy.

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
Crosslist: 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
Crosslist: HISTORY 3O03
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
Crosslist: 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
Crosslist: CSCT 3X03, ENGLISH 3X03, INDIG ST 3E03
This course is administered by Indigenous Studies.

PEACE ST 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
Crosslist: HISTORY 3XX3
This course is administered by the Department of History.

PEACE ST 3Y03 SPECIAL TOPICS IN PEACE STUDIES
Consult the Peace Studies Office for the topic to be offered.
Seminar (three hours); one term
Prerequisite: Registration in Level III or IV of the Combined Honours in Peace Studies Program
PEACE ST 3Y03 may be repeated, if on a different topic, to a total of six units.

PEACE ST 3YY3 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
Antirequisite: HISTORY 3RR3, PEACE ST 3RR3
Crosslist: HISTORY 3YY3
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
Crosslist: 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

PEACE ST 4B03 INDEPENDENT RESEARCH
Students develop and execute their own research projects, in regular consultation with a faculty supervisor, and produce and orally defend a substantial paper. May include a practicum component.
Prerequisite: Registration in Level III or IV of the Combined Honours in Peace Studies Program with a Cumulative Average of at least 8.5, and permission of the Director of Peace Studies

PEACE ST 4C03 THEORY OF VALUE
A study of human practices of evaluation in morality, politics, art, religion, and economics.
Seminar (two hours); one term
Prerequisite: PHILOS 3G03 and registration in Level III or above
Crosslist: PHILOS 4B03
Offered in alternate years.
This course is administered by the Department of Philosophy.

PEACE ST 4IP3 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.
Seminar (two hours); one term
Prerequisite: Registration in Level III or above of a program in Peace Studies
Antirequisite: PEACE ST 3MM3
Crosslist: COMP LIT 3MM3, CSCT 4IP3, ENGLISH 4IP3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

PEACE ST 4PR3 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 Peace Studies
Antirequisite: PEACE ST 4D03
Crosslist: COMP LIT 4D03, CSCT 4PR3, ENGLISH 4PR3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

PHARMACOLOGY {419}

WEB ADDRESS: http://www.science.mcmaster.ca/biopharm

These courses are available only to those students registered in Honours Biology and Pharmacology.

Note:

PHARMAC 3A06, 3B06, 4A03, 4AA3, 4C03, 4D03 and 4E03 will be based on self-directed problem based learning.

Courses

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 3B06 METHODS IN PHARMACOLOGY
Experimental methods for the study of drugs in vitro. Interpretation and communication of experimental data. Design and conduct of a Discovery Project.
One lab (three hours); two terms
Prerequisite: Credit or registration in PHARMAC 3A06

PHARMAC 4A03 RECEPTOR-DRUG INTERACTIONS
Receptor classification, receptor theory, stimulus response coupling, second messengers.
One tutorial (three hours); one term
Prerequisite: PHARMAC 3A06

PHARMAC 4AA3 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
Antirequisite: BIOLOGY 4C09, 4F06, 4FF3, 4GG9, 4I03, HTH SCI 3H03, 4A09, 4B06, MOL BIOL 4R09

PHILOSOPHY {420}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~philos

University Hall, Room 310

Ext. 24275

Faculty as of January 15, 2009

Chair

Elisabeth Gedge

Professors

Barry Allen/B.A. *(Lethbridge)*, Ph.D. *(Princeton)*
Richard T.W. Arthur/B.A. *(Oxford)*, M.A. *(McGill)*, Ph.D. *(Western Ontario)*
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 Library)*, B.A. *(Victoria)*, M.L.S. *(Western Ontario)*, M.A. *(McMaster)*, Ph.D. *(Guelph)*

Associate Professors

Elisabeth Gedge/B.A., M.A. *(Alberta)*, Ph.D. *(Calgary)*, MTh. *(Newman Theological College)*
Violetta Igneski/B.A., M.A. *(Western Ontario)*, *Ph.D. (Toronto)*
Brigitte Sassen/B.A. *(Toronto)*, M.A., Ph.D. *(Pennsylvania State)*
Mark Vorobej/B.A. *(Carleton)*, M.A., Ph.D. *(Toronto)*

Assistant Professors

Diane Enns/B.A. *(Ottawa)*, M.A. *(Carleton)*, Ph.D. *(SUNY-Binghamton)*
Brian Garrett/B.A., M.A. *(Auckland)*, Ph.D. *(McGill)*

Associate Member

Lisa Schwartz/B.A., M.A. *(McGill)*, Ph.D. *(Glasgow)*

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 Counsellor 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

PHILOS 1B03 PHILOSOPHY, LAW AND SOCIETY
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.
Two lectures, one tutorial; one term
Alternates with PHILOS 1C03.

PHILOS 1C03 PHILOSOPHY IN LITERATURE
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.
Two lectures, one tutorial; one term
Alternates with PHILOS 1B03.

PHILOS 1D03 PHILOSOPHY AND THE SCIENCES
An introduction to philosophical issues arising from modern science and technology. Topics to be discussed may include science versus pseudo-science, the nature of scientific explanation, the impact of science on society, and the contribution of society to the development of science.
Two lectures, one tutorial; one term
Not open to students with credit or registration in PHILOS 3D03.

PHILOS 1E03 PROBLEMS OF PHILOSOPHY
A critical investigation of philosophical arguments concerning such topics as God, politics, morality, human nature, knowledge, and art.
Two lectures, one tutorial; one term

PHILOS 2A06 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
Crosslist: CLASSICS 2P06

PHILOS 2B03 INTRODUCTORY LOGIC
Sentential and quantification logics are introduced and applied to arguments in English.
Three lectures; one term
Prerequisite: Registration in Level II or above

PHILOS 2C06 DESCARTES TO HUME
A comprehensive survey of early modern philosophy, concentrating on the metaphysical and epistemological innovations of the period.
Three lectures; two terms
Prerequisite: Registration in Level II or above

PHILOS 2D03 MORAL ISSUES
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.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Crosslist: RELIG ST 2C03

PHILOS 2E03 CLASSICAL CHINESE PHILOSOPHY
Introductory survey of classical Chinese philosophy, especially Confucianism and Daoism. Readings include Confucius, Mencius, Laozi and Zhuangzi.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above

PHILOS 2F03 PHILOSOPHICAL PSYCHOLOGY
A consideration of such questions as: In what terms might human nature be described? How do intentional and unintentional behaviour differ? How do physical and mental states differ? When is action free? Can intelligence be duplicated artificially?
Three lectures; one term
Prerequisite: Registration in Level II or above

PHILOS 2G03 SOCIAL AND POLITICAL ISSUES
A philosophical examination of some contemporary issues in public policy, such as environmental problems, the question of a just distribution of society's goods and services, and problems of liberty and coercion.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Crosslist: PEACE ST 2I03

PHILOS 2H03 AESTHETICS
An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Crosslist: ART HIST 2H03, CMST 2O03
Offered in alternate years.

PHILOS 2N03 BUSINESS ETHICS
An analysis of ethical issues arising in contemporary business life. Sample topics include: fair and unfair competition; responsibilities towards employees, society and the environment; honesty and integrity in business; the moral status of corporations.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Crosslist: COMMERCE 2SB3

PHILOS 3A06 FROM KANT TO HEGEL
The philosophies of Kant and Hegel viewed in relation to each other and to other philosophies of the period, such as those of Rousseau or Schelling.
Three lectures; two terms
Prerequisite: PHILOS 2C06

PHILOS 3B03 PHILOSOPHIES OF EXISTENCE
An examination of the 19th-century forerunners of contemporary existential philosophy, concentrating principally on the thought of Kierkegaard and Nietzsche.
Three lectures; one term
Prerequisite: At least six units of Philosophy and registration in Level III or above
Offered in alternate years.

PHILOS 3C03 ADVANCED BIOETHICS
An advanced study of the application of ethical theory to selected problems in health care, such as our reproductive practices, care of the dying, the therapeutic relationship.
Three lectures; one term
Prerequisite: 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
Offered in alternate years.

PHILOS 3D03 PHILOSOPHY OF SCIENCE
A survey of philosophical problems concerning science. Topics to be considered include explanation, causation, scientific laws, and instrumentalism vs. realism.
Three lectures; one term
Prerequisite: At least six units of Philosophy and registration in Level III or above
Offered in alternate years.

PHILOS 3E03 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 above
Crosslist: CMST 3Y03
Offered in alternate years.

PHILOS 3F03 INTERMEDIATE LOGIC
Selected topics in the study of formal languages and their interpretations, metalogic, and the philosophy of logic.
Three lectures; one term
Prerequisite: PHILOS 2B03
Offered in alternate years.

PHILOS 3G03 ETHICS
An introduction to the major types of ethical theory and the problem of their justification.
Three lectures; one term
Prerequisite: At least six units of Philosophy and registration in Level III or above

PHILOS 3H03 PHILOSOPHY OF RELIGION
An analysis of the concept of religion in light of the philosophical claims of religious experience, practice, and belief.
Three lectures; one term
Prerequisite: Six units of Philosophy and registration in Level III or above
Offered in alternate years.

PHILOS 3I03 PHILOSOPHY AND FEMINISM
A study of philosophical issues in feminist thought.
Three lectures; one term
Prerequisite: Six units of Philosophy or WOMEN ST 1A03, 1AA3 (or 1A06); and registration in Level III or above
Crosslist: WOMEN ST 3I03
Offered in alternate years.

PHILOS 3J03 MODERN JEWISH THOUGHT
Introduction to different conceptions of the connection between Jewish traditions and philosophical questioning. Authors may include: Maimonides, Spinoza, Mendelssohn, Cohen, Buber, Rosenzweig, Strauss, Levinas, Soloveitchik.
Three hours (lectures and discussion); one term
Crosslist: RELIG ST 3A03
This course is administered by the Department of Religious Studies.

PHILOS 3M03 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
Crosslist: CMST 3E03

PHILOS 3N03 POLITICAL PHILOSOPHY
A study of major political concepts and issues, such as social contract, ideology, justice, freedom vs. equality, reform vs. revolution, state vs. individual.
Three lectures; one term
Prerequisite: At least six units of Philosophy and registration in Level III or above
Offered in alternate years.

PHILOS 3O03 THEORY OF KNOWLEDGE
A study of scepticism and certainty, knowledge and belief, perception, memory, and truth.
Three lectures; one term
Prerequisite: PHILOS 2C06

PHILOS 3P03 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 above; or registration in Level III or IV of the Combined Honours in Peace Studies Program
Crosslist: PEACE ST 3M03
Offered in alternate years.

PHILOS 3Q03 PHILOSOPHY OF LAW
An investigation of the nature of law and of issues arising within legal systems. These issues include legal reasoning, equality, legal insanity, punishment, and the Charter of Rights and Freedoms.
Three lectures; one term
Prerequisite: At least six units of Philosophy and registration in Level III or above

PHILOS 3W03 READING COURSE
A tutorial course in which individual students meet regularly with an instructor on a list of readings outside normally available course offerings. It is the student's responsibility to secure the agreement of an instructor and to complete a proposal form (available in the Philosophy Department office), before attempting to register in the course.
Prerequisite: Registration in Level III or IV of any program in Philosophy, with a Cumulative Average of at least 8.5 and permission of the Department

PHILOS 4A03 EARLY MODERN PHILOSOPHY
A critical study of one or more 17th- or 18th-century European or British philosophers, such as Descartes, Leibniz, Hume.
Seminar (Two hours); one term
Prerequisite: PHILOS 2C06 and registration in Level III or above
Offered in alternate years.

PHILOS 4B03 THEORY OF VALUE
A study of human practices of evaluation in morality, politics, art, religion, and economics.
Seminar (Two hours); one term
Prerequisite: PHILOS 3G03 and registration in Level III or above
Crosslist: PEACE ST 4C03
Offered in alternate years.

PHILOS 4D03 TWENTIETH-CENTURY ANALYTIC PHILOSOPHY
A study of some main currents of 20th-century philosophy, including the work of such figures as Russell, Wittgenstein, Quine, and Davidson.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy and registration in Level III or above
Offered in alternate years.

PHILOS 4E03 EXISTENTIALISM AND PHENOMENOLOGY
A study of selected texts of major existential and phenomenological philosophers in the 20th-century, such as Camus, Heidegger, Jaspers, Marcel.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy and registration in Level III or above

PHILOS 4F03 RECENT EUROPEAN PHILOSOPHY
Contemporary trends in European Philosophy as represented by such writers as Derrida, Foucault and Habermas.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy and registration in Level III or above
Offered in alternate years.

PHILOS 4H03 METAPHYSICS
An investigation of metaphysical concepts, such as substance, individuation, identity, essence, quality, process, mind, time and causality. Some contemporary criticisms of metaphysics will be discussed.
Seminar (two hours); one term
Prerequisite: PHILOS 2A06, 2C06 and registration in Level III or above of a program in Philosophy

PHILOS 4I03 MEDIEVAL PHILOSOPHY
A study of one or more central medieval philosophers, such as Augustine, Aquinas, or William of Ockham.
Seminar (two hours); one term
Prerequisite: PHILOS 2A06 or 2C06
Offered in alternate years.

PHILOS 4K03 ANCIENT PHILOSOPHY
A critical study of one or more ancient Greek philosophers such as Parmenides, Plato, Aristotle.
Seminar (two hours); one term
Prerequisite: PHILOS 2A06 and registration in Level III or above
Antirequisite: PHILOS 4C03, 4J03
Crosslist: CLASSICS 4K03
Offered in alternate years.

PHILOS 4N03 PHILOSOPHY OF THE ENLIGHTENMENT
An examination of the philosophy of 18th-century Europe, particularly of the thinkers associated with the Encyclopedia project. This movement was a concerted attempt to replace the old theological-cum-political order with one based on scientific reason and human rights.
Seminar (two hours); one term
Prerequisite: At least six units of Philosophy and registration in Level III or above

PHILOS 4W03 INDEPENDENT STUDY
In consultation with a member of the Department of Philosophy, students will prepare an essay on an approved topic, on the basis of a list of readings outside normally available course offerings. It is the student's responsibility to secure the agreement of an instructor and to complete a proposal form (available in the Philosophy Department office), before attempting to register in the course.
Prerequisite: Registration in Level IV of any Honours program in Philosophy, with a Cumulative Average of at least 8.5 and permission of the Department
Antirequisite: PHILOS 4Z06

PHILOS 4Z06 THESIS
Reading and research under the supervision of two members of the Department. A major paper is required as well as a formal examination. It is the student's responsibility to secure the agreement of an instructor and to complete a proposal form (available in the Philosophy Department office), before attempting to register in the course.
Prerequisite: Registration in Level IV of any Honours program in Philosophy, with a Cumulative Average of at least 8.5 and permission of the Department
Antirequisite: PHILOS 4W03

PHYSICS AND ASTRONOMY

WEB ADDRESS: http://www.physics.mcmaster.ca/
A.N. Bourns Science Building, Room 241
Ext. 24559

Faculty as of January 15, 2009

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)*, F.R.S.C.
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)*
Catherine Kallin/B.Sc. *(British Columbia)*, A.M., Ph.D. *(Harvard)*, Senior Canada Research Chair
Graeme M. Luke/B.Sc. *(Queen's)*, Ph.D. *(British Columbia)*
Ralph E. Pudritz/B.Sc. *(British Columbia)*, M.Sc. *(Toronto)*, Ph.D. *(British Columbia)*
An-Chang Shi/B.Sc. *(Fudan)*, M.Sc., Ph.D. *(Illinois)*
Erik Sorensen/B.Sc., M.Sc. *(Århus)*, Ph.D. *(California-Santa Cruz)*
Peter G. Sutherland/B.Sc. *(McGill)*, M.S., Ph.D. *(Illinois)*
David E. Venus/B.Sc. *(Queen's)*, Ph.D. *(Toronto)*
Ethan T. Vishniac/B.Sc., M.Sc. *(Rochester)*, Ph.D. *(Harvard)*
Douglas L. Welch/B.Sc., Ph.D. *(Toronto)*
Christine D. Wilson/B.Sc. *(Toronto)*, Ph.D. *(California Institute of Technology)*

Associate Professors

Alan A. Chen/B.Sc. *(Toronto)*, Ph.D. *(Yale)*
Kari Dalnoki-Veress/B.Sc., M.Sc., Ph.D. *(Guelph)*
Cécile Fradin/B.Sc., M.Sc. *(Ecole Normale Supérieure)*, Ph.D. *(Paris VI)*, Canada Research Chair
Alison Sills/B.Sc. *(Western Ontario)*, Ph.D. *(Yale)*
James Wadsley/B.Sc. *(Monash)*, M.Sc., Ph.D. *(Toronto)*

Assistant Professors

Karen Hughes/B.Sc. *(Lakehead)*, M.Sc., Ph.D. *(McMaster)*
Brian E. King/B.Sc. *(Simon Fraser)*, M.Sc., Ph.D. *(Colorado)*
Sung-Sik Lee/B.Sc. *(Korea Advanced Institute of Science and Technology)*, M.Sc., Ph.D. *(Pohang)*
Neil McKay/B.Sc. *(Queen's)*, M.Sc., Ph.D. *(McMaster)*
Reza Nejat/B.Sc. *(Tehran)*, M.Sc., Ph.D. *(Missouri-Rolla)*
Duncan O'Dell/B.Sc. *(Imperial)*, Ph.D. *(Bristol)*
Laura C. Parker/B.Sc. *(Mount Allison)*, Ph.D. *(Waterloo)*
Michael A. Reid/B.Sc. *(Waterloo)*, M.Sc., Ph.D. *(McMaster)*
Maikel Rheinstädter/B.Sc., M.Sc., Ph.D. (Universität des Saarlandes)
Sarah L. Symons/B.Sc., Ph.D. *(Leicester)*

Associate Member

John S. Preston/*(Engineering Physics)* B.Sc. *(McMaster)*, M.Sc., Ph.D. *(Toronto)*

Adjunct Assistant Professor

Ken Sills/B.Sc. *(Western Ontario)*, M.Sc. *(St. Mary's)*

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.
3. Courses in Physics and Astronomy are not open to students registered in the Bachelor of Technology program.

ASTRONOMY {025} ...

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. Completion of one of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U or MATH 1F03 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1F03; and one of Grade 12 Physics U, PHYSICS 1L03, 1P03
Antirequisite: SCIENCE 1D03
Crosslist: PHYSICS 1F03
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 ARTS&SCI 2D06, ISCI 1A24, PHYSICS 1B03, 1D03; and one of ARTS&SCI 1D06, MATH 1A03, 1N03, 1X03, 1Z04; or ISCI 1A24

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
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. PHYSICS 2G03 is strongly recommended.
Alternates with ASTRON 3X03.
Not offered in 2009-2010.

PHYSICS {440} ...

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 one of ARTS&SCI 1D06, MATH 1A03, 1LS3, 1X03, 1Z04; and SCIENCE 1A00
Not open to students with credit or registration in ISCI 1A24.

PHYSICS 1BA3 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 1BB3
Not open to students with credit or registration in ISCI 1A24.

PHYSICS 1BB3 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 1BA3
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. Completion of one of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U or MATH 1F03 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of Grade 12 Calculus and Vectors U, Grade 12 Advanced Functions and Introductory Calculus U, MATH 1F03; and one of Grade 12 Physics U, PHYSICS 1L03, 1P03
Antirequisite: SCIENCE 1D03
Crosslist: ASTRON 1F03
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 use 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; the 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 1AA3, 1XX3, 1ZZ5, 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 ARTS&SCI 2D06, ISCI 1A24, PHYSICS 1BA3, 1BB3. Completion of one of MATH 1AA3, 1XX3 or 1ZZ5 is strongly recommended.
Prerequisite (Beginning 2010-2011): One of ARTS&SCI 2D06, PHYSICS 1BA3, 1BB3; and one of ARTS&SCI 1D06, MATH 1AA3, 1XX3, 1ZZ5; or ISCI 1A24
Antirequisite: PHYSICS 3M03

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 problem, 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 1B03, 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: One of ARTS&SCI 1D06, ISCI 1A24, MATH 1A03, 1X03, 1Z04

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
Antirequisite: CHEM BIO 2P03, CHEM 2PA3, 2PD3, 2R03, ENGINEER 2H03, MATLS 2B03
Crosslist: ENG PHYS 2H04
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; or registration in Honours Mathematics and Physics
Alternates with PHYSICS 3C03.
Not offered in 2009-2010.

PHYSICS 3BA3 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 2B06
Antirequisite: PHYSICS 3B06

PHYSICS 3BB3 ELECTRONICS II
Design and synthesis project in electronics, based on the material presented in PHYSICS 3BA3.
Prerequisite: PHYSICS 3BA3
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 registration in Honours Mathematics and Physics; or permission of the instructor
Alternates with PHYSICS 3A03.

PHYSICS 3D03 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 an Honours Physics program
Antirequisite: MED PHYS 4A03, 4AA1, 4AB2, PHYSICS 3DA1, 3DB2, 4A03, 4AA1, 4AB2

PHYSICS 3DA1 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 III of Honours Physics Co-op
Antirequisite: MED PHYS 4A03, 4AA1, 4AB2, PHYSICS 3D03, 4A03, 4AA1, 4AB2

PHYSICS 3DB2 INQUIRY IN PHYSICS II
The continuation of PHYSICS 3DA1.
Two lectures or seminars; one term
Prerequisite: PHYSICS 3DA1 or 4AA1
Antirequisite: MED PHYS 4A03, 4AA1, 4AB2, PHYSICS 3D03, 4A03, 4AB2

PHYSICS 3H03 INTERMEDIATE LABORATORY
Experiments in atomic physics, neutron physics, optics, spectroscopy, mechanics.
One lecture, one term; one lab (three hours), two terms
Prerequisite: PHYSICS 2B06; and credit or registration in 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 2XX3), 2C03, PHYSICS 2H04; or registration in Honours Mathematics and Physics

PHYSICS 3MM3 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; Fraunhofer and Fresnel diffraction; Maxwell's equations and the electromagnetic character of light; polarization and double refraction; interference of polarized light; selected topics in modern optics.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2Q04, 2XX3; and MATH 2C03 or 2P04; and either PHYSICS 2B06 or both ENG PHYS 2A04 (or 2A03) and 2E04

PHYSICS 3S03 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: One of CHEM 2R03, CHEM BIO 2P03, PHYSICS 2H04 or registration in Honours Mathematics and Physics

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, 4AA1, 4AB2, PHYSICS 3D03, 3DA1, 3DB2, 4AA1, 4AB2
Last offered in 2009-2010.

PHYSICS 4AA1 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, 4AA1, 4AB2, PHYSICS 3D03, 3DA1, 4A03
Last offered in 2009-2010.

PHYSICS 4AB2 INQUIRY IN PHYSICS (II)
The continuation of PHYSICS 4AA1.
Two lectures or seminars; one term
Prerequisite: PHYSICS 4AA1
Antirequisite: MED PHYS 4A03, 4AA1, 4AB2, PHYSICS 3D03, 3DA1, 3DB2, 4A03
Last offered in 2009-2010.

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
Antirequisite: PHYSICS 4B04

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 3DJ4, PHYSICS 4DA3, 4DB3

PHYSICS 4DA3 DIGITAL LOGIC AND COMPUTER SYSTEMS I
The design and use of digital logic systems and their application to data acquisition and control techniques. The project-oriented laboratory involves both hardware and software.
Two lectures, one lab (three hours); one term
Prerequisite: PHYSICS 2B06; or ENG PHYS 2A04 (or 2A03) and 2E04
Antirequisite: COMP ENG 3DJ4, PHYSICS 4D06

PHYSICS 4DB3 DIGITAL LOGIC AND COMPUTER SYSTEMS II
The continuation of PHYSICS 4DA3.
Two lectures, one lab (three hours); one term
Prerequisite: PHYSICS 4DA3
Antirequisite: 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.
Three lectures; one term
Prerequisite: PHYSICS 2G03, 3MM3; or registration in Honours Physics Co-op

PHYSICS 4K03 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
Enrolment 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
Enrolment is limited.

PHYSICS 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. 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, CHEM-BIO 2P03, MATLS 2B03, PHYSICS 2H04; or registration in Honours Mathematics and Physics. PHYSICS 3S03 is recommended.
Crosslist: BIOCHEM 4S03

POLISH

(SEE LINGUISTICS AND LANGUAGES, POLISH)

POLITICAL SCIENCE {450}

WEB ADDRESS: http://www.socsci.mcmaster.ca/polisci/

Kenneth Taylor Hall, Room 527

Ext. 24741

Faculty as of January 15, 2009

Chair

Robert O'Brien

Distinguished University Professor

William D. Coleman/B.A. *(Carleton)*, A.M., Ph.D. *(Chicago)*/Canada Research Chair in Global Governance and Public Policy

Professors

Henry J. Jacek/B.S.S. *(Fairfield)*, M.A., Ph.D. *(Georgetown)*
Robert J. O'Brien/B.A. *(Carleton)*, M.Sc. *(London)*, Ph.D. *(York)*
Tony Porter/B.A. *(McGill)*, M.A., Ph.D. *(Carleton)*
Richard W. Stubbs/B.Sc. *(Wales)*, M.A. *(Lancaster)*, Ph.D. *(Alberta)*
Charlotte A. B. Yates/*(Labour Studies)* B.A. *(Winnipeg)*, M.A. *(Queen's)*, Ph.D. *(Carleton)*

Associate Professors

J. Marshall Beier/B.A., M.A., Ph.D. *(York)*
Karen Bird/B.A. *(Wilfrid Laurier)*, Ph.D. *(Minnesota)*
Catherine Frost/*(Communication Studies and Multimedia)* B.A. *(Lakehead)*, M.A., Ph.D. *(Toronto)*
Nibaldo H. Galleguillos/B.A. *(Chile)*, M.A., Ph.D. *(Toronto)*
Peter Graefe/B.A. *(McGill)*, M.A. *(York)*, Ph.D. *(Montreal)*
Ahmed Shafiqul Huque/B.A., M.A. *(Dhaka)*, M.A. *(Manitoba)*, Ph.D. *(British Columbia)*
Peter Nyers/B.A., M.A. *(Victoria)*, Ph.D. *(York)*
John W. Seaman/B.A. *(Mount Allison)*, M.A. *(Dalhousie)*, Ph.D. *(Toronto)*
Donald M. Wells/*(Labour Studies)* B.A. *(Western Ontario)*, M.A. *(British Columbia)*, Ph.D. *(Toronto)*

Assistant Professors

Alina Gildiner/*(Health, Aging and Society)* B.Sc., M.Sc., Ph.D. *(Toronto)*
Martin Hering/B.A., M.A. *(Marburg)*, Ph.D. *(Johns Hopkins)*
James D. Ingram/B.A. *(Alberta)*, M.A. *(Queen's)*, Ph.D. *(New School)*
Lana Wylie/B.A. *(McMaster)*, M.A. *(Calgary)*, Ph.D. *(Massachusetts)*

Associate Members

Julia Abelson/*(C.E.P.A.)* B.A., B.Sc. *(McMaster)*, M.Sc. *(Harvard)*, Ph.D. *(Bath)*
Robert C. A. Andersen/*(Sociology)* B.A., M.A. *(Western)*, Ph.D. *(McMaster)*
Scott Davies/*(Sociology)* B.A. *(Toronto)*, M.A. *(McMaster)*, Ph.D. *(Toronto)*
John Lavis/*(C.E.P.A.)* M.D. *(Queen's)*, M.Sc. (LSE), Ph.D. *(Harvard)*

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. (Please see *Department of Political Science* in the *Faculty of Social Sciences* section of this Calendar for specific program requirements.) 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 2O06 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.
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 basis. Students should register early. Permission of the faculty supervisor and the Department are required for POL SCI 4Z06 and 4ZZ6.
8. Political Science Honours and Combined Honours students are encouraged but not required to take one of the Level III Honours Topics courses (POL SCI 3B03, 3H03 and 3J03). Each student may only take one of these Honours Topics courses. The topics of the courses will be described on the Department's website in advance of the date on which registration for them begins. Normally they will correspond to the research interests of the permanent faculty members (if available) who will teach them.

Fields of Study

(Students are responsible for ensuring that course prerequisites are fulfilled.)

CANADIAN POLITICS

POL SCI 2D03, 2DD3, 2F03, 2L03, 3C03, 3FF3, 3GG3, 3HH3, 3J03, 3JJ3, 3K03, 3NN6, 3S03, 3SP3, 3Z03, 4O06, 4T06

COMPARATIVE POLITICS

POL SCI 2A06, 2B03, 2C03, 2M03, 2N03, 2XX3, 2Z03, 3BB3, 3D03, 3EE3, 3F03, 3G03, 3GG3, 3H03, 3I03, 3K03, 3KK3, 3LL3, 3M03, 3MM3, 3T03, 3U03, 3V03, 3VV3, 3Y03, 3YY3, 4A03, 4AA6, 4D06, 4G06, 4L03, 4Q06, 4R06

INTERNATIONAL RELATIONS

POL SCI 2BB3, 2C03, 2H03, 2I03, 2J03, 2XX3, 3AA3, 3B03, 3E03, 3EE3, 3FF3, 3K03, 3KK3, 3P03, 3Q03, 3QQ3, 3X03, 3Y03, 4D06, 4M06, 4MM6

POLITICAL THEORY

POL SCI 2O06, 3CC3, 3VV3, 4C06, 4E06, 4P06

PUBLIC POLICY

POL SCI 2L03, 3B03, 3D03, 3E03, 3FF3, 3H03, 3J03, 3LL3, 3M03, 3S03, 3SP3, 3U03, 3YY3, 3Z03, 4A03, 4G06, 4L03, 4O06, 4R06

The following courses while satisfying the requirements of the program are not specific to any field of study:

POL SCI 1G06, 3N06, 3UU3, 4Z06, 4ZZ6

Courses *If no prerequisite is listed, the course is open.*

POL SCI 1G06 POLITICS AND GOVERNMENT
An introduction to the study of politics, emphasizing critical discussion of issues such as: social conflict, prospects for democracy, citizens' rights and responsibilities and Canada's future as a state and its role in the world.
Three hours (lectures and tutorials); two terms
Antirequisite: POL SCI 1B03, 1C03, 2G06

POL SCI 2BB3 U.S. FOREIGN POLICY
An examination of the development as well as theories and practice of American foreign policy.
Three hours (lectures and tutorials); one term
Not open to students with credit or registration in POL SCI 3I03 if the topic was U.S. Foreign Policy.

POL SCI 2D03 CANADIAN CITIZENSHIP: INSTITUTIONAL FOUNDATIONS
An introduction to institutions delimiting the practice of citizenship in Canada and of the political values they embody.
Three hours (lectures and tutorials); one term
Antirequisite: POL SCI 2K03

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 impact 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 3ZZ3

POL SCI 2M03 COMPARATIVE POLITICS OF ADVANCED INDUSTRIAL NATIONS
A systematic introduction to comparing the politics of industrialized and post-industrial countries including electoral and government institutions, parties, ideologies and values, and political economy.
Three hours (lectures and tutorials); one term
Antirequisite: POL SCI 2A06

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 3AA3 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 HONOURS TOPICS IN INTERNATIONAL RELATIONS AND GLOBAL PUBLIC POLICY
Recommended for Honours Political Science students interested in this field of study.
Three hours; one term
Prerequisite: Registration in Level III or above of an Honours Political Science Program. (See *Note 6* above.)
Antirequisite: POL SCI 3H03, 3J03
Students may take only one of POL SCI 3B03, 3H03 and 3J03. (See Note 8 above.)

POL SCI 3BB3 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
Crosslist: 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
Crosslist: 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 2O06 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 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 3H03 HONOURS TOPICS IN COMPARATIVE POLITICS AND PUBLIC POLICY
Recommended for Honours Political Science students interested in this field of study.
Three hours; one term
Prerequisite: Registration in Level III or above of an Honours Political Science Program. (See *Note 6* above.)
Antirequisite: POL SCI 3B03, 3J03
Students may take only one of POL SCI 3B03, 3H03 and 3J03. (See Note 8 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
Priority will be given to students registered in a Political Science program. (See Note 6 above.)
POL SCI 3I03 may be repeated, if on a different topic, to a total of six units.

POL SCI 3J03 HONOURS TOPICS IN CANADIAN POLITICS AND CANADIAN PUBLIC POLICY
Recommended for Honours Political Science students interested in this field of study.
Three hours; one term
Prerequisite: Registration in Level III or above of an Honours Political Science Program. (See *Note 6* above.)
Antirequisite: POL SCI 3B03, 3H03
Students may take only one of POL SCI 3B03, 3H03 or 3J03. (See Note 8 above.)

POL SCI 3K03 MIGRATION AND CITIZENSHIP: CANADIAN, COMPARATIVE AND GLOBAL PERSPECTIVES
This course examines immigration as a local, national and global phenomenon. It considers the process of incorporation of immigrants into receiving societies, and the implications of migration for our understanding of citizenship and the nation-state.
Three hours; one term
Prerequisite: Registration in Level III or above. (See *Note 6* above.)

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
Antirequisite: SOC SCI 2C03
Crosslist: SOCIOL 3KK3
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 3YY3 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 (lectures and discussion); one term
Prerequisite: Registration in Level III or above of a Political Science or Health Studies program
Crosslist: HEALTHST 3M03
Not open to students with credit in POL SCI 3YY3 if the topic was Health Policy in a Changing World.

POL SCI 3MM3 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: One of CMST 2Z03 or POL SCI 2Z03; and registration in Level III or above
Crosslist: CMST 3MM3

POL SCI 3N06 RESEARCH METHODS, STATISTICS AND POLITICAL ANALYSIS
An introduction to the study of concept and theory formation, and an overview of the scope, research methods and statistical techniques of political science.
Three hours; two terms
Prerequisite: Registration in Level III or above
Antirequisite: POL SCI 2F06
Not open to students with credit or registration in COMMERCE 2QA3, ECON 2B03, 3O06, 3U03, GEO 2S03, HTH SCI 1F03, 2A03, KINESIOL 3C03, POL SCI 2F06, PSYCH 2G03, 2R03, 2RA3, 2RB3, 2RR3, SOC SCI 2J03, STATS 1A03, 1CC3 or any Level II, III or IV Statistics course. (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
(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 2I03 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 3QQ3 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 2I03

POL SCI 3S03 LOCAL GOVERNMENT AND POLITICS IN CANADA
A description of the laws and institutions of local government; examination of relationships with citizens and other levels of government; the dynamics of local politics.
Three hours; one term
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 3SP3 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 or registration in POL SCI 3S03; and permission of the instructor

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 above. (See *Note 6* above.)

POL SCI 3VV3 THE POLITICAL THEORY OF DEMOCRACY
An examination of historical and contemporary debates about democracy and its challenges.
Three hours (lectures and discussion); one term
Prerequisite: POL SCI 2O06 and registration in Level III or above

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, 2I03, 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 4AA6 PROBLEMS IN AMERICAN POLITICS
An examination in depth of one of the important dimensions of the American political system.
Three hours (seminar); two terms
Prerequisite: One course in Comparative Politics and registration in Level IV Honours Political Science. (See *Note 7* above.)

POL SCI 4C06 COSMOPOLITANISM AND ITS CRITICS
An examination of historical and contemporary debates about the idea that we should think and act as citizens of the world.
Three hours (seminar); two terms
Prerequisite: POL SCI 2O06 and registration in Level IV Honours Political Science. (See *Note 7* above.)

POL SCI 4D06 HUMAN RIGHTS AND INTERNATIONAL POLITICS
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: POL SCI 2O06 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.)
Crosslist: 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 4MM6 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 4Q06 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 2O06; and registration in Level IV Honours Political Science. (See *Note 7* above.)
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. (See *Note 7* above.)

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, 3ZZ3; and registration in Level IV Honours Political Science. (See *Note 7* above.)

POL SCI 4T06 TOPICS IN CANADIAN POLITICS
An examination of major issues in contemporary Canadian politics.
Three hours (seminar); two terms
Prerequisite: Registration in Level IV Honours Political Science. (See *Note 7* above.)

POL SCI 4Z06 HONOURS ESSAY
A major research paper, supervised by a faculty member. The subject matter is to be different from that covered in 3UU3, if the student is registered or has credit in that course.
Prerequisite: Registration in Level IV Honours Political Science normally with a minimum C.A. of 9.0; and written permission of the faculty member supervising the student's Honours Essay; and permission of the Department.

POL SCI 4ZZ6 EXPERIENTIAL LEARNING IN RESEARCH
A major collaborative research project supervised by a faculty member and involving a unique course of instruction.
Prerequisite: Registration in Level IV Honours Political Science; and written permission of the faculty member supervising the research; and permission of the Department
Not open to students with credit in POL SCI 3UU3 or 4Z06 if on a similar topic.

PROCESS AUTOMATION TECHNOLOGY

(SEE TECHNOLOGY, PROCESS AUTOMATION TECHNOLOGY)

PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR {460}

WEB ADDRESS: http://www.mcmaster.ca/psychology

Psychology Building, Room 102

Ext. 23000

Faculty as of January 15, 2009

Chair

Betty A. Levy

Associate Chairs

Patrick Bennett/Graduate Studies
Louis Schmidt/Undergraduate Studies

Professors

Suzanna Becker/B.A., M.Sc. *(Queen's)*, Ph.D. *(Toronto)*
Patrick Bennett/B.Sc. *(Tufts)*, Ph.D. *(California-Berkeley)*/Senior Canada Research Chair
Martin Daly/B.A. *(Toronto)*, M.A. *(McGill)*, Ph.D. *(Toronto)*
Denys deCatanzaro/B.A., M.A. *(Carleton)*, Ph.D. *(British Columbia)*
Betty A. Levy/B.A. *(Dalhousie)*, M.A., Ph.D. *(Toronto)*
Terri L. Lewis/B.A. *(Toronto)*, Ph.D. *(McMaster)*
Daphne M. Maurer/B.A. *(Swarthmore)*, M.A. *(Pennsylvania)*, Ph.D. *(Minnesota)*
Bruce Milliken/B.A., Ph.D. *(Waterloo)*
Kathryn M. Murphy/B.A. *(Western Ontario)*, M.A., Ph.D. *(Dalhousie)*
Louis A. Schmidt/B.A. *(Maryland)*, M.S. *(Baltimore)*, Ph.D. *(Maryland)*
Allison Sekuler/B.A. *(Pomona)*, Ph.D. *(California-Berkeley)*/Canada Research Chair
Laurel J. Trainor/B.Mus., M.A., Ph.D. *(Toronto)*
Margo I. Wilson/B.A. *(Alberta)*, M.A. *(California)*, Ph.D. *(London)*

Adjunct Professors

Dan Bosnyak/B.A., Ph.D. *(McMaster)*
Mertice M. Clark/B.A., Ph.D. *(McMaster)*
Ivan Kiss/B.Sc. *(Toronto)*, M.A., Ph.D. *(Concordia)*
Bruce A. Linder/B.E.S. *(Minnesota)*, Ph.D. *(McMaster)*
Tracy Vaillancourt/B.A., M.A., Ph.D. *(British Columbia)*

Associate Professors

Sigal Balshine/B.Sc. *(Toronto)*, Ph.D. *(Cambridge)*
Richard B. Day/B.A. *(Massachusetts)*, M.A. *(Iowa)*, Ph.D. *(McMaster)*
Reuven Dukas/B.Sc. *(Jerusalem)*, Ph.D. *(North Carolina State)*
Daniel Goldreich/B.Sc. *(California-San Diego)*, Ph.D. *(California-San Francisco)*
Mel D. Rutherford/B.A. *(Yale)*, Ph.D. *(California-Santa Barbara)*
Judith M. Shedden/B.Sc. *(Alberta)*, M.S., Ph.D. *(Pittsburgh)*
David I. Shore/B.Sc. *(McMaster)*, M.A., Ph.D. *(British Columbia)*
Hongjin Sun/B.Sc., M.Sc. *(Peking)*, M.A. *(Western Ontario)*, Ph.D. *(Queen's)*

Assistant Professors

Brett Beston/B.Sc., Ph.D. *(McMaster)*
Steven Brown/B.A. *(California-San Jose)*, M.A., M.Phil., Ph.D. *(Columbia)*
Paul A. Faure/B.Sc., M.Sc. *(Calgary)*, Ph.D. *(Cornell)*
David Feinberg/B.Sc. *(Rutgers)*, Ph.D. *(St. Andrews)*
Deda C. Gillespie/B.Sc. *(Yale)*, Ph.D. *(California-San Francisco)*
Karin Humphreys/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., M.D. *(Bangalore)*, Ph.D. *(Hamamatsu)*
Scott Watter/B.Med.Sc., M.B.B.S. *(Queensland)*, A.M., Ph.D. *(Illinois)*

Associate Members

Ian C. Bruce/*(Electrical and Computer Engineering)* B.Eng., Ph.D. *(Melbourne)*
John F. Connolly/*(Linguistics and Languages)* A.B. *(Holy Cross)*, M.A. *(Saskatchewan)*, Ph.D. *(London)*
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)*
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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)*
Margaret McKinnon/*(Psychiatry and Behavioural Neursciences)* B.A. *(Windsor)*, M.A., Ph.D. *(Toronto)*
Heather McNeely/*(Psychiatry and Behavioural Neurosciences)* B.A. *(Lakehead)*, M.A. *(Carleton)*, Ph.D. *(Waterloo)*
Alison G. Niccols/*(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. *(Oklahoma)*
Christopher David Rollo/*(Biology)* B.Sc., M.Sc. *(Guelph)*, Ph.D. *(British Columbia)*
Patricia I. Rosebush/*(Psychiatry)* B.Sc.N., M.Sc.N. *(Toronto)*, M.D. *(McMaster)*, F.R.C.P.S.
Alexandre Sévigny/*(Communication Studies and Multimedia; French)* B.A. *(York)*, M.A., Ph.D. *(Toronto)*
William Sulis/*(Psychiatry and Behavioural Neurosciences)* B.Sc. *(Carleton)*, M.D., M.A., Ph.D. *(Western Ontario)*, F.R.C.P.C.
Henry Szechtman/*(Biomedical Sciences)* B.Sc., Ph.D. *(Pittsburgh)*
Larry Tuff/*(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 & Behaviour.
2. The Psychology, Neuroscience & Behaviour Department pre-registration ballot will be done in two phases. The first phase will include the thesis courses (PSYCH 4D06, 4D09, 4DD6), and the Individual Study courses (PSYCH 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 Psychology, Neuroscience & Behaviour Department web site at http://www.mcmaster.ca/psychology.

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 (web modules, tutorials, discussion/review); one term
Antirequisite: PSYCH 1AA3
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.

PSYCH 1XX3 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 (lecture, web modules, tutorials, discussion/review); 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.H.Sc. (Honours) program.

PSYCH 2AA3 SURVEY OF CHILD DEVELOPMENT

A general survey of theories and mechanisms of child development, illustrated through examples from neural, perceptual, cognitive, social and emotional development.
Students in Honours programs are referred to PSYCH 3GG3 for which this course is an antirequisite.
Three lectures; one term

Prerequisite: One of ISCI 1A24, PSYCH 1X03 (or 1AA3), or registration in the Bachelor of Health Sciences (Honours) program
Antirequisite: PSYCH 3GG3

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: One of ISCI 1A24, PSYCH 1X03 (or 1AA3), or registration in the Bachelor of Health Sciences (Honours) program

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: One of ISCI 1A24, PSYCH 1X03 (or 1AA3), or registration in the Bachelor of Health Sciences (Honours) program

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: 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) or Grade 12 Biology U, and registration in a program in Psychology or the Faculty of Science; or ISCI 1A24; or registration in Arts & Science, the Bachelor of Health Sciences (Honours), the Honours Linguistic Cognitive Science or the Honours Music (Music Cognition) program

PSYCH 2F03 FUNDAMENTALS OF NEUROSCIENCE
Fundamentals of nervous system function in humans and animals, including neurophysiology, neural transmission and neuroanatomy.
Prerequisite: Six units from 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 ISCI 1A24; 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 or the Honours Music (Music Cognition) program.
Antirequisite: LIFE SCI 2C03, PSYCH 2N03

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: 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), or Grade 12 Biology U, and registration in a program in Psychology or the Faculty of Science; or ISCI 1A24; or registration in Arts & Science, the Bachelor of Health Sciences (Honours), the Honours Linguistic Cognitive Science or the Honours Music (Music Cognition) program

PSYCH 2MA3 MUSIC COGNITION
This course presents an overview of music cognition, covering such topics as musical acoustics, melodic and rhythmic systems, and the mechanisms of perception and performance in music.
Three lectures; one term
Prerequisite: Registration in any Music Cognition program (B.A., B.Mus., B.Sc); or PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) and registration in an Honours program; or ISCI 1A24. Completion of Grade 2 Rudiments from The Royal Conservatory of Music is recommended
Crosslist: MUSICCOG 2A03

PSYCH 2N03 PRINCIPLES OF NEUROPSYCHOLOGY
This course deals with gaining insights into behaviour with the help of unfortunate experiments of nature in the form of disorders or syndromes.
Prerequisite: 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), or Grade 12 Biology U, and registration in a program in Psychology or the Faculty of Science; or ISCI 1A24; or registration in Arts & Science, the Bachelor of Health Sciences (Honours), the Honours Linguistic Cognitive Science or the Honours Music (Music Cognition) program
Antirequisite: LIFE SCI 2C03, PSYCH 2D03, 2F03

PSYCH 2QQ3 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 1XX3 (or 1A03); and registration in Level II of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program; and permission of the course coordinator.

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), the Bachelor of Health Sciences (Honours), Honours Linguistic Cognitive Science, Honours Music (Music Cognition) or any Honours Psychology, Neuroscience & 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 sensory, cognitive, personality, and social changes that occur during the normal aging process.
Three lectures: one term
Prerequisite: One of ISCI 1A24, PSYCH 1X03 (or 1AA3) or registration in the Bachelor of Health Sciences (Honours) program
Antirequisite: GERONTOL 3D03
Not open to students with credit or registration in PSYCH 3GG3.
Offered in alternate years.
Offered in 2009-2010.

PSYCH 2TT3 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: Six units from PSYCH 1A03, 1AA3, 1X03, 1XX3 with a grade of at least C+ in each, and one of BIOLOGY 1M03 (or 1AA3), 1P03 (or 1K03), or Grade 12 Biology U, and registration in a program in Psychology or the Faculty of Science; or ISCI 1A24; or registration in Arts & Science, the Bachelor of Health Sciences (Honours) program; or credit or registration in one of BIOLOGY 1M03 (or 1AA3), 1P03 (or 1K03) or Grade 12 Biology U, and registration in the Honours Music (Music Cognition) program
Antirequisite: LIFE SCI 2D03

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 2F03

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: One of PSYCH 2AA3, 2C03 or 3GG3

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, 2N03, 2TT3; and one of ARTS&SCI 2R06, HTH SCI 1F03, 2A03, PSYCH 2RA3, SOC SCI 2J03, STATS 1A03, 1CC3, 2B03, 2D03

PSYCH 3BA3 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.
Not offered 2009-2010.

PSYCH 3BB3 PSYCHOLINGUISTICS
The study of how the human mind understands and produces sounds, words and sentences. The emphasis is on how evidence from psycholinguistics research relates to theoretical linguistics.
Three hours; one term
Prerequisite: LINGUIST 1A03, 1AA3
Crosslist: LINGUIST 3B03
This course is administered by the Department of Linguistics and Languages.

PSYCH 3BN3 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, 2N03; and one of ARTS&SCI 2R06, PSYCH 2RB3, 2RR3, 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 hours; one term
Prerequisite: LINGUIST 1A03; and LINGUIST 1AA3 or PSYCH 2H03
Crosslist: LINGUIST 3C03
This course is administered by the Department of Linguistics and Languages.

PSYCH 3CB3 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.
Offered in 2009-2010.

PSYCH 3CC3 FORENSIC PSYCHOLOGY
Introduces students to applications of psychology to the law. Includes topics such as eyewitness testimony, criminal profiling, assessment of criminal responsibility, jury psychology and psychopathy.
Three lectures; one term
Prerequisite: Registration in Level III or IV of a Psychology program

PSYCH 3CD3 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

PSYCH 3D03 THE MULTISENSORY MIND
This course will consider how unisensory 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 one of PSYCH 2D03, 2F03, 2N03; and registration in an Honours program

PSYCH 3EE3 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 ARTS&SCI 2R06, PSYCH 2RB3, 2RR3, STATS 2MB3; and PSYCH 2E03; and registration in Level III or IV of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program, or registration in Level III of the Honours Linguistic 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 theories. Topics include family relations, sex differences, mate choice, cooperation and conflict, and universality and diversity across cultures.
Three lectures; one term
Prerequisite: ANTHROP 2D03 or PSYCH 2TT3; or BIOLOGY 1A03, 1M03 (or 1AA3); or nine units from BIOLOGY 1M03 (or 1AA3), HTH SCI 1I06

PSYCH 3FA3 THE NEUROBIOLOGY OF LEARNING AND MEMORY
Learning and memory mechanisms will be discussed from several perspectives ranging from cognitive neuroscience to synaptic physiology.
Three lectures; one term
Prerequisite: One of PSYCH 2D03, 2F03, 2N03

PSYCH 3GG3 ESSENTIALS OF DEVELOPMENTAL PSYCHOLOGY
This course concentrates on theories 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, 2N03, 2TT3; and one of ARTS&SCI 2R06, HTH SCI 1F03, 2A03, PSYCH 2RA3, STATS 1CC3, 2B03, 2D03; and registration in an Honours program
Antirequisite: PSYCH 2AA3

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, 1AA3, 1X03, 1XX3; and one of MUSICCOG 2A03, PSYCH 2E03, 2H03 or 2MA3; and registration in Level III or above of an Honours program. Completion of PSYCH 2E03 is strongly recommended.
Prerequisite (Beginning 2010-2011): Two of PSYCH 1A03, 1AA3, 1X03, 1XX3; PSYCH 2E03; and registration in Level III or above of an Honours program

PSYCH 3HH3 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 2E03, 3GG3

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 2RB3, 2RR3, STATS 2MB3; and registration in Level III or IV of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program; and permission of the coordinator. This course cannot be taken concurrently with any independent study course (PSYCH 3Q03, 3QQ3, 4Q03, 4QQ3, 4D06, 4D09, 4DD6) with the same supervisor.

PSYCH 3I13 COGNITIVE DEVELOPMENT
The development of attention, concepts, memory, reasoning and language.
Three lectures; one term
Prerequisite: PSYCH 2H03, 3GG3

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 3JJ3 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, 3GG3

PSYCH 3KK3 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.
Three lectures; one term
Prerequisite: One of ARTS&SCI 2R06, ECON 2B03, PSYCH 2RB3, 2RR3, STATS 2MB3

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 & Behaviour or Combined Honours Psychology program
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 3LL3 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: One of ARTS&SCI 2R06, PSYCH 2RB3, 2RR3, STATS 2MB3, and registration in an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program; or registration in Level III or above of the Honours Linguistic Cognitive Science program
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

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 2TT3; and one of PSYCH 2D03, 2F03, 2N03
Not open to students with credit or registration in PSYCH 3Y03 or 4Y03.

PSYCH 3MA3 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: MUSICCOG 2A03 or PSYCH 2MA3, and registration in any Music Cognition program (B.A., B. Mus., B.Sc.) or Honours Music; or MUSICCOG 2A03 or PSYCH 2MA3, two of PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3, and registration in any Honours program
Antirequisite: PSYCH 3AA3
Crosslist: MUSICCOG 3A03

PSYCH 3MB3 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: MUSICCOG 2A03 or PSYCH 2MA3, and registration in any Music Cognition program (B.A., B. Mus., B.Sc.) or Honours Music; or MUSICCOG 2A03 or PSYCH 2MA3, two of PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 2TT3 and registration in any Honours program
Crosslist: MUSICCOG 3B03
This course is administered by the School of the Arts.

PSYCH 3MM3 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 2RB3, 2RR3, STATS 2MB3; and one of PSYCH 2E03, 2F03, 2H03; and registration in Level III or IV of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 3N03 ABNORMAL PSYCHOLOGY: FUNDAMENTALS AND MAJOR DISORDERS
Provides students with a survey of the fundamentals of psychopathology, focusing on the description and etiology of major disorders.
Three lectures; one term
Prerequisite: Six units from PSYCH 2D03, 2E03, 2F03, 2H03, 2N03, 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 3NN3

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 of a Psychology program. 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 preregistration 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 of a Psychology program. 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 preregistration 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 2TT3; and one of ARTS&SCI 2R06, PSYCH 2RB3, 2RR3, STATS 2MA3, 2MB3; and registration in Level III or IV of an Honours program in Biology or Psychology
Enrolment is limited. Permission is by preregistration 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 1X03 (or 1AA3) and 1XX3 (or 1A03); and 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 Honours Life Sciences, Honours Linguistic Cognitive Science or any Psychology 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, 3VV3 and one of ARTS&SCI 2R06, PSYCH 2RB3, 2RR3, STATS 2MB3, and registration in Level III or IV of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program; or PSYCH 2H03, 3VV3 and registration in Level III or IV of Honours Linguistic Cognitive Science
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 3VV3 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 Honours Life Sciences, Honours Linguistic Cognitive Science or any Psychology program

PSYCH 3YY3 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 2TT3

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 physiologists influenced the earliest roots of Psychology as a science.
Three lectures; one term
Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience & 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 Honours Linguistics Cognitive Science, any Honours Psychology, Neuroscience & 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, 3QQ3, 4Q03 or 4QQ3 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 & Behaviour or Combined Honours Psychology program with a Cumulative Average of at least 8.0; and credit in one of PSYCH 3BL3, 3EE3, 3L03, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3; and permission of the department.
Antirequisite: PSYCH 4D09, 4DD6
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 4D09 SENIOR HONOURS THESIS
Students conduct an individual research project under the supervision or co-supervision of a Department of Psychology, Neuroscience & Behaviour faculty member. If any of PSYCH 3Q03, 3QQ3, 4Q03, 4QQ3 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 & Behaviour or Combined Honours Psychology program with a Cumulative Average of at least 8.5; and one of PSYCH 3BL3, 3EE3, 3L03, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3; and permission of the department
Antirequisite: PSYCH 4D06, 4DD6
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4DD6 SENIOR THESIS
Students conduct an individual research project under the supervision of a faculty member. If any of PSYCH 3Q03, 3QQ3, 4Q03 or 4QQ3 are taken concurrently with PSYCH 4DD6, 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 4DD6, or contact the Course Administrator.
Prerequisite: Registration in Level IV of the Honours Biology and Psychology program with a minimum Cumulative Average of at least 8.5; and credit in one of PSYCH 3BL3, 3EE3, 3L03, 3LL3, 3MM3, 3QQ3, 3S03, 3V03, 4QQ3; and permission of the department
Antirequisite: PSYCH 4D06, 4D09
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4F03 SPECIAL TOPICS IN NEUROSCIENCE
An advanced seminar focusing on selected topics in neurobiology. Topics for discussion selected in consultation with students and instructor, with focus on animal models of neurobiological processes.
Seminar and discussions (three hours); one term
Prerequisite: A grade of at least B in PSYCH 2F03 and registration in Level IV of an Honours Biology or Psychology program. Completion of BIOLOGY 2B03 and/or 3P03 are recommended.
Not offered 2009-2010.

PSYCH 4J03 INQUIRY IN PSYCHOLOGY
This course will provide students with an opportunity to develop skills required to launch investigations of selected psychological themes.
Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program

PSYCH 4L03 COGNITIVE NEUROSCIENCE OF LANGUAGE
Brain imaging methods have provided remarkable insights into what areas of the brain are involved in linguistic processes. This course will survey the current scientific literature dealing with the neuroimaging of normal and pathological brain function as related to language processes.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of a program in Linguistics or Honours Psychology and permission of the Department of Linguistics and Languages
Crosslist: LINGUIST 4F03
This course is administered by the Department of Linguistics and Languages.

PSYCH 4Q03 ADVANCED INDIVIDUAL LIBRARY STUDY
A library project under the supervision of a faculty member that may extend over both terms.
Prerequisite: Registration in Level IV of an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program. If PSYCH 4Q03 is taken concurrently with PSYCH 4D06, 4D09 or 4DD6, a different faculty member must supervise each course.
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4QQ3 ADVANCED INDIVIDUAL LAB STUDY
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 & Behaviour or Combined Honours Psychology program. If PSYCH 4QQ3 is taken concurrently with PSYCH 4D06, 4D09 or 4DD6, a different faculty member must supervise each course.
PSYCH 4QQ3 may be repeated once with permission of the course coordinator.
Enrolment is limited. Permission is by preregistration ballot. (See Department Note 2 above.)

PSYCH 4R03 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 one of PSYCH 3F03, 3T03 or 3YY3; 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 program
Antirequisite: PSYCH 3Y03

PSYCH 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 3BB3, 3C03, 3U03, 3UU3; and LINGUIST 2D03 or PSYCH 2RA3; and permission of the Department of Linguistics and Languages
Crosslist: LINGUIST 4Z03
Offered in alternate years.
This course is administered by the Department of Linguistics and Languages.

RELIGIOUS STUDIES {475}

WEB ADDRESS: http://www.socsci.mcmaster.ca/relstud
University Hall, Room 104
Ext. 23109

Faculty as of January 15, 2009

Chair

P. Travis Kroeker

Professors

P. Travis Kroeker/B.A. *(Winnipeg)*, M.A. *(Manitoba)*, Ph.D. *(Chicago)*
Eileen Schuller/B.A. *(Alberta)*, M.A. *(Toronto)*, Ph.D. *(Harvard)*
Stephen R. Westerholm/B.A., M.A. *(Toronto)*, D.Th. *(Lund)*

Associate Professors

Ellen Badone/B.A., M.A. *(Toronto)*, Ph.D. *(California-Berkeley)*
James Benn/B.A., M.A. *(Cambridge)*, M.A. *(London)*, Ph.D. *(California-Los Angeles)*
Dana Hollander/B.A. *(Oberlin College)*, M.A., Ph.D. *(Johns Hopkins)*
Graeme MacQueen/B.A., M.A. *(McMaster)*, Ph.D. *(Harvard)(Retired)*
Zdravko Planinc/B.A., M.A. *(York)*, A.M., Ph.D. *(Harvard)*
Celia Rothenberg/B.A. *(Wellesley College)*, M.S. *(Oxford)*, Ph.D. *(Toronto)*
Anders Runesson/B.A., M.Div., M.A., Lic.Theol., Ph.D. *(Lund)*
Peter Widdicombe/B.A. *(Manitoba)*, M.Phil. *(Oxford)*, M.Div. *(Toronto)*, D.Phil. *(Oxford)*

Assistant Professors

Philippa Carter/B.A. *(Toronto)*, M.A., Ph.D. *(McMaster)*
Shayne Clarke/B.A., M.A. *(Canterbury)*, Ph.D. *(California-Los Angeles)*
Daniel Machiela/B.A. *(Grand Valley State)*, M.A. *(Jerusalem University College)*, Ph.D. *(Notre Dame)*
Anne Pearson/B.A. *(Toronto)*, M.A., Ph.D. *(McMaster)*
Mark Rowe/B.A. *(McGill)*, M.A., Ph.D. *(Princeton)*

Associate Member

Virginia Aksan/*(History)* B.A. *(Allegheny College)*, M.L.S. *(California-Berkeley)*, M.A., Ph.D. *(Toronto)*

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 are allocated to the fields as follows:

Fields of Study

I. ASIAN RELIGIONS

RELIG ST 2E03, 2F03, 2I03, 2K03, 2L03, 2P03, 2TT3, 3AA3, 3E03, 3L03, 3P03, 3RR3, 3S03, 3U03, 3UU3, 3V03, 4H03
SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES

RELIG ST 2B03, 2DD3, 2EE3, 2GG3, 2HH3, 2VV3, 2YY3, 2Z03, 3DD3, 3GG3, 3J03, 3K03, 3M03, 3N03, 3R03, 3T03, 4I03
HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT

RELIG ST 2C03, 2EA3, 2EB3, 2FF3, 2G03, 2II3, 2J03, 2JJ3, 2KK3, 2LL3, 2MM3, 2NN3, 2Q03, 2U03, 2V03, 2X03, 2ZZ3, 3A03, 3B03, 3C03, 3CC3, 3D03, 3GG3, 3KK3, 3LL3, 3MM3, 3NN3, 3W03, 3X03, 3Y03, 3Z03, 3ZZ3, 4N03

IV. CONTEMPORARY AND COMPARATIVE RELIGIONS

RELIG ST 2BB3, 2H03, 2M03, 2N03, 2QQ3, 2SS3, 2TT3, 2W03, 2WW3, 3EE3, 3FF3, 4P03

Courses

If no prerequisite is listed, the course is open.

RELIG ST 1B06 WORLD RELIGIONS
A comparative study of religions such as Hinduism, Buddhism, Islam, Christianity, and Judaism with special reference to selected texts, traditions and thought.
Two lectures, one tutorial; two terms

RELIG ST 1D06 MODERN STUDY OF THE BIBLE
An introduction to the discipline of modern biblical criticism focusing on the development of selected central themes.
Two lectures, one tutorial; two terms

RELIG ST 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

RELIG ST 2B03 WOMEN IN THE BIBLICAL TRADITION
This course will focus on the portrayal of women in the Hebrew Scriptures and the New Testament. Among the texts to be dealt with are examples of biblical narrative and legal material, the gospels, the letters of Paul and extra-biblical material.
Two lectures, one tutorial; one term
Crosslist: WOMEN ST 2B03

RELIG ST 2BB3 IMAGES OF THE DIVINE FEMININE
An examination of goddesses and female religious symbols in a variety of cultures: tribal, eastern and western.
Two lectures, one tutorial; one term
Crosslist: WOMEN ST 2BB3

RELIG 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
Crosslist: PHILOS 2D03
This course is administered by the Department of Philosophy.

RELIG ST 2DD3 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

RELIG 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

RELIG 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
Antirequisite: RELIG ST 3H03
Crosslist: JAPAN ST 3H03

RELIG 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
Crosslist: HISTORY 2HH3
This course is administered by the Department of History.

RELIG 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 1I06, 1I03

RELIG ST 2GG3 EARLIEST PORTRAITS OF JESUS
A study of the Gospels of Matthew, Mark, and Luke. Special attention will be given to the possible literary relationships among them as well as to the distinctive features of their Jesus stories.
Two lectures, one tutorial; one term

RELIG ST 2H03 THEORY AND PRACTICE OF NON-VIOLENCE
An introduction to the history, theory and practice of non-violence, with attention to the relations between religious representatives of the tradition such as Tolstoy, Gandhi and King and secular or political figures such as Gene Sharp and James Scott.
Two lectures, one tutorial; one term

RELIG ST 2HH3 PAUL AND CHRISTIAN ORIGINS
A study of the controversial role played by Paul in the definition and expansion of early Christianity, based on the Acts of the Apostles and Paul's own extant correspondence.
Two lectures, one tutorial; one term

RELIG 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 2II3 CHRISTIANITY IN THE PATRISTIC PERIOD (100-800)
The development of Christianity in the first centuries C.E. in relation to competing alternatives such as Judaism, Graeco-Roman cults and philosophies.
Two lectures, one tutorial; one term

RELIG ST 2J03 INTRODUCTION TO JUDAISM
Survey of major facets of Jewish religion and identity from antiquity to the present, including foundational texts, major historical developments and central beliefs and practices.
Two lectures, one tutorial; one term

RELIG ST 2JJ3 CHRISTIANITY IN THE MEDIEVAL PERIOD (800-1500)
The development of Christianity in the Middle Ages and its relation to the political and intellectual context. Primary texts will illustrate typical aspects of medieval religion, learned and popular.
Two lectures, one tutorial; one term

RELIG ST 2K03 INTRODUCTION TO BUDDHISM
A survey of the developments of the essential concepts, practices, and institutions of the Buddhist religion, emphasizing its role in the history and culture of Asian societies.
Two lectures, one tutorial; one term

RELIG ST 2KK3 CHRISTIANITY IN THE REFORMATION PERIOD
The place of the Reformation in the development of Christian thought and practice -its background, context and sequels. Attention is given to such figures and movements as Martin Luther, John Calvin, the Anabaptists, the reformation in England, the Catholic Reformation.
Two lectures, one tutorial; one term

RELIG ST 2L03 LIFE, WORK AND TEACHINGS OF MAHATMA GANDHI
A study of the central religious and ethical ideas of Gandhi in the context of his life; in particular: his doctrines of Non-violent Struggle and Truth-act; his place in contemporary consciousness, particularly in the struggle for human harmony and preservation of the earth and its living species; and his revolutionary view of Truth itself as God.
Two lectures, one tutorial; one term

RELIG ST 2LL3 SCEPTICISM, ATHEISM AND RELIGIOUS FAITH
A study of conceptions of religious belief, knowledge and God in the history of modern thought up to the 20th century, with special attention to major challenges to the role of religious faith in human existence. Authors may include: Descartes, Hume, Kant, Schleiermacher, Nietzsche, Dostoevsky, Kierkegaard, Camus, Buber, Levinas.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 3MM3

RELIG ST 2M03 DEATH AND DYING: COMPARATIVE VIEWS
A comparative survey of the diversity of social and ritual practices, religious beliefs, and emotional responses surrounding death in a variety of non-Western cultural contexts.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above

RELIG ST 2MM3 WAR AND PEACE IN THE CHRISTIAN TRADITION
Christian thinking and practice on militarism, the restraint of war and paths to peace, including just war, nonviolence, pacifism and revolution.
Two lectures, one tutorial; one term

RELIG ST 2N03 DEATH AND DYING: THE WESTERN EXPERIENCE
Drawing on theoretical perspectives and evidence from anthropology and sociology, this course examines death and dying in Western contexts, focusing on biomedical, social and cultural themes.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above

RELIG ST 2NN3 THE ENCOUNTER OF SCIENCE AND RELIGION
A study of contemporary discussions of: (a) methods of inquiry in science and religion, (b) the human being's relation to nature and (c) God's relation to nature.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 3NN3

RELIG ST 2P03 JAPANESE CIVILIZATION
Introduction to Japanese history, society, and culture through a study of the religious traditions, literature, and art of Japan.
Two lectures, one tutorial; one term.
Antirequisite: JAPAN ST 2P06, RELIG ST 2P06
Crosslist: JAPAN ST 2P03

RELIG ST 2Q03 INTRODUCTION TO ISLAM
The origins and early history of Islam with an emphasis on the Koran and the early Muslim community.
Two lectures, one tutorial; one term

RELIG ST 2QQ3 CULTS IN NORTH AMERICA
An examination of recent religious trends in North America. The Hare Krishna Movement, the Church of Scientology, the "Family" Branch Davidians and Satanism will be covered.
Two lectures, one tutorial; one term

RELIG 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 multi-media sources, including manga and anime.
Two lectures, one tutorial; one term
Crosslist: JAPAN ST 2TT3

RELIG ST 2U03 RELIGION AND THE MORAL IMAGINATION
An exploration of religious and ethical themes/symbols/practices in selected ancient and modern literature (including plays, stories, poetry) and art in the western traditions.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 2UU3

RELIG ST 2VV3 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
Crosslist: COMP LIT 2G03

RELIG ST 2W03 RELIGION AND ECOLOGY
Attitudes toward nature or the environment in Native, Asian and Western religious traditions; the underlying assumptions of our contemporary view of the natural world.
Two lectures, one tutorial; one term

RELIG ST 2WW3 HEALTH, HEALING AND RELIGION
An examination of the different ways in which religion and health are related. Ideas of sickness and techniques of healing will be studied in a variety of traditional and modern religious contexts.
Two lectures, one tutorial; one term

RELIG ST 2X03 JUDAISM, THE JEWISH PEOPLE AND THE BIRTH OF THE MODERN WORLD
On the lures and threats of the modern world from the early eighteenth to the early twentieth century. Topics include: Jewish philosophy in the Age of Reason, new Jewish denominations, assimilation, early Zionism, Yiddish socialism, the beginnings of modern anti-semitism, movements of cultural renewal.
Two lectures, one tutorial; one term
Antirequisite: HISTORY 3Z03, RELIG ST 3Z03
Crosslist: HISTORY 2X03

RELIG ST 2YY3 THE BIBLE AND FILM
An examination of the use of the Bible in film. A variety of film genres will be studied including the Disney cartoon, biblical epic, horror film, contemporary comedy and drama and the rock music video. Issues to be discussed include the transformation of biblical images in popular media and film as a vehicle for conveying religious values.
Two lectures, one tutorial; one term

RELIG ST 2ZZ3 SHAKESPEARE: RELIGIOUS AND POLITICAL THEMES
An examination of ethical, political and religious themes in several of Shakespeare's plays, including The Merchant of Venice.
Two lectures, one tutorial; one term

RELIG ST 3A03 MODERN JEWISH THOUGHT
Introduction to different conceptions of the connection between Jewish traditions and philosophical questioning. Authors may include: Maimonides, Spinoza, Mendelssohn, Cohen, Buber, Rosenzweig, Strauss, Levinas, Soloveitchik.
Three hours (lectures and discussion); one term
Crosslist: PHILOS 3J03

RELIG ST 3AA3 POPULAR RELIGION IN THE INDIAN TRADITION
The music, dance and festivals associated with temples in India and its diaspora will be analyzed in terms of their social, psychological and political implications.
Two lectures, one tutorial; one term

RELIG ST 3B03 CHRIST THROUGH THE CENTURIES
A study of the varied theological and artistic conceptions of Jesus Christ in the principal periods of Christian thought: the Biblical, Patristic, Medieval, Reformation, and Modern.
Two lectures, one tutorial; one term

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 3CC3 SOVEREIGNTY AND SECULARIZATION
Exploration of key modern Western texts 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
Antirequisite: RELIG ST 2NN3
Crosslist: HISTORY 3DD3

RELIG ST 3E03 JAPANESE RELIGIONS
A study of Japanese religions and how they function in Japanese society. Topics will include Shinto, Shamanism, Ancestor Worship, Japanese Buddhism and the New Religions of Japan.
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.
Crosslist: 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
Crosslist: WOMEN ST 3FF3

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 3J03 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 1D06 or three units from the Biblical Studies Field of Study is strongly recommended.

RELIG ST 3K03 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 1D06 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
Crosslist: ARTS&SCI 3L03

RELIG ST 3LL3 RELIGION AND HUMAN NATURE
What is the nature of human nature and its fulfilment? A study of recent philosophical, scientific and religious anthropology.
Two lectures, one tutorial; one term

RELIG ST 3M03 PSALMS AND WISDOM IN THE BIBLE
A study of selected texts from Psalms, Job, and Proverbs with attention to how poetic and wisdom literature in the Hebrew Scriptures has functioned in Jewish and Christian worship and everyday life.
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 2O03

RELIG ST 3R03 DEATH AND THE AFTERLIFE IN EARLY JUDAISM AND CHRISTIANITY
An examination of the variety of ways in which physical death and the afterlife were understood in biblical and post-biblical Judaism as well as in the New Testament and early Christianity. Among the topics to be considered are the netherworld, immortality and resurrection, as well as the relationship of these concepts to issues of faith and morality.
Two lectures, one tutorial; one term

RELIG ST 3RR3 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
Crosslist: ARTS&SCI 3S03, JAPAN ST 3S03

RELIG ST 3T03 THE QUEST FOR THE HISTORICAL JESUS
A look at the continuing scholarly effort to reconstruct the career and teaching of the historical Jesus.
Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above. RELIG ST 1D06 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 3UU3 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
Crosslist: JAPAN ST 3UU3

RELIG ST 3Y03 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 1E03, 1E06

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 state; Jewish identities in literature and the arts.
Two lectures, one tutorial; one term
Antirequisite: RELIG ST 2XX3
Crosslist: HISTORY 3ZZ3

RELIG ST 4H03 TOPICS IN ASIAN RELIGIONS
Advanced seminar in Asian religions.
One term
Prerequisite: Registration in Level III or above of an Honours Religious Studies program, RELIG ST 3F03, six units in the Field of Study of the seminar; or permission of the instructor
Offered in alternate years.

RELIG ST 4I03 TOPICS IN BIBLICAL STUDIES
Advanced seminar in Early Judaism and Early Christianity.
One term
Prerequisite: Registration in Level III or above of an Honours Religious Studies program, RELIG ST 3F03, six units in the Field of Study of the seminar; or permission of the instructor
Offered in alternate years.

RELIG ST 4N03 TOPICS IN WESTERN RELIGIOUS THOUGHT
Advanced seminar in philosophy, theology and political thought dealing with contemporary and historical materials.
One term
Prerequisite: Registration in Level III or above of an Honours Religious Studies program, RELIG ST 3F03, six units in the Field of Study of the seminar; or permission of the instructor
Offered in alternate years.

RELIG ST 4P03 TOPICS IN CONTEMPORARY AND COMPARATIVE RELIGION
Advanced seminar in contemporary and comparative religion, from the perspectives of the anthropology and sociology of religion.
One term
Prerequisite: Registration in Level III or above of an Honours Religious Studies program, RELIG ST 3F03, six units in the Field of Study of the seminar; or permission of the instructor
Offered in alternate years.

RELIG ST 4Q03 ADVANCED READINGS IN RELIGIOUS STUDIES
Independent study of special topics in Religious Studies.
One term
Prerequisite: Registration in Level III or above of an Honours Religious Studies program and permission of the instructor
RELIG ST 4Q03 may be repeated, to a total of six units, if on a different topic.

RELIG ST 4R06 HONOURS THESIS
Students in this course will work closely with faculty members who specialize in the fields of study in which they plan to write their honours essay.
Two terms
Prerequisite: Registration in Level IV of an Honours Religious Studies program with a minimum C.A. of 9.5; or permission of the instructor
Antirequisite: RELIG ST 4J06

HEBREW {280} ...

Courses *If no prerequisite is listed, the course is open.*

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
Prerequisite: HEBREW 2A03 or permission of the instructor
Antirequisite: HEBREW 2A06

HEBREW 3A03 INTERMEDIATE HEBREW I
A reading course in classical (biblical) Hebrew. Sample texts will be read from some or all of the following: the Hebrew Bible, Mishnah, ancient Hebrew inscriptions and the Dead Sea Scrolls.
Four hours (two lectures); one term
Prerequisite: HEBREW 2B03 or permission of the instructor
Antirequisite: HEBREW 3A06

HEBREW 3B03 INTERMEDIATE HEBREW II
Further sample texts will be read from some or all of the following: the Hebrew Bible, the Mishnah, ancient inscriptions and the Dead Sea Scrolls.
Four hours (two lectures); one term
Prerequisite: HEBREW 2B03 or permission of the instructor
Antirequisite: HEBREW 3A06

SANSKRIT {507} ...

Courses *If no prerequisite is listed, the course is open.*

SANSKRIT 3A06 INTRODUCTION TO SANSKRIT GRAMMAR
Basic course in the elements of Sanskrit grammar. No previous knowledge of Sanskrit is required.
Three lectures; two terms

SANSKRIT 4B06 READINGS IN SANSKRIT TEXTS
Intermediate course with readings in selected texts.
Three lectures; two terms
Prerequisite: SANSKRIT 3A06

RUSSIAN

(SEE LINGUISTICS AND LANGUAGES, RUSSIAN)

SANSKRIT

(SEE RELIGIOUS STUDIES, SANSKRIT)

SCHOOL OF THE ARTS {505}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~sota/index.html
Togo Salmon Hall, Room 414
Ext. 27671

Faculty as of January 15, 2009

Director

Keith W. Kinder

Professors

Keith W. Kinder/Dip.F.A. *(Calgary)*, B.Mus. *(Western Ontario)*, M.Mus. *(Northwestern)*, D.M.A. *(Colorado) (Music)*
Hayden B.J. Maginnis/B.A. *(Western Ontario)*, M.F.A., Ph.D. *(Princeton) (Art History)*
William Renwick/B.Mus. *(British Columbia)*, Ph.D. *(CUNY)*, A.A.G.O., F.R.C.C.O. *(Music)*

Associate Professors

Catherine Graham/B.A., M.A., Ph.D. *(McGill) (Theatre & Film Studies)*
Hugh K. Hartwell/Assoc. Dipl., B. Mus. *(McGill)*, A.M., Ph.D. *(Pennsylvania) (Music)*
Janice Hladki/B.A. *(York)*, M.A., Ph.D. *(Toronto) (Theatre & Film Studies)*
Judy N. Major-Girardin/B.F.A. *(Windsor)*, M.F.A. *(Alabama) (Art)*
Alison McQueen/B.A. *(McGill)*, M.A., Ph.D. *(Pittsburgh)*
Joseph Sokalski/B.E. *(Alberta)*, M.A., Ph.D. *(Toronto) (Theatre & Film Studies)*
Graham Todd/L.D.A.D. Dip. *(Chelsea School of Art)* M.F.A. *(Guanajuato) (Art)*

Assistant Professor

Angela Sheng/B.A., M.A. *(Toronto)*, Ph.D. *(Pennsylvania)*

Associate Members

Michele G. George/*(Classics)* B.A. *(Toronto)*, M.A., Ph.D. *(McMaster)*
David C. Wilson/*(Kinesiology)* Cert. Ed. *(St. Paul's College)*, B.Ed. *(Bristol)*, M.A. *(York)*

Sessional Music Faculty

Elise Bédard/B.Mus., L.Mus., M.Mus. *(McGill)*/voice
John Brownell/B.F.A., M.A., Ph.D. *(York) (Music)*/percussion methods
Lita Classen/B.Mus. *(Ottawa)*, M.Mus. *(Vincent d'Indy Montréal)* Dipl. Perf. *(Vienna)*/voice
Caroline Colenbrander, string methods
Richard Cunningham/B.Mus. *(Toronto)*/voice, vocal methods
Kevin Dempsey/drums
Cecile Desrosiers/B.Mus. *(McGill)*, M.Mus. *(Western Ontario)*/piano
Lance Elbeck/B.Mus. *(Curtis Inst. of Music, Philadelphia)*/violin
Paula Elliott/B.Mus. *(Oberlin)*, M.M. *(New England Conservatory)*/flute
Don Englert/jazz saxophone
Patrick Feely/classical guitar
Robert Fekete/Dipl. *(Mohawk College)*, B.Mus., B. Ed. *(Toronto)*/jazz piano and vocal
Tom Forsyth/B.F.A., M.F.A. *(York)*, B.Ed. *(Toronto)*/jazz band
David Gerry/A.R.C.T., B.Mus. *(Toronto)*, Dipl. Ped. *(Japan)*/flute
Paul Grimwood/B.Mus. *(Western Ontario)*/harpsichord and organ, keyboard harmony
William Holinaty, woodwind methods
David Holler/McMaster University Choir Director
Judy Hunter/A.R.C.T. *(Toronto)*, A.Mus., Mus.G. Paed., B.A. *(Western Ontario)*, L.T.C.L., F.T.C.L., A.T.C.L. *(Trinity College, London)*/piano
Clark Johnston/jazz bass
Zoltan Kalman/Dipl. *(Franz Liszt Academy of Music, Budapest)*/clarinet
Leokadia Kanovich/B.Mus. *(Vilnius)*, M.A. *(Moscow)*/piano
Leon Karan/B. Mus. *(Music College, USSR)*, M.F.A. *(Uralskaya Univ. of Music, USSR)*/piano
Marie Lorcini/harp
Willem Moolenbeek/A.R.C.T., B.Sc., M.Sc. *(Guelph)*/saxophone
Rebecca Morton/cello
Nancy Nelson/B.Mus. *(McMaster)* /oboe
Stephen Pierre/clarinet
Mike Polci/B.Mus. *(Western Ontario)*/trombone, brass methods
Bob Shields/Dipl. *(Mohawk)*, B.Mus. *(Toronto)*/jazz guitar
Suzanne Shulman/A.R.C.T., Dipl. Perf. *(Toronto)*/flute
Shoshana Telner/piano
Pamela Vanweelden/A.R.C.T. *(Toronto)*, A.Mus. *(Western Ontario)*, L.T.C.L., F.T.C.L. *(Trinity, London)*, B.Ed. *(Althouse)*, B.Mus. *(Western Ontario)*, M.M. *(Toronto)*/piano
Sonia Vizante/B.A. *(Univ. of Bucharest)*, B.Ed. *(Brock)*/violin
Timothy White/B.Ed. *(Toronto)*, B.Mus., M.Mus. *(Michigan)*/trumpet
Alla Zacarelli/Dipl. Perf. *(Odessa, St. Petersburg)*/piano

School Note:

Art, Art History, Music and Theatre & Film Studies courses can be found listed alphabetically within the *Course Listings* section of this Calendar.

In order to foster interdisciplinarity in the Arts, the School of the Arts offers the following SOTA courses for students who wish to combine various disciplines within the School.

Courses

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
Crosslist: 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
Crosslist: CMST 3F03

SCIENCE {510}

Courses *If no prerequisite is listed, the course is open.*

SCIENCE 1A00 INTRODUCTION TO 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 session.
Web modules
Antirequisite: ENGINEER 1A00, ENG TECH 1A00, NURSING 1A00

SCIENCE 1E03 PHYSICS IN MEDICINE AND BIOLOGY I

An introduction to the physics underlying techniques used in the diagnosis and treatment of disease. Topics will include atomic and nuclear structure, waves, electromagnetic fields, and application to x-radiography, ultrasonography, MRI, PET and radiation therapy.
Three lectures; one term
Prerequisite: One of MATH 1A03, 1LS3, 1X03 and one of PHYSICS 1L03 or Grade 12 Physics U; or credit or registration in ISCI 1A24; or permission of the instructor
Antirequisite: MEDRADSC 1C03
Crosslist: MED PHYS 1E03
This course is administered by the Department of Medical Physics and Applied Radiation Sciences.

SCIENCE 2A03 PHYSICS IN MEDICINE AND BIOLOGY II

Applications of introductory physics concepts to medicine and biology emphasizing the analytical techniques of mathematical physics. Centrifugation; chromatography and electrophoresis; ultrasonography; confocal microscopy; photomolecular interactions and optical diagnostic techniques.
Three lectures; one term
Prerequisite: One of MED PHYS 1E03, MEDRADSC 1C03, PHYSICS 1B03 or permission of the instructor. Completion of MATH 1AA3 (or 1XX3, 1ZZ5) and one of PHYSICS 1BA3, 1BB3 are strongly recommended.
Prerequisite (Beginning 2010-2011): MATH 1AA3 (or 1XX3, 1ZZ5), and either MEDRADSC 1C03 or PHYSICS 1B03; or permission of the instructor. One of MED PHYS 1E03, PHYSICS 1BA3, 1BB3 is recommended.
Crosslist: MED PHYS 2A03

SCIENCE 2B03 THE BIG QUESTIONS

Ultimate questions in modern science are surveyed with emphasis on physical sciences: origin of space-time, elements, structure in the cosmos, and life on Earth and other planets.
Note: Students who intend to combine the Origins Research Specialization with their degree program should register in ORIGINS 2B03.
Three lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Crosslist: ORIGINS 2B03
This course is administered by the Department of Physics and Astronomy.

SCIENCE 2C00 SKILLS FOR CAREER SUCCESS IN SCIENCE

Develop career skills (resumé, cover letter, interview, job search) necessary to create a career path.
Eight, one hour lectures/workshops; one term
Prerequisite: Full-time registration in Level II or above of any program in the Faculty of Science
Registration priority will be given to students in a Co-op program. Students intending to register in a Co-op program in Level III must complete this course before their first work placement and, therefore, are strongly encouraged to complete this course in Level II.

SCIENCE 2K03 HEREDITY, EVOLUTION AND THE ENVIRONMENT

Introduction to the principles of human genetics and evolutionary biology, the adaptation of organisms to their environment, biological diversity and integrated ecosystems.
Three lectures or two lectures and one tutorial; one term
Prerequisite: Registration in Level II or above
Not open to students with credit or registration in BIOLOGY 1A03 (1A06), 1M03 (1AA3).
Offered in alternate years.
Not offered in 2009-2010.

SCIENCE 3EP3 APPLIED SCIENCE PLACEMENT

This placement course provides students with the opportunity to explore career options and integrate academics with a community, volunteer or professional experience. The student will complete an academic component in addition to the placement.
Normally students will completely 60 hours of placement work through the duration of the experience.
Prerequisite: Credit or registration in SCIENCE 2C00; and registration in Level III or above of a program in the Faculty of Science; and permission of the supervisor and the Office of the Associate Dean of Science (Studies)
Students are responsible to arrange a suitable placement and supervision, and are required to submit an application to the Office of the Associate Dean (Studies) two months prior to registration. More information and the application form can be found at http://www.science.mcmaster.ca/~associatedean.

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, LIFE SCI 4A03, 4B06, 4C09, 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, LIFE SCI 4A03, 4B06, 4C09, 4D03, 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, LIFE SCI 4A03, 4B06, 4C09, 4D03, SCIENCE 4A03, 4B06

SCIENCE 4SZ3 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
Antirequisite: INQUIRY 4SZ3
Crosslist: MED PHYS 4SZ3
Enrolment is limited.
This course is administered by the Department of Medical Physics and Applied Radiation Sciences.

SCIENCE 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
Antirequisite: BIOLOGY 2A03, 3U03, 3UU3, 4G06, HTH SCI 1D06, 1H03, 1H06, 1H03, 2F03, 2FF3, 2L03, 2LL3, KINESIOL 1A03, 1A06, 1AA3, 1Y03, 1YY3
Crosslist: MED PHYS 4XX3
This course is administered by the Department of Medical Physics and Applied Radiation Sciences.

SOCIAL SCIENCES {525}

Notes:

1. All students are strongly recommended to complete SOC SCI 2EL0. Completion of SOC SCI 2EL0 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 2O03, 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 2EL0 INTRODUCTION TO CAREER PLANNING THROUGH EXPERIENTIAL LEARNING
Students will engage in exploration activities to provide a foundation for career/education planning. They will better connect the skills acquired through academics, extracurricular activities and work experiences to future occupation choices.
Six, two hour lectures/workshop; one term
Prerequisite: Registration in Level II or above of a program in the Faculty of Social Sciences, including the Honours Bachelor of Kinesiology 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 Honours Bachelor of Kinesiology, Bachelor of Kinesiology General, Music Cognition, Linguistic Cognitive Science or a Social Sciences program
Antirequisite: COMMERCE 2QA3, EARTH SC 2MB3, ECON 2B03, GEO 3S03, GEOG 2MB3, NURSING 2R03
Not open to students with credit or registration in:ECON 3O06, 3U03, GEO 2S03, HTH SCI 1F03, 2A03, KINESIOL 3C03, POL SCI 2F06, 3N06, PSYCH 2G03, 2RA3, 2RB3, 2R03, 2RR3, STATS 1A03, 1CC3 or any Level II, III or IV statistics course.

SOC SCI 2K03 RESEARCH METHODS FOR THE SOCIAL SCIENCES
This course is designed to develop those skills necessary to pursue and understand research. Several general methods of research will be examined.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II or above of Honours Social Psychology
First offered in 2011-2012.

SOC SCI 2O03 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
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 power and the social politics of career formation.
Three hours (lectures and discussion); one term
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
Not open to students with credit in SOC SCI 2E03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES I 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
Not open to students with credit in SOC SCI 2F03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II if the topic was Women and Work in Canada.
(See *Note 3* above.)

SOC SCI 3IF0 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 searches.
Normally 30 to 35 hours per week
Prerequisite: Registration in a program in the Faculty of Social Sciences; credit or registration in SOC SCI 2EL0; and permission of the Programming and Outreach Manager
SOC SCI 3IF0 may be repeated.

SOC SCI 3IP0 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 15 hours per week
Prerequisite: Registration in a program in the Faculty of Social Sciences; credit or registration in SOC SCI 2EL0; and permission of the Programming and Outreach Manager
SOC SCI 3IP0 may be repeated.

SOC SCI 3IS0 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 have this experience recognized as 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 2EL0; and permission of the Programming and Outreach Manager
SOC SCI 3IS0 may be repeated.

SOC SCI 3YY3 PERSPECTIVES AND THEORIES ON SOCIAL PSYCHOLOGY IN THE SOCIAL SCIENCES

Understanding the history and development of perspectives and theories from multiple social sciences disciplines on Social Psychology.
Prerequisite: Registration in Level II or above of Honours Social Psychology
First offered in 2012-2013.

SOC SCI 3ZZ3 COMPLEX PROBLEMS FROM A MULTIDISCIPLINARY SOCIAL PSYCHOLOGY PERSPECTIVE

Problem-based social issues course (changing foci) involving students in examining a social problem from a multidisciplinary social psychology perspective.
Prerequisite: SOC SCI 3YY3 and registration in Level III or above of Honours Social Psychology
First offered in 2012-2013.

SOC SCI 4ZZ6 INTEGRATIVE STUDIES IN SOCIAL PSYCHOLOGY

A seminar, an experiential education focused course, an internship, a group thesis, or some combination of opportunities which results in a capstone learning opportunity.
Prerequisite: Registration in Level IV of Honours Social Psychology
First offered in 2013-2014.

SOCIAL WORK {620}

WEB ADDRESS: http://www.socsci.mcmaster.ca/socwork/

Kenneth Taylor Hall, Room 319

Ext. 23795

Faculty as of January 15, 2009

Director

Jane Aronson

Professors

Jane Aronson/B.Sc. *(New University of Ulster)*, B.S.W., M.S.W. *(McGill)*, Ph.D. *(Toronto)*
Roy Cain/B.S.W., M.S.W., Ph.D. *(McGill)*
James W. Gladstone/B.A. *(McGill)*, M.S.W. *(British Columbia)*, Ph.D. *(Toronto)*
M. Susan Watt/B.A., M.S.W., Adv. Dip. S.W. *(Toronto)*, D.S.W. *(California-Los Angeles)*

Associate Professors

Donna Baines/*(Labour Studies)* B.S.W. *(Calgary)*, M.S.W. *(Ottawa)*, Ph.D. *(Toronto)*
Gary C. Dumbrill/B.Sc. *(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)*
Christina Sinding/*(Health, Aging and Society)* B.A. *(Western Ontario)*, M.A. *(McMaster)*, Ph.D. *(Toronto)*

Assistant Professors

Mirna E. Carranza/B.S.W. *(University of El Salvador)*, M.T.S *(Wilfrid Laurier)*, Ph.D. *(Guelph)*
Saara Greene/B.A., B.S.W. *(Manitoba)*, M.S.W. *(McGill)*, Ph.D. *(Edinburgh)*
Y. Rachel Zhou/B.A. *(Institute on Globalization and the Human Condition)*, LLM *(Wuhan, China)*, M.A., Ph.D. *(Toronto)*

Adjunct Assistant Professor

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. *(Hull)*, M.A., Ph.D. *(Southern California)*

Lecturers

Ann Fudge Schormans/B.P.E., B.A. *(McMaster)*, B.S.W. *(York)*, M.S.W. *(McMaster)*
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. Not all courses will be offered every year.

SOC WORK 3C03	Social Aspects of Health and Illness
SOC WORK 3H03	Justice and Social Welfare
SOC WORK 3O03	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
Antirequisite: SOC WORK 2B06
Crosslist: LABR ST 2B03
Students in a Social Work program must register for this course as SOC WORK 2B03.

SOC WORK 2BB3 SOCIAL WORK AND SOCIAL WELFARE: ANTI-OPPRESSIVE PERSPECTIVES

Exploration and analysis of systematic patterns of oppression, their relationships to social policies and practices and the implications for social work through a variety of instruction including experiential exercises. Topics could include: race, gender, disability, sexual orientation.
Exercises, lectures, discussion; one term
Crosslist: LABR ST 2BB3
Antirequisite: SOC WORK 2B06
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

Prerequisite: 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 (summer). Priority for summer block given to B.S.W. students.
Prerequisite: SOC WORK 2B06 or both SOC WORK 2B03 and 2BB3; and SOC WORK 2A06 or both SOC WORK 2C03 and 2D03; and SOC WORK 2E03
Corequisite: SOC WORK 3DD6
Antirequisite: SOC WORK 3D09
Credit in this course is dependent on achieving a minimum grade of C+ and a Pass in SOC WORK 3DD6.

SOC WORK 3DD6 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 defining learning 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.
Prerequisite: SOC WORK 2B06 or both SOC WORK 2B03 and 2BB3; 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 receiving a Pass and a minimum grade of C+ in SOC WORK 3D06.

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
Prerequisite: 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 3O03 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
Prerequisite: 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
Prerequisite: 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 4Z03 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
Prerequisite: 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 4Z03 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 4DD6
Prerequisite: SOC WORK 3D06, 3DD6
Corequisite: SOC WORK 4DD6
Antirequisite: SOC WORK 4D12
Credit in this course is dependent on achieving a minimum grade of C+ and a Pass in SOC WORK 4DD6.

SOC WORK 4DD6 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 4D06.
Prerequisite: SOC WORK 3D06, 3DD6
Corequisite: SOC WORK 4D06
Credit in this course is dependent on receiving a Pass and a minimum grade of C+ in SOC WORK 4DD6.

SOC WORK 4G03 SELECTED TOPICS
Critical examination of social work practice in respect to selected social issues. Topics will vary from year to year and the School should be consulted for details for any particular year.
Seminars; one term
Prerequisite: 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 4I03 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
Prerequisite: 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
Prerequisite: 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
Prerequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
Antirequisite: GERONTOL 4S03, POL SCI 4A03, SOC WORK 4A03, 4V03
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
Prerequisite: Credit or registration in SOC WORK 3D06 and 3DD6; or permission of the instructor

SOC WORK 4Q03 INQUIRY INTO ANTI-OPPRESSION: FACILITATING THE DIALOGUE
The study of anti-oppression policies and practice combined with practical application in the form of facilitating small group discussions that focus on issues of social justice.
Seminars, discussion, exercises; one term
Prerequisite: SOC WORK 3D06, 3DD6 and permission of the instructor

SOC WORK 4R03 SOCIAL WORK WITH WOMEN
Critical examination of the potential of social policies and programs, community organizations and service practices to challenge women's systemic disadvantage and enhance women's welfare.
Seminars; one term
Prerequisite: Registration in a Social Work program; or SOC WORK 1A06 and registration in Level III or above of any program
Antirequisite: SOC WORK 4E03, 4T03
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 4U03 IMMIGRATION, SETTLEMENT AND SOCIAL WORK
Examination of social and political factors impacting the lives of immigrants and refugees as they settle in Canada; critical assessment of social work responses.
Seminars; one term
Prerequisite: 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 Immigration and Settlement.
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 4W03 CHILD WELFARE
This course analyzes the Canadian child welfare system, its policies and programs and teaches skills for working with children, families and substitute caregivers.
Lectures, discussions, skills development; one term
Prerequisite: 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 4X03 SOCIAL WORK WITH FAMILIES
Examination of relevant aspects of family theory for social work practice; models of family intervention.
Seminars; one term
Prerequisite: Credit or registration in SOC WORK 3D06 and 3DD6; or permission of the instructor
Antirequisite: SOC WORK 3M03

SOC WORK 4Y03 CRITICAL ISSUES IN MENTAL HEALTH AND ADDICTION
A critical review of selected theoretical perspectives and contemporary issues in mental health and addiction; examination of implications for social work research and practice.
Seminars; one term
Prerequisite: 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 Mental Health and Addiction.
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.

SOCIOLOGY {520}

WEB ADDRESS: http://www.socsci.mcmaster.ca/sociology/

Kenneth Taylor Hall, Room 627

Ext. 24481

Faculty as of January 15, 2009

Acting Chair

William Shaffir

Professors

W. Peter Archibald/B.A. *(Mt. Allison)*, M.A. *(British Columbia)*, Ph.D. *(Michigan)*
Scott Davies/B.A. *(Toronto)*, M.A. *(McMaster)*, Ph.D. *(Toronto)*
Margaret Denton/*(Gerontological Studies)* B.A., M.A., Ph.D. *(McMaster)*
John Fox/B.A., M.A., Ph.D. *(Michigan)*
Cyril H. Levitt/B.A., M.A. *(Waterloo)*, Ph.D. *(Freie Universitat, Berlin)*
Charlene Miall/B.A. *(Ottawa)*, M.A. *(Calgary)*, Ph.D. *(York)*
Victor Satzewich/B.A., M.A. *(Saskatchewan)*, Ph.D. *(Glasgow)*
William B. Shaffir/B.A., M.A., Ph.D. *(McGill)*
Philip G. White/*(Kinesiology)* B.Sc. *(London)*, M.Sc., Ph.D. *(Waterloo)*

Associate Professors

Robert Andersen/B.A., M.A. *(Western Ontario)*, Ph.D. *(McMaster)*
Ivy Bourgeault/*(Health, Aging and Society)* B.Sc. *(Alberta)* M.Sc., Ph.D. *(Toronto)*
Art Budros/B.A. *(San Jose State)*, M.A., Ph.D. *(California-Los Angeles)*
Lori Campbell/*(Health, Aging and Society)*B.A., M.A. *(Western Ontario)*, Ph.D. *(Guelph)*
James Gillett/*(Health, Aging and Society)* B.A. *(Calgary)*, M.A., Ph.D. *(McMaster)*
Neil McLaughlin/B.A., M.A. *(Cleveland State)*, Ph.D. *(City University of New York)*
Dorothy Pawluch/B.A. *(Laurentian)*, M.A., Ph.D. *(McGill)*
Robert H. Storey/*(Labour Studies)* B.A. *(Toronto)*, M.A. (Dalhousie), Ph.D. *(Toronto)*

Assistant Professors

Deanna Behnke-Cook/B.A., M.A., Ph.D. *(McMaster)*
Catherine Chiappetta-Swanson/B.A. *(York)*, M.A., Ph.D. *(McMaster)*
Tina Fetner/B.A. *(California Santa Cruz)*, M.A., Ph.D. *(New York)*
Melanie Heath/B.A. *(California-Berkeley)*, M.A. *(California State, Sacramento)*, Ph.D. *(Southern California)*
Leanne Joanisse/B.A. *(McGill)*, M.A. *(Concordia)*, Ph.D. *(McMaster)*
David Young/B.A., M.A. *(Queen's)*, Ph.D. *(McMaster)*

Lecturer

Antony Christensen/B.A. *(Lethbridge)*, M.A. *(McMaster)*

Adjunct Assistant Professor

Michael Atkinson/*(Loughborough)* B.A. *(Waterloo)*, M.A. *(McMaster)*, Ph.D. *(Calgary)*

Associate Members

Jane Aronson/*(Social Work)* B.Sc. *(New University of Ulster)*, B.S.W., M.S.W. *(McGill)*, Ph.D. *(Toronto)*
Roy Cain/*(Social Work)* B.S.W., M.S.W., Ph.D. *(McGill)*
Graham K. Knight/*(Communication Studies and Multimedia)* B.A. *(Kent)*, M.A., Ph.D. *(Carleton)*

Department Notes:

1. Prior to registration, students should consult the Department of Sociology's website or individual course outlines, for fuller course descriptions and any changes in the list of courses offered in 2009-2010.
2. SOCIOL 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 Honours Sociology students.
4. All Level IV courses are normally only open to students registered in a Level IV Honours Sociology program on a first come basis. SOCIOL 4M03, 4MM6 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 2I03 SOCIOLOGY OF ORGANIZATIONS
A theoretical and empirical analysis of formal and informal organizational structures and processes in the major sectors of modern industrial society.
Three hours (lectures and discussion); two terms
Prerequisite: SOCIOL 1A06
Antirequisite: LABR ST 2I03, 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, television and radio program production and the relationship between media production and management.
Three hours (lectures); one term
Prerequisite: 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 gender 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 Marxian, Weberian and structural-functionalist perspectives.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Antirequisite: SOCIOL 2O06

SOCIOL 2RR3 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 2O06

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 2Z03 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 2Z03, 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 sociological theory.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 2S06 and registration in Level III or IV of an Honours Sociology program
The Department of Sociology guarantees that all Level III and IV Honours Sociology students will have access to either this course, SOCIOL 3P03 or 3PP3.

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 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 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
Crosslist: 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 Sociology 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 2C06
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; all Statistics courses except STATS 1A03, 1L03, 2D03, 3S03, 3U03, 4H03.

SOCIOL 3HH3 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.

SOCIOL 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
SOCIOL 3J03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 3K03 SPECIAL TOPICS IN SOCIOLOGICAL ANALYSIS II
Same as SOCIOL 3J03.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
SOCIOL 3K03 may be repeated, if on a different topic, to a total of six units.

SOCIOL 3KK3 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
Antirequisite: SOC SCI 2C03
Crosslist: POL SCI 3KK3
Priority will be given to students registered in a Political Science or Sociology program.
This course is administered by the Department of Political Science.

SOCIOL 3O03 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.

SOCIOL 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 SOCIOL 3PP3.
The Department of Sociology guarantees that all Level III and IV Honours Sociology students will have access to either this course, SOCIOL 3A03 or 3PP3.

SOCIOL 3PP3 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 SOCIOL 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.

SOCIOL 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.

SOCIOL 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
The Department of Sociology guarantees that all Level III and IV Honours Sociology students will have access to either this course, or 3O03.

SOCIOL 3X03 SOCIOLOGY OF AGING
This course deals with changing population structure, economic support of the aged, family of later life, the sociology of retirement, widowhood, death, bereavement, and institutionalization.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Not open to students registered in a Gerontology program as of September 1998.
Priority will be given to students registered in a Sociology program.

SOCIOL 3Z03 ETHNIC RELATIONS
An analysis of political, social and economic change in selected locales.
Three hours (lectures and discussion); one term
Prerequisite: SOCIOL 1A06
Priority will be given to students registered in a Sociology program.

SOCIOL 4A03 ETHNIC/RACIAL TENSIONS
The course will investigate the processes by which racial and/or ethnic tensions develop in various societies.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology

SOCIOL 4AA3 SELECTED TOPICS IN THE SOCIOLOGY OF THE FAMILY
An intensive examination of selected problems 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 SOCIOL 4GG3 if on a similar topic.
SOCIOL 4AA3 may be repeated, on a different topic, to a total of six units.

SOCIOL 4BB3 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.

SOCIOL 4E03 SELF AND IDENTITY
A consideration of theoretical and empirical questions relating to self and identity viewed from historical, cross-cultural and cross-disciplinary perspectives.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology

SOCIOL 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
SOCIOL 4EE3 may be repeated, if on a different topic, to a total of six units.

SOCIOL 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
SOCIOL 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: SOCIOL 2C06 and 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 4MM6 DIRECTED RESEARCH FOR HONOURS STUDENTS
Directed study of a research problem through published material 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 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 4PP3 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

SOCIOL 4W03 SOCIAL PROBLEMS
The focus of the course will be theories concerning social problems or an empirical examination of specific issues that have become the object of public debate and discussion.
Three hours (seminar); one term
Prerequisite: Registration in Level IV Honours Sociology

SOFTWARE ENGINEERING

(SEE COMPUTING AND SOFTWARE)

SPANISH

(SEE LINGUISTICS AND LANGUAGES, SPANISH)

STATISTICS

(SEE MATHEMATICS AND STATISTICS)

TECHNOLOGY

WEB ADDRESS: http://www.btech.mcmastermohawk.ca/

Communications Research Laboratory (CRL), Room 112B

Ext. 27056

Executive Director

Arthur C. Heidebrecht

Four Year Degree Programs

Associate Director

Ishwar Singh

Program Chair, Automotive and Vehicle Technology

Appointment Pending

Program Chair, Biotechnology

Appointment Pending

Program Chair, Process Automation Technology

Ishwar Singh

DEGREE COMPLETION PROGRAMS

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

AUTOMOTIVE AND VEHICLE TECHNOLOGY {031} ...

Courses

AUTOTECH 2AC3 ADVANCED CAD
Design cycle; graphics 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 (three 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 1CH3, 1PH3

AUTOTECH 2TS3 THERMAL SYSTEMS
Thermodynamic principles; heat engines; gas turbine cycles; air conditioning; conductive, convective and radiative heat transfer, heat transfer coefficients, heat exchangers, vehicle thermal management components and systems.
Three lectures, one lab (three hours); one term
Prerequisite: AUTOTECH 2AE3, ENG TECH 1CH3, 1PH3, 2MA3

AUTOTECH 3AE3 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 3AV3 ALTERNATE VEHICULAR POWER SYSTEMS
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 (three hours every other week); one term
Prerequisite: AUTOTECH 3AE3, 3CT3

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 III
Internal combustion engine maps; engine development process; engine configuration and balance; materials, design, manufacturing and assembling main engine components; bearings; lubrication; cooling; gaskets and seals; powertrain design, manufacture and assembly.
Three lectures, one lab (two hours every other week); one term
Prerequisite: AUTOTECH 3AE3, 3AV3

AUTOTECH 4AT3 AUTOMOTIVE ENGINEERING TECHNOLOGY IV
Automotive 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 4AE3, 4EC3, 4MS3

AUTOTECH 4CI3 COMPUTER INTEGRATED MANUFACTURING
Computer systems and CIM; NC programming; robotics; material handling, storage and identification; manufacturing planning and systems; flexible manufacturing systems; CAD/CAM, CIM and quality; emerging CIM technologies.
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 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 3CT3, 3MV3

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 {054} ...

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 1BI3, 1CH3

BIOTECH 2BT3 BIOTECHNOLOGY II
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 2CB3 CELL BIOLOGY
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: ENG TECH 1BI3, 1CH3

BIOTECH 2GT3 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 2MB3 MICROBIOLOGY
An introduction to microbiological analysis with emphasis on use of microscopic techniques, staining, cultivation and control of microbial growth, enumeration, identification, potable water analysis, with environmental and industrial applications.
Three lectures, one lab (three hours); 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 3BP3 BIOREACTOR PROCESSES
An overview of fermentation technology and bioprocessing, including the kinetics and thermodyamics 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 3EC3 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 process in foods and food borne illness.
Three lectures; one term
Prerequisite: BIOTECH 2BT3, 2CB3

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 transcriptions 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 3PM3 PHARMACOLOGY
Pharmacology topics include the nature of drugs, drug receptors, drug action, pharmacokinetics and pharmacodynamics. Topics on drug discovery include pre-clinical testing, clinical trials, manufacturing and patents.
Four lectures; one term
Prerequisite: BIOTECH 2BC3, ENG TECH 1BI3

BIOTECH 4BI3 BIOINFORMATICS
The course will familiarize students with the tools and principles of bioinformatics. A toolbox will be used to study access to genomic and proteomic data and data formats and analysis techniques.
Three lectures, one lab (three hours); one term
Prerequisite: BIOTECH 4GP3, ENG TECH 1CP3, 3ES3

BIOTECH 4BL3 BIOMATERIALS
Natural and synthetic biopolymers, and other materials for industrial and biomedical engineering applications: biocompatibility; industrial products to include biofilms, lubricants and adhesives; bioplastics, composites and applications.
Three lectures; one term
Prerequisite: BIOTECH 2BC3, 2BT3

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 4BS3 BIOETHICS, SAFETY AND REGULATIONS
This course will familiarize students with current methods of laboratory safety and good lab and manufacturing practices in biotechnology; bioethics issues, benefits and risks of biotechnology applications; provincial, federal and international guidelines/regulations.
Three lectures; one term
Prerequisite: BIOTECH 3BP3, 3MB3

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, analyses 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 utilized to produce 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

BIOTECH 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 tutorial, one lab (two hours); two terms
Prerequisite: BIOTECH 3BP3, 3FM3, 3FR3, 3PM3

CIVIL ENGINEERING INFRASTRUCTURE TECHNOLOGY {121} ...

Courses

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 of 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 3CS3 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

CIV TECH 3FM3 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.
Two lectures, one lab; one term
Prerequisite: ENG TECH 3MA3
Not open to graduates of Civil Engineering Technology diploma programs.

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
Not open to graduates of Civil Engineering Technology diploma programs.

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 3LU3 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
Antirequisite: ENG TECH 2MN3, 3MN3

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 4EI3 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: CIV 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 3FM3
Not open to graduates of Civil Engineering Technology diploma programs.

CIV TECH 4SD3 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

COMPUTING AND INFORMATION TECHNOLOGY {141} ...

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 4AP3 and either COMPTECH 4CC3 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 3ET3 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 and Information Technology

COMPTECH 3IA3 INTERNET APPLICATIONS
This course covers Internet applications, utilities and services. Topics include the Internet application architecture stack, related technologies and security.
One lecture (two hours), one lab; one term
Corequisite: COMPTECH 3NT3

COMPTECH 3IN3 INQUIRY I (INDIVIDUAL)
Inquiry-based course in which students investigate relevant IT problems, formulate precise problem statements and propose documented and justified solutions.
One lecture (three hours); one term
Prerequisite: Registration in Computing and Information Technology

COMPTECH 3IT3 NETWORKING I
Introductory and intermediate topics involving Layers 1-4 in the OSI model including Ethernet, IP addressing, subnetting, and routing, VLANs, Spanning-Tree Protocol and network device configuration.
One lecture (two hours), one lab; one term
Prerequisite: Registration in Computing and Information Technology

COMPTECH 3NT3 NETWORKING II
Introductory and intermediate topics in security including cryptography, firewalls, vulnerabilities, policies and best practices, disaster recovery, attack and defence strategies, IP ACLs and device configuration.
One lecture (two hours), one lab; one term
Prerequisite: COMPTECH 3IT3 and registration in Computing and Information Technology

COMPTECH 3PD3 PROGRAMMING DESIGN I
Using VB.NET and the C programming languages, this introduction to programming concepts course introduces topics including algorithms, control structures and functions.
One lecture (two hours), one lab; one term
Prerequisite: Registration in Computing and 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 3PD3

COMPTECH 3RQ3 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 and Information Technology

COMPTECH 4AP3 MICROCONTROLLER PROGRAMMING
Computer architecture and assembler language. Low-level representation of control and data structures. Hardware interfaces. Interfaces to high-level languages.
One lecture (two hours), one lab; one term
Prerequisite: COMPTECH 3PD3

COMPTECH 4CC3 DISTRIBUTED COMPUTING
The course objectives are to introduce techniques of distributed computing. Topics include design and implementation of MPI programming, performance measures, fault tolerance and flexibility.
One lecture (two hours), one lab; one term
Prerequisite: COMPTECH 3NT3

COMPTECH 4DM3 DATA MINING
Fundamental concepts of data mining: classification, association, prediction and clustering. Algorithms based on decision trees. Bayes' model. Instance-based learning and numeric classifiers.
One lecture (two hours), one lab; one term
Prerequisite: COMPTECH 3PD3

COMPTECH 4ES3 EMBEDDED PROGRAMMING
Real-time operating systems. Scheduling and concurrency. Sampling, digitization, conditioning and processing of signals. Control. Communications. Reliability and fault tolerance.
One lecture (two hours), one lab; one term
Prerequisite: COMPTECH 4AP3

COMPTECH 4FD3 FACILITIES DESIGN AND IMPLEMENTATION
Project-based course that incorporates the knowledge that students have gained in the areas of network infrastructure, systems design and security.
One lecture (three hours); one term
Prerequisite: COMPTECH 3RQ3

COMPTECH 4IN3 INQUIRY II (GROUP PROJECT)
Inquiry-based course in which a large facilities development project is used to put into practice the concepts and techniques developed in the program.
One lecture (three hours); one term
Prerequisite: Registration in Level IV of Computing and Information Technology

COMPTECH 4SD3 SYSTEM DESIGN
Life-cycle. Quality attributes. Decomposition and interface design. Specification. Design of modules. Design patterns. Design documentation. Implementation. Reviews and inspections. Testing.
One lecture (three hours); one term
Prerequisite: COMPTECH 3RQ3

COMPTECH 4TM3 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 3RQ3

COMPTECH 4TR3 TRAINING
Focusing on implementation of training in the workplace, topics in this interactive course include learning modalities, learning outcomes, training techniques and evaluation methods.
One lecture (three hours); one term
Prerequisite: Registration in Computing and Information Technology

ENERGY ENGINEERING TECHNOLOGIES {175} ...

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 3EP3, ENG TECH 3MA3 and registration in Energy Engineering Technologies

ENR TECH 3EP3 ELECTRICAL POWER GENERATION
Basic Power generation, power plants operation and their electrical components (transformers, motors, breakers, synchronous machines), components' equivalent circuits. Power Flow and Power World Simulator Software.
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 3IE3 INDUSTRIAL ELECTRONICS
Analysis and design of high power control circuits using power electronic devices (i.e. Triacs, SCRs, IGBTs, 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: ENR TECH 3EP3, ENG TECH 3MA3 and 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 and 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 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, 3MI3 and registration in Energy Engineering Technologies

ENR TECH 3PP3 POWER PLANTS MECHANICAL SYSTEMS
Power plant operation, turbine, diesel engine, pumps, heat exchanger. Heat and mass balance flow diagrams. Gt-pro Software, Thermodynamics cycles (Simple, Combine and Gate).
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 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, 3FM3 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 3MI3, 3PD3 and registration in Energy Engineering Technologies

ENR TECH 4PP3 POWER PROTECTION AND MAINTENANCE II
New generation of digital fault detection systems. Balanced faults, computer-based fault studies, symmetrical components and sequence networks, unbalanced short-circuit and open-circuit faults.
Three lectures; one term
Prerequisite: ENR TECH 4PM3 and registration in Energy Engineering Technologies

ENR TECH 4PQ3 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 (BIO-MASS, 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

ENGINEERING TECHNOLOGY {181} ...

Courses

ENG TECH 1A00 INTRODUCTION TO 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 re-register in the course, during the same academic year.
Web modules
Prerequisite: Registration in Technology I of a Four-Year Technology Program or Level I, II or III of a Degree Completion Technology Program. ENG TECH 1A00 must be completed in the first term of a program
Antirequisite: ENGINEER 1A00, NURSING 1A00, SCIENCE 1A00
This course must be completed before registering in any Level II Technology program.

ENG TECH 1AC3 ANALYTICAL CHEMISTRY
Introduction to laboratory procedures used in chemical analysis for classical wet and instrumental methods; statistical data treatment, gravimetric analysis, volumetric analysis, pH measurements and optical methods.
Three lectures, one lab (three hours); one term
Prerequisite: ENG TECH 1CH3 and registration in Biotechnology or Process Automation Technology

ENG TECH 1BI3 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 or Biotechnology

ENG TECH 1CH3 CHEMISTRY
Basic chemical concepts, calculations and laboratory procedures. Chemical formulae and equations, chemical stoichiometry, nomenclature, acids and bases, gases, chemical equilibrium, thermochemistry and thermodynamics, redox reactions and electrochemistry.
Three lectures, one tutorial, one lab (three hours every other week); one term
Prerequisite: Registration in Technology I

ENG TECH 1CP3 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
Antirequisite: ENG TECH 1PG3, 1SP3

ENG TECH 1EE0 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.
Four sessions; second term
Prerequisite: Registration in Technology I

ENG TECH 1EL3 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 and 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 or Automotive and Vehicle Technology

ENG TECH 1MT3 MATHEMATICS II
Introductory calculus; limits, derivatives, integrals and applications. Computer algebra software will be used throughout the course.
Four lectures; one term
Prerequisite: ENG TECH 1MC3

ENG TECH 1PH3 PHYSICS
Sound, light, kinematics, forces, work, energy, fluid and thermal physics.
Four lectures, one lab (two hours every other week); one term
Prerequisite: Registration in Technology I

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, Automotive and Vehicle Technology or Process Automation Technology

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 Manufacturing Engineering Technology
Antirequisite: ENG TECH 1CP3, 1PG3

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; and registration in Level II of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

ENG TECH 2MT3 MATHEMATICS IV
Infinite complex series; Taylor and Laurent series; calculus of residues; conformal mapping; calculus of complex variables; Laplace and Fourier transforms.
Four lectures; one term
Prerequisite: ENG TECH 2MA3; and registration in Level II of Automotive and Vehicle Technology or Process Automation Technology

ENG TECH 3CT3 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
Antirequisite: ENG TECH 2CT3

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 and Information Technology

ENG TECH 3ES3 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 Level II of Automotive and Vehicle Technology; or Level III of Biotechnology or Process Automation Technology
Antirequisite: ENG TECH 3ST3

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 Level III of 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, Energy Engineering Technologies 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, Castagliano'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, 2MA3; and registration in Level II of Automotive and Vehicle Technology or Level III or above of 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

ENG 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: Registration in Computing and Information Technology
Antirequisite: ENG TECH 3ES3

GENERAL TECHNOLOGY {236} ...

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
   ENGSOCTY 3Y03 The Culture of Technology
2. With the approval of the Associate Director the following courses may be substituted for GEN TECH 2TE3:
   COMMERCE 2SB3 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 3BB3 Technology and Society II
   ENGSOCTY 4Z03 The Social Control of Technology

Courses

GEN TECH 1CS3 COMMUNICATION SKILLS
The purpose of this course is to provide students with the foundations of sound technical communication skills with emphasis is on applying principles of style, structure and strategy to a variety of documents.
Three lectures; one term
Prerequisite: Registration in Technology I

GEN TECH 1DM3 CREATIVE AND ANALYTICAL THINKING
This course provides students with the opportunity to study and apply various problem resolution paradigms to open their minds in the solution of real world problems using left and right brain thinking techniques.
Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 4DM3

GEN TECH 1EE3 ENGINEERING ECONOMICS
Costing methods for engineering designs and processes; minimum attractive rate of return, return sensitivities, time value of money, internal rates of return, payback period, amortization of equipment and capital cost allowance structures.
Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 4EE3

GEN TECH 1FS3 FINANCIAL SYSTEMS FOR TECHNOLOGY ORGANIZATIONS
Introduction to the use of accounting data in the management of technical units and projects.
Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 1FT3

GEN TECH 1FT3 FINANCIAL SYSTEMS FOR TECHNOLOGY ORGANIZATIONS
Introduction to the use of accounting data in the management of technical units and projects.
Three lectures; one term
Prerequisite: Registration in Technology I
Antirequisite: GEN TECH 1FS3

GEN TECH 1HB3 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 Technology I
Antirequisite: GEN TECH 1OB3

GEN TECH 1HR3 HUMAN RESOURCES IN A TECHNOLOGY SETTING
Best practices in managing technical human resources and others who work in technical organizations.
Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 4HR3

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 Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 1HB3

GEN TECH 1TI3 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 Technology I

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 Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 2ET3

GEN TECH 2ET3 TECHNOLOGICAL ENTREPRENEURSHIP
The processes for bringing new technologies to market through business formulation and entrepreneurship.
Three lectures; one term
Prerequisite: Registration in Level II of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 2EN3

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 of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

GEN TECH 2TE3 TECHNOLOGY AND ETHICS
In this course the students will examine issues and choices 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 of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

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 III of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

GEN TECH 2TM3 TECHNOLOGY AND MANAGEMENT
In this course the students will critically examine the technology diffusion/adoption process and implementation strategies in different organizations.
Three lectures; one term
Prerequisite: Registration in Level III of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

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 applications in various societies.
Three lectures; one term
Prerequisite: Registration in Level III or above of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

GEN TECH 3FT3 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, 2EN3 and registration in Level III or above of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 3SF3

GEN TECH 3MT3 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 of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 3PM3

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 Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 3MT3

GEN TECH 3SF3 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, 2EN3, and registration in Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 3FT3

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 IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

GEN TECH 4DM3 ANALYTICAL THINKING AND PROBLEM SOLVING METHODOLOGIES
This course provides a foundation in analytical thinking concepts and tools for solving practical problems. It will cover methodologies that focus on processes that drive efficiently to technical solutions in a business or technical setting.
Three lectures; one term
Prerequisite: Registration in Level IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 1DM3

GEN TECH 4EE3 ENGINEERING ECONOMICS
Costing methods of engineering designs and processes; minimum attractive rate of return, return sensitivities, time value of money, internal rates of return, payback period, amortization of equipment and capital cost allowance structures.
Three lectures; one term
Prerequisite: Registration in Level IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 1EE3

GEN TECH 4HR3 HUMAN RESOURCES IN A TECHNOLOGY SETTING
Best practices in managing technical human resources and others who work in technical organizations.
Three lectures; one term
Prerequisite: Registration in Level IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 1HR3

GEN TECH 4IS3 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 IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 2IS3

GEN TECH 4LM3 LEAN THINKING
Students will learn about and apply classical lean techniques well beyond the shop floor. Lean methods will enable students to deploy and adapt tools aimed at minimizing waste, removing non-value added activities, and pursuing incremental improvements across organizations.
Three lectures; one term
Prerequisite: Registration in Level IV of Manufacturing Engineering Technology
Antirequisite: GEN TECH 4LT3

GEN TECH 4LT3 LEAN THINKING
Students will learn about and apply classical lean techniques well beyond the shop floor. Lean methods will enable students to deploy and adapt tools aimed at minimizing waste, removing non-value added activities, and pursuing incremental improvements across organizations.
Three lectures; one term
Prerequisite: Registration in Level IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 4LM3

GEN TECH 4SC3 SUPPLY CHAIN MANAGEMENT AND RESOURCE PLANNING
This course addresses Supply chain management concepts and models. Topics include Enterprise Resource Planning (ERP), Manufacturing Execution Systems (MES), integration of plant floor data with the planning systems, plant modelling and simulation and theory of contraints.
Three lectures; one term
Prerequisite: GEN TECH 4SS3, PROC TECH 4IC3, 4IT3; and registration in Level IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

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 III or above of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology

GEN TECH 4ST3 SPECIAL TOPICS
Students are offered a selection of three to four emerging issues of the day as those issues relate to current and emerging technology and management technology practices. These topics could include supply chain management, ERP, knowledge management, 6 sigma methods, etc.
Three lectures; one term
Prerequisite: Registration in Civil Engineering Infrastructure Technology, Computing and Information Technology, Energy Engineering Technologies or Manufacturing Engineering Technology
Antirequisite: GEN TECH 4SZ3

GEN TECH 4SZ3 SPECIAL TOPICS
Students are offered a selection of three to four emerging issues of the day as those issues relate to current and emerging technology and management technology practices. These topics could include supply chain management, ERP, knowledge management, 6 sigma methods, etc.
Three lectures; one term
Prerequisite: Registration in Level IV of Automotive and Vehicle Technology, Biotechnology or Process Automation Technology
Antirequisite: GEN TECH 4ST3

MANUFACTURING TECHNOLOGY {317} ...

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
Antirequisite: MAN TECH 1CD3, 3CD3

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
Antirequisite: MAN TECH 2MD3

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
Antirequisite: MAN TECH 1TF3

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 and registration in Manufacturing Engineering Technology
Antirequisite: MAN TECH 1ID3, 4ID3

MAN TECH 4FB3 FABRICATION TECHNOLOGY
Welding: arc welding methods; laser beam welding and electron beam welding. Casting: pattern and mould design, die, centrifugal casting, defects. Heat treatment; steel ingots, continuous casting, wrought structure, furnaces.
Two lectures, one lab; one term
Prerequisite: Registration in Manufacturing Engineering Technology
Antirequisite: MAN TECH 3FB3

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
Antirequisite: MAN TECH 3FM3

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
Antirequisite: MAN TECH 3FT3

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
Antirequisite: MAN TECH 3MT3

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
Antirequisite: MAN TECH 2MT3

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: Registration in Manufacturing Engineering Technology or Energy Engineering Technologies
Antirequisite: MAN TECH 3ST3

MAN TECH 4TF3 THERMO FLUIDS II
Fluid statics; pressure, manometry, hydrostatic forces, forces on submerged and floating bodies; kinematics of flow, control volume approach; continuity, momentum, energy and Bernoulli's equations; dimensional analysis and similarity; flow in closed conduits.
Three lectures, one lab; one term
Prerequisite: MAN TECH 3TF3 and registration in Manufacturing Engineering Technology
Antirequisite: MAN TECH 2TF3

PROCESS AUTOMATION TECHNOLOGY {459} ...

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 1CH3, 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 (P and ID) will be interpreted.
Two lectures, one tutorial, one lab (two and one half hours); one term
Prerequisite: ENG TECH 1MT3, PROCTECH 2CE3

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 tutorial, 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 and registration in Level II of Process Automation Technology

PROCTECH 3CE3 CHEMICAL ENGINEERING III
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 and registration in Level III or above of Process Automation Technology

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 and registration in Level III of Process Automation Technology

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 and registration in Level III or above of Process Automation Technology

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 and registration in Level III of Process Automation Technology

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 and registration in Level III of Process Automation Technology

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 2CE3, 3CT3, 3SC3 and registration in Level III or above of Process Automation Technology

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 and registration in Level IV of Process Automation Technology

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 and registration in Level III or above of Process Automation Technology

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 and registration in Level III or above of Process Automation Technology

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 and registration in Level III or above of Process Automation Technology

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 and registration in Level IV of Process Automation Technology

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 and registration in Level III or above of Process Automation Technology

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 and registration in Level IV of Process Automation Technology

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 and registration in Level III or above of Process Automation Technology

THEATRE & FILM {551}

WEB ADDRESS: http://www.humanities.mcmaster.ca/~sota/index.html

Togo Salmon Hall, Room 414

Ext. 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.
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 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.

COMP LIT 3G03	European Drama
ENGLISH 2B06	The Development of English Drama
ENGLISH 2L03	Shakespeare: Selected Plays
ENGLISH 3DD3	Contemporary Canadian Drama
ENGLISH 3GG3	European Drama
ENGLISH 3K06	Shakespeare
FRENCH 3BB3	Contemporary Quebec Theatre
FRENCH 3Q03	Seventeenth-Century French Literature I
KINESIOL 3SS3	Body, Mind, Spirit
KINESIOL 3T03	Dance Performance
RELIG ST 2YY3	The Bible and Film

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 and performance techniques 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
Crosslist: CMST 2P03, COMP LIT 2D03

THTR&FLM 2E03 NEW MEDIA AND PERFORMANCE
An exploration of the interrelationship of performance and new media that examines how creation, reception and interpretation of performance are shaped by new media developments.
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
Crosslist: 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
Antirequisite: CMST 2X03
Crosslist: ART HIST 2G03

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
Antirequisite: CMST 2Y03
Crosslist: CLASSICS 2E03
This course is administered by the Department of Classics.

THTR&FLM 2I03 ITALY THROUGH THE CAMERA LENS (TAUGHT IN ENGLISH)
The most powerful images from nine films (English subtitles) by famous Italian directors tell the tale of critical moments in contemporary Italy starting from the fatal year of 1943. Taught in English.
Three hours; one term
Prerequisite: Registration in Level II or above
Crosslist: ITALIAN 2B03
This course is administered by the Department of Linguistics and Languages.

THTR&FLM 2P03 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
Antirequisite: SOTA 2G03
Crosslist: CMST 2G03
This course is administered by the Department of Communication Studies and Multimedia.

THTR&FLM 2S03 SPLIT SCREEN MODERN GERMANY THROUGH CINEMA
This course looks at contemporary German culture and national identity through the most representative West and East German films of the past decades.
Two hours plus one film screening per week; one term
Prerequisite: Registration in Level II or above
Antirequisite: COMP LIT 4J03, GERMAN 4J03, THTR&FLM 4J03
Crosslist: COMP LIT 2S03, GERMAN 2S03
Offered on an irregular rotation basis.
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
Crosslist: 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 exercises. 60 practicum hours including evenings and weekends)
Prerequisite: Registration in Level III or above of a program in Theatre & Film Studies. Not to be taken concurrently with THTR&FLM 4A06.
Antirequisite: THTR&FLM 3C03

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
Crosslist: COMP LIT 3C03
Offered in alternate years.

THTR&FLM 3F03 DEVELOPMENT OF CANADIAN THEATRE
A study of the development of theatrical performance in English Canadian, Québécois, 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, 3AA3, CMST 2G03, 2P03, 2S03, THTR&FLM 2C03, 2D03, 2E03
Crosslist: ART HIST 3L03, CMST 3L03
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

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
Antirequisite: CMST 3XX3
Crosslist: ART HIST 3XX3

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
Crosslist: 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
Crosslist: 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, et cetera.
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, 2I03, THTR&FLM 1B03 or WOMEN ST 1A03, 1AA3 (or 1A06)
Crosslist: CMST 3BB3, WOMEN ST 3BB3
This course is administered by Women's Studies.

THTR&FLM 3QQ3 TOPICS IN NATIONAL CINEMAS
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: THTR&FLM 1B03; and THTR&FLM 2E03 or 2F03
Antirequisite: CMST 3TT3
Crosslist: COMP LIT 3VV3

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.
Crosslist: 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 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 3B03
Departmental permission is required.
Offered on an irregular rotation basis with THTR&FLM 3XX3.

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 & 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 required.
Offered on an irregular rotation basis with THTR&FLM 3X03.

THTR&FLM 3ZZ3 WESTERN CLASSICAL PERFORMANCE IN ACTION
An exploration in action of classical practices of dramatic representation and the forms of knowledge building they promote.
Two studio; 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.

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, 2BB3, 3A03 or 3B03, 3CC3, 3YY3, 3X03, 3XX3, 3ZZ3; 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.

THTR&FLM 4D03 STUDIES IN THEATRE AND FILM
This senior seminar 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.

THTR&FLM 4E03 STUDIES IN FILM
Senior seminar: An examination of selected films.
Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours program in Theatre & Film Studies; or registration in Level IV of an Honours program in Communication Studies. THTR&FLM 2F03 is recommended.
Crosslist: 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.

THTR&FLM 4F03 INDEPENDENT STUDY IN THEATRE & FILM STUDIES II
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

WOMEN'S STUDIES {642}

WEB ADDRESS: http://www.mcmaster.ca/womensst
Office of Interdisciplinary Studies
Togo Salmon Hall, Room 726
Ext. 23112

The Honours B.A. Women's Studies and Another Subject Program is taught by an interdisciplinary Committee of Instruction.

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, 2009

Chair

Appointment Pending
David Clark *(English and Cultural Studies)*
Daniel Coleman *(English and Cultural Studies)*
Cathy Grisé *(English and Cultural Studies)*
Maroussia Hajdukowski-Ahmed *(French)*
Christina Baade *(Communication Studies and Multimedia)*
Karen Balcom *(History)*
Diane Enns *(Philosophy; Women's Studies)*
Ruth Frager *(History)*
Melinda Gough *(English and Cultural Studies; Women's Studies)*
Janice Hladki *(School of the Arts)*
Susan Searls 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 or 1AA3; or PEACE ST 1A03, 1B03; or registration in any Labour Studies program
Crosslist: LABR ST 2W03, PEACE ST 2B03
This course is administered by Peace Studies.

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 or 1AA3

WOMEN 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
Crosslist: RELIG ST 2B03
This course is administered by the Department of Religious Studies.

WOMEN ST 2BB3 IMAGES OF THE DIVINE FEMININE
An examination of goddesses and female religious symbols in a variety of cultures: tribal, eastern and western.
Two lectures, one tutorial; one term
Crosslist: RELIG ST 2BB3
This course is administered by the Department of Religious Studies.

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
Crosslist: HEALTHST 2H03, HTH SCI 2I03

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: SOCIOL 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
Crosslist: 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; two terms
Prerequisite: WOMEN ST 1A03, 1AA3; or permission of the Director of Women's Studies.
Crosslist: 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.
Crosslist: 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 STUDIES IN 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, et cetera.
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, 2I03, THTR&FLM 1B03 or both WOMEN ST 1A03 and 1AA3
Crosslist: CMST 3BB3, THTR&FLM 3P03
Not open to students with credit or registration in WOMEN ST 3B03, 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; one term
Prerequisite: Registration in Level II or above. WOMEN ST 1A03, 1AA3 are recommended.
Antirequisite: CMST 3WW3

WOMEN 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
Crosslist: RELIG ST 3FF3
This course is administered by the Department of Religious Studies.

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
Antirequisite: WOMEN ST 3X03
Crosslist: HISTORY 3W03
This course is administered by the Department of History.

WOMEN ST 3GG3 HISTORY OF 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
Antirequisite: WOMEN ST 3X03
Crosslist: HISTORY 3WW3
This course is administered by the Department of History.

WOMEN ST 3H03 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
Crosslist: COMP LIT 3RR3, CSCT 3A03, ENGLISH 3A03, PEACE ST 3A03
This course is administered by the Department of English and Cultural Studies.

WOMEN ST 3HH3 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
Crosslist: COMP LIT 3AA3, CSCT 3AA3, ENGLISH 3AA3
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.
Crosslist: PHILOS 3I03
Offered in alternate years.
This course is administered by the Department of Philosophy.

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
Crosslist: PEACE ST 3Z03
This course is administered by 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

WOMEN ST 4C03 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

WOMEN ST 4D03 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

WOMEN ST 4J03 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
Crosslist: CSCT 4J03, ENGLISH 4J03
Departmental permission required.

WOMEN ST 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 the Combined Honours in Womens Studies program
Crosslist: CSCT 4WA3 , ENGLISH 4WA3
Departmental permission required.
This course is administered by the Department of English and Cultural Studies.

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. Womens Studies program students should consult the Director or undergraduate counsellor in Womens Studies if they intend to take the courses on this list for credit towards a program in Womens Studies.

COMP LIT 4E03	Topics in Comparative Literature (when the topic is *Twentieth-Century Women Writers*)
HISTORY 4I06	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

ACADEMIC FACILITIES

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./Director

Associate University Librarian (Organizational Analysis, Planning and Accountability)

Vivian Lewis, B.A., M.A., M.L.S.

Associate University Librarian (Collections and Facilities)

Anne Pottier, B.A., M.L.S.

Associate University Librarian (Library and Learning Technologies)

Paul Otto, B.A., B.Ed., M.L.S.

Director, Assessment and Accountability

Kathryn Ball, B.A., M.L.S./Director

Director, 21st Century Fluencies

Jeannie An, B.A., M.L.S./Business/Director

Director, Learning Support Services

Joan Sweeney-Marsh, M.L.S.

Director, Research Collections

Carl Spadoni, Ph.D. M.L.S.

Administrative Services

Mary Ruth Linkert/Administrator

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 2008 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, Marian 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)

John Kearney, B.Com., M.B.A., M.Eng.

Director, Service Development and Delivery

Heather Grigg

Director, Project Management

Appointment Pending

Associate Director, Enterprise Networks

Robin Griffin, B.Sc., Ph.D.

Associate Director, Enterprise Systems

Brian McEntegart, B.Sc.

There are currently ten UTS Student Technology Centres on campus:

- Burke Science Building (BSB) - Rooms 241, 242, 244, 248 - 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 timetables, 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 MUSS (McMaster Undergraduate Student Server) for undergraduate students https://muss.cis.mcmaster.ca. Graduate students and McMaster staff have e-mail accounts on UNIVMAIL. UNIVMAIL accounts can be accessed on line at https://univmail.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/wwwpol.htm.

VPN (Virtual Private Network) Access

McMaster University students use a VPN connection to connect to school resources from 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 on campus wireless access, 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 (2-HELP)*** *or visit them in building* ***Burke Science Building, Room 245.***

CENTRE FOR LEADERSHIP IN LEARNING

➢ T-13, Room 124, ext. 24540

Web Address

http://www.mcmaster.ca/cll

Email Address

horvathe@mcmaster.ca

Educational Consultant

Paola Borin, B.A., B.Ed., M.Ed.

Graduate Student Network Coordinator

Appointment Pending

Administrative Assistant

Elvia Horvath

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:

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 Blackboard).

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 a credit course 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 TA'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 one particular 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 7,500 books, articles and journals on university teaching and learning. It is an excellent way to find ideas for improving and promoting active learning. You can visit the CLL library in the office (T-13, Room 124) between the hours of 8:30 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 about 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

moorcr@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 B111, 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 files 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. The Department of Health, Aging and Society offers an M.A. in Health and Aging. (Further information can be obtained by contacting Gavin Andrews 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-Spring Workshop, and Montessori-Based Dementia Program 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
Paul Leegsma

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

Communications Officer

R.A. Prevec, B.A.
Email: prevecr@mcmaster.ca

Administrative Secretary

Jude Levett
Email: levettje@mcmaster.ca

Collections Administrator

Julie Bronson, B.A.
Email: jbrons@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 Education 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.

STUDENT SERVICES

Student Affairs Web Address

http://studentaffairs.mcmaster.ca

ASSOCIATE VICE-PRESIDENT (STUDENT AFFAIRS) AND DEAN OF STUDENTS

➢ Gilmour Hall, Room 207, ext. 27455

Philip E. Wood, B.A.Sc., Ph.D., F.C.I.C., P. Eng.

The Associate Vice-President (Student Affairs) and Dean of Students leads a variety of specialized student services and is available to meet with students and representatives of student organizations with problems, concerns, questions or suggestions on any matter relating to student life and student services on campus.

CENTRE FOR STUDENT DEVELOPMENT

➢ McMaster University Student Centre, Room B107, ext. 24711

Web Address

http://csd.mcmaster.ca/

Director

Desmond Pouyat

The Centre for Student Development is a resource for all McMaster students. It offers services in five main areas: personal counselling, academic skills (including writing skills), services for students with disabilities (including ATLAS, a program for students with Learning Disabilities), Leadership Training and International Student Services (including English as a Second Language and a Work and Study Abroad program). **All** contact with CSD is confidential. For a complete staff listing, visit http://csd.mcmaster.ca/staff.htm.

Personal Counselling

Students are encouraged to seek assistance from the Centre if they experience any type of personal, emotional, social or mental health concerns. Workshops, groups, and other sessions are also offered periodically throughout the year. For more information visit http://csd.mcmaster.ca/personal.

McMaster Student Activity Record (MacStAR)

Web Address

http://macstar.mcmaster.ca

MacStAR is an official record of your involvement in the McMaster community through service learning, citizenship and leadership development. Manage your record during your time at McMaster and then request an official print version that you can use as testimony for your learning that took place outside the classroom.

Academic Skills and English as a Second Language (ESL) Support

The Centre offers workshops, small group seminars and individual counselling on a wide range of academic skills matters. English as a second language support is available through evening classes, the Speakeasy program (one-on-one assistance from a peer), and the conversation circle (group-based discussion). Please visit our website for availability.

Academic Skills Online is available, which offers academic skills content and online videos 24 hours a day.

Academic Skills services include:

- Advanced learning strategies (e.g. note taking, lecture and reading)
- Time management, personal organization and study habits
- Motivation, procrastination, stress and energy management
- Exam taking skills (e.g. multiple choice, exam preparation)
- Academic writing skills development

For more information and to see what workshops are currently available, please visit http://csd.mcmaster.ca/academic.

Services for Students with Disabilities

The Centre for Student Development can provide advice to current and potential students and applicants with disabilities. Once admitted to the University, students with disabilities are encouraged to contact the Centre at an early date (two or three months prior to registration) to ensure sufficient time to make arrangements regarding their needs. Even if accommodation or assistance is not immediately required, students are encouraged to maintain contact with the Centre in case a need for assistance should arise at a later date.

The Centre assists students with issues concerning the accessibility of campus facilities, the provision of special equipment and alternative media formats 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 low vision or blindness, 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. For more information, drop by our lab in Commons Building Room B104, call (905) 525-9140, ext. 24354, or visit http://csd.mcmaster.ca/atlas.

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 team player and 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 an undergraduate 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,
- preliminary information concerning immigration matters,
- an exchange and student mobility program, where students can apply to work, study, volunteer, intern, or teach abroad,
- liaison with sponsoring agencies, foreign governments, consulates and embassies, and
- general advising and counselling regarding personal, financial and academic problems.

ISS is also the Plan Administrator for the University Health Insurance Plan (UHIP) which is mandatory for all international students.

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. Speakeasy/conversation Circle
2. Note taking Program (volunteer or one-on-one)
3. Volunteer (Students with Disabilities)
4. Peer Helper Program

THE OFFICE OF ACADEMIC INTEGRITY

➢ McMaster University Student Centre, Room 211, ext. 24303

Web Address

http://www.mcmaster.ca/academicintegrity

Email Address

thyreta@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.

THE OFFICE OF HUMAN RIGHTS AND EQUITY SERVICES (HRES)

➢ McMaster University Student Centre, Room 212, ext. 23641

Web Address

http://www.mcmaster.ca/hres

Email Address

hres@mcmaster.ca

Director

Milé Komlen
ext. 23641
Email: komlenm@mcmaster.ca

Human Rights Officer

Denise Maraj
ext. 24067
Email: dmaraj@mcmaster.ca

Program Coordinator

Vilma Rossi
ext. 24235
Email: rossiv@mcmaster.ca

Administrative Assistant

Elaine Hay
ext. 27581
Email: hayelain@mcmaster.ca

HRES is responsible for human rights issues on campus and administers the Sexual Harassment and Anti-Discrimination policies for McMaster University . The goal of the office is to ensure that students, staff and faculty can live, learn and work in an environment free from all forms of harassment and discrimination. HRES takes two avenues of approach to accomplishing this goal: education/training and resolution of complaints.

The services offered by HRES are available to the entire McMaster community. Our staff are available to listen to questions or concerns regarding situations that may involve harassment, discrimination or other human rights issues. We provide advice, explain strategies for dealing with discrimination or harassment and identify options for how to approach such situations, either through informal mediation or the lodging of a complaint under university policies. Except in rare circumstances where the situation involves immediate danger to a member of the community, HRES services are completely confidential and advice is offered without obligation to the person contacting the office.

In addition to services related to specific situations, HRES is also responsible for developing and implementing training workshops and educational programs dealing with human rights, anti-discrimination and anti-harassment topics. In meeting this mandate, we offer regular awareness-raising programs and situation-specific workshops as well.

The HRES office is located on the second floor of the Student Centre and is completely wheelchair accessible. The office's fax number is (905) 522-7102. Our office hours are 8:30 a.m. to 4:30 p.m., or after hours by appointment.

ATHLETICS AND RECREATION

Web Address

http://www.athrec.mcmaster.ca

Email Address

iwynne@mcmaster.ca (Customer Service)

Director of Athletics and Recreation

Appointement Pending

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 (17,000 square feet), a cycling studio, fitness studio, two multipurpose studios, new locker rooms, two additional gymnasiums (seven gymnasiums 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 events are 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 Copicards 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

Director of Student Services

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 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. Two specialists in sports medicine are available for physical injuries. Our health centre provides on-site access to complementary health 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/tobacco 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. Vegetarian choices, international food menus, healthy options, as well as quick snacks and made to order entrées are offered. The goal is to make the university dining experience exciting and fun, while providing high quality food services, variety and good value.

All students living in residence 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 2008-2009, the off-campus vendors included Boston Pizza, Basilique, East Side Mario', Gino' Pizza, Kelsey', Mahal, Pita Pit, Pizza Pizza and Quarters Pub.

Off-campus 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:

- **Bymac** is the newest facility on campus located in the David Braley Athletic Centre and features the latest in dining trends which include a Pizza Pizza, Tim Hortons and Freshëns'innovative new juice concepts.
- **Bridges Café** was developed from a student-based initiative and is located in the renovated Refectory basement. It provides an exciting vegetarian concept cafeteria, catering to the ideological and religious dietary needs of students, staff and faculty on campus.
- **Café One** in the Michael G. Degroote Centre for Learning and Discovery provides Tim Hortons coffee and a variety of ready made items.
- **CaFFeINe- the elements** is a new and exciting location in the Burke Science Building that offers students and faculty snacks and drinks, as well as a comfortable lounge.
- **IAHS Café** is located in the Institute for Applied Health Science and features Piller' Deli, Pizza Pizza, Tim Hortons, a wrap station and more.
- **Commons Marketplace** provides students with a varied dining experience and is home to Your Healthy Choice, Pacific Rim, Chef' Table, Piller' Deli and Pizza Pizza.
- **East Meets West Bistro** 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 stir 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 "arché Style"marketplace is located in the McMaster University Student Centre and features Pizza Pizza, Tim Hortons, Piller' Deli and Creation X International Grill. You will also find Made in Japan, Tim Hortons and Williams Coffee Pub kiosks located in the Centre.
- **MAC express** locations are conveniently found in the John Hodgins Engineering Building and Chester New Hall. They offer snack and drink items that are convenient.
- **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 coffees from regular coffee to a gourmet cappuccino with a variety of ready made items.
- **Tech Wave Café,** located in the Information Technology Building, features Starbucks coffee in addition to a variety of delectable desserts.
- **The Reactor Café** is a new location in the Thode Engineering Library providing students with a quick and appetizing snack and drink while they study in the library.
- **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 and Health Science Centre provides gourmet coffees and specialty beverages, which are perfectly complemented by pastries, desserts and sandwiches to suit everyone' 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

Web Address

http://housing.mcmaster.ca

Email Address

housing@mcmaster.ca

Director, Housing and Conference Services

Catherine Miller

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 spot 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/American Express) 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: resadm@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" residence 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;
- overseeing the operation of the building safety and security systems.

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://macoffcampus.ca

Email Address

macoffcampus@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-laws 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 carpools 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 transit 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 (Student Walk Home Attendant Team) is a student program offering escorted walks home from campus. The University also 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 at McMaster.

PARKING SERVICES

➢ E.T. Clarke Centre, ext. 24232

Web Address

http://parking.mcmaster.ca

Travel to and from the University on foot, by public transportation and in car pools is encouraged.

Students wishing to park a motor vehicle or motorcycle on campus are required to complete and submit a parking application. Renewal Applications (if you previously held a transponder) for the 2009-2010 academic year will be accepted between June 1, 2009 and July 31, 2009. If you are new to campus and require parking for the 2009-2010 academic year, applications will be accepted between July 1, 2009 and July 31, 2009.

Notice to all Applicants: Applications will not be accepted after July 31, 2009. A resume date for accepting applications will begin on September 14, 2009. All renewal and new parking requests will be required to complete a parking application. An application can be retrieved from our website at 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.

Undergraduate students not in residence may apply for available spaces in Lot M or Stadium Underground. 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 counselling 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 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 6.5 million dollars and extensive operations spanning over 35 unique departments. More than 20,000 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 (Shortstop), 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 (EFRT), a radio station (93.3 CFMU FM), a newspaper (The Silhouette), a Student Walk Home Attendant Team (SWHAT), a Student Health Education Centre (SHEC), the Maroons, a foodbank, and more than 250 clubs, including academic, recreational, religious, cultural and social issues.

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 of the MSU 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, call (905) 525-9140, ext. 22003 or visit www.msu.mcmaster.ca.

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

University Ombuds

Shelley Lancaster
Carolyn Brendon

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

Terri Jones

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, undergraduate degree students who are enrolled in 17 units or less (in any academic session), and Clinical Behavioural Studies students. 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 student staff members who implement the advocacy and service agenda approved by the board.

MAPS provide 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. 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, 2006 and 2008, MAPS made contributions totalling over $1 million ($550,000 of which was matched by the provincial government) to bursary endowments at McMaster. 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

➢ Alumni House, 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 135,000 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.

Alumni are invited to participate in a variety of over 200 events and programs each year designed to keep alumni connected to McMaster and each other, both in the greater Hamilton area, and literally around the world. Alumni events held in larger geographic centres where there is a concentration of alumni residing include, but are not limited to, Vancouver, Ottawa, Toronto, Chicago and Hong Kong. Within the Hamilton area, new graduates can take advantage of a program of networking and social events as well as informative seminars to help them in the transition to life after their studies. The Albert Lager Lecture series facilitates life-long learning with fascinating lectures on a vast array of topics. A Family Event Series encourages grads to share their McMaster experiences with their families, and the Women's Series brings in speakers to address issues and topics of particular interest to alumnae. Our traditional reunion weekend, Alumni Weekend, held in June each year, along with Homecoming activities each Fall, are always highlights of the alumni calendar where we welcome hundreds of alumni back to Mac. These along with many more programs, provide opportunities for all alumni to find a way to connect with McMaster.

The Association also gives its members the chance to obtain unique or discounted products or services through its Services and Benefits portfolio. Alumni can experience fantastic trips, obtain unique McMaster merchandise, use their McMaster MasterCard to help benefit the Association, receive high-quality home, auto, life, dental and extended health insurance at group rates, or investigate the other services offered through the MAA.

The McMaster Alumni Association also acts as an advocate, with representatives on the University Senate and Board of Governors. These representatives, along with other elected alumni, compose the MAA Board of Directors, and along with hundreds of other alumni volunteers, provide alumni programming in conjunction with the Office of Alumni Advancement. Both the Office and the Association can be contacted in Alumni House, or by phone at (905) 525-9140 ext 23900, 1-888-217-6003 (Toll free), by email at alumni@mcmaster.ca or by fax at (905) 524-1733.

STUDENT FINANCIAL AID

WEB ADDRESS: http://sfas.mcmaster.ca/

EMAIL ADDRESS: osap@mcmaster.ca

Associate Director, Student Financial Aid

Tracie Long

For information on any of the programs which follow, please contact:
Office of Student Financial Aid & Scholarships
Gilmour Hall, Room 120
McMaster University
Hamilton, Ontario, L8S 4L8
Telephone: (905) 525-9140, ext. 24319

For information regarding awards please see *Undergraduate Academic Awards*.

ONTARIO STUDENT ASSISTANCE PROGRAM

Financial aid to help students meet the costs of their post-secondary education is available from the federal and provincial governments through the Ontario Student Assistance Program (OSAP). The various components of OSAP are:

- Canada-Ontario Integrated Student Loans
- Canada Student Grants
- Ontario Access Grants
- Ontario Special Bursary Plan
- Ontario Work-Study
- Child Care Bursary
- Bursaries for Students with Disabilities/Canada Student Grant (for exceptional education-related costs)
- Queen Elizabeth II (Aiming for the Top) Scholarship
- Millennium Bursary (Transition Grant)
- Part-time Canada Student Loans/Canada Student Grants for High-Need Part-time Students

To be eligible to be considered for assistance under these OSAP programs, a student must be a Canadian citizen, permanent resident of Canada or a protected person; must meet Ontario residency requirements and must meet the specific deadlines and 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 20-39% 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, local transportation, child care and incidentals. Students have the option to wait six months after leaving their studies to begin repaying their loans and accumulated interest.

Canada Student Grants are available to high need part-time students. Students submitting part-time loan applications will be assessed for grant eligibility.

Ontario Access Grants

The Government of Ontario offers grant assistance to students from low-income families and to students who are former or current crown wards. The Ontario Access Grant covers tuition 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 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 Student Grant (For Exceptional Education-Related Costs)

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 Student Grants

Canada Student 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 Student Grants include support for the following:

- low to middle income students
- students with dependants
- high-need part-time students
- students with permanent disabilities

All Canada Student 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 2008/2009 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 2009/2010 academic year; and
- meet all other application requirements/deadlines.

Millennium Bursary (Transition Grant)

The Canada Millennium Scholarship Foundation Bursary ended in 2008/2009. The Government of Canada has introduced a transition grant to ensure no CMSF recipient will be disadvantaged as a result of the implementation of the new Canada Student Grant. The Millennium Bursary (Transition Grant) 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 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 1996 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 may be 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 WYNNE MEMORIAL LOAN FUND
Established in 1971 in memory of Ivor Wynne, 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.

Legend

AS	Arts & Science Program	**EX**	Exchange
		HS	Health Sciences
AT	Athletic	**H**	Humanities
B	Business	**R**	Regional
CS	Community Service	**S**	Science
D	Disabilities	**SS**	Social Sciences
E	Engineering	**T**	Travel

U University-wide

THE 4 WINDS BURSARIES (U)
Established in 1997 by John F. Evans, Q.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 to be granted to 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 1996 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 2004 by Rose (née D'Alessio) Allison, B. Eng. (Class of '81) and Paul Allison, B. Eng. Mgt. (Class of '80) and M.B.A. (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 Theodore Arcand (Class of '57), in memory of his 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 in 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. (90500)

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 Axelson, 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 BABY BURSARY (U)
Established in 1997 by Joy Baby 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) BURSARY (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 II initiative. To be granted to a student in the Bachelor of Health Sciences (Honours) program who demonstrates financial need. (90985)

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, S, 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 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 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 BURSARY (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 1996 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 BEVAN FAMILY FIRST GENERATION BURSARY (U)
Established in 2008 by George A. Bevan, B.A. (Class of 48) and his wife Simone L. Bevan (B.A. University of Toronto). To be granted to students entering any Level I program with a final admission average of 85 percent or greater, and who demonstrate financial need. Preference to be given to students who are the first in their family to attend a post secondary institution and whose parents are not university graduates. (91096)

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. (90960)

THE DAVID H. BLANCHARD BURSARY (S, SS)
Established in 2007 by David H. Blanchard, B.A. (Class of '75) because of his belief in the value of education. To be granted to students enrolled in the Faculty of Social Sciences or the Faculty of Science who demonstrate financial need. Preference will be given to students enrolled in the School of Geography and Earth Sciences. (91089)

THE SIDNEY 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 3D06. (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 female students who reside 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 to 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, Mrs. 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 Bretzler (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. (90814)

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 Department 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. (90673)

BURSARIES FOR IN-COURSE VISA STUDENTS (U)
Established in 1982 by the University to assist visa students in any program. (90547)

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, enable the University community to deploy its financial resources to the greatest advantage. A variable number of bursaries to be granted to students in any 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 medallist 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. (90681)

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 bequest of Anne Maria 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 CHAWKERS FOUNDATION BURSARIES (U)
Established in 1996 by The Chawkers 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. (90683)

THE SAM M. CINO BURSARY (U)
Established in 1997 by Sam Cino in support of McMaster students. To be granted to a student enrolled in any program who demonstrates financial need. (90684)

THE CITY OF HAMILTON BURSARIES (R)
Established in 1959 by the City of Hamilton to commemorate the visit of Her Majesty Queen Elizabeth II and His Royal Highness Prince Philip to Hamilton in July 1959. To assist Hamilton students who demonstrate financial need. (90515)

THE DAVID CLARK BURSARIES (B)
Established in 1996 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. (90588)

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. (90591)

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. (90686)

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. (91065)

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 '58 BURSARY (H, N, S, SS)
Established by the Class of 58. To be granted to students in Level II or above in the Faculties of Social Sciences, Humanities, Science or the School of Nursing who demonstrate financial need. Preference to students with Cumulative Averages of 7.0 or greater. (91098)

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 '60 GOLDEN ANNIVERSARY BURSARIES (U)
Established by the Class of '60 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 CLASS OF '63, 50TH ANNIVERSARY BURSARY (U)
Established in 2008 by the Class of 63 in honour of their 50th Anniversary. To be granted to students enrolled in any program who demonstrate financial need. (91099)

THE JANET HOLDER AND NEAL COCKSHUTT BURSARY (R, 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 to be given to students from Brant County. (91020)

THE DORIS PARTRIDGE COLE BURSARY (U)
Established in 1981, this bursary is to be granted to a worthy student in memory of Doris Partridge Cole (Class of '45). (90508)

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. (90666)

THE GERALDINE LORETTA 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. (90692)

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. (90694)

THE CREATIVE IMPACT COMMUNICATIONS BURSARY (SS)
Established in 2005 by Natalie Muryn (Class of '80) under the McMaster Student Opportunity Fund II initiative. To be granted to a student enrolled in the Faculty of Social Sciences who demonstrates financial need. (90986)

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 varsity men's or women's cross country team. (90695)

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. (90565)

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. (90696)

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. (91034)

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 Damude (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. (90697)

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 intervarsity 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. (90987)

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 to be given to women enrolled in the Faculty of Business. (90593)

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. (90594)

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. (90698)

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. (90699)

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 Saltfleet 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. (90595)

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. (90597)

PATRICIA ANNE DICICCIO MEMORIAL BURSARY (SS)
Established in 1988 this bursary is to be granted to a student or students enrolled in a program which includes Gerontology as a major, who is a Canadian citizen or permanent resident and who exhibits financial need. (90510)

THE STEWART ANDERSON DINNING BURSARY (S)
Established in 2008 by the Stewart Anderson Dinning Estate. To be granted to students enrolled in an Honours Chemistry program who demonstrate financial need. (91091)

THE MARGERY E. DIXON MEMORIAL BURSARY (H)
Established in 2003 in loving memory of Margery E. Dixon (Class of '35) by Geraldine Phenix 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. (90598)

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. (90851)

THE STEPHEN DULMAGE BURSARY (B)
Established in 2005 by Stephen Dulmage, B.A. (Class of '64). 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. (90599)

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. (90856)

THE CYRUS EATON FOUNDATION BURSARY (R)
Established in 2000 by the Cyrus Eaton Foundation of Cleveland, Ohio, 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. (90688)

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. (90963)

THE EVANS, PHILP BURSARIES (U)
Established in 1996 by the partners of Evans, Philp 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 under the McMaster Student Opportunity Fund initiative with proceeds from the Fundraising Auction held at Vineland Estates Winery Ltd. To be granted to students enrolled in the Faculty of Business who demonstrate financial need. (90705)

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 in any program who demonstrate financial need. (90833)

THE DONALD A. FEATHER BURSARY (U)
Established in 2003 by family in honour 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. (91010)

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 1965 by the late Edith E. Ferrie. To be granted to students 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 1989 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 FIRST STUDENT CANADA 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. (90608)

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 1961 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 Stelco strike by William E. (Bill) Fuller, recognized by the City of Hamilton for his volunteer work which included serving as Vice-President of Labour Community Services of the United Way for six years, member of The Hamilton 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 his belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in the Faculty of Science 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 '62 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. (91060)

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 GRADER 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 GUPTA FAMILY EMERGENCY BURSARY FUND (U)
Established in 2005 by Kulbushan Gupta and family. To be granted to international students who demonstrate urgent financial need due to exceptional circumstances as determined by the Office of Student Financial Aid &Scholarships. (91041)

THE ASMAHAN HAFEZ MEMORIAL BURSARY (S)
Established in 1997 by her family in memory of Asmahan Hafez. To be granted to a student enrolled in Level I of the Faculty of Science who demonstrates financial need. (90721)

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 HALCYON HOUSE BURSARY (U)
Established in 1999 by past residents of Halcyon House 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 a student in residence at Halcyon House. (90859)

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 the Faculty of Humanities who demonstrates financial need. (91001)

THE HAMILTON ALUMNI BRANCH BURSARIES (R)
Established in 1997 by the McMaster Alumni Association, Hamilton Branch, in honour of the long-standing accomplishments of the Hamilton Alumni Branch. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students graduating from a high school in the Hamilton-Wentworth Region. (90725)

THE HAMILTON CHAPTER OF THE HUMAN RESOURCES PROFESSIONALS ASSOCIATION BURSARY (B)
Established in 1999 by the Hamilton Chapter of the Human Resources Professionals Association under the McMaster Student Opportunity Fund initiative. To be granted to a Level III or Level IV Commerce student taking two or more of the Human Resource and Management Area courses who demonstrates financial need. (90860)

THE HAMILTON CITIZENS' MEMORIAL BURSARIES (R)
Established in 1947 by the Hamilton Citizens' Committee for War Services. Proceeds to be used to assist undergraduate students who are residents of the Hamilton-Wentworth Region. (90516)

HAMILTON COMMUNITY FOUNDATION BURSARIES (R)
Established in 1996-97 by Hamilton Community Foundation from the income of funds generously donated by citizens of this community, notably the late sisters Genevieve Chaney and Cordelia Ensign, and the late Mr. Ross F. Webb. A variable number of bursaries to be awarded to full-time students, registered in any year of any undergraduate program, who have graduated from publicly-funded secondary schools in Hamilton-Wentworth and who demonstrate financial need. The criteria established for these bursaries are consistent with the intention of the original donors. (90723)

THE HAMILTON AND DISTRICT LABOUR COUNCIL BURSARY (SS)
Established in 1997 by the Hamilton and District Labour Council under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in the Labour Studies Program who demonstrates financial need. (90726)

THE HAMILTON FOLLIES INC. (GERITOL FOLLIES) BURSARY (SS)
Established in 1997 by the Hamilton Follies Inc. (Geritol Follies) under the McMaster Student Opportunity Fund initiative. To be granted to a student in any program who demonstrates financial need. Preference to be given to a student who has completed at least 30 units in the Gerontology program. (90722)

THE HAMILTON PERFORMING ARTS BURSARY (H)
Established in 1997 by the Hamilton Performing Arts Foundation Inc. under the McMaster Student Opportunity Fund initiative. To be granted to students who have completed at least 30 units of a program in the School of the Arts, who has shown service to the community-at-large and who demonstrates financial need. Preference to be given to students who are currently on the Deans' Honour list. (90724)

THE HAMILTON PORCELAINS BURSARY (U)
Established in 1997 by Hamilton Porcelains Limited in the 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. (90727)

THE HAMILTON SPECTATOR BURSARY (U)
Established in 1997 by The Hamilton Spectator in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a McMaster student enrolled in any program who demonstrates financial need. (90728)

THE HAMLIN FAMILY FOUNDATION BURSARY (U)
Established in 2004 by The Hamlin Family Foundation under the McMaster Student Opportunity Trust Fund II initiative. To be granted to students enrolled in any program who demonstrate financial need. (91016)

THE ROSS HAMMOND BURSARY (B)
Established in 2008 by Kara Hammond, in memory of her husband Ross Hammond, through the generosity of Ross family and friends. A variable number of bursaries to be granted to students registered in Business I in the DeGroote School of Business. (91097)

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 (90517)

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 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. (90730)

THE MEL AND MARILYN 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 Hawkrigg 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 1996 by family, friends and colleagues upon his retirement as Dean of Student Affairs in recognition of 32 years of dedicated service to students and to the McMaster University Community. To be granted to students in any 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 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 JANITZA 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 IDA MARIETTA HOUSTON BURSARY (N)
Established in 2007 by Ida Marietta Houston. To be granted to a student who has completed Level II in the School of Nursing and demonstrates financial need. Preference will be given to a student with a particular interest in palliative or end- of- life care. (91090)

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 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 BURSARY (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 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 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 IVEY BURSARY (H)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, to the recipient of The Ivey 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 Award. (90736)

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 Jaddco 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 II 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 students who demonstrate 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 will be given to a student 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 2003 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 (HS)
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. (90974)

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. To assist 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. (90962)

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 KNAP 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 intervarsity sport. (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 BETTY MAY LAMB MEMORIAL BURSARY (U)
Established in 1991 by family, friends, colleagues in memory of Betty May Lamb, an employee at McMaster University for 22 years, most recently as Executive Assistant to the Faculty Association from 1988-91. To assist students in any program who demonstrate financial need. (90555)

THE LAHREN LAMB MEMORIAL BURSARY (AS)
Established in 2007 by family and friends in loving memory of Lahren Lamb, B.A. (Class of 06), a gifted young artist and graduate of the Honours Art and Multimedia program who did not live to fulfill her potential. She was a truly loved and admired young woman. To be granted to a Level III student enrolled in the School of the Arts who demonstrates financial need.(91083)

THE LANCASTER SHEET METAL LIMITED BURSARY (U)
Established in 1997 under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any program who demonstrate financial need. (90751)

THE LANDMARK CONSULTING GROUP BURSARIES (U)
Established in 1996 by The LANDMARK Consulting Group Inc. in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in any program who demonstrate financial need. (90609)

THE NORMAN D. LANE BURSARIES (S)
Established in 1996 by family and friends in honour of Dr. Norman D. Lane, distinguished geometer and member of the Department of Mathematics and Statistics from 1952 to 1987 and now Professor Emeritus. A variable number of bursaries to be granted to students enrolled in a program in Mathematics who demonstrate financial need. (90610)

THE LANG FAMILY BURSARIES (U)
Established in 1996 by H. Murray Lang (Class of '44) of Etobicoke, Ontario in honour of his family's connection to McMaster. A variable number of bursaries to be granted to students enrolled in any program who demonstrate financial need. (90611)

THE JAMES R. A. LANGS BURSARIES IN THE ARTS (H)
Established by family in memory of James R. A. Langs (Class of '37), a Hamilton business leader and great supporter of the Hamilton Community. A variable number of bursaries to be granted to students enrolled in a program in Art, Theatre & Film Studies or Music who demonstrate financial need. (90612)

THE JAMES R.A. LANGS STUDENT EXCHANGE PROGRAM BURSARIES (EX)
Established in 1996 by family in memory of James R.A. Langs (Class of '37), a Hamilton business leader and great supporter of the Hamilton Community. A variable number of bursaries to be granted to students enrolled in a program in Humanities who demonstrate financial need and who are participating in a formal McMaster Exchange Program. (90655)

THE KELLY DAWN LAPP MEMORIAL BURSARY (SS)
Established in 1997 by family and friends under the McMaster Student Opportunity Fund initiative in memory of Kelly Dawn Lapp who received her B.A./B.S.W. degree from McMaster University in 1996. To be granted to a student enrolled in the Social Work program who demonstrates financial need. Preference will be given to a student who has volunteered or worked in programs related to violence against women and children, employment and affordable housing for women, advocacy and treatment of mental health patients, addiction treatment or prevention of cruelty to animals. (90847)

THE GARY LAUTENS MEMORIAL BURSARIES (U)
Established in 1996 by Mrs. Jackie Lautens, the Toronto Star, family and friends, 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. A variable number of bursaries to be granted to students in any program who demonstrate financial need. Preference will be given to the recipient of The Gary Lautens Memorial Scholarship. (90613)

THE SZE-WAI LEE MEMORIAL BURSARY (E)
Established in 1997 under the McMaster Student Opportunity Fund initiative in honour of Sze-Wai Lee. To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need and has shown involvement in support of the community, particularly multicultural events. (90752)

THE LEFLAR FOUNDATION BURSARY (R)
Established in 1997 by The Leflar Foundation in support of its 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 to be given to students who are from the Owen Sound area. (90753)

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 KEVIN LENGYELL BURSARY (B)
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 to be given to students from the Region of Waterloo. (91056)

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 LINCLUDEN MANAGEMENT BURSARIES (U)
Established in 1997 by Lincluden 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 LINDLEY BURSARIES (U)
Established in 2006 in memory of Russell and Elizabeth Lindley. To be granted to students enrolled in any program who demonstrate financial need. (91081)

THE BURSARY FOR LINGUISTICS AND LANGUAGES (H)
Established in 2007 by Linda White, B.A. (Class of '80), M.A. (Class of '83). To be granted to a student who has completed Level I of a program in the Department of Linguistics and Languages who demonstrates financial need. Preference to be given to a student who has attained a minimum Cumulative Average of 7.0. (91077)

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 and 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 ALBERT LOVAS MEMORIAL BURSARY (E)
Established in 2008 by Reta Lovas, Glenn Gray (McMaster Class of 73) and Susan Gray (Mohawk Class of 72). To be granted to students enrolled in a Bachelor of Technology program who demonstrate financial need. Preference to be given to students residing in the City of Hamilton. (91095)

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 either McMaster intervarsity football or intervarsity women's tennis. (90615)

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 a student enrolled in any program who has displayed commendable service to the community-at-large. Preference to be given to students who currently reside in the Lynden or Troy area. (90758)

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 Action 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. (90861)

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. (90761)

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 MANCINELLI BURSARIES (SS)
Established in 1996 by the Labourers' International Union of North America, Local 837 in honour of Enrico Henry Mancinelli, 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 by Joyce Beverly Krugel, a former student of Dr. Albert Martin who was a Professor of German in the Faculty of Arts and Science from 1939 to 1961. A variable number of bursaries to be granted to students enrolled in 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 '84). 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 MIDWIFERY (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 two 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 Hryniszak. 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 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 University. 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 McIVOR BURSARIES (SS)
Established in 1996 as a tribute to Professor R. Craig McIvor by his family, friends, colleagues and students. A variable number of bursaries to be granted to students enrolled in 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 David and Jean McLay under the McMaster Student Opportunity Fund initiative. To be granted to a student in any program 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. (90849)

THE McMASTER ALUMNAE CENTENNIAL BURSARY (U)
Established in 1988 by the McMaster Women's Alumnae, Hamilton Branch. To be granted to a student in his or her graduating year who is a Canadian citizen or permanent resident and who exhibits financial need. Preference will be given to a single parent. (90528)

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 1988 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 program, who demonstrate financial need. Applications will be reviewed by the MAPS Awards Committee. (90835)

THE McMASTER ASSOCIATION OF PART-TIME STUDENTS 25TH ANNIVERSARY BURSARIES (U)
Established in 2004 by the McMaster Association of Part-Time Students (MAPS) to commemorate its silver anniversary. To be granted to students currently enrolled, on a part-time basis, in a degree program, who demonstrate financial need. Applications will be reviewed by the MAPS Awards Committee. (90988)

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. (90906)

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 Spanish courses (formerly Hispanic Studies) or a Linguistics and Languages program 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 (B)
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. (90627)

THE McMASTER STUDENT OPPORTUNITY FUND II BURSARIES (U)
Established in 2003 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. (91002)

THE McMASTER STUDENTS' UNION BURSARIES (U)
Established in 1982 by the McMaster Students' Union. To assist those undergraduate MSU members who demonstrate financial need. (90530)

THE McMASTER UNIVERSITY FACULTY ASSOCIATION BURSARY (U)
Established in 1997 by the McMaster Faculty Association under the McMaster Student Opportunity Fund initiative based on the assumption that all students should have access to educational opportunities. To be granted to a student enrolled in any program who demonstrates financial need. (90768)

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 McMASTER WOMEN'S VOLLEYBALL BURSARY (AT)
Established by past and present student-athletes and friends of McMaster Women's Volleyball to assist a student in any academic program who demonstrates financial need and who demonstrates outstanding athletic participation in the sport of women's volleyball. (90773)

THE KATHERINE M. COLLYER McNALLY BURSARY (HS)
Established in 1997 by her children in honour of Katherine M. Collyer McNally under the McMaster Student Opportunity Fund initiative. To be granted to a student who demonstrates financial need and has completed at least 30 units in the Midwifery, Physiotherapy or Nursing program. (90774)

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 MELOCHE MONNEX INC. BURSARY (U)
Established in 1997 by Meloche 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 1999 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 daughters, 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 family, friends and colleagues of 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 MOUGHALIAN 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. (90848)

THE SAMMON MUNROE BURSARY (H)
Established in 2003 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. (90982)

THE HELEN K. MUSSALLEM BURSARY (U)
Established in 1996 by Dr. Helen K. Mussallem (C.C., B.N., Ed.D., LL.D (Queen's), D.Sc., D.St.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. (90909)

THE CAROLE AND ALEXANDER NAKEFF 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 1998 by NCR (Waterloo) under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in an Engineering and Management program who demonstrates financial need. (90842)

THE MARJORIE AND BILL NELSON BURSARY (U)
Established in 1997 by Marjorie 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 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 intervarsity sport. (90889)

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 to be 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. (91057)

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. (90535)

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 to be granted to students enrolled in Level II of a program in Engineering and Management who demonstrate financial need. Preference to be given to students who demonstrate a lively interest in the university and community through their involvement in extracurricular activities. (90632)

THE 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. (90786)

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. (90788)

THE PATTERSON-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 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 1997 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 '64). 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. (91038)

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 demonstrates financial need. Preference will be given to a student who is involved in one of the following University activities or issues: the McMaster Choir, varsity wrestling, karate club, the environment or 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 Ratford (Class of '71) and Elda Ratford (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 III 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 PLUMB MEMORIAL 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 Procor Ltd. in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in Engineering or Commerce who demonstrate financial need and undertake service to McMaster University and the community-at-large. (90669)

THE LYNDA QUINN BURSARY (B)
Established in 2008 by Lynda Quinn, B.Com. (Class of 86). To be granted to students enrolled in the DeGroote School of Business who demonstrate financial need. (91093)

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 under the McMaster Student Opportunity Fund initiative. To be granted to part-time students in any program who demonstrate financial need. Preference will be given to the recipient of The Gordon Raymond Award. (90638)

RBC FINANCIAL GROUP BURSARY (U)
Established in 1997 by the Royal Bank of Canada 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 who demonstrate financial need. (90797)

THE REDPATH SUGARS BURSARY (U)
Established in 1997 by Redpath Sugars, Division of Redpath Industries 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. (90824)

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH BURSARIES (R)
Established in 1997 by The Regional Municipality of Hamilton-Wentworth 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 permanently reside in the Hamilton-Wentworth Region. (90794)

THE RICOH CANADA INC. BURSARIES (B, E)
Established in 1996 by Ricoh Canada Inc. in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students 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. (90795)

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 a program in Business or Engineering who demonstrate financial need. (90640)

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. (90668)

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 cherished 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 LENORE ROSZELL MEMORIAL BURSARIES (U)
Established in 2000 by bequest of Helen Lenore Roszell. A variable number of bursaries to be granted to students in any program who demonstrate financial need. (90951)

THE ROTARY CLUB OF ANCASTER BURSARY (U)
Established in 1997 by the Rotary Club of Ancaster 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 Rotary Club of Ancaster Award. (90914)

THE ROTARY CLUB OF ANCASTER A.M. MURRAY FERGUSON BURSARY (B, SS)
Established in 2007 by the Rotary Club of Ancaster A.M. to honour member Murray Ferguson in recognition of his years of outstanding service and leadership to the communities of Ancaster and the City of Hamilton. To be granted to a student enrolled in the DeGroote School of Business or the Faculty of Social Sciences who demonstrates financial need. Preference will be given to a student in the Department of Political Science. (91070)

THE ROTARY CLUB OF BURLINGTON CENTRAL BURSARY (U)
Established in 1997 by the Rotary Club of Burlington Central under the McMaster Student Opportunity Fund initiative. To be granted to students who are enrolled in any program who demonstrate financial need. Preference will be given to the recipient of The Rotary Club of Burlington Central Award. (90915)

THE ROTARY CLUB OF HAMILTON BURSARY (U)
Established in 1997 by the Rotary Club of Hamilton 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 Rotary Club of Hamilton Award. (90875)

THE ROTARY CLUB OF HAMILTON A.M. BURSARY (U)
Established in 1997 by The Rotary Club of Hamilton A.M. 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 Rotary Club of Hamilton A.M. Award. (90876)

THE HARRY A. ROTHMANN BURSARY (S)
Established in 2005 by Harry A. Rothmann, B.Sc. (Class of '58). To be granted to students in the Faculty of Science enrolled in a program in Mathematics who demonstrate financial need. (91052)

THE ROYAL CANADIAN LEGION BRANCH 163 BURSARY (SS)
Established in 1997 by the Royal Canadian Legion Branch 163 in support of the McMaster Student Opportunity Fund initiative and in keeping with the Legion's intention to support community service, education and leadership programs in the country. To be granted to a student enrolled in a Gerontology program who demonstrates financial need. (90798)

THE ROYAL & SUNALLIANCE BURSARIES (U)
Established in 1997 by Royal & SunAlliance Canada 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. (90799)

THE CARMEN AND DOROTHY RYDER BURSARY (B)
Established in 1997 by Marvin Ryder under the McMaster Student Opportunity Fund initiative in honour of Carmen and Dorothy Ryder. To be granted to a student enrolled in the Faculty of Business who demonstrates financial need. Preference to be given to a student entering Level III or IV. (90800)

The Eleanor and Wilfred Ryder Bursary (R)
Established in 1999 by Marvin Ryder in honour of Eleanor and Wilfred Ryder. To be granted to students enrolled in any program who demonstrate financial need. Preference will be given to students from Oxford County or Norfolk County. (90894)

THE SALENA FAMILY BURSARY (HS)
Established in 1997 under the McMaster Student Opportunity Fund initiative by Dr. Bruno Salena (Class of '81), full-time faculty member in the Faculty of Health Sciences, and his family. To be granted to a student who demonstrates financial need and is enrolled in the Faculty of Health Sciences, School of Medicine. (90801)

THE HELEN SANSONE BURSARIES (U)
Established in 1996 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 SATURN OF HAMILTON EAST BURSARY (U)
Established in 1996 by SATURN of Hamilton East 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 Saturn of Hamilton East Achievement Award. (90919)

THE WILLIAM F. SCANDLAN BURSARIES (SS)
Established in the 50th anniversary year of the historical Stelco steel strike of 1946 by William F. Scandlan, valued member of the United Steelworkers of America for 44 years including terms as International Representative (1953) and Area Supervisor (1976 to 1986), Alderman to the City of Hamilton (1964-1976) and Regional Councillor (1973-1976). 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. (90642)

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 a student enrolled in the Faculty of Business or Faculty of Social Sciences who demonstrates financial need. (91005)

THE PHILIP SCHEIDING BURSARY (H)
Established in 2008 by Philip Scheiding (Class of 71). To be granted to students in the Faculty of Humanities enrolled in a program in History who demonstrate financial need. Preference will be given to a student from the Hamilton area. (91094)

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. (91003)

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 1996 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 '90) under the McMaster Student Opportunity Fund II initiative. To be granted to a student in the Faculty of Engineering who demonstrates financial need. (90998)

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 '35). To be granted to a student in any program who demonstrates financial need. (90541)

THE SMYRNIW BURSARY (H)
Established in 1996 by Dr. and Mrs. W. Smyrniw. To be granted to students who are Canadian citizens or permanent residents who demonstrate financial need and are in good academic standing in any undergraduate 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. (90922)

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 Sorger. 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 and who are also involved in community service. (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 an Honours Chemistry program who demonstrates financial need. (91072)

THE SALVATORE SPITALE MEMORIAL BURSARY (H)
Established in 1984 and augmented in 1997 by the Spitale family in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to a student in the Department of Linguistics and Languages, Level II 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 '62) 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 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 1997 by Professor Thomas H.B. Symons under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in 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 Environmental Studies or an Engineering and Society Program. (90939)

THE 3M 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 2002 in memory of Herman ten Cate by his family, in support of his belief that all students should have the opportunity to pursue their educational goals. To be granted to a student enrolled in the Faculty of Social Sciences who demonstrates financial need. (90975)

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 TIRIMACCO 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 TKK INC. BURSARY (U)
Established in 1997 by TKK 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 TKK Inc. Awards. (90925)

THE GRAHAM RONALD TOOP BURSARY (H)
Established in 1997 under the McMaster Student Opportunity Fund initiative. Preference will be given, if financial need is demonstrated, 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 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 a student enrolled in the Faculty of Humanities who demonstrates financial need. Preference to be given to a female undergraduate student enrolled in a 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. (90926)

THE GEORGE ELIAS TUCKETT BURSARIES (U)
Established in 2005 in memory of George Elias Tuckett, 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. (90898)

MOSSADIQ AND YASMIN UMEDALY BURSARIES (B)
Established in 1999 by Mossadiq, M.B.A. (Class of '74) and Yasmin Umedaly under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in Business I or first year of the M.B.A. program who demonstrate financial need. (90868)

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. (90993)

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 to be given to students who have demonstrated leadership and involvement in university and community activities. (90650)

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. (90589)

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 1998 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)

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. (90796)

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 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 WEISZ BURSARY (U)
Established in 2004 by Arthur Weisz (LL.D. 2004) and Margaret Weisz 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 WEISZ BURSARY (HS)
Established in 2004 by Dr. Janet Weisz, 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. (90651)

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 '87), 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. (90793)

THE MARY DRYDEN WILLIS BURSARY (H)
Established in 1997, in memory of Mary Willis (Class of '26), by her daughter, Mary Lou Dingle and son-in-law Allan (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 BURSARY (S,SS)
Established in 1997 under the McMaster Student Opportunity Fund initiative by Claus Wolter (Class of '80) 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 (U)
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. (90764)

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 I BURSARIES (B, E, SS)
Established in 1997 by the Zonta Club of Hamilton I 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)

THE ROSS HAMMOND BURSARY (B)
Established in 2008 by Kara Hammond, in memory of her husband Ross Hammond, through the generosity of Ross family and friends. A variable number of bursaries to be granted to students registered in Business I in the DeGroote School of Business. (91097)

SUPPLEMENTARY BURSARY AID FOR AWARD RECEIPIENTS

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 1996 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 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)). 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. Mussallem (C.C., B.N., Ed.D., LL.D (Queen's), D.Sc., D.St.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 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)

THE GORDON RAYMOND AWARD
Established in 1996 by the McMaster Association of Part-time Students and other friends and colleagues in honour of Gord Raymond in recognition of his 27 years of service to McMaster University including 15 years as Coordinator of Part-time Degree Studies. To be awarded to the part-time student who, in the judgment of a selection committee, demonstrates enthusiasm for life-long 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 to 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 Engineering 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. (80031)

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. (80026)

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 WESCAST INDUSTRIES CONTINUOUS LEARNING AWARD
Established in 1997 by Wescast 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 '89) 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 ZENON ENVIRONMENTAL AWARDS
Established in 1997 by Zenon 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 *Collection and Disclosure of Personal Information* section of this Calendar.

To view the undergraduate Awards Policy, go to http://www.mcmaster.ca/univsec/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 24 units in the Fall/Winter session, including Extra Courses.

Graduand Awards are granted to eligible students on the completion of their graduating session.

In-Course Awards are granted to eligible students, based on academic achievement in other than their graduating session.

Part-time Studies Awards are referred to under 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:
   a. travel scholarships and non-monetary awards such as books and medals; and
   b. an award granted on the basis of an application; and
   c. awards continued from a previous year (including entrance scholarships), except as provided by the particular terms of an award; and
   d. either one (major) award greater than or equal to the value of a Senate Scholarship ($800 in 2009-2010) and one (minor) award of less than the value of a Senate Scholarship; or two awards of less than the value of a Senate Scholarship; and
   e. 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 to 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 Associate Dean/Director of the program and medical documentation if appropriate. The appeal must be submitted to the Undergraduate Council Awards Committee c/o the Awards Officer in Gilmour Hall, Room 120.
10. The particular terms for University Academic Awards are listed in *AWARDS FOR ENTERING STUDENTS, AWARDS FOR IN-COURSE, GRADUAND, PART-TIME AND SECOND DEGREE STUDENTS and ACADEMIC GRANTS FOR FULL-TIME IN-COURSE STUDENTS.*

CATEGORIES OF AWARDS

CONDITIONS FOR AWARD CATEGORIES

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. An exception may be granted to students who withdrew before they actually attended another institution or before the deadline to drop or add courses.
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 completion of their secondary school diploma.
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 with 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 Undergraduate 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. Students wishing to defer subsequent instalments of renewable entrance awards should apply to the Office of Student Financial Aid & Scholarships.

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 have no failures.
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 break any tie in the competition for awards which are based on another criterion.
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 granted 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.

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 grants 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 OSAP 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 to the Awards Officer in the Office of Student Financial Aid & Scholarships.

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**

◆ The 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
- 85 - 89.99% $1,000
- 80 - 84.99% $750

McMaster's Awards for Entering Students are supported by the following:

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 '52 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 '56 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. (20166)

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 1984 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 SCHOLARSHIP
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 her memory. To be awarded to a promising student entering a full-time program of study. (20136)

THE GENERAL MOTORS ENTRANCE SCHOLARSHIPS
Established in 1999 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 1915 and augmented 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. OGILVIE SCHOLARSHIPS
Established in 1984 by bequest of Alvin I. Ogilvie of Hamilton. Five scholarships to be awarded to students entering a full-time program of study. (20138)

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. (20129)

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. (20128)

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. (20158)

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. (20159)

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. (20160)

THE WALLINGFORD HALL ENTRANCE SCHOLARSHIP
Established in 1993. To be awarded to a student entering a full-time program of study. (20135)

THE WHEELER SCHOLARSHIP
Established in 1915. Grade 12 U or M subjects to be included are: History, English and a language other than English. (20161)

◆ Music Awards

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 (20059)

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 (20031)

THE FRANK THOROLFSON MEMORIAL SCHOLARSHIPS
Established in 1978 in memory of Professor Frank Thorolfson, 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 (20028)

◆ Other Awards

THE HATCH SCHOLARSHIPS
Established in 2008 by Hatch Ltd. Four scholarships to be awarded annually to students entering the Faculty of Engineering. These awards are renewable for three years at the same value provided the students remain full-time and achieve a Sessional Average of 9.5 with no failures.
Value: $48,000 each ($12,000 per year) (20198)
Note: Students who wish to be considered for this award will apply to the Faculty of Engineering. The application process will be determined and administered by the Faculty.

THE ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION ENTRANCE SCHOLARSHIP
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.
Value: $1,000 each (20027)

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) (20132)

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 (20192)

◆ Awards Open to International Students

INTERNATIONAL AWARDS
The following awards are provided exclusively for international students qualifying for admission to Level I of a first baccalaureate degree program.

THE MCMASTER CHINESE ALUMNI (TORONTO CHAPTER) INTERNATIONAL ENTRANCE SCHOLARSHIPS
Established in 1999 by Chinese Alumni (Toronto Chapter) of McMaster University. A variable number to be awarded to visa students entering Level I of any program.
Value: $1,000 (20191)

NG MAN-CHUNG MEMORIAL SCHOLARSHIPS FOR INTERNATIONAL STUDENTS
Established in 2000 by Joe Ng Engineering Limited in memory of Joe Ng's father Ng Man-Chung. A variable number to be awarded to visa students entering Level I. Up to eight scholarships in the Faculty of Engineering and up to four scholarships in any other Faculty.
Value: $2,000 (20188)

THE WOO FAMILY INTERNATIONAL ENTRANCE SCHOLARSHIPS
Established in 1999 by Mr. Chung How Woo in honour of his late wife, Mrs. Ching Yung Chiu-Woo, mother and mother-in-law of four McMaster graduates. A variable number to be awarded to visa students entering Level I of any program.
Value: $2,000 (20190)

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 ACI (ONTARIO CHAPTER) SCHOLARSHIP
Established in 1992 by the American Concrete Institute (Ontario Chapter). To be awarded to a student entering Level IV of the Civil Engineering program who, in the judgment of the Department of Civil Engineering, has demonstrated outstanding academic achievement and knowledge of concrete technology.
Value: $500 (30337)

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 attain a minimum Sessional Average of 9.5 at the most recent Fall/Winter session.
Value: $1,500 (30258)

THE HENRIETTA ALDERSON SCHOLARSHIP
Established in 2002 in memory of Henrietta Jane Alderson. Two scholarships to be awarded to students in the B.Sc.N. program who are entering Level II (A Stream) or Level IV (B and C Streams) and, in the judgment of the School of Nursing, have 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 Grieg 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 1978 in memory of Cameron D. Allen. 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 of Geography and Earth Sciences, shows outstanding achievement in studies in a fourth year climatology course. Preference will be given to a graduating student.
Value: $200 for books (40127)

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 part-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 GEOG 2RC3 (or GEO 2HC3) (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. (50014)

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 1982. To be awarded to the graduating student who has completed a program in Anthropology primarily on a part-time basis and who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement.
Value: $100 (50004)
Students who wish to be considered for this award are encouraged to submit a resume to the Department of Anthropology by April 15th.

THE HERBERT S. ARMSTRONG MEMORIAL FUND
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 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 (30308)
Note : Faculties and programs will 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 2I06 (Modern British Literature).
Value: $425 (40105)

THE BA CONSULTING GROUP TRANSPORTATION ENGINEERING SCHOLARSHIP
Established in 2008 by BA Consulting Group. To be awarded to a student graduating from a program in Civil Engineering who, in the judgment of the Department of Civil Engineering, has demonstrated interest in urban transportation planning and engineering.
Value: $2,000 (50102)

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 (30313)

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 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 program.
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 STATS 3D03 and 3DD3.
Value: $375 (30076)

THE WILLIAM AND LIDA BARNS MEMORIAL PRIZE IN HISTORY
Established in 1969 by their son, William D. Barns, of Morgantown, West Virginia. To be awarded to the graduand 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 3FA3 and 3FB3, taken in one session.
Value: $200 (30134)

THE BASU MEDAL
Established in 1984 in memory of Professor Sanjoy Basu by friends, colleagues and accounting organizations. To be awarded to the graduating student who, in the judgment of the School of Business, has displayed outstanding achievement in accounting and has attained an average of at least 10.0 in any four of COMMERCE 4AA3, 4AC3, 4AD3, 4AE3, 4AF3.
Value: $1,000 and a medal (50006)

THE M. BANKER BATES SCHOLARSHIP
Established in 1975 by Dr. M. Banker Bates and augmented in 1978 in his memory by 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 Women 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 (50034)

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)
Note: Application required (500 word essay outlining internship plans). To be submitted to the Chair of the Department of Health, Aging and Society by October 15th.

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 (30008)

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 full-time students who, in the judgment of the School of Geography and Earth Sciences, demonstrate an interest in the field of mining and have completed at least Level II of a B.Sc. program in the School of Geography and Earth Sciences with a minimum Cumulative Average of 8.0.
Value: $2,000 minimum (30291)

THE BINKLEY MEDAL
Established in 2000 by the University, friends and colleagues of Margaret Belec (nee Binkley) on the occasion of her retirement and for her outstanding contributions to McMaster University during her 43 years of service. To be awarded to a student graduating from an Honours program in Computer Science who attains the highest Cumulative Average.
Value: $350 and a medal (50085)

THE BIOLOGY ACHIEVEMENT AWARD
Established in 2004 by the Department of Biology. A variable number to be awarded to students registered in Life Sciences 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: Book (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 & Behaviour from 1958 to 1978. To be awarded to the student who, in the judgment of the Department of Psychology, Neuroscience & Behaviour, has demonstrated outstanding achievement in PSYCH 4D06 (Senior Thesis), PSYCH 4D09 (Senior Honours Thesis), or PSYCH 4DD6 (Senior Thesis).
Value: $600 (40076)

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 & Behaviour from 1958 to 1978. Three prizes to be awarded: (a) one to the student who attains the highest Cumulative Average in an Honours B.A. program in Psychology or Psychology, Neuroscience & Behaviour; (b) one to the student who attains the highest Cumulative Average in the Honours B.Sc. program in Psychology or Psychology, Neuroscience & Behaviour; (c) one to the student who attains the highest Cumulative Average in the Honours Biology and Psychology (Life Sciences) program.
Value: $200 each (50000)

THE LEONE BETTY BLACKWELL MEMORIAL BOOK PRIZE
Established in 1999 by Dr. Bonnie Blackwell in memory of her mother, Leone Betty Blackwell. To be awarded to a graduating student with the highest grade in EARTH SC 3P03 (or GEO 3P03).
Value: $85 for books (50096)

THE BRIAN BLAKEY MEMORIAL SCHOLARSHIP
Established in 1979 in memory of Dr. Brian Blakey, Professor of French, by his friends, colleagues and former students, on behalf of his wife, Dorothy. To be awarded to the student who attains the highest Sessional Average on completion of Level I and an additional 60 - 75 units of an Honours program in Classics, Cultural Studies and Critical Theory, Theatre & Film Studies, English, French or Linguistics and Languages. Students in all programs except Theatre & Film Studies must have achieved a B- in both LINGUIST 1A03 and 1AA3.
Value: $500 (30013)

THE HILDA DOROTHY BORMAN SCHOLARSHIP
Established in 1998 by bequest of Hilda Dorothy Borman. To be awarded to a student studying piano who, in the judgment of the School of the Arts, has attained high academic standing.
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 placement elective in Level III 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 (40126)

THE JOAN FRANCES BOWLING SCHOLARSHIPS
Established in 1997 from the estate of Marie Bowling in memory of her daughter, Joan Frances Bowling. Two scholarships to be awarded to outstanding classical music scholars 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 that the recipient 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 (S)
Presented by science graduates of the University in memory of Dean C.E. Burke. To be awarded to a graduate of a B.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 (30282)

THE CRISPIN CALVO SCHOLARSHIPS
Established in 1992 by Dr. J.S. Kirkaldy and Dr. W.W. Smeltzer. 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 MATLS 2B03 and 2D03.
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 1990 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 8.0.
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 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 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 Instruction for Women's Studies, has demonstrated outstanding academic achievement in the Women's Studies component of the program.
Value: $300 (50107)

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: $800 (30346)

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 3S03 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 PRIZE
Established in 1947 by the Chemical Institute of Canada. To be awarded to the student who is entering his/her final year of study of a program in Chemical Engineering and who attained the highest Sessional Average.
Value: $50, medal and certificate (30016)

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 the Department of Chemical Engineering who has attained the highest academic standing in Level I.
Value: $500 (30307)

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 Science, 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 HISTORY 2R03 or 2RR3 (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 the Certified General Accountants Association of Ontario. To be awarded to the graduating student who, in the judgment of the School of Business, has displayed outstanding achievement in accounting and has attained an average of at least 10.0 in 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 (30022)

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: $150 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 (six awards) (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)
Travel Scholarship applications are due February 15th.

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: $950 (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)
Students who wish to be considered for this award are encouraged to submit a resume to the Department of Economics by April 15th.

THE CLASS OF '53 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 (30028)

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 graduand 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: $500 (50104)

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 Consulate 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 and 2CC3 (Exercise Physiology) and either KINESIOL 4C03 or 4CC3.
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 Professor de Buda by family, friends and colleagues. To be awarded to students who have achieved high academic standing in an Electrical or Computer Engineering program and who complete a thesis or project in their final year or intend to pursue graduate research in the field of Information Theory, Coding or Digital Communications.
Value: $1,900 (50100)

THE JOHN DEERE LIMITED SCHOLARSHIP
Established in 1992 by John Deere Limited. To be awarded to a graduating student who, in the judgment of the Degroote School of Business, has demonstrated outstanding academic achievement in courses offered by the Human Resource/Labour Relations Area.
Value: $2,000 (50101)

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 COMMERCE 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 COMMERCE 3AB3 and 3AC3 (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 2I06.
Value: $100 for books (60005)

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 science.
Value: $200 (50031)

THE ROSEMARY 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 2BB3 and one of FRENCH 2J03 or 2JJ3.
Value: $175 (30124)

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 (30306)

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 (30066)

THE JOAN JACKSON DUNBAR TRAVEL SCHOLARSHIP
Established in 1960 by Mayor Lloyd D. Jackson (Class of '09), LL.D (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 EDWARDS 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 at least 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: $2,000 each (30333)

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: $2,000 each (40125)
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 Dr. Murray Enkin and his wife, Eleanor Enkin to reflect their belief in the importance of midwifery within Canadian maternity 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 Metal Recovery Industries and Philip Environmental, Industrial Filter Fabrics Ltd., and Laidlaw Waste Systems. To be awarded to the student who attains the highest grade in GEOG 4MT6 (or GEO 4R06).
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 Department of Linguistics and Languages. To be awarded to an outstanding student who has completed Level II of a Humanities 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)
Travel Scholarship applications are due February 15th.

THE EUROPEAN HISTORY PRIZE
Established in 1986 by Professor Ezio Cappadocia, on the occasion of his retirement from the Department of History, in memory of his mentor, Professor Frank H. Underhill. To be awarded to a student graduating from an Honours program in History who, in the judgment of the Department of History, has displayed outstanding achievement in European history courses consistently throughout the degree program.
Value: $100 (50017)

THE JOHN P. EVANS TRAVEL SCHOLARSHIP
Established in 1991 by many friends, colleagues, students and graduates of McMaster University as a tribute to John (Jack) P. Evans upon his retirement as Associate Vice-President, University Services and Secretary of the Board of Governors in recognition of his 25 years of outstanding contribution to the University Community. To be awarded to a student who has completed at least 30 units beyond Level I of an Honours 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 to 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.Mgt. (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 (30323)
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 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 review at the end of 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 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 (30327)

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 1982 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 (30261)

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 is completing any Level I program in the current session 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 City of Hamilton, 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 58 - 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 P. 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 (30058)
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 A-, 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 during 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 graduands, and who has completed the program primarily on a part-time basis. (50029)

THE H.B. GREENING BOOK PRIZE
Established in 1969 by bequest of Gladys Powis Greening in memory of her husband, Herald Benjamin Greening. To be awarded to the student who has completed Level I and 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 3PI4.
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 judgment 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 69 - 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. 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 3MO3.
Value: $1,000 (30336)

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: $1,000 (50105)

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 ALEXANIAN HASSEL MEMORIAL SCHOLARSHIP
Established in 2007 by family and friends in memory of Alise Alexanian 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 HEDDEN 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 (30198)

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 LYMAN 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 OSMER HOOPER 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 1993 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 4D06.
Value: $275 for books (40087)

THE HUMANITIES MEDALS FOR SPECIAL ACHIEVEMENT
Established by the University in 1982. Up to five medals 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 HYPHER 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 III, 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 (30275)

THE INCO SCHOLARSHIP IN MATERIALS ENGINEERING
Established in 2000 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: $1,900 (30274)

THE INTERMETCO LIMITED SCHOLARSHIP
Established in 1977. To be awarded to the student who has completed Level I and an additional 66 - 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 NATIONES (BONN) BOOK PRIZE *
To be awarded from time to time to in-course students for proficiency in German studies.
Value: Book (40024)

THE INTER-RESIDENCE COUNCIL SCHOLARSHIP
Established in 1995 by the McMaster Inter-Residence Council in recognition of the IRC's continued support of the University and its students. To be awarded to a student who has completed at least Level I of any 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)
Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE MUNICIPAL CHAPTER OF HAMILTON, IODE, MURIEL E. SKELTON 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. (50028)

THE ITCA COMMUNITY INVOLVEMENT PRIZE
Established in 1982 by Italian Canadian Community Involvement Incorporated. To be awarded to students who have completed at least 30 units beyond Level I and who, in the judgment of the Department of Linguistics and Languages have 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 3A03 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 graduand 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.I. JOHNSON SCHOLARSHIP
Established in 1977 in memory of Dr. A.I. Johnson by his friends and former colleagues. To be awarded to a student who has completed Level 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: $1,000 (30335)

THE LAWRENCE AND KATHLEEN MARY JOHNSTON MEMORIAL 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 (30094)

THE ROBERT H. JOHNSTON UNDERGRADUATE SCHOLARSHIP IN HISTORY
Established in 2005 to honour Bob Johnston's contribution to undergraduate teaching in history. 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 '98 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 '98. 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 the Canadian Interuniversity Sports (CIS). 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 (30254)

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. Two scholarships to be awarded to students who, in the judgment of the Department of Mathematics and Statistics, have demonstrated outstanding achievement in an Honours program in that Department: (a) one to a student who has completed Level I and an additional 24 - 40 units; (b) one to a student who has completed Level I and an additional 54 - 80 units.
Value: $750 each (30334)

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 Kinnear, B.Eng. (Class of '88) and Betty Ann Kinnear in honour of his parents, Lorna and Alvin Kinnear. 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 and 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 KPMG SCHOLARSHIP
Established in 1956 by Pettit, Hill and Bertram, Toronto, and continued after amalgamation of firms. To be awarded to an outstanding student on the basis of qualifications and academic record after the completion of Level I and 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: $350 (30146)

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. Clinard. To be awarded to a student who, in the judgment of the Department of Classics, has demonstrated notable achievement in LATIN 1Z03 and 1ZZ3.
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 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 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 (30109)
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 1Z06 or 1BB3 in Level I or to a student who has completed GERMAN 2ZZ3 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.Cn.L., LL.D., K.G.St.J., 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 (30126)

THE SAKARKHANU K. LILA MEMORIAL SCHOLARSHIP *
Established in 2000 by the children and grandchildren of the late Sakarkhanu 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: $925 (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 (40032)

THE CLAUDE G. LISTER SCHOLARSHIP
Established in 1990 by bequest of Pauline Detwiler Lister in memory of her husband. To be awarded to a student in a 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 '86) 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 (50032)

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 the 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 1996 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: $750 (50061)
Applications and the names of two referees should be submitted to the Office of Student Financial Aid & Scholarships by April 15th.

THE WILLIAM MacKENZIE MEMORIAL PRIZE *
Established in 1977 in memory of Professor William MacKenzie by his friends and colleagues. To be awarded to the student who, in the judgment of the Department of Economics, has demonstrated outstanding academic achievement in either ECON 3T03 (Economic Development: Agriculture and Population) or ECON 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 1946 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. (50076)

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 ELEANOR DORNBUSH MARPLES PRIZE IN ART HISTORY *
Established in 1985 by Mrs. Barbara Niedermeier 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 ELEANOR DORNBUSH MARPLES PRIZE IN THEATRE & FILM STUDIES *
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 RONALD E. MATERICK SCHOLARSHIPS
Established in 1987 by Ronald E. Materick (Class of '70). Four scholarships to be awarded to students who have completed at least Level II in a Civil Engineering program, who are continuing in an undergraduate Civil Engineering program and who, in the judgment of the Department of Civil 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 1998 by John Mayberry. One scholarship to be awarded to a student who has completed Level II or III of a program in Chemical Engineering, Mechanical Engineering or Materials Engineering and who, in the judgment of the Faculty of Engineering, has demonstrated outstanding academic achievement. The recipients must attain a minimum Sessional Average of 9.5 at the most recent Fall/Winter session.
Value: $1,000 (30262)

THE CHARON BURKE McCAIN MEMORIAL SCHOLARSHIP
Established in 2004 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 III and who, in the judgment of the Arts and Science Program, has demonstrated exceptional qualities of leadership and service at McMaster University or in the community, as well as notable academic achievement.
Value: $500 (30305)

THE WILLIAM J. 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 at the most recent review.
Value: $250 each (60004)

THE ESTHER McCANDLESS MEMORIAL PRIZE
Established in 1984 by friends and colleagues in memory of Professor E.L. McCandless, a humanitarian and distinguished member of the Department of Biology from 1964 to 1983. To be awarded to a student who achieves an outstanding Cumulative Average in an Honours program in Biology.
Value: $300 (50016)

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 Science, Humanities, Science, or Social Sciences who enrols 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 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 a Level II student who, in the judgment of the Department of History, attains notable standing in British History courses.
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. McIVOR 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 graduands. (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 McLAY 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 1930 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 1938 in honour of Dean McLay, by his daughter, Mrs. R.R. McLaughlin (Marjorie McLay Class of '25) and further enlarged in 1950 by A.H. Wilson of Woodstock. To be awarded to the student who attains the highest Cumulative Average in an Honours program in English.
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)
Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

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 (30270)
Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

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 37 - 50 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)
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 PETER McPHATER 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
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 Farooque 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 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 GEOG 4UT3 (or GEO 4HY3); and (b) the student who attains the highest grade in GEOG 4UH3 (or GEO 4HZ3).
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 1990 by the Steel Founders' Society of America in honour of John Moore's contributions to the Society over the past 25 years. To be awarded to the student who attains the highest grade in 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 (30252)

THE MOULTON COLLEGE SCHOLARSHIPS
Established in 1957 from funds originally subscribed by the Alumnae of Moulton College during the years 1946 to 1949 for the expansion of Moulton College. Two scholarships to be awarded to the women students of Moulton Hall with the highest Sessional Averages: (a) one after completion of Level I and an additional 30 - 45 units, and (b) one after completion of Level I and an additional 60 - 75 units.
Value: $1,000 each (30112)

THE MOULTON 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 (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 P.L. NEWBIGGING PRIZES
Established in 1982 in recognition of Dr. Lynn Newbigging for his outstanding contributions to the Department of Psychology, Neuroscience & 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 Sciences with a concentration in Psychology; and (d) one to a student in a B.Sc. program in Life Sciences 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
Established in 1994 by family, friends and colleagues in memory of Dr. P.L. Newbigging, founding Chair of the Department of Psychology, Neuroscience & 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 or Psychology, Neuroscience & Behaviour who, in the judgment of the Department of Psychology, Neuroscience & Behaviour, has demonstrated high academic achievement 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 DR. O.W. NIEMEIER SCHOLARSHIP
Established in 1938 and augmented in 1952 by Dr. O.W. Niemeier, M.D.FRCPS(E). 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 a student in a program in Political Science who, in the judgment of the Department of Political Science, has achieved high standing in Level II and/or III courses in political theory or political philosophy.
Value: $650 (40012)

THE FREDRIC 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 graduand of a program in Engineering who attains the highest Cumulative Average. (50005)

THE ONTARIO PROFESSIONAL ENGINEERS FOUNDATION FOR EDUCATION UNDERGRADUATE SCHOLARSHIPS
Established in 1961 by the Ontario Professional Engineers Foundation for Education. Four scholarships to be awarded to students in the Faculty of Engineering with high academic achievement who, in the judgment of the Faculty of Engineering, have demonstrated leadership in professional affairs and involvement in extracurricular activities.
Value: $1,250 each (40124)

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 Parker 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) (B)

THE IRENE PEARCE SCHOLARSHIP
Established in 1994 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: $800 (30339)

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: $700 (30340)

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. GERONTOLOGY PRIZES
Established in 1988 by the Pioneer Group Limited. Two prizes to be awarded (a) one to a full-time student and (b) one to a part-time student, both of whom are graduating from a 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 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: $250 (50106)

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) (Class of '71). Two scholarships (one to a male and one to a female) to be awarded to students who have completed Level III of an Honours Geography program and who, in the judgment of the School of Geography and Earth Sciences, have achieved notable academic standing and demonstrated qualities of leadership at McMaster or in the community.
Value: $500 each (30273)

THE BRIAN POCKNELL 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.
Value: $500 (30302)

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 4Z06.
Value: $100 (50059)

THE POLITICAL SCIENCE PRIZE
Established in 1982. 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 BILL PRESTWICH SCHOLARSHIP IN MEDICAL AND HEALTH PHYSICS
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: $600 (30341)

THE PRICEWATERHOUSECOOPERS SCHOLARSHIPS
Established in 2000 by PricewaterhouseCoopers. 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 & 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 & Behaviour B.A. program; (b) one in an Honours Psychology or Honours Psychology, Neuroscience & 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 2T03 and 2TT3.
Value: $700 (30039)

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: (a) one to the student who attains the highest Cumulative Average in an Honours B.A. program in Geography; (b) one to the student who attains the highest Cumulative Average in an Honours B.Sc. program in Earth and Environmental Sciences; (c) one to the student who attains 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 Geo (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 GEOG 4MT6 (or GEO 4R06).
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 RELIGIOUS STUDIES PRIZES
Established in 1982. Two prizes to be awarded to students who attain the highest Cumulative Average in a three- or four-level 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 RETIRED TEACHERS OF ONTARIO HAMILTON/HALDIMAND DISTRICT PRIZE IN GERONTOLOGY
Established in 1987 by the Superannuated Teachers of Ontario, District 13. To be awarded to the student who attains the highest standing in GERONTOL 1A03.
Value: $200 (40047)

THE ELLA JULIA REYNOLDS SCHOLARSHIPS
Established in 1984 by bequest of Ella Julia Reynolds of Hamilton. Two scholarships to be awarded on the basis of scholarship and character to students who have completed Level I and an additional 30 - 75 units of the Honours English or the Honours English and History programs with a Sessional Average of at least 9.5. The recipients must not be holders of another scholarship.
Value: $1,000 each (30044)

THE GLADYS RICHARDS SCHOLARSHIP
Established in 2002 by bequest of Gladys Richards. Two scholarships to be awarded to students who have completed at least Level II of a single Honours program in English or a Combined Honours English and History program who, in the judgment of the Departments, have demonstrated outstanding academic achievement. Students may not hold another scholarship of equal or greater value.
Value: $2,000 each (30288)

THE JACK RICHARDSON MEMORIAL SCHOLARSHIP
Established in 2002 in memory of Jack Richardson by family, friends and colleagues. To be awarded to a part-time student who has completed at least Level II in an Honours Sociology program and who attains the highest Cumulative Average at the most recent review.
Value: $400 (60013)

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 to be awarded on the basis of scholarship (Sessional Average of at least 9.5) and character to: (a) two to students who have completed Engineering I, or Level I and an additional 35 - 90 units of a program in Engineering, and (b) two 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 LaDema Dorrine 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 at least Level I in any program who, in the judgment of a selection committee, have achieved notable academic standing and demonstrate qualities of leadership, service and/or participation in athletics and/or music. Preference will be given to a student in the Faculty of Engineering. Not open to students in their graduating year.
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 (30332)

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 1988 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 supported by family, in recognition of Dr. Ellen Bouchard Ryan's outstanding contribution to the field of aging. 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 ages-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 60 - 75 units of any 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 the 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 to the committee 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 60 - 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 P. Sayers (Class of '82) by his friends. To be awarded to the student who, in the judgment of the Department of History, has demonstrated outstanding achievement in at least six units of courses work in 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. Two scholarships to be awarded to students enrolled in an Honours Bachelor of Science program who, in the judgment of the Faculty of Science, have demonstrated outstanding academic performance.
Value: $1,000 each (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 the Honours Commerce program who, in the judgment of the DeGroote School of Business, has achieved notable standing in COMMERCE 3AB3 and 3AC3 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 III 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 School of the Arts, 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 to be 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 (30278)

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: $550 (30342)

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 (1946-53) 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 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-FONTES MEMORIAL PRIZE *
Established in 1989 by the graduating class (Class of '88) in association with the McMaster University Nursing Society and the McMaster Nursing Alumni Executive in memory of Grace Senra-Fontes (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 MARGARET A. SERVICE BOOK PRIZE
Established in 1990 by friends, colleagues and former students in memory of Margaret A. Service. To be awarded to the student who upon completion of Level I attains the highest average in BIOLOGY 1A03 and 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 is enrolled in a program in Philosophy, and has, in the judgment of the Department of Philosophy, attained notable standing. Preference will be given to a student travelling and studying abroad during the summer before the final Fall/Winter session, but the scholarship could also be used to fund the final year of study at McMaster.
Value: $725 (30225)
Travel Scholarship applications are due February 15th.

THE LOUIS J. SHEIN SCHOLARSHIP
Established in 1990 by family and friends in memory of Dr. L.J. Shein, founding chair of the Russian Studies program and faculty member from 1958 to 1980. To be awarded to a student who, in the judgment of the Department of Linguistics and Languages, has achieved 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: $600 (30343)

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 (30118)

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 graduand, (b) one to an Honours Biochemistry or Honours Biochemistry and Chemistry graduand, and (c) one to an Honours Chemistry graduand, 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)
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 SONS OF ITALY OF ONTARIO SCHOLARSHIP
Established in 1971 by the Order Sons of Italy of Ontario. To be awarded to a student who has completed at least 30 units beyond Level I in a 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.
Value: $500 (30141)

THE SOUTH ONTARIO ECONOMIC DEVELOPMENT COUNCIL SCHOLARSHIPS
Established in 1973 by the South Ontario (formerly Niagara) Economic Development Council. Two scholarships to be awarded, normally one in each of the B.A. and B.Sc. programs, to the students who have completed Level I and an additional 60 - 75 units of the Honours Geography program and who elect EARTH SC 4MT6 (or GEOG 4MT6) in their graduating session. Awards are based on scholarship and interest in undertaking studies relating to regional development and regional planning in the Niagara Peninsula.
Value: $2,000 each (30142)

THE ROBERT SOWERBY MEMORIAL SCHOLARSHIP
Established in 2002 by family, friends and colleagues, in memory of Dr. R. Sowerby, a professor of Mechanical Engineering. To be awarded to a student enrolled in the Bachelor of Technology program who, in the judgment of the Department of Mechanical Engineering, has demonstrated notable academic achievement.
Value: $500 (40108)

THE MARNIE SPEARS SCHOLARSHIP
Established in 1993 by many friends, colleagues and alumni of McMaster University as a tribute to Marnie Spears (Class of '69), Executive Director, Development and Public Relations from 1986-93 and dedicated alumna who served as President of the McMaster Alumni Council in 1980, in recognition of her outstanding contribution to the University. To be awarded to the student who has completed Level I and at least an additional 30 units of an Honours program with notable academic standing and who, in the judgment of a Selection Committee, has demonstrated leadership in public, community or University alumni relations.
Value: $1,150 (30217)
Students should submit an application to the Office of Student Financial Aid & Scholarships by April 15th.

THE SPORT COACHING PRIZE
Established in 2003 by Pauline McCullagh, 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 pick up an application form from the Department of Kinesiology by April 1.

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.
Value: $850 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 Dr. C.L. Starr, M.D., LL.D., F.A.S.S., Professor of Surgery at the University of Toronto, and an honorary alumnus of McMaster University (LL.D. 1922). To be awarded to the student who has completed Nursing I and who attains the highest 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 3DD6 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 3DD6 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 - 75 units of an Honours program in Music or Art who, in the judgment of the School of the Arts, has demonstrated outstanding achievement.
Value: $525 (30229)

THE MABEL STOAKLEY SCHOLARSHIP
Established in 1956 by the Young Women's Canadian Club of Toronto (now the Career Women's Canadian Club of Toronto). To be awarded to a woman student who has completed 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: $325 (30170)

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 STOJCIC SCHOLARSHIPS
Established in 1997 by bequest of Mark John Stojcic. 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 3QA3) taken in the same session.
Value: $450 (30265)

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 1960 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) one to the student who attains the highest standing in GERMAN 1Z06 and (b) one to the student who attains the highest standing in RUSSIAN 3AA3 (or 2ZZ3).
Value: $50 each for books (40035)

THE TINNERMAN PALNUT ENGINEERED PRODUCTS SCHOLARSHIP IN MECHANICAL ENGINEERING
Established in 2001 by Tinnerman Palnut 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 qualities of leadership at McMaster or in the community.
Value: $3,000 (30344)

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 Corelene 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 TOTH MEMORIAL PRIZE *
Established in 1983 in memory of John Toth by his friends. To be awarded to the student who attains the highest average in any six units of Level III or IV Latin courses.
Value: $50 (40028)

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: $800 (40118)

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: $1,575 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 1990 by the former students, colleagues and friends of Dr. F.W. Waters, Professor from 1935 to 1959. To be awarded to the student entering Level IV of 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 notable standing. Preference to be given to a student pursuing studies on a part-time basis.
Value: $800 (40073)

THE WEISZ FAMILY FOUNDATION 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 ALVINA MARIE WERNER SCHOLARSHIP
Established in 2008 through a bequest by the late Alvina Marie Werner. To be awarded to a graduating student enrolled in a Gerontology or Social Work program who, in the judgment of the Faculty of Social Sciences, demonstrates outstanding academic achievement and interest in pursuing a career in social services in the specific area of gerontology.
Value: $2,400 (50103)

THE HOWARD P. WHIDDEN SCHOLARSHIP
Established in 1941 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)
Travel Scholarship applications are due February 15th.

THE WHIDDEN 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 (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 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 of 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 Arabel 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 or 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 (30160)

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
Established in 1963 by bequest of William Henry Yates of Hamilton.
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 1984 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 GORDON AND AGNES (TWAMBLEY) BRASH ACADEMIC GRANT
Established in 2008 by the bequest of Ron Brash, B.Eng. (Class of '64) in memory of his parents. A variable number to be awarded to students in a Level II Electrical Engineering program who attained a high Sessional Average in Engineering I and demonstrate financial need.
Value: $2,000 (85013)

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) (85010)

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 (85016)

THE DUBECK ACADEMIC GRANT
Established in 2006 by Dr. Michael Dubeck, 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: $1,000 (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: $2,000 each (85008)

THE JACK HOWETT ACADEMIC GRANT
Established in 2005 by the Organization of CANDU Industries (OCI) in honour of Jack Howett, a founding member. To be awarded to a student who has completed at least Level II with a high Sessional Average and is continuing in an Engineering Physics program specializing in the Nuclear Engineering and Energy Systems Stream, and who demonstrates financial need.
Value: $1,000 (85007)

THE JOYCE AND ROSS KELLY ACADEMIC GRANT
Established in 2008 by Joyce and Ross Kelly to provide support for students who wish to pursue their educational goals. To be awarded to a student who has completed Level I with a high Sessional Average, is registered in Level II of a Materials Engineering program, and demonstrates financial need.
Value: $800 (85029)

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: $2,000 (85011)

THE THELMA LAZAROWICH ACADEMIC GRANT
Established in 2005 by Michael Lypka, B. Com. (Class of '80) in memory of his grandmother. 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.
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: $800 (85014)

THE LINARDIC FAMILY ACADEMIC GRANT
Established in 2007 by Daniel Linardic, B.A. (Class of 91) and Kim Linardic. To be awarded to a student who has completed Level I and an additional 24 75 units in an Honours Philosophy program, who attained a high Sessional Average, and demonstrates financial need.
Value: $800 (85025)

THE WILLIAM McKEON MEMORIAL ACADEMIC GRANT IN PHYSICS
Established in 2007 by Mary McKeon, B.A. (Class of '46) in honour of her cousin William McKeon. To be awarded to a student in a Level II Honours Physics program who attained a high Sessional Average in Level I and demonstrates financial need.
Value: $1,200 (85026)

THE SZLEK MILLER ACADEMIC GRANT
Established in 2008 by Dr. Stefania Szlek Miller (Class of '67), on the occasion of her retirement after 35 years of service as a faculty member in the Department of Political Science. To be awarded to a student registered in an Honours History or Honours Political Science program who attains a high Sessional Average and demonstrates financial need.
Value: $800 (85027)

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 Sessional Average and demonstrates financial need.
Value: $800 (85006)

THE DOREEN MORRISON ACADEMIC GRANT
Established in 2007 in memory of Doreen O'Neill Morrison by her children, Rod, Brent and Jane, and the Morrison and Collis families. To be awarded to a student who has completed at least Level II of any program in the Department of Health, Aging and Society, and who attains a high Sessional Average and demonstrates financial need.
Value: $800 (85021)

THE RICHARD C. NEWMAN 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 '83). 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: $800 (85003)

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, 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, COMMERCE 2MA3 or 3MC3, and who demonstrates financial need.
Value: $800 (85018)

THE PATRICK TAN ACADEMIC GRANT
Established in 2008 by Dr. Patrick Guong-Ching Tan, B.Eng. (Class of '70), M.Eng. (Class of '72), LL.D. (2003). Two grants to be awarded to students in a program in Engineering who have a high Sessional Average and demonstrate financial need.
Value: $1,000 (85030)

THE THOMPSON ACADEMIC GRANT
Established in 2006 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 - 63 units in an Honours Economics program, attains a high Sessional Average and demonstrates financial need.
Value: $800 (85015)

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 Business I, is continuing in the Bachelor of Commerce program, attains a high Sessional Average and demonstrates financial need.
Value: $2,000 (85009)

THE DIANE AND COLIN WOOD ACADEMIC GRANT IN BUSINESS
Established in 2008 by Diane Wood and Colin Wood, B.Com. (Class of 78). To be awarded to students in the DeGroote School of Business who have completed Business I, with a high Sessional Average, are registered in a Level II Commerce program, and have demonstrated financial need.
Value: $800 each (85028)

UNDERGRADUATE AWARDS AND ACADEMIC GRANTS BY FACULTY

Legend

AWARD AND GRANT CATEGORY

- B In-Course (Full-time) Awards
- C Part-time Awards
- D Specific Achievement Awards
- E Graduand Awards
- F Second Degree Awards
- G Academic Grants
- H Travel/Exchange Scholarships

AWARD TYPE

- J Judgmentally Awarded
- M Mathematically Awarded

Please look at the listings in relevant Faculties if you are in a combined program.

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
ARTS AND SCIENCE					
	J	Yes	H	$1,000	The Arts and Science Program Experiential Learning Travel Scholarship
	J	No	D	$75	The Arts and Science Program Book Award
	J	No	B	$500	The Charon Burke McCain Memorial Scholarship
	J	No	B	$1,500	The Class of '53 50th Anniversary Scholarship
	J	No	E	$200	The Laura Dodson Prize
	M	No	E	$500	The Barbara M. Ferrier Scholarship in Arts and Science
	J	No	B	$400	The Barbara Francis Scholarship
	J	No	B	$325	The George P. Gilmour Memorial Scholarship
	J	No	D	$150	The Herbert M. Jenkins Prize
	J	Yes	E	$700	The John R. McCarthy Scholarship
	J	Yes	H	$4,600	The T. Russell Wilkins Memorial Scholarship
BUSINESS					
Commerce	J	Yes	B	$850	The Accenture Inc. Scholarship
	J	No	E	Gold Medal	The E.H. Ambrose Gold Medal
	J	No	B	$200	The Scott Bartlett Memorial Prize
	J	No	E	$1,000 and Medal	The Basu Medal
	M	No	B	$1,400	The M. Banker Bates Scholarship
	J	No	E	$150	The CGA Ont. Award For Excellence
	J	Yes	H	$1,000	The Maria Chan Scholarships for International Studies in Business
	M	No	B	$775	The City of Hamilton Economic Development Department Scholarships
	J	No	E	$2,000	The John Deere Limited Scholarship
	J	No	B	$800	The DeGroote School of Business Alumni Undergraduate Scholarships
	J	No	B	$1,500	The Deloitte & Touche Scholarship
	M	No	G	$1,000/year	The Burdee Gibson Academic Grant
	M	No	G	$1,000	The Carl Haller-Associated Medical Services, Inc. Academic Grant
	J	No	E	$1,000	The Bruce M. Hamilton Award
	J	No	B	$1,275	The Hamilton Port Authority Scholarship
	J	No	B	$400	The Donald Hart Scholarship
	J	No	B	$2,500	The Hawkrigg Family Scholarship in Business
	M	No	D	$250 for books	The Paul Hypher Prize
	J	No	E	$200	The Burton R. James Memorial Prize
	J	No	B	$475	The Robert Alan Kennedy Scholarship
	J	No	B	$350	The KPMG Scholarship
	M	No	G	$5,000/year	The Thelma Lazarowich Academic Grant
	M	No	G	$800	The Taylor Leibow Academic Grant
	M	No	B	$625	The Claude C. Lister Scholarship
	J	No	B	$2,500	The PricewaterhouseCoopers Scholarships
	M	No	G	$800	The Barrie Reid Academic Grant
	J	No	B	$3,000	The SB Partners Scholarship
	M	No	B	$450	The Dr. Andrew Szendrovits Memorial Scholarship
	M	No	G	$2,000	The Troy Family Academic Grant
	M	No	B	$1,500	The Weisz Family Foundation Scholarship
	M	No	G	$800	The Diane and Colin Wood Academic Grand in Business
ENGINEERING					
Faculty Wide	J	Yes	B	$850	The Accenture Inc. Scholarship
	M	No	B	$2,000	The Audcomp Computer Systems Scholarship
	M	No	G	$2,000/year	The William F. Campbell Academic Grant
	M	No	B	$800	The Canadian Federation of University Women (Hamilton) Past President's Prize
	J	Yes	H	$2,500	The Jimmy Fong International Outreach Travel Award in Engineering

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
Faculty Wide	M	No	D, F	$120	The Neil Forsyth Prize
	M	No	D	$125	The John F. Moore Prize
	M	No	G	$800	The Richard C. Newman Academic Grant
	M	No	E	Gold Medal	The Ontario Professional Engineers Foundation for Education Gold Medal
	J	No	B	$1,250	The Ontario Professional Engineers Foundation for Education Undergraduate Scholarships
	J	No	B	$2,000	The Herbert A. Ricker Scholarship
	J	Yes	B	$2,500	The Stanley Robertson Scholarship
	M	No	G	$1,000	The Patrick Tan Academic Grant
Chemical Engineering	J	No	B	$1,000	The Air Liquide Canada Inc. Scholarship
	M	No	B	$50, Medal and Certificate	The Canadian Society for Chemical Engineering Prize
	M	No	B	$500	The Canadian Society for Chemical Engineering (CSChE) Scholarship
	J	No	B	$150	The Chemical Institute of Canada (Hamilton Section) Prize
	M	No	B	$1,000/year	The Lorna and Alvin Kinnear Scholarship
	J	No	B	$1,000	The John Mayberry Scholarships
	M	No	E	Plaque	The Society of Chemical Industry Merit Awards
Civil Engineering	J	No	B	$500	The ACI (Ontario Chapter) Scholarship
	M	No	B	$200	The A.H. Atkinson Prize
	J	No	D	$2,000	The Canadian Institute of Steel Construction (CISC) Award
	J	No	B	Plaque	The Canadian Society of Civil Engineers (Hamilton Section) Prize
	J	No	B	$1,000	The Hamilton and District Heavy Construction Association Scholarships
	J	No	E	$2,000	The BA Consulting Group Transportation Engineering Scholarship
	M	No	G	$2,000	The Hatch Academic Grant in Engineering
	J	No	B	$1,000	The Ronald E. Materick Scholarships
	J	No	B	$650	The Simon McNally Scholarship
	M	No	D	$250	The Dr. F.A. Mirza Scholarship
	J	No	B	$1,500	The F.W. Paulin Scholarship
	M	No	G	$2,000	The Pollock Family Academic Grant
	M	No	B	$2,500	The Stantec Consulting Ltd. Engineering Scholarship
Computer Engineering	J	No	E	$1,900	The Dr. Rudolf de Buda Scholarship
	M	No	B	$225	The Ruth and Jack Hall Prize
	J	No	B	$1,000	The Nortel Networks Scholarships in Information Technology
Computer Science	M	No	E	$350 and Medal	The Binkley Medal
	M	No	B	$225	The Ruth and Jack Hall Prize
	M	No	E	Medal	The Gerald L. Keech Medal
	J	No	B	$1,000	The Nortel Networks Scholarships in Infomation Technology
Electrical Engineering	M	No	G	$2,000	The Gordon and Agnes (Twambley) Brash Academic Grant
	J	No	E	$1,900	The Dr. Rudolf de Buda Scholarship
	M	No	B	$1,000	The Group Eight Engineering Limited L.F. Eull Prize
	J	No	B	$1,000	The Nortel Networks Scholarships in Information Technology
Engineering and Management	J	No	B	$1,000	The A.I. Johnson Scholarship
	M	No	B	$275	The Ray Lawson Scholarships
	J	No	E	$300	The Shell Canada Prizes in Engineering and Management
	J	No	B	$1,100	The Shell Canada Scholarships in Engineering and Management
Engineering and Society	M	No	B	$1,100	The Molson Scholarship in Environmental Studies
Engineering Physics	M	No	G	$1,000	The Jack Howett Academic Grant
	J	No	B	$1,000	The Nortel Networks Scholarships in Information Technology
Materials Engineering	M	No	B	$1,700	The Crispin Calvo Scholarship
	M	No	G	$2,000	The Hatch Academic Grant in Engineering
	J	No	B	$1,900	The Inco Scholarship in Materials Engineering
	J	No	B	$1,800	The Mark John Stojcic Scholarships
Materials Science and Engineering	J	No	B	$1,000	The Air Liquide Canada Inc. Scholarship
	J	No	E	$500	The Denton Coates Memorial Scholarship
	J	No	B	$125	The Ronald K. Ham Memorial Prize
	J	No	B	$1,900	The Inco Scholarship in Materials Engineering
	M	No	G	$800	The Joyce and Ross Kelly Academic Grant
	J	No	B	$1,000	The John Mayberry Scholarships
Mechanical Engineering	J	No	B	$1,000	The Air Liquide Canada Inc. Scholarship
	J	No	B	$1,500	The Grace Dorothy and William P. Carpenter Award
	M	No	B	$1,000	The Federation of Chinese Canadian Professionals Education Foundation Scholarships

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
	M	No	G	$2,000	The Hatch Academic Grant in Engineering
	J	No	B	$600	The Intermetco Limited Scholarship
	J	No	E	Trophy	The Iroquois Trophy
	J	No	B	$1,000	The John Mayberry Scholarships
	J	No	D	$500	The Robert Sowerby Memorial Scholarship
	J	No	B	$3,000	The Tinnerman Palnut Engineered Products Scholarship in Mechanical Engineering
Software Engineering	J	No	B	$3,400	The CAE Scholarships in Computing and Software Engineering
	J	No	B	$800	The Motorola Software Engineering Scholarship
	J	No	B	$1,000	The Nortel Networks Scholarships in Information Technology
HEALTH SCIENCES					
Faculty Wide	J	Yes	H	$4,600	The T. Russell Wilkins Memorial Scholarship
Anatomy	J	No	C	$1,000 and Medal	The Anatomy Prize
Health Sciences	J	Yes	H	$1,000	The CIM International Outreach Travel Award
Midwifery	J	No	D	$1,000	The Dr. Garth Boulter Memorial Award
	J	No	E	$5,000	The Murray and Eleanor Enkin Midwifery Award
	J	No	D, F	$1,000	The Sakarkhanu K. Lila Memorial Scholarship
Nursing	J	No	B	$3,150	The Henrietta Alderson Scholarship
	J	No	E	$2,900	The Margaret Elizabeth Burke Memorial Academic Grant
	J	No	D	$1,000	The Elizabeth Petra Cooke Memorial Scholarship
	J	No	B	$2,000	The Clara I. Elman Scholarships
	J	Yes	H	$2,000	The Clara I. Elman Travel Scholarships
	J	No	B	$2,400	The Dr. Shigeaki Hinohara Scholarship
	J	No	D, F	$600	The Janet McKnight Award
	J	No	D	$800	The Donald Lavigne Memorial Scholarship
	J	No	E, F	$300	The McMaster Nursing Alumni Memorial Prize
	J	No	D	$250	The Medical-Surgical Excellence in Clinical Nursing Award
	M	No	G	$800	The Eleanor Morris Academic Grant
	M	No	B	$1,100	The Niemeier Scholarship
	J	No	E	$250	The Pioneer Group Inc. Prizes in Nursing
	J	No	D, F	$250	The Grace Senra-Fontes Memorial Prize
	M	No	B	$150	The Clarence L. Starr Prize
	J	No	D	$250	The Corelene Helen Tostevin Scholarships
	J	No	B	$1,800	The Lillian and Manuel Zack Scholarship
HUMANITIES					
Faculty Wide	J	Yes	H	$5,500	The A.G. Alexander Scholarships
	J	No	E	$5,000 and Medal $3,000 and Medal $2,000 and Medal	The Dean's Medal for Excellence in the Humanities
	J	No	E	Medal	The Humanities Medals for Special Achievement
	M	No	G	$2,000	The Kneale Brothers '37 Academic Grant
	J	Yes	E	$700	The John R. McCarthy Scholarship
Art	J	No	B	$800	The Alise Alexanian Hassel Memorial Scholarship
	J	No	B	$450	The Peter McPhater Memorial Scholarship
	J	No	B	$525	The Leona Allerston Ryan and Gordon Henry Stevens Memorial Scholarship
	M	No	B	$750	The Juanita LeBarre Symington Scholarship
	M	No	B	$750	The Women's Art Association Scholarships
Art History	J	No	D, F	$175	The Eleanor Dornbush Marples Prize in Art History
	J	No	B	$450	The Peter McPhater Memorial Scholarship
	M	No	B	$750	The Women's Art Association Scholarships
Classics	M	No	B	$500	The Brian Blakey Memorial Scholarship
	J	No	B	$100	The Classics Prize
	J	No	D, F	$150	The Latin Prize
	J	No	E	$100	The A.G. McKay Prize in Classical Studies
	J	No	B	$350	The Alexander Gordon McKay Scholarship
	J	No	B	$50	The Gladys Ballantyne Parker Prize
	J	Yes	H	$2,000	The E.T. Salmon Scholarship
	M	No	D, F	$50	The John Toth Memorial Prize
	J	No	B	$275	The Varey Scholarship
Comparative Literature	J	No	D, F	$250	The Comparative Literature Prize
English	M	No	D	$425	The Maqbool Aziz Memorial Scholarship
	J	No	B	$500	The Laura Baldwin Scholarship
	M	No	B	$500	The Brian Blakey Memorial Scholarship
	J	No	D	$200	The Canadian Federation of University Women (Hamilton) Ruby Brown Book Prize

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
English	M	No	D, F	$175	The Cranston Prizes
	M	No	C	$100 for Books	The Audrey Diemert Memorial Book Prize
	M	No	B	$2,000	The Margery E. Dixon Memorial Scholarship
	J	Yes	H	$3,675	The Joan Jackson Dunbar Travel Scholarship
	J	No	B	$975	The Daphne Etherington Graham Memorial Scholarship in English
	J	No	B	$200	The Kit Memorial Scholarship
	J	No	E	$200	The Agnes and John MacNeill Memorial Prize
	M	No	B	$525	The McGregor-Smith-Burr Memorial Scholarship
	M	No	E	$250	The Walter Scott McLay Prize
	J	No	D	$250	The Rand Memorial Prize of Class '98
	J	No	B	$1,000	The Ella Julia Reynolds Scholarships
	J	No	B	$2,000	The Gladys Richards Scholarship
	J	Yes	H	$2,000	The E.T. Salmon Scholarship
	M	No	C	$125	The Morris and Sarah Rosenhead Memorial Prize
	M	No	B	$550	The Sheila Scott Scholarship in English
	M	No	B	$375	The Patricia L. Smye Memorial Prizes
	J	No	D, F	$250 for Books	The R.M. Wiles Memorial Book Prize
French	M	No	B	$500	The Brian Blakey Memorial Scholarship
	M	No	B	$175	The Rosemary Douglas-Mercer Memorial Prize
	J	No	B	$1,000	The Harold and Gertrude Freeman Scholarship in French
	J	No	B	$1,000	The French Scholarship
	J	No	D	Book Prize	The French Government Book Prizes
	J	No	E	$475	The W. Norman Jeeves Scholarship
	J	No	B	$2,200	The E. Doris Lawrence Scholarship
	J	No	D	$250	The Elaine Nardocchio Memorial Scholarship Fund
	J	No	B	$500	The Brian Pocknell Memorial Scholarship
	J	No	B	$450	The Marie L. Stock Scholarship
	J	No	D	Book Prize	The Swiss Minister to Canada Book Prizes
History	J	No	E	$150	The William and Lida Barns Memorial Prize in History
	J	No	E	$85 for Books	The Marion Bates Book Prize
	J	No	E	Medal	The Ezio Cappadocia Medal
	J	No	D, F	$425	The James Robertson Carruthers Memorial Prize
	J	No	E	$100	The European History Prize
	M	No	G	$800	The P.J. Ferguson Academic Grant
	J	No	B	$425 for Books	The Samuel Geller Memorial Book Prize
	J	No	B	$1,000	The Daphne Etherington Graham Memorial Scholarship in History
	J	No	B	$750	The Robert H. Johnston Undergraduate Scholarship in History
	M	No	B	$1,500	The Jury Prize
	J	No	D, F	$100	The H.W. McCready Prize in British History
	M	No	B	$525	The McGregor-Smith-Burr Memorial Scholarship
	M	No	G	$800	The Szlek Miller Academic Grant
	M	No	D	$150	The Municipal Chapter of Hamilton, IODE, Muriel E. Skelton Award
	J	No	B	$575	The Robert Nixon Scholarship
	M	No	B	$700	The Dr. John A. Pylypiuk Scholarship
	J	No	B	$1,000	The Ella Julia Reynolds Scholarships
	J	No	B	$2,000	The Gladys Richards Scholarship
	J	Yes	H	$2,000	The E.T. Salmon Scholarship
	J	No	B	$175 for Books	The E. Togo Salmon Prize in History
	J	No	D, F	$150 for Books	The Noel Sandusky Memorial Prize
	J	No	D, F	$275	The Larry Sayers Prize in East Asian History
	J	No	E	$250	The John H. Trueman Prize
	J	No	D, F	$250	The John H. Trueman Scholarship
	J	No	D	$375	The Thomas E. Willey Scholarship
Linguistics and Languages	J	No	E	Book Prize	The Ambassador of Spain Book Prize
	M	No	B	$500	The Brian Blakey Memorial Scholarship
	J	No	D	$125	The Beatrice Corrigan Memorial Book Prize
	M	No	D, F	$150	The Consul General of Italy Book Prize in Italian
	J	Yes	H	$900	The Gabriele Erasmi Travel Scholarship to Italy
	J	No	D	Book Prize	The German Embassy Book Prize
	J	No	D, F	Book Prize	The Inter Nationes (Bonn) Book Prize
	J	No	B	$125	The ITCA Community Involvement Prize
	J	No	D	$150	The James B. Lawson Scholarship
	J	Yes	H	$925	The Linguistics and Languages Travel Scholarship
	J	No	D	$250	The Linguistics Prize
	J	No	B	$300	The Anne Murray Scholarship
	J	No	B	$750	The Fedor Schneider Scholarship in Italian
	J	No	B	$375	The Louis J. Shein Scholarship

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
	J	No	B	$500	The Sons of Italy of Ontario Scholarship
	J	No	C	Book Prize	The Swiss Minister to Canada Book Prizes
	M	No	C	$50 for Books	The Michael Thomson Memorial Book Prizes
	J	No	D	$375	The Thomas E. Willey Scholarship
Multimedia	J	No	B	$1,000	The Bank of Montreal Humanities Multimedia Scholarships
Music	J	No	B	$450	The Louise E. Bettger Scholarships in Music
	J	No	B	$1,050	The Hilda Dorothy Borman Scholarship
	J	No	B	$1,500	The Joan Francis Bowling Scholarships
	J	No	B	$200	The Ella Halstead Campbell Prize
	M	No	G	$800	The Margaret C. Dixon Academic Grant
	J	No	B	$150	The Norman N. Caskey Memorial Prize
	J	No	B	$450	The Merrill Francis Gage Scholarships
	J	No	B	$100 for Books	The H.B. Greening Book Prize
	J	No	D	$200	The Hughes Scholarship
	J	No	B	$125	The Ivey Scholarship
	J	No	D	$1,000	The Allan Ludbrook Memorial Scholarship
	J	No	B	$1,000	The Merriam School of Music Scholarship
	J	No	B	$800	The Irene Pearce Scholarship
	J	No	B	$425	The Sharon Reeves Scholarship
	J	No	B	$525	The Leona Allerston Ryan and Gordon Henry Stevens Memorial Scholarship
	J	No	B	$950	The School of the Arts Scholarship in Music
Peace Studies	J	No	D	$300	The Alan G. Newcombe Prize in Peace Studies
Philosophy	J	No	B	$475	The Brien Scholarship in Philosophy
	J	No	B	$1,000	The Ten Broeke-Bensen Memorial Scholarship
	J	No	B	$200	The Horace A. Dulmage Prize in Philosophy
	M	No	G	$800	The Linardic Family Academic Grant
	M	No	D	$225	The Abraham Rosenberg Memorial Prize
	J	**Yes**	H	$725	The Albert Shalom Travel Scholarship
	J	No	B	$500	The Graham Ronald Toop Scholarship
	J	No	B	$750	The F.W. Waters Scholarship in Philosophy
	J	No	C	$250	The F.W. Waters Scholarship in Philosophy for Part-Time Students
Theatre &Film Studies	M	No	B	$500	The Brian Blakey Memorial Scholarship
	J	No	B	$1,500	The Class of '38 Scholarship in Honour of Amelia Hall
	J	No	B	$950	The Class of '43 Golden Anniversary Scholarship
	J	No	E	Gold Medal	The Amelia Hall Gold Medal
	M	No	D,F	$125	The Eleanor Dornbush Marples Prize in Theatre &Film Studies
	M	No	D	Book Prize	The Theatre & Film Studies Book Prize
Women's Studies	J	No	E	$300	The Canadian Federation of University Women (Hamilton) Memorial Prize
SCIENCE					
Faculty Wide	J	**Yes**	B	$850	The Accenture Inc. Scholarship
	J	No	E	Ring	The Burke Memorial Ring
	M	No	G	$2,000/year	The William F. Campbell Academic Grant
	M	No	G	$1,000/year	The Dubeck Academic Grant
	M	No	B	$325	The J.L.W. Gill Prizes
	J	**Yes**	E	$700	The John R. McCarthy Scholarship
	M	No	G	$800	The Manson Olson Academic Grant
	J	No	B	$2,000	The Herbert A. Ricker Scholarships
	J	No	B	$1,000	The Dr. Sina Sazgar Memorial Scholarship
	J	No	B	$500	The Science Alumni Scholarships
	M	No	B	$1,575	The Valley City Manufacturing Co. Ltd. Scholarships
	J	**Yes**	H	$4,600	The T. Russell Wilkins Memorial Scholarship
Biochemistry	M	No	B	$350	The Beauty Counselors of Canada Scholarship
	J	No	B	Medal and Certificate	The Canadian Society for Chemistry Prizes
	J	No	B	$1,000	The Dubeck Biochemistry Award
	J	No	B	$800	The Ross Hume Hall Memorial Scholarship
	J	No	B	$800	The Ernest Robert MacKenzie Kay Scholarships
	M	No	E	Plaque	The Society of Chemical Industry Merit Awards
Biology	J	No	B	$800	The Stanley T. Bayley Scholarship in Biology
	J	No	D	Book	The Biology Achievement Award
	J	No	E,F	$200	The Abe Black Memorial Prizes
	M	No	D	$400	The Douglas Davidson Scholarship in Genetics
	J	No	D	$575	The D.M. Davies Prize
	J	No	B	$800	The Ernest Robert MacKenzie Kay Scholarships
	J	No	B	$500	The John N.A. Lott Scholarship in Biology

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
Biology	M	No	E	$300	The Esther McCandless Memorial Prize
	M	No	B	$575	The J.J. Miller Prize
	J	No	B	$200	The Shenstone Prize
Biology and Pharmacology Co-op	J	No	E	Medal	The Jensen Medal
Chemistry	M	No	B	$350	The Beauty Counselors of Canada Scholarship
	M	No	B	$1,700	The Crispin Calvo Scholarships
	M	No	B	Medal and Certificate	The Canadian Society for Chemistry Prizes
	J	No	B	$150	The Chemical Institute of Canada (Hamilton Section) Prize
	J	No	B	$1,000	The Dubeck Chemistry Award
	M	No	B	$1,000	The Federation of Chinese Canadian Professionals Education Foundation Scholarships
	M	No	B	$350	The Klaus Fritze Memorial Prize
	M	No	B	$140	The Hamilton Chemical Association Prize
	J	No	B	$800	The Ernest Robert MacKenzie Kay Scholarships
	J	No	B	$925	The Donald G. McNabb Scholarship
	J	No	B	$175 for Books	The Michael J. Morton Memorial Book Prize
	J	No	B	$150 for Books	The Fredric P. Olsen Book Prize
	J	No	B	$200	The Shenstone Prize
	M	No	B	$600	The Gerald and Verna Simpson Memorial Scholarship
	M	No	E	Plaque	The Society of Chemical Industry Merit Awards
Geography and Earth Sciences	J	No	E	$200 for Books	The Cameron D. Allen Book Prize
	M	No	D	$300	The Alumni Canadian Geography Prize
	J	No	B	$75	The Herbert S. Armstrong Memorial Fund
	M	No	B	$1,500	The Murray Ball Scholarships in Geology
	J	Yes	B	$2,000	The J.P. Bickell Foundation Mining Scholarships
	J	No	E	$100 for Books	The Leone Betty Blackwell Memorial Book Prize
	J	No	B	$1,650	The Helen Emery Scholarships in Environmental Science
	M	No	D, F	$100	The Environmental Issues Prize
	J	No	D	$550	The R. Louis Gentilcore Prize
	J	No	B	$2,000	The Inco Scholarship in Environmental Science
	J	No	B	$75	The Stanford N. Katambala Earth Sciences Prize
	M	No	D	$150	The Moffat Family Prizes
	M	No	B	$1,100	The Molson Scholarship in Environmental Studies
	J	No	B	$500	The Pitcher-Ratford Awards
	M	No	E	$100	The Lloyd Reeds Prizes
	J	No	B	$325	The Rosart Properties Inc. Scholarship
	J	No	B	$2,000	The South Ontario Economic Development Council Scholarships
	M	No	B	$250	The Hugh R. Thompson Memorial Prize
Kinesiology	J	No	B	$1,500/year	The Betty Taylor Campbell Scholarship
	J	No	B	$400	The Nancy Car Memorial Scholarship in Kinesiology
	J	No	E	Medal and Certificate	The CSEP/SCPE Undergraduate Student Award
	J	No	B	$1,200	The Rose Hill Scholarship
	J	No	E	$100	The Kinesiology Prize
	J	No	D	$100	The Kinesiology Prizes
	J	No	B	$700	The Megan Lawrence Scholarship
	J	Yes	D	$500	The Sport Coaching Prize
	J	No	B	$250	The Ivor Wynne Memorial Prize
Life Science	J	No	E, F	$200	The Abe Black Memorial Prizes
	M	No	E	$100	The P.L. Newbigging Prizes
Mathematics and/or Statistics	M	No	B	$1,100	The W.K. Allan Memorial Scholarship
	M	No	B	$375	The J. Douglas Bankier Memorial Scholarship
	M	No	B	$600/year	The Dr. and Mrs. F.R. Britton Scholarship in Mathematics
	J	No	D	$425	The H.L. Jackson Memorial Scholarship
	J	No	B	$750	The George P. and Leatha M. Keys Scholarships
	J	No	B	$850	The S.L. Squire Scholarships
	M	No	B	$300	The Dr. R.A. Thompson Prize in Mathematics
	M	No	B	$1,600	The Gladys A. Young Scholarship
Medical and Health Physics	M	No	B	$600	The Bill Prestwich Scholarship in Medical and Health Physics
Physics	M	No	B	$1,100	The W.K. Allan Memorial Scholarship
	M	No	B	$1,000	The Federation of Chinese Canadian Professionals Education Foundation Scholarships
	M	No	G	$1,200	The William McKeon Memorial Academic Grant in Physics
	J	No	B	$500	The A.B. McLay Scholarship in Physics
	J	No	B	$575	The Boyd McLay Scholarship in Physics
	M	No	B	$1,200	The Catherine and Albert Roeder Memorial Scholarship

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
	J	No	B	$200	The Shenstone Prize
	M	No	B	$600	Te Gerald and Verna Simpson Memorial Scholarship
	M	No	E	Plaque	The Society of Chemical Industry Merit Awards
	M	No	B	$700	The Jim Waddington Prize in Physics and Astronomy
	M	No	B	$1,200	The Emanuel Williams Scholarship in Physics
	M	No	B	$1,600	The Gladys A. Young Scholarship
Psychology	J	No	C	$600	The Abe Black Memorial Prize
	M	No	E	$100	The P.L. Newbigging Prizes
	J	No	D	$375	The P.L. Newbigging Scholarship
	M	No	B	$70	The Psychology Society Prizes
	M	No	B	$375	The Patricia L. Smye Memorial Prizes
SOCIAL SCIENCES					
Faculty Wide	M	No	B	$1,950	The Hugh Clark Scholarship
	J	No	E	Medal	The J.E.L. Graham Medal
	M	No	C	$500	The Faculty of Social Sciences Inquiry Award
	M	No	G	$2,000	The Kneale Brothers '37 Academic Grant
	J	Yes	E	$700	The John R. McCarthy Scholarship
	J	No	E	Medal	The R.C. McIvor Medal
	J	No	C	$425	The David Winch Memorial Scholarship
Anthropology	J	No	E	$100	The Anthropology Prize
	J	No	E	$100	The Ruth Landes Prize
	J	No	E	$100	The Richard Slobodin Prize
Economics	J	No	B	$700	The Class of '50 Scholarship in Honours Economics
	M	No	B	$300	The Dr. Thomas Hobley Prize
	M	No	D	$500	The William D.G. Hunter Prize
	J	No	E	Medal	The Hurd Medal
	J	No	D, F	$175	The Sam Lawrence Prize
	J	No	D, F	$475	The MacGibbon Scholarship
	J	No	D, F	$425	The William MacKenzie Memorial Prize
	J	No	B	$700	The Pevensing Scholarship
	J	No	D, F	$100	The Kenneth W. Taylor Book Prize
	M	No	G	$800	The Thompson Academic Grant
	J	No	D, F	$800	The Ralph Weekes Scholarship
Geography and Earth Sciences	J	No	E	$200 for Books	The Cameron D. Allen Book Prize
	M	No	D	$300	The Alumni Canadian Geography Prize
	J	No	B	$75	The Herbert S. Armstrong Memorial Fund
	M	No	B	$1,500	The Murray Ball Scholarships in Geology
	M	No	E	$100 for Books	The Leone Betty Blackwell Memorial Book Prize
	J	No	B	$1,650	The Helen Emery Scholarships in Environmental Science
	M	No	D, F	$75	The Environmental Issues Prize
	J	No	D	$550	The R. Louis Gentilcore Prize
	J	Yes	B	$2,000	The J.P. Bickell Foundation Mining Scholarships
	J	No	B	$75	The Stanford N. Katambala Earth Sciences Prize
	M	No	D	$150	The Moffat Family Prizes
	M	No	B	$1,100	The Molson Scholarship in Environmental Studies
	J	No	E	$225	The E.S. Moore Prize
	J	No	E	$100	The Lloyd Reeds Prizes
	J	No	B	$325	The Rosart Properties Inc. Scholarship
	J	No	B	$2,000	The South Ontario Economic Development Council Scholarships
	M	No	B	$250	The Hugh R. Thompson Memorial Prize
Gerontology	J	Yes	D, F	$450	The Barbara and Ronald Bayne Gerontology Internship Award
	J	No	E	$100	The Gerontology Prizes
	J	No	F	$50	The Karl Kinanen Alumni Prize in Gerontology
	M	No	C	$250 for Books	The McMaster University Retirees Association Prize
	M	No	B	$1,000	The McMaster University Retirees Association Scholarship
	J	No	E, F	$1,200	The Audrey Evelyn Mepham Award in Gerontology
	M	No	G	$800	The Doreen Morrison Academic Grant
	J	No	E	$45	The Pioneer Group Inc. Gerontology Prize
	J	No	D	$400	The Pioneer Group Inc. Prize
	J	No	B	$1,000	The Pioneer Group Inc. Scholarship
	M	No	C	$200	The Retired Teachers of Ontario Hamilton/Haldimand District Prize in Gerontology
	J	No	D, F	$400	The Ellen Bouchard Ryan Scholarship
	J	No	E	$2,400	The Alvina Marie Werner Scholarship
Labour Studies	J	No	D, F	$500	The Larry Sefton Scholarships
	J	No	E	$50 for Books	The Harry Waisglass Book Prize
	J	No	D, F	$175	The Melinda Wapshaw Achievement Award

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
Political Science	J	No	D, F	$300	The Canadian Institute of International Affairs Prize
	M	No	B	$300	The Dr. Thomas Hobley Prize
	M	No	D	$275 for Books	The Human Rights Award
	J	No	E	$750	The Feliks Litkowski Memorial Prize in Political Science
	M	No	G	$800	The Szlek Miller Academic Grant
	J	No	D	$650	The Derry Novak Scholarship
	J	No	E	$200	The Political Science Prize
	J	No	E	$100	The Political Science Honours Essay Prize
	J	No	D	$650	The T.H.B. Symons Prize in Canadian Studies
	J	No	D	$75	The Thomas Truman Memorial Prize
Psychology	M	No	E, F	$200	The Abe Black Memorial Prizes
	M	No	E	$100	The P.L. Newbigging Prizes
	J	No	D	$375	The P.L. Newbigging Scholarship
	M	No	B	$70	The Psychology Society Prizes
	M	No	B	$375	The Patricia L. Smye Memorial Prizes
Religious Studies	M	No	D, F	$125	The Gilmour Memorial Prize
	M	No	B	$175	The Lawrence and Kathleen Mary Johnston Memorial Prize
	M	No	E	$100	The Religious Studies Prizes
	J	No	B	$450	The Marjorie and Charles Wilkinson Scholarship
Social Work	J	No	D, F	$500	The Citizen Action Group Prize
	M	No	E, F	$800	The Dr. Jean Jones Memorial Scholarship
	M	No	E	$100	The Harry L. Penny Prize
	M	No	D	$100	The Social Work Prize
	M	No	C, D, F	$125	The Anne Stein Memorial Prize
	J	No	E	$2,400	The Alvina Marie Werner Scholarship
Sociology	M	No	E	$100	The Frank E. Jones Prize
	J	No	B	$150	The Betty MacMillan Prize
	J	No	B	$800	The Lianne Marks Scholarship
	M	No	C	$400	The Jack Richardson Memorial Scholarship
	M	No	E	$100	The Sociology Prizes
TRAVEL SCHOLARSHIPS					
University Wide	J	Yes	H	$2,200	The Beale-Lincoln-Hall Travel Scholarship
	J	Yes	H	$1,500	The John P. Evans Travel Scholarship
	J	Yes	H	$800	The Howard P. Whidden Scholarship
Arts and Science	J	Yes	H	$1,000	The Arts and Science Experiential Learning Travel Scholarship
	J	Yes	H	$1,300	The Class of '37 Travel Scholarship in Arts and Science
	J	Yes	H	$4,600	The T. Russell Wilkins Memorial Scholarship
Business	J	Yes	H	$1,000	The Maria Chan Scholarships for International Studies in Business
Engineering	J	Yes	H	$2,500	The Jimmy Fong International Outreach Travel Award in Engineering
Health Sciences	J	Yes	H	$1,000	The CIM International Outreach Travel Award
	J	Yes	H	$4,600	The T. Russell Wilkins Memorial Scholarships
Humanities	J	Yes	H	$5,500	The A.G. Alexander Scholarships
	J	Yes	H	$3,675	The Joan Jackson Dunbar Travel Scholarship
	J	Yes	H	$900	The Gabriele Erasmi Travel Scholarship to Italy
	J	Yes	H	$925	The Modern Languages Travel Scholarship
	J	Yes	H	$2,000	The E.T. Salmon Scholarship
	J	Yes	H	$725	The Albert Shalom Travel Scholarship
Nursing	J	Yes	H	$1,000	The Clara I. Elman Travel Scholarship
Science	J	Yes	H	$4,600	The T. Russell Wilkins Memorial Scholarships
UNIVERSITY WIDE SCHOLARSHIPS					
University Wide	J	Yes	D	$800	The Achievement Awards of Excellence
	M	No	C	$375	The Alumni Association Scholarship
	M	No	B	$200 for books	The Edgar R. Ashall Scholarship
	M	No	B	$750	The Bates Residence Scholarship
	M	No	B	$1,500	The Bentall Scholarships
	J	No	B	$1,500	The Joan Francis Bowling Scholarships
	J	Yes	B	$300	The Josephine Staples Brien Scholarship
	M	No	B	$1,500	The Canadian Federation of University Women (Hamilton) Scholarship
	J	No	B	Medal	The Chancellor's Gold Medal
	M	No	B	$1,500	The Class of '44 Scholarship
	M	No	B	$800	The Edwin Marwin Dalley Memorial Scholarships
	M	No	B	$750	The Edwards Hall Residence Scholarship
	M	No	E	Medal	The Governor General's Academic Medal
	J	Yes	B	$1,500	The Gwen George Award

Faculty/Program/ Department	Award Type	Application Required	Award Category	Value	Name of Scholarship
	J	Yes	C	$400 and Medal	The Gwen George Medal
	M	No	B	$1,500	The Gupta Family International Scholarships
	M	No	B	$800	The Hamilton Industrial Scholarships
	M	No	B	$750	The Hedden Hall Residence Scholarship
	M	No	B	$1,500	The Dr. Harry Lyman Hooker Scholarships
	M	No	B	$1,550	The Anna Marie Hibbard Scholarship
	M	No	B	$250	The Bertram Osmer Hooper Scholarship
	M	No	B	$500	The Nina Louise Hooper Scholarship
	J	Yes	B	$400	The Inter-Residence Council Scholarship
	J	Yes	B	$2,500	The Dr. Ronald V. Joyce "Amazing" Grace Awards
	J	Yes	D	$2,500	The Dr. Ronald V. Joyce Awards for Athletes
	M	No	B	$750	The Mary E. Keyes Residence Scholarship
	J	Yes	B	$2,000/year	The Gary Lautens Memorial Scholarship
	M	No	E	Medal	The MAPS Gold Medal
	J	No	D	$800	The William G. Carter Scholarship in Golf
	J	Yes	E	$750	The Bert MacKinnon Memorial Scholarship
	J	Yes	E	$175	The Catherine MacNeill Prize
	M	No	B	$750	The Matthews Hall Residence Scholarship
	M	No	C	$250	The William J. McCallion Scholarships
	M	No	B	$750	The McKay Hall Residence Scholarship
	J	Yes	E	$1,000	The McMaster University Futures Fund Award
	J	Yes	B	$1,800	The McMaster University Futures Fund in-Course Awards
	J	Yes	D	$400	The John D. McNie Achievement Award of Excellence
	J	Yes	B	$1,500	The Elizabeth Mosgrove Scholarship
	M	No	B	$1,000	The Moulton College Scholarships
	M	No	B	$750	The Moulton Hall Residence Scholarship
	J	Yes	D, F	$425	The Connie O'Shaughnessy Memorial Prize
	M	No	B	$425	The Tony Pickard Memorial Scholarship
	M	No	B	$750	The Les Prince Residence Scholarship
	M	No	B, F	Medal	The Provost's Honour Roll Medal
	J	Yes	B	$2,500	The Stanley Robertson Scholarship
	M	No	C	$125	The Morris and Sarah Rosenhead Memorial Prize
	M	No	B	$575	The Rotary Club of Hamilton Scholarship
	M	No	B	$500	The Hilda Savage Memorial Scholarship
	M	No	B	$750	The Sheila Scott Scholarship for Brandon Hall
	M	No	B	$750	The Sheila Scott Scholarship for Wallingford Hall
	J	No	D	$120 for Books	The Margaret A. Service Book Prize
	M	No	B	$800	The Somerville Scholarships
	M	Yes	B	$1,150	The Marnie Spears Scholarship
	J	Yes	B	$425 for Books	The Mabel Stoakley Scholarship
	M	No	B	$325	The Stobo Scholarship
	M	No	D	$800	The University Achievement Awards
	J	No	D, F	$150	The University Prizes for Special Achievement
	M	No	C	$250	The University Scholarships
	M	No	B	$800	The University (Senate) Scholarships
	M	No	B	$750	The Whidden Hall Residence Scholarship
	M	No	B	$750	The Woodstock Hall Residence Scholarship
	M	No	B	$225	The Marguerite Yates Scholarship
	M	No	B	$800	The Yates Scholarship
	M	No	B	$1,600	The Gladys A. Young Scholarship

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SCHOOL OF THE ARTS

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Graham Petrie/M.A. *(St. Andrews)*, B. Litt. *(Oxford) (Theatre & Film Studies)*
Paul Rapoport/A.B. *(Michigan)*, M.Mus., Ph.D. *(Illinois) (Music)*
Ronald W. Vince/B.A. *(McMaster)*, M.A. *(Rice)*, Ph. D., *(Northwestern)(Theatre & Film Studies)*
Alan Walker/B. Mus., D. Mus. *(Durham)*, A.R.C.M., L.G.S.M., F.G.S.M., F.R.S.C. *(Music)*
George B. Wallace/M.A. *(Trinity College, Dublin)(Art)*
William Wallace/B.Mus., Ph.D. *(Utah)(Music)*
Paul H. Walton/B.A. *(Toronto)*, A.M., Ph.D. *(Harvard) (Art History)*

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Cyril Greenland/M.Sc. *(North Wales)*, Ph.D. *(Birmingham)*
Sally Palmer/B.A. *(Western Ontario)*, B.S.W., M.S.W., Ph.D. *(Toronto)*
Harry L. Penny/Dip. Theol. *(Union College, British Columbia)*, B.A., M.S.W. *(British Columbia)*, LL.D. *(McMaster)*
James J. Rice/B.A. *(Sir George Williams)*, B.S.W., M.S.W. *(Calgary)*, Ph.D. *(Exeter)*
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GENERAL INDEX

CAMPUS MAP

INDEX – Campus Buildings

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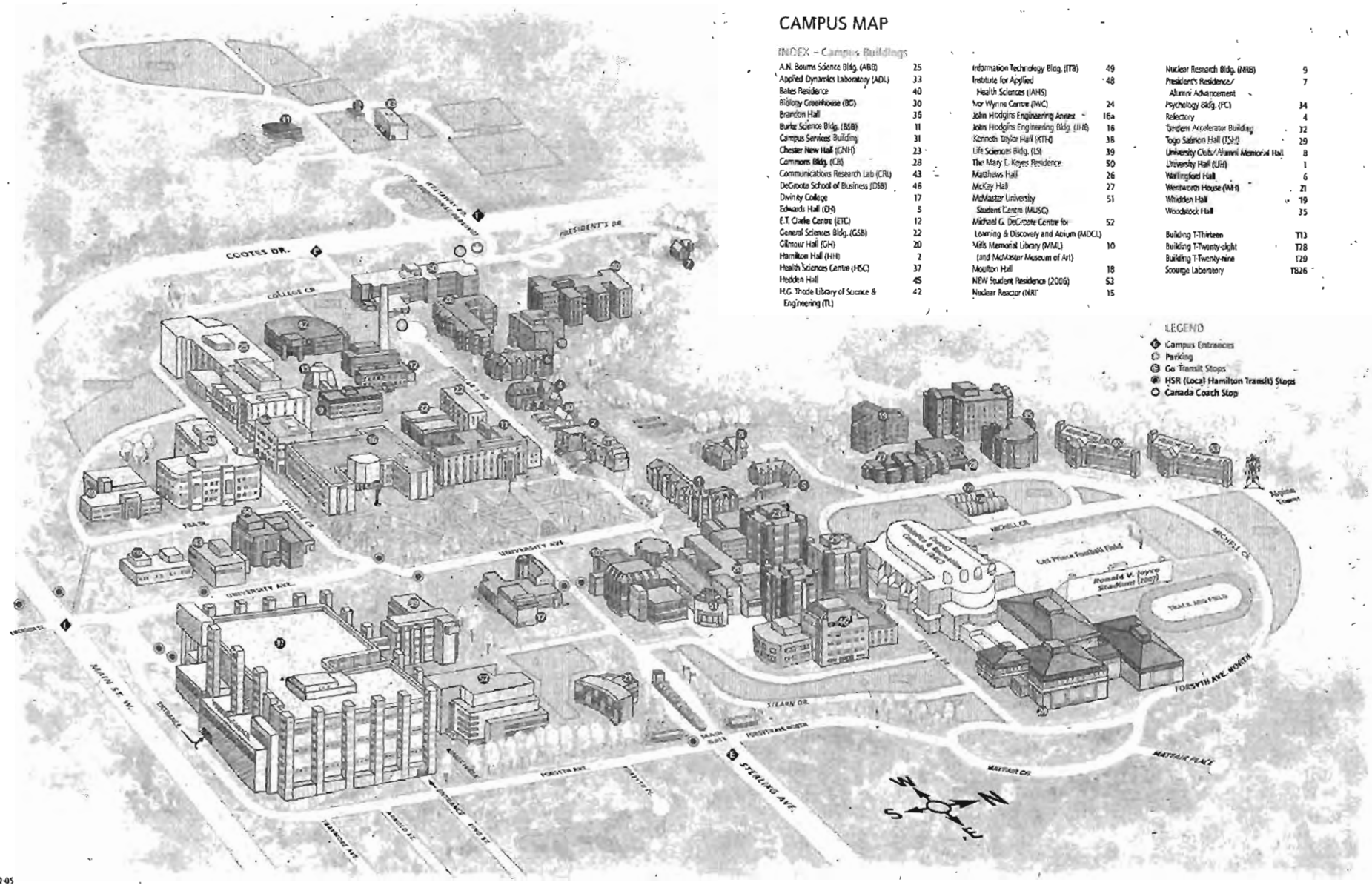

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