

1999-2000

McMASTER UNIVERSITY Undergraduate Calendar

◆ This Calendar covers the period from September 1999 to August 2000.

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

Table of Contents

Directory for Correspondence and Enquiries	2
McMaster University	3
Sessional Dates	4, 5
Degrees and Programmes	6
Degrees by Programme	7
Glossary	8
Admission Requirements	9
Application Procedures	15
Academic Regulations	17
Senate Policy Statements	23
Financial Information	24
Arts and Science Programme	27
School of Business	34
Faculty of Engineering	38
Faculty of Health Sciences	48
Faculty of Humanities	65
Faculty of Science	79
Faculty of Social Sciences	106
Theme Schools	128
Interdisciplinary Minors and Thematic Areas of Study	129
Part-time Degree Studies	132
Certificate and Diploma Programmes	133
Course Listings	135
Academic Facilities, Student Services and Organizations	259
Student Financial Aid	267
Student Financial Aid Index	282
Community Contribution Awards	285
Undergraduate Academic Awards	287
Undergraduate Academic Awards Index	309
Governing Bodies	313
General Index	315
Campus Map	322
Calendar Order Form	323

ARTS AND SCIENCE

BUSINESS

ENGINEERING

HEALTH SCIENCES

HUMANITIES

SCIENCE

SOCIAL SCIENCES

Using the Calendar

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

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

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

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

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

Directory for Correspondence and Enquiries

Mailing Address

McMaster University
Hamilton, Ontario, L8S 4L8
Canada

Telephone: (905) 525-9140

Web Address: <http://www.mcmaster.ca>

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

Admissions Office (Undergraduate Studies)

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

Student Liaison

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

Student Financial Aid and Scholarships

Manager: Elizabeth Seymour, ext. 24528
Hamilton Hall, Room 404, L8S 4K1, ext. 24319, 24789

Transcripts and Records

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

Examinations, Schedules and Reservations

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

Office of the Associate Vice-President (Student Affairs)

Associate Vice-President (Student Affairs): Mary Keyes
Gilmour Hall, Room 207, L8S 4L8, ext. 27455

School of Graduate Studies

Dean of Graduate Studies: John L. Weaver (until June 30, 1999)
Togo Salmon Hall, Room 111, L8S 4M2, ext. 23679

Centre for Continuing Education

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

Alumni Association

Director of Alumni Advancement: Scott Koblyk
Gilmour Hall, Room 110, L8S 4L8, ext. 23900

Housing and Conference Services

Director of Housing and Conference Services: Cathie Miller
Manager, Admissions and Conferences: Leanne Piper
Commons Building, Room 101, L8S 4K1, ext. 24223

Off-campus Housing

Wentworth House, Room 118, L8S 4K1, ext. 24086

Hospitality Services

Director: Albert Ng, ext. 23836
Commons Building, Room B101B, L8S 4K1
Mac Express Inquiries: ext. 27448

Centre for Student Development

Team Leader: Bill Wilkinson (until April 30, 1999)
Hamilton Hall, Room 409, L8S 4K1, ext. 24711

Services for Students with Disabilities

Programme Coordinator (Disability Specialist): Tim Nolan
Programme Coordinator (Disability Specialist): Marg Marriott
Programme Coordinator (Learning Specialist): Caroline Cayuga
Hamilton Hall, Room 409, L8S 4K1, ext. 24711

Career Planning and Employment Centre

Team Leader: Susan Collard (until April 30, 1999)
Hamilton Hall, Room 302, L8S 4K1, ext. 24253

Advice for Overseas and Exchange Students

International Students' Advisor: Cheryl-Ann Jackson
Hamilton Hall, Room 405, L8S 4K1, ext. 24748

Grievances

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

Other Publications for McMaster Students

Undergraduate Studies

- Year's Handbooks
- Plan and Degree Tables Calendar
- Schools of Study Book Reviews
- McMaster Dining Guide Calendar

Available from the Office of the Registrar
Available from the School of Social Work and Family College respectively

Certificate Studies

- Calendar of the School of Graduate Studies
- Graduate Studies in Business (MBA and Ph.D.) programmes

Available from the Director of Graduate Studies

Post-Graduate Medical Programs

Available from the Post-Graduate Medical Education
Office at the Health Sciences Centre, Room 1570A

Faculty departments that take graduate students who provide detailed
New checks about their programs. These may be requested directly
from the departments.

Certificates and Professional Studies

The Centre for Continuing Education Calendar, which describes
professional programs, certificates and correspondence programmes,
is available from the Centre for Continuing Education.

Professional Development and Non-Credit Studies

Information about non-credit programs and certificates is available
from the Centre for Continuing Education.

Ombuds Office

Ombuds: Shelley Lancaster

Hamilton Hall, Room 212, L8S 4K1, ext. 24151; Fax: (905) 529-3208; E-mail: 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 programmes through six Faculties. The extensive activity in research, supported by \$75 million in grants and contracts, means there are first-class libraries and sophisticated facilities. Undergraduate teaching is conducted through the School of Business, the Faculties of Engineering, Health Sciences, Humanities, Science, and Social Sciences, and the distinctive Arts and Science programme. The Department of Kinesiology and the School of Social Work are part of the Faculty of Social Sciences.

DISCIPLINES AND DEGREES

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

The Michael G. DeGroot 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 programme in Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Engineering Physics, Manufacturing Engineering, Materials Engineering, Mechanical Engineering and Software Engineering.

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

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

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

The Faculty of Humanities offers programmes in Art, Art History, Classics (Ancient History and Archaeology, Classical Languages and Literature) Comparative Literature, Drama, English, French, History, Japanese Studies, Linguistics, Modern Languages (German, Hispanic Studies, Italian), Modern Languages and Linguistics, Multimedia, Music, Philosophy 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 programmes may complete and receive credit for the third level of the programme in study abroad at a university in a country approved by the Faculty.

Bachelor of Science programmes are available in the Faculty of Science at the B.Sc. and B.Sc. Honours levels. Programmes are offered in Biochemistry, Biology, Chemistry, Computer Science, Geography, Environmental Science, Geology, Geoscience, Kinesiology, Life Science, Mathematical Science, Mathematics,

Materials Science, Medical and Health Physics, Molecular Biology, Neural Computation, Physical Science, Physics and Astronomy, Psychology, Science, and Statistics.

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

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 13,000 full-time students attend McMaster University, 1,500 of whom are pursuing advanced degrees offered through the School of Graduate Studies. In addition, about 3,000 part-time students are registered in the Fall/Winter session, from September to April, and 3,500 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 900 members of the University faculty hold doctoral degrees in their areas of specialization. Faculty members are expected to teach both graduate and undergraduate courses and may be involved in the academic counselling of students.

The University's diverse academic programmes are supported by some fine, and even unique, facilities. The University Library is a member of the Association of Research Libraries and contains over 1.7 million volumes, and has subscriptions to nearly 12,000 periodical titles. The Library has an extensive special collections section which includes the Bertrand Russell Archives, 18th Century materials and major Canadian collections. Facilities for programmes in the Humanities include modern language laboratories, music rehearsal rooms, art studios, a museum of art and seminar rooms. The work of the Faculties of Science and Engineering is supported by sophisticated facilities, which includes a nuclear reactor. There are six undergraduate computing labs on campus which contain Pentium computers, as well as numerous departmental computing clusters containing a mixture of PCs and Unix workstations. Students in residence have convenient access to the McMaster network and the internet from their rooms.

The recreation, fitness and intramural programmes offer more than 30 different sports in which over 6,000 students participate. The Intercollegiate Athletic Programme provides 16 sports for men and 14 for women. The athletic facilities include a 50-metre pool, a 400-metre, all-weather track, eight hard surface all-weather tennis courts, a state-of-the-art strength training facility known as the Pulse, as well as fully equipped laboratories for exercise, physiology and biomechanics.

McMaster's campus, which is restricted to pedestrian traffic, is adjacent to the Royal Botanical Gardens at the western end of Lake Ontario. On-campus men's, women's and co-educational residences are available for about 2,780 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 1999-2000 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.

SESSIONS	TERMS	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.
FALL/ WINTER SESSION	Term 1	9 18											
	Term 2					6 27							
	Term 3	9 27											
SPRING/ SUMMER SESSION	Term 1									1 16			
	Term 2										19 4		
	Term 3									1 4			

CONVOICATIONS

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

Friday, July 16, 1999

- ◆ Last day to file a Graduation Information Card and declare a minor for Autumn 1999 Convocation.

Friday, November 5, 1999

- ◆ Autumn 1999 Convocation (all Faculties)

Friday, February 4, 2000

- ◆ Last day to change Programmes for Spring 2000 Convocations.

Friday, February 4, 2000

- ◆ Last day to file a Graduation Information Card and declare a minor for Spring 2000 Convocations.

Friday, May 12, 2000

- ◆ Health Sciences Convocation 2000

Tuesday, May 30 to Thursday, June 1, 2000

- ◆ Spring Convocations 2000

Friday, July 21, 2000

- ◆ Last day to file a Graduation Information Card and declare a minor for Autumn 2000 Convocation.

Friday, November 10, 2000

- ◆ Autumn 2000 Convocation (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 programme at any level.

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

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

University Policies

Acceptance of the University's policies, and changes that may be approved from time to time by the Board of Governors and the Senate, is a condition of being accepted in any capacity in any University-controlled laboratory or programme. This includes, but is not limited to, the McMaster University Intellectual Property Policy (<http://www.mcmaster.ca/intelprop/index.html>).

Sessional Dates for 1999-2000

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

Fall/Winter Session 1999-2000

	Term 1	Term 2	Term 3
<ul style="list-style-type: none"> ➤ Registration (All Levels) ➤ Classes begin ➤ Last day for registration and adding classes ➤ Thanksgiving Day: No classes ➤ Mid-term recess ➤ Last day for withdrawal without failure by default ➤ Good Friday: No classes ➤ Test and Examination ban: No tests or examination may be held ➤ Classes end ➤ Mid-Session Tests (Level I) ➤ Final Examinations ➤ Last day to confirm intent to write deferred examinations ➤ Deferred Examinations 	<p>Thursday, September 9</p> <p>Friday, September 17</p> <p>Monday, October 11</p> <p>—</p> <p>Friday, November 5</p> <p>—</p> <p>Monday, November 29 to Saturday, December 4</p> <p>Friday, December 3</p> <p>—</p> <p>Monday, December 6 to Saturday, December 18</p> <p>Friday, February 4</p> <p>Monday, April 10 to Thursday, April 27</p>	<p>To Be Announced</p> <p>Thursday, January 6</p> <p>Friday, January 14</p> <p>—</p> <p>Monday, February 21 to Saturday, February 26</p> <p>Friday, February 18</p> <p>Friday, April 21</p> <p>Monday, April 3 to Saturday, April 8</p> <p>Friday, April 7</p> <p>—</p> <p>Monday, April 10 to Thursday, April 27</p> <p>Friday, June 16</p> <p>Monday, July 17 to Thursday, July 20</p>	<p>Thursday, September 9</p> <p>Friday, September 17</p> <p>Monday, October 11</p> <p>Monday, February 21 to Saturday, February 26</p> <p>Friday, February 18</p> <p>Friday, April 21</p> <p>Monday, April 3 to Saturday, April 8</p> <p>Friday, April 7</p> <p>Monday, December 6 to Saturday, December 18</p> <p>Monday, April 10 to Thursday, April 27</p> <p>Friday, June 16</p> <p>Monday, July 17 to Thursday, July 20</p>

Spring/Summer Session 2000

	Term 1	Term 2	Term 3
<ul style="list-style-type: none"> ➤ Classes begin ➤ Last day for registration and changes in registration ➤ Victoria Day: No classes ➤ Last day for withdrawal from a course without failure by default ➤ Canada Day: No classes ➤ Civic Holiday: No classes ➤ Classes end ➤ Examinations ➤ Last day to confirm intent to write deferred examinations ➤ Deferred Examinations 	<p>Monday, May 1</p> <p>Friday, May 5</p> <p>Monday, May 22</p> <p>Wednesday, May 31</p> <p>—</p> <p>—</p> <p>Friday, June 16</p> <p>Friday, October 13</p> <p>December 2000 Examination period</p>	<p>Monday, June 19</p> <p>Friday, June 23</p> <p>—</p> <p>Wednesday, July 19</p> <p>Monday, July 3</p> <p>Monday, August 7</p> <p>Friday, August 4</p> <p>During class time, as arranged by instructor</p> <p>Friday, October 13</p> <p>December 2000 Examination period</p>	<p>Monday, May 1</p> <p>Friday, May 5</p> <p>Monday, May 22</p> <p>Friday, June 30</p> <p>Monday, July 3</p> <p>Monday, August 7</p> <p>Friday, August 4</p> <p>Friday, October 13</p> <p>December 2000 Examination period</p>

DEGREES AND PROGRAMMES

McMaster University offers the following undergraduate degrees:

FACULTY AND DEGREE DURATION IN YEARS

ARTS & SCIENCE PROGRAMME

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

SCHOOL OF BUSINESS

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

FACULTY OF ENGINEERING

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

FACULTY OF HEALTH SCIENCES

B.H.Sc. (Midwifery)	4
B.H.Sc. (Occupational Therapy/Physiotherapy)	*2
(+Follows completion of prior undergraduate degree)	
B.Sc.N.	4
B.Sc.N. (Diploma RN Stream)	*2
B.Sc.N. (Nurse Practitioner Stream)	*2
M.D. (Doctor of Medicine)	*3
(*In these programmes, an academic year extends beyond the regular Fall/Winter session.)	

FACULTY OF HUMANITIES

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

FACULTY OF SCIENCE

B.Sc.	3
B.Sc. (Honours)	4
B.Sc. (Honours)	*5
(^These are Co-op programmes.)	

FACULTY OF SOCIAL SCIENCES

B.A.	3
B.A. (Honours)	4
B.Kin.	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 programme is normally shortened (except for the B.H.Sc.-Occupational Therapy, Physiotherapy and Midwifery Education programmes). An application for admission is necessary for entry to a second degree programme, and it should be submitted by the application deadlines. (See *Application Procedures* and *General Academic Regulations* sections of this Calendar.)

Combined Programmes

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

ELECTIVE COURSES AVAILABLE TO LEVEL I STUDENTS

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

ANTHROP	1A03, 1Z03
ART HIST	1A03, 1AA3
* ASTRON	1F03
* BIOLOGY	1A03, 1AA3, 1J03
CAYUGA	1Z06
* CHEM	1A03, 1AA3
CLASSICS	1B06, 1L06
COMP LIT	1A06
* COMP SCI	1MC3, 1MD3, 1SA3
DRAMA	1A06
ECON	1A06, 1B03, 1BB3
ENGLISH	1D06
FRENCH	1A06, 1N06, 1Z06
* GEO	1A03, 1B03, 1G03
GEO	1HB6
GERMAN	1B06, 1Z06
GERONTOL	1A06
GREEK	1Z06
HISPANIC	1A06, 1Z06
HISTORY	1A06, 1L06
INDIG ST	1A06
INQUIRY	1HU3, 1SS3
* INQUIRY	1SC3
ITALIAN	1A06, 1Z06, 1ZZ6
JAPANESE	1Z06
* KINESIOL	1A06
LABR ST	1A03, 1Z03
LATIN	1Z06
LINGUIST	1A06
* MATH	1A03, 1AA3, 1B03, +1K03, +1M03
* MATLS	1A03
* MMEDIA	1A03, 1B03, 1C03
MOHAWK	1Z06
MUSIC	1A06
OJIBWE	1Z06
PHILOS	1B06, 1D06
* PHYSICS	1B03, 1BA3, 1BB3, 1P03
POLISH	1Z06
POL SCI	1A06, 1G06
PSYCH	1A03, 1AA3
RELIG ST	1B06, 1D06, 1E06, 1H03, 1I03
RUSSIAN	1Z06
SOC SCI	1H03
SOC WORK	1A06
SOCIOL	1A06
* STATS	+1A03, 1CC3, +1L03
WOMEN ST	1A06

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

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

+ These courses may not be taken for credit by students in Science I.

DEGREES BY PROGRAMME

- ★ This degree programme is also available through a combination of evening and summer study.
- A five-year co-op option is available.
- ▲ An Honours (Specialist Option) is available for this programme.
- + An Honours (Complementary Studies Option) is available for this programme.

SUBJECT	BACHELOR'S DEGREE	HONOURS DEGREE	COMBINED HONOURS	PROFESSIONAL DEGREE
Anthropology	B.A.★	B.A.★	B.A.★	
Applied Mathematics		B.Sc.		
Art		B.A.	B.A.	
Art History	B.A.★	B.A.★	B.A.★	
Arts & Science	B.Arts Sc.	B.Arts Sc.	B.Arts Sc.	
Astrophysics		B.Sc.		
Biochemistry •		B.Sc.▲ +	B.Sc.	
Biological Chemistry		B.Sc.		
Biology		B.Sc.▲ +	B.Sc.; B.A.	
Biology & Pharmacology •			B.Sc.	B.Eng.; B.Eng.Mgt.; B.Eng. Society
Chemical Engineering				
Chemistry •		B.Sc.		B.Eng.; B.Eng.Mgt.; B.Eng. Society
Civil Engineering				
Classics	B.A.★	B.A.	B.A.	B.Com.; B.Com. (Honours)
Commerce				
Comparative Literature			B.A.	
Computer Engineering				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Computer Science		B.Sc.▲ +	B.Sc.; B.A.	
Drama	B.A.★	B.A.★	B.A.★	
Economics	B.A.★	B.A.★★	B.A.	
Electrical Engineering				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Engineering Physics				B.Eng.; B.Eng.Mgt.; B.Eng. Society
English	B.A.★	B.A.★	B.A.★	
French	B.A.★	B.A.★	B.A.★	
Environmental Science •		B.Sc.		
Geography	B.A.★	B.A.★★; B.Sc.	B.A.★	
Geography & Environmental Studies		B.A.		
Geology		B.Sc.		
Geoscience	B.Sc.			
Gerontology	B.A. (Combined)★		B.A.★	
History	B.A.★	B.A.★	B.A.★	
Japanese Studies			B.A.★	
Kinesiology		B.Sc.		B.Kin.; B.Kin. (Honours)
Labour Studies	B.A.★	B.A.★★	B.A.★	
Life Science	B.Sc.★			
Linguistics		B.A.	B.A.	
Manufacturing Engineering				B.Eng.; B.Eng. Mgt.; B.Eng. Society
Manufacturing Technology	B.Tech.			
Materials Engineering				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Materials Science		B.Sc.▲		
Mathematical Science	B.Sc.★			
Mathematics		B.Sc.▲ +	B.Sc.; B.A.	
Mathematics & Statistics		B.Sc.▲ +		
Mechanical Engineering				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Medical & Health Physics •		B.Sc.		
Medicine				M.D.
Midwifery				B.H.Sc.
Modern Languages		B.A.	B.A.	
Modern Languages & Linguistics		B.A.		
Molecular Biology		B.Sc.	B.Sc.	
Multimedia			B.A.	
Music	B.A.	B.Mus.	B.A.	
Neural Computation		B.Sc.		
Nursing				B.Sc.N.
Occupational Therapy				B.H.Sc.
Philosophy	B.A.★	B.A.★	B.A.★	
Physical Science	B.Sc.			
Physics		B.Sc.▲ +		
Physiotherapy				B.H.Sc.
Political Science	B.A.★	B.A.★	B.A.★	
Psychology	B.A.★	B.A.★★; B.Sc.▲ +	B.A.★; B.Sc.	
Religious Studies	B.A.★	B.A.★	B.A.★	
Science		B.Sc.+		
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
Statistics		B.Sc.▲ +	B.Sc.	
Women's Studies			B.A.★	

■ The University also offers Thematic Areas of Study and a large number of Minor programmes. Suggested lists of courses, which constitute non-degree Thematic Areas, have been assembled in the section *Interdisciplinary Minors and Thematic Areas*. Also in that section are four Interdisciplinary Minors which are not connected to a specific department of Faculty. Other Minors are found in the programme sections of most departments.

GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Full Load is the number of units specified in the Calendar for an individual level of a programme (e.g. Astrophysics, Level II: 31 units). If the Calendar does not specify the programme requirements by individual levels, divide the total units for all levels by the number of levels, discarding the remainder. Full-time students must carry a full load of McMaster courses to be eligible for Undergraduate In-Course Academic Awards. A full load is not required to be eligible for graduand awards.

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

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

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

Level is used to describe a student's progression through a programme.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Reviewing Period is the time between two reviews for a student. Reviews will take place in May and August, provided the student has 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 programme of study and selected courses.

Undergraduate Student is a student enrolled in a programme 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. 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 programme.

ADMISSION REQUIREMENTS

ENGLISH LANGUAGE PROFICIENCY

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

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

1. achieved a score of at least 220 on the computerized test (or 560) on TOEFL, or the equivalent on other recognized tests, or
2. achieved a score between 197 and 219 (530-559) on TOEFL, or the equivalent on other recognized tests and EITHER a score of at least 4.0 on the TWE (Test of Written English) OR present other evidence of English language proficiency such as English courses, ESL programmes, letters of support from guidance counsellors, etc., or
3. attended a Canadian educational institution for at least three years, or
4. resided in an English speaking country for at least four years.

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

Admission from Ontario Secondary Schools

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

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

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

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

Early Admission from Ontario Secondary Schools

Early conditional admission is granted annually beginning in late March to qualified applicants, depending on your academic standing at that time. Early conditional admission is based on:

1. six appropriate midterm/interm OAC grades, or
2. a combination of at least three final OAC grades and grade 11/12 advanced grades PLUS enrolment in the appropriate three OAC courses.

If you do not receive an offer of admission in March, you will automatically be reassessed for admission after additional OAC grades are received from your secondary school in May.

Admission offers made in May will be based on updated OAC grades and information you have provided on a supplementary application form which will be mailed directly to you in April. If you are granted early conditional admission, you must successfully complete six OACs, including all required subjects. The University reserves the right to withdraw its offer of admission if you do not meet the minimum final average prescribed for your chosen programme; if you do not receive an Ontario Secondary School Diploma; if you do not complete six OACs; or if you do not respond to the Ontario Universities' Application Centre within the response period indicated on your offer letter.

Final Admission from Ontario Secondary Schools

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

If you do not receive an offer of admission by June 15, you may still be considered for admission, once final marks are received, depending on availability of space in your chosen programme.

Deferral of Admission for Ontario Secondary School Students

Students who receive both an offer of scholarship and an offer of admission may defer their entry for one year. Otherwise, McMaster does not normally grant a deferral of an admission offer unless special circumstances exist. All requests for deferral should be made in writing to the Admissions Office at McMaster and if appropriate, to the Student Financial Aid and Scholarships Office by September 1, 1999, outlining the reasons for the request.

Programme Transfer After Admission

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

Minimum Final Average

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

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

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

SUBJECT REQUIREMENTS FOR SPECIFIC LEVEL I PROGRAMMES

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

McMaster University offers ten Level I programmes: Arts & Science I, Business I, Engineering I, Humanities I, Kinesiology I, Midwifery I, Music I, Nursing I, Science I and Social Sciences I.

➤ ARTS AND SCIENCE I (0027)

You are required to submit a completed supplementary application. The information provided enters into the selection process. Only applicants with high academic standing are selected. In recent years successful candidates had an admission average in the upper 80s or higher.

The following are the minimum requirements:

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

➤ BUSINESS I (0725)

The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. One of OAC Calculus, OAC Finite Mathematics or OAC Algebra and Geometry. (OAC Calculus and OAC Finite Mathematics are recommended.)
3. Completion of additional OACs to total six credits.

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

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

10 ADMISSION REQUIREMENTS

> ENGINEERING I (0730)

The following are the minimum requirements:

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

A minimum overall and area final average in the high 70s to low 80s has been required for an offer of admission in recent years.

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

> HUMANITIES I (0700)

The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. Completion of additional OACs to total six credits with a minimum overall final average of 70%

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

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

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

ART 1F06: The prerequisite for ART 1F06 requires permission of the department based on a **required portfolio interview**. If you intend to take ART 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the department for a portfolio interview in February/March. The portfolio should contain a variety of original work in different media including work derived from both first-hand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. **Acceptance into ART 1F06 is contingent upon receiving written confirmation from the School of Art, Drama and Music. Please use the MHA OUAC Code to ensure proper consideration of your application.**

> KINESIOLOGY I (0308)

Students must apply for admission to Level I. The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. One of OAC Algebra and Geometry, OAC Calculus or OAC Finite Mathematics
3. Completion of additional OACs to total six credits

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

NOTES:

i) Applicants who intend to register in the Honours Kinesiology (B.Sc.) programme beyond Level I are strongly recommended to include the following:

1. OAC English
2. OAC Calculus
3. OAC Algebra or OAC Finite Mathematics
4. OAC Chemistry
5. OAC Biology or OAC Physics

ii) Applicants who intend to register in the Honours B. Kin. or B. Kin. programme beyond Level I are strongly recommended to include two credits from OAC Biology, Chemistry, and Physics. Completion of a *Supplementary Application* is recommended for those students whose average is near the cut-off.

iii) Please see Level I Science courses for specific OAC prerequisites.

> MIDWIFERY I (6501)

As places in the Midwifery programme are very limited, the admission process is competitive. For non-OAC applicants a Midwifery supplementary application including a personal questionnaire are required and must be received at McMaster by February 1. For **OAC applicants only**, application forms are due by February 1 and all supplemental material is due March 15. **No exceptions will be made.**

The following are the minimum requirements:

1. One of OAC English, OAC anglais I or OAC anglais II
2. One of OAC Biology or OAC Chemistry
3. An OAC in Social Science (History, Sociology, Psychology, Geography, Law)
4. Completion of additional OACs to total six credits, with a minimum overall final average of 70%

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

> NURSING I (6390)

The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. OAC Chemistry
3. One of OAC Calculus, OAC Algebra and Geometry or OAC Finite Mathematics
4. One of OAC Biology or OAC Physics
5. Completion of two additional OACs to total six credits

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

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

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

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

> SCIENCE I (0710)

The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. OAC Calculus
3. One of OAC Algebra and Geometry, or OAC Finite Mathematics
4. Two of OAC Biology, OAC Chemistry or OAC Physics*
5. Completion of one additional OAC to total six credits
6. An average acceptable to the Faculty in the four credits specified in points 2, 3, and 4 above
7. An average acceptable to the Faculty in the best six OAC credits (which must include the four OACs specified in points 2, 3 and 4 above)

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

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

*Pending approval by Senate, effective September 2000: Students will require OAC Chemistry and one of OAC Biology or OAC Physics.

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

> SOCIAL SCIENCES I (0720)

The following are the minimum requirements:

1. One of OAC English I, OAC anglais I or OAC anglais II
2. Completion of additional OACs to total six credits

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

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

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

OAC Course Equivalents for Students from Other Canadian Provinces

	B.C./ Yukon	Alta./ N.W.T.	Sask.	Manitoba	++Que. (CEGEP)	Nova Scotia	New Brunswick	P.E.I.	Nfld.
ENGLISH	English 12, Writing 12 or English Lit 12	English 30	English 30	English 300, 40S or 40A	English 603s	English 441 or 541	English 121 or 122	English 621A (previously English 620s)	English 3101 and one of 3201 or 3202
CALCULUS ** +	Calculus 12 (LD) (Locally Developed)	Math 31	Calculus 30	Introduction to Calculus 305, Math 355 or Calculus 45A	Math 103 or 203	Math 541 or Calculus 441	Calculus 120	Math 611A (previously Math 621 - Locally Developed)	Math 4225 (AP) or 3105
ALGEBRA AND GEOMETRY	Math 12	Math 30	Geom-Trig 30, Algebra 30 or Math 30	Math 300 or 40S	Math 105	Math 441	Math 121 or 122	Math 621A	Math 3200 or 3201
FINITE MATH	Survey Math 12	Not available*	Finite Math 30L	Advanced Math 305 (Topics in Math), Stats and Probability 305 or 40S	Not available*	Math 442	Math 121 or 122	Not available*	Not available*
CHEMISTRY	Chemistry 12	Chemistry 30	Chemistry 30	Chemistry 300, 40S or 40A	Chemistry 101, 201, or 202	Chemistry 12 or 12 IB (previously Chemistry 441 or 541)	Chemistry 121 or 122	Chemistry 621	Chemistry 3202
PHYSICS	Physics 12	Physics 30	Physics 30	Physics 300, 40S or 40A	Physics 101 and 201 or 301	Physics 12 or 12 IB (previously Physics 441 or 541)	Physics 121 or 122	Physics 621	Physics 3204
BIOLOGY	Biology 12	Biology 30	Biology 30	Biology 300, 40S or 40A	Biology 301, 401	Biology 441 or 541	Biology 121 or 122	Biology 621	Biology 3201

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

ADMISSION WITH OTHER QUALIFICATIONS

A. Admission from Other Canadian Provinces

McMaster welcomes applications from other provinces and territories. Applicants are required to meet the following minimum requirements:

- Quebec - CEGEP (minimum one year)
- All other Canadian provinces - Grade 12 Diploma

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

B. Admission from Other Countries

McMaster welcomes applications from international students. See the admission requirements for applicants from selected countries below. Applicants should contact the Admissions Office for information on how to obtain an application form.

Applicants must arrange for official matriculation certificates to be sent well in advance of the session. The equivalent of first-class standing may be required for some limited enrolment programmes.

12 ADMISSION REQUIREMENTS

Clear notarized photocopies of certificates in a language other than English should be accompanied by notarized English translations. Clear photocopies of English language certificates must be notarized.

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

Applicants from the **General Certificate of Education** system require:

1. five GCE subjects at least two of which must be at the Advanced Level;
2. Advanced Level subjects appropriate for your chosen programme, (refer to *Subject Requirements for Specific Level I Programmes* in this section). For Science and Engineering programmes, Mathematics and one of Physics or Chemistry must be offered at the Advanced Level;
3. Grades of at least *C* (*B* for Science and Engineering programmes) must be presented in each of the Advanced Level subjects.

Applicants from **Hong Kong** must meet the Hong Kong Advanced Level Examinations and the Hong Kong Certificate of Education or the GCE requirements as listed above.

Applicants who have a complete **International Baccalaureate Diploma** will be considered for admission to Level I, provided the completed diploma includes the subject area requirements of the programme desired. An overall score of 28 and not less than 4 in any given subject must be achieved in order to be eligible for admission. Advanced credit of up to 30 units may be granted at the discretion of the Faculty.

Applicants who have completed **Advanced Placement Courses** will be considered for admission to a Level I programme.

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

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

C. General Policy on the Transfer of Course Credits

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

1. Acceptance of transfer credits from accredited universities shall be based on the recognition that, while learning experiences may differ in a variety of ways, their substance may be essentially equivalent in terms of their content and rigour. Insofar as possible, acceptance of transfer credit shall allow for the maximum recognition of previous learning experience in university-level courses;
2. Subject to degree, grade and programme requirements, any course offered for credit by an accredited university shall be accepted for credit by McMaster when there is an essential equivalency in course content. However, no course for which a grade of less than *C-* (60%) has been achieved will be considered.

Electronic Credit Transfer information for Ontario Universities is available on the web at <http://step.ouac.on.ca>

D. Advanced Credit

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

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

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

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

F. Transfers from Other Universities

When you transfer to McMaster University, you will normally receive credit for courses in which you have obtained at least a *C* (third-class honours) standing. Assessment of courses for transfer credit is subject to the guidelines of the individual Faculties.

As a transfer student, you must also satisfy the Residence Requirements set out in the *General Academic Regulations* section of this Calendar. The University will not accord to you privileges which would not be granted by your own university.

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

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

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

G. Graduates Applying for a Second Bachelor's Degree

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

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

H. Continuing Students

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

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

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

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

I. Post-Degree Students

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

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

J. Readmission

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

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

K. Reinstatement

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

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

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

L. Admission from Ontario Colleges of Applied Arts and Technology

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

To be eligible to apply to Business I, you must have completed a two or three year diploma with a GPA of 3.0 or better. All candidates must have successfully completed a Grade 12 Advanced Mathematics course.

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

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

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

To be eligible to apply to Kinesiology I:

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

To be eligible to apply to Nursing, you must have an Ontario diploma in Nursing or the equivalent with an overall GPA of 2.7 or better. Selection will be based on academic qualification and a rating obtained on a questionnaire completed by the applicant. An interview may also be required.

Generally speaking, advanced credit could be up to 30 units if you are a well-qualified graduate of a three-year programme, and at least six units if you have completed two years and performed well, provided the college work is appropriate to your chosen university programme.

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

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

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

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

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

M. Admission from Grand River Polytechnic

McMaster University, along with four other universities, has entered into a partnership with Grand River Polytechnical Institute 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.

N. Graduates of McMaster Certificate Programmes

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

O. Mature Students (Part-time Admission)

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

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

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

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

After taking at least 12 units, your performance will be reviewed as follows:

- i) If you have a Cumulative Average (CA) of at least 3.5 with no failures, you will be allowed to register for full-time study.
- ii) If you have a CA of at least 3.0 with no more than six units of failure, you will be allowed to register in another six units of study and will be reviewed again after completion of these six units (see Second Review below).
- iii) If you have failed more than six units, you may not continue at the University.
- iv) If your CA is less than 3.0, you may not continue at the University.

14 ADMISSION REQUIREMENTS

Second Review:

- a) If you have a CA of at least 3.5, you will be allowed to register for full-time study.
- b) If you have a CA of less than 3.5, you may not continue at the University.

P. Nursing Occasional Category

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

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

Q. Enrichment Programme for Secondary School Students

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

R. Letter of Permission - For Credit At Another University

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

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

S. Listener

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

For more information, please contact the Centre for Continuing Education, Commons Building, Room 116, McMaster University, Hamilton Ontario, L8S 4K1 (905) 525-9140, ext. 24321.

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.

T. 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 OUAC.

APPLICATION PROCEDURES

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

Use the *OUAC 101 Application* if:

- You are now taking one or more Ontario Academic Courses (OACs) in *day school* and wish to enter a Level I degree programme as a full-time student.

Please obtain the OUAC 101 form from your secondary school guidance office and follow the instructions therein. You will receive an acknowledgement mailing from McMaster's Admissions Office once your application has been received.

Use the *OUAC 105D Application* if :

- You are not currently taking one or more Ontario Academic Courses (OACs) in *day school*, have not previously attended McMaster and wish to enter Level I or above of an undergraduate degree programme as a full-time student.
- You are currently registered at another university or college and wish to transfer to McMaster for full-time studies.
- You have previously attended McMaster, but you have since registered at another university or have completed a college diploma and now wish to enter an undergraduate degree programme as a full-time student.
- You have completed a degree at a university other than McMaster and wish to attend McMaster full-time to take courses as a Continuing student.+
- You have completed a degree at a university other than McMaster and wish to pursue a second undergraduate degree on a full-time basis.
- You are currently registered at a university other than McMaster and wish to attend McMaster full-time to take courses on a Letter of Permission for Credit at Another University.

Please obtain the OUAC 105D form from the Admissions Office of any Ontario university or from the Ontario Universities' Application Centre, 650 Woodlawn Road West, P.O. Box 1328, Guelph, Ontario, Canada, N1H 7P4, and follow the instructions therein.

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

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

+ If you are a graduate of a McMaster degree programme and wish to become a Continuing student, you do not need to apply through Admissions, but need to submit a registration form.

Use the *McMaster University Returning Student Application* for the following categories:

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

Please obtain the *Returning Student Application* form from the Office of the Registrar, Gilmour Hall, Room 108, McMaster University, Hamilton, Ontario, L8S 4L8. You will be provided with more information on application procedures at that time. See application deadlines as listed in this section of the Calendar. The Nursing deadline is February 15 for September entry.

Use the *McMaster University Part-time Degree Application* if:

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

Please obtain the Part-time Degree Application from the Office of the Registrar, Gilmour Hall, Room 108, McMaster University, Hamilton, Ontario, L8S 4L8. You will be provided with more information on application procedures at that time.

Use the *McMaster University Post-Degree Studies Application* if:

- You wish to register as a post-degree student.

Please obtain the *Post-Degree Application* from the Graduate Studies Office, Togo Salmon Hall, Room 111, McMaster University, Hamilton, Ontario, L8S 4M2 and use it to apply to the appropriate academic department(s).

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

DEADLINES

A complete application includes: an application form, relevant transcripts, and all other documentation stipulated in the *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.

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

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

FALL/WINTER SESSION (SEPTEMBER 1999 ENTRY)

Undergraduate programmes which are not specified below: July 15

- Limited Enrolment Programmes
 - Above Level I February 1
- International Applications May 1
- International Documentation June 1
- Domestic Applications July 15
- Domestic Documentation July 15
- CEGEP Applications March 1
- Optional Supplementary Application Deadline for Level I Programmes April 30
- Arts & Science Applications January 15
 - Supplementary Applications for all others January 15
- Biochemistry (Co-op) February 1
- Biology and Pharmacology (Co-op) February 1
- Gerontology Applications March 31
 - Supplementary Applications* May 15
- Kinesiology May 15
- Labour Studies March 31
- Medicine October 15
- Midwifery Applications February 1
 - Official Transcripts February 1
 - Supplementary Applications for non-OAC applicants † February 1
 - Supplementary Applications for OAC applicants** March 15
- Nursing OAC May 1
 - Nurse Practitioner February 1
 - NP Supplementary Applications † February 1
 - Transfers from other university Nursing Programmes June 30
 - All Other February 15
 - Supplementary Applications* February 15
- Occupational Therapy/Physiotherapy December 1
 - Official Transcripts January 9
 - Supplementary Applications** January 26
- Social Work
 - McMaster Applicants March 1
 - All Others December 1
 - Supplementary Applications*** March 1
- Women's Studies April 15

❖ Only university transfer and Second Degree applicants need to complete the supplementary application forms.

† Please contact the Ontario Universities' Application Centre for a supplementary application.

* Only non-OAC students need to complete the mandatory supplementary applications. Please contact the Ontario Universities' Application Centre for a supplementary application.

** The Admissions Office will forward supplementary packages once applications are received from the OUAC.

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

FALL/WINTER SESSION (JANUARY ENTRY)

- All Eligible Programmes November 15
- Documentation Deadline December 1

SPRING/SUMMER SESSION (MAY or JUNE ENTRY)

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

Deadlines for Reinstatement or Readmission

The application deadline for September entry for all programmes, except Nursing is June 30. The Nursing deadline is February 15. Application deadlines for January or May or June entry are as indicated above.

Retention of Documents

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

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

Academic Counselling for Those Offered Admission

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

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

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

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

Enquiries

Please direct your enquiries about Application Procedures to:

OFFICE OF THE REGISTRAR

Gilmour Hall, Room 108

McMaster University

Hamilton, Ontario, L8S 4L8

Telephone: (905) 525-4600

E-mail: macadmit@mcmaster.ca

GENERAL ACADEMIC REGULATIONS

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

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.

All other students will be governed by transitional arrangements, under which the CA will be calculated using:

1. *area courses* (as defined in the 1992/93 Undergraduate Calendar) taken before September 1993; and
2. all courses taken 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 programme-specific courses.

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

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

Registration

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

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

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

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

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

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

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

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

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

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

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

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

■ **Transfer of Credit between Faculties:** Transfer of credit between Faculties is handled by the Office of the Associate Deans (Studies) to which you wish to transfer. It is possible that full credit may not be given at the time of transfer between Faculties and additional courses may need to be taken.

■ **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 programmes that exist between McMaster and a number of universities in other countries; by participating in one of the programmes available through specific Faculties; or by independent study abroad.

Formal exchange programmes 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 programme, you can obtain further information and an application form from the Student Exchanges Officer, Hamilton Hall, Room 405. Applications are normally due February 1 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. For information concerning the *Group of Ten Student Exchange Programme (GOTSEP)*, please refer to the *Academic Facilities, Students Services and Organizations* section of this Calendar under the heading *Student Exchanges/Work and Study Abroad*.

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

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 programme or an independent study abroad programme 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 programmes and universities, please contact the Student Exchanges Officer, Hamilton Hall, Room 405.

2. ACADEMIC STANDING AND PROGRAMME 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 programme.

Minimum Requirements to Continue at the University

All students must maintain a CA of at least 3.5 at each review to continue at the University. Under certain circumstances, as described below, students may be allowed to continue on academic probation for one reviewing period with a CA of 3.0 to 3.4. If your CA is less than 3.0, you may not continue at the University.

Level I Registration and Academic Standing Requirements

When you are admitted to McMaster University for a first degree, you will register in one of the following Level I programmes: Arts and Science I, Business I, Engineering I, Humanities I, Kinesiology 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 (Studies) has the discretion to permit you to take some of the work in the higher levels prior to having attempted the full load of Level I. Decisions will be made on an individual basis, according to the special circumstances that apply in the particular case.

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

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

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

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

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

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

> ARTS & SCIENCE PROGRAMME

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

If your CA is 3.5 to 5.4, you must transfer to another programme for which you qualify, or register in the Art & Science programme as an irregular student for one reviewing period. During that period, you cannot take Arts & Science programme courses. At the end of that period you may apply for readmission to the Arts & Science programme.

If your CA is 3.0 to 3.4, you will be placed on academic probation. You may continue in the programme for one reviewing period as an irregular student but cannot take Arts & Science programme courses. The purpose of this period is to prepare yourself for a programme outside the Arts & Science programme. You may be on academic probation only once. (Potential graduands may not continue at the University.)

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

➤ SCHOOL OF BUSINESS

■ **Business I:** For specific admission requirements to Commerce II see *Programme Notes* under the heading *Programmes* 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 programme either now or in the future, you are still in good standing at the University. You may continue at the University in a programme outside the School of Business or as an irregular student in Business. To continue in a programme outside the School of Business you must apply for admission to that programme through the Office of the Associate Dean (Studies) appropriate for that programme. You should consult that office for more details. If you are not admitted to another Faculty you may register in the School of Business as an irregular student for one reviewing period. During that period you cannot take Commerce courses and you will not be eligible for consideration for admittance to Commerce II or readmittance to Business I. The purpose of your registration as an irregular student is to make yourself eligible for admission to a programme outside the School of Business.

If you have a CA of 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 programme 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 programmes:

■ **Honours B.Com. Programme:** You must have a CA of at least 6.0 to enter the Honours B.Com. programme in Level III or IV or to continue in the Honours B.Com. programme. If your CA is 5.5 to 5.9, you may continue in the Honours B.Com. programme, but will be placed on programme probation. You may be on programme 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. programme. 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 programme in the School of Business.**

■ **B.Com. Programme:** You must have a CA of at least 4.0 to continue in the B.Com. programme. If your CA is 3.5 to 3.9, you are permitted to continue in the B.Com. programme on programme 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 programme in the School of Business.**

➤ FACULTY OF ENGINEERING

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

In Level II and above, you must maintain a CA of at least 4.0, with no failures, to continue in an Engineering programme. If your CA is at least 4.0 and includes one failure since your last review, and you were not placed on probation at the last review, you will be placed on programme probation. If your CA is at least 5.0 and includes two failures since your last review, and you were not placed on probation at the last review, you will be placed on programme probation. Your probation will be lifted if you complete the year with a Sessional Average of 4.0 with no failures. You may only be on probation twice. If you have more than two failures since the last review, you may not continue in the Faculty. If you have a CA of 3.0 to 3.9, you may not continue in the Faculty. If your CA is less than 3.0, you may not continue at the University.

➤ FACULTY OF HEALTH SCIENCES

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

➤ FACULTIES OF HUMANITIES and SOCIAL SCIENCES

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

■ **B.Kin. Programme:** You must have a CA of at least 4.0 to continue in the B.Kin. programme. If your CA is 3.5 to 3.9, you may remain in the programme, but will be placed on programme probation for one reviewing period. You may be on programme probation only once. If your CA is 3.0 to 3.4, you must transfer to another programme for which you qualify, and be placed on academic probation. If your CA is less than 3.0, you may not continue at the University.

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

➤ FACULTY OF SCIENCE

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

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

Transfer Between Programmes

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

Minors

If you are enrolled in a four- or five-level programme, you are eligible to obtain a Minor in another subject area, provided that the subject area is not integral to the requirements of your degree programme. You should check the calendar requirements state-

ment for your programme in the case of Science programmes, or check with your Faculty in the case of other programmes, for subject areas that are excluded from consideration as a Minor in your programme.

If you wish to receive a Minor, you should check the information under the heading Minor in the appropriate department's listing. McMaster also offers Interdisciplinary Minors in Health and Society, Indigenous Studies, Jewish Studies and Peace Studies, which are not connected to a specific Faculty or Department. (See *Interdisciplinary Minors and Thematic Areas* section.) The University also has three Theme Schools—Globalization, Social Change and the Human Experience, International Justice and Human Rights, and Science, Technology, and Public Policy—which give you, upon successful completion of one of the programmes, a Minor in that area of study. (See *Theme Schools* section.) You will be responsible for ensuring that you register in the required Minor courses. Normally, you must complete a minimum of 24 units in the Minor subject. 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 programme, when you file your Graduation Information Card, you must indicate your desire to receive a Minor in the chosen subject. The Faculty Reviewing Committee will verify that the requirements have been met. If you are successful, your transcript will contain a designation for Minor in that area. See *Sessional Dates* section for deadlines.

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

Second Bachelor's Degree Programmes

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

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

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

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

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

■ **B.Kin.:** For entry, you must meet the admission requirements for the programme and have a Cumulative Average of at least 7.0. If admitted, you must complete at least 60 units beyond the first degree including all programme requirements. Eligibility to transfer to the Honours B.Kin. programme or the Honours Kinesiology (B.Sc.) programme as a Second Degree is determined upon completion of 30 units of work.

Notes

1. All work for the second degree must be completed at McMaster University.
2. Some additional regulations are applied by the Faculty of Science involving cognate disciplines, e.g. Mathematics and Statistics. These are described in the *Faculty of Science* section of this Calendar.

3. A second degree is not available in all subject areas. See individual Faculty regulations for further information.
4. Minors will not be revoked to permit later registration in a three-level second degree in the same subject. Students may return for a second degree in a subject in which they have obtained a Minor, but only at the Honours level. (See *Minors* above.)
5. Extra courses taken while you are registered in a first degree programme, or courses completed as a Continuing Student, may, with the approval of the Faculty, be applied to the second degree programme.
6. You must meet the same standards for continuation and graduation as are applied to students registered in a first degree programme.
7. Credit from the first two degrees cannot be applied to a third undergraduate degree. To obtain a third undergraduate degree you must take the complete programme, i.e. approximately 90 units for a three-level degree and approximately 120 units for a four-level degree.

Deans' Honour List

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

3. EXAMINATIONS

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

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

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

See the *Sessional Dates* section of this Calendar.

Examinations Conducted by the Office of the Registrar

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

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

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

■ If you become ill during an examination, you may be excused by a presider.

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

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

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

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

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

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

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

Deferred examinations must be written in the examination session which follows the one for which the privilege is granted (e.g. in the April session for an examination missed in December).

The decision to grant you a deferred examination will be reported on your grade report. You must confirm your intent to write by submitting an application, accompanied by applicable fees, to the Examinations Section of the Office of the Registrar.

The deferred examination fee for 1998-99 is \$50.00 per examination, to a limit of \$150.00 per examination session. An additional fee of \$50.00 is payable for each examination written at an off-campus site.

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

4. GRADING SYSTEM

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

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

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

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

◆ Since September 1982, the grading scale has been:

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

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

Course Grade	Grade Points		Course 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: $153 / 18 = 8.5$

5. UNDERGRADUATE ACADEMIC AWARDS

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

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

6. GRADUATION

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

The following Cumulative Averages are required to graduate:

- B.A. — 3.5
- B.A. (Honours) — 5.0
- B.A. /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.Mgt., B.Eng.Society — 4.0
- B.Kin. — 4.0
- B.Kin. (Honours) — 5.0
- B.Mus. — 5.0
- B.Sc. — 3.5
- B.Sc. (Honours) — 5.0
- B.Tech. — 3.5

Please see the graduation regulations for individual Health Sciences programmes in the *Faculty of Health Sciences* section. If, at the time of graduation, you fail to meet the requirements for an Honours degree, you may seek to transfer to another programme.

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

You must take the degree at the Convocation **immediately** following the completion of the appropriate degree work.

7. RECORDS POLICY

Transcripts

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

**Transcripts
Office of the Registrar
Room 108, Gilmour Hall
McMaster University
L8S 4L8**

Phone: (905) 525-4600

FAX: (905) 527-1105

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

The transcript fee for 1998-99 is \$8.00 per copy. An additional charge of \$5.00 applies to transcripts which are faxed from McMaster (\$10.00 outside Canada). Fees are due at the time that transcripts are ordered. All mail or fax requests must include either a cheque, money order, or credit card number with the expiry date and name of card owner (Visa and MasterCard, only).

Requests are filled promptly on receipt of payment. Official transcripts are usually delivered to other Ontario universities by courier and elsewhere by Canada Post. To avoid disappointment, please allow at least five business days for processing and delivery time. Transcripts will not be issued if you have outstanding accounts at the University.

Retention Policy

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

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

If you are not accepted, or if you fail to enrol following acceptance, your documentation is normally destroyed at the end of each admissions cycle. If you reapply, you must resubmit any previous documentation and any additional academic information.

Supporting documentation relevant to your admission to, and performance at, the University will normally be eliminated seven years after the end of your enrolment at the University (regardless of whether you graduate).

SENATE POLICY STATEMENTS

The University has defined its expectations of students in both the academic and non-academic life of the University community, and developed procedures to ensure that all members of the community receive equitable treatment. An electronic version of the following policies is available at the following address: <http://www.mcmaster.ca/policy>

- Statement on Academic Ethics
- The University's Statement on Human Rights
- Sexual Harassment Policy
- Anti-Discrimination Policy
- Code of Conduct
- Alcohol Policy and Residence Community Alcohol Policy
- Student Appeal Procedures
- General Regulations for McMaster University Library
- Policy Statement on Applicants and Students with Disabilities
- Policy on Undergraduate Student Access to Final Examinations
- Welcome Week Regulations
- Senate Resolution on Course Outlines
- Guidelines on Access to Information and Protection of Privacy (including Security of Student Data)

The following provides a summary of the major policies which pertain to students. Complete versions of the policies may be obtained from the Senate Secretariat, Room 104, Gilmour Hall.

Academic Ethics

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

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

Breaches of academic ethics fall into two general categories:

- a) a disregard for the norms of scholarly integrity, without necessarily intending to deceive, and
- b) academic dishonesty, which is an intentional disregard for the norms of scholarly integrity.

Minor breaches of academic ethics that fall into category a) are normally drawn to students' attention by instructors and may result in penalties such as a reduced mark or a zero for the piece of work.

Academic dishonesty is not qualitatively different from other types of dishonesty. It consists of misrepresentation by *deception or by other fraudulent means*.

The *Senate Resolutions on Academic Dishonesty* define academic dishonesty and specify the procedures to be followed in the event that a student is charged with academic dishonesty. Penalties include expulsion from the University.

Appeal Procedures

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

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

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

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

Applicants who have been refused readmission to a degree programme may appeal the decision, using the procedures described in the *Student Appeal Procedures*, if the following two conditions have been met:

1. the applicant withdrew voluntarily from the University, and
2. the applicant alleges error or injustice on grounds other than academic judgment.

Student Code of Conduct

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

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

Alcohol Policy and Residence Community Alcohol Policy

The intention of the University Alcohol Policy is to promote attitudes towards alcohol use that are consistent with an atmosphere of civility, and to discourage alcohol-related behaviour on campus which is abusive to oneself or to others. Students are accountable for their own decisions regarding alcohol use; they are also responsible for knowing, understanding, and complying with applicable University policies and provincial laws related to alcohol.

The University Policy describes general and minimal requirements for the use of alcoholic beverages on campus. More specific guidelines concerning alcohol use are available from other offices on campus such as the Housing Office (for residence hall events), Vice-President (Administration) (for other events including faculty/staff events).

Statement on Human Rights

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

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

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

Sexual Harassment Policy

The University recognizes its legal and moral responsibility to protect all of its members from sexual harassment and to take action if such harassment does occur. To these ends it has developed a policy on, and procedures for, dealing with complaints of sexual harassment, including a range of disciplinary measures up to and including dismissal.

Anti-Discrimination Policy

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

The intention of this policy and its procedures is to prevent discrimination and harassment from taking place, and where necessary, to act upon complaints of such behaviour promptly, fairly, judiciously and with due regard to confidentiality for all parties concerned.

Student Records

The University has developed operating procedures which are designed to protect the confidentiality of undergraduate student records.

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

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

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

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

Transcripts are issued only with the consent of the student. Addresses will not be released except under provisions noted above.

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, diplomas, campus health services, student organizations, and athletics, and are payable by all students.

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

The University reserves the right to assess other supplementary fees or charges in some courses or programmes 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 1998-99. The fee schedules for 1999-2000 are enclosed in the Registration Handbook sent to each student during the summer preceding registration and are available on the web at <http://www.mcmaster.ca/bms/finance/feesched.htm> in the spring of 1999.

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

Base Per Unit Tuition Per Faculty

Faculty / Programme	Canadian/Permanent Resident Status	Visa Status
➤ Arts & Science	114.06 per unit	400.00 per unit
➤ Business and Commerce	119.44	395.00
➤ Engineering	117.92	364.00
➤ Eng. Mgt. II, IV	119.44	400.40
➤ Eng. Mgt. III, V	117.92	364.00
➤ Humanities	114.06	375.00
➤ Kinesiology and Social Sciences	114.06	375.00
➤ Nursing	114.06	400.00
➤ Occupational Therapy	125.90	431.60
➤ Physiotherapy	125.90	431.60
➤ Science	114.06	400.00

Supplementary Fees

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

McMaster Association of Part-Time Students fees:

Organization Fee	\$4.00
University Centre Fee	2.00
Athletics and Recreation Activity Fee	4.20
Total Charge per unit	\$10.20

Nursing Students Add:

Learning Resource Fee	6.25
Nursing Total Per Unit	16.45

STUDENTS TAKING 18 OR MORE PAY:

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

Athletics & Recreation Activity Fee	\$75.60
Student Health Service	36.00
Ontario Public Interest Research Group (OPIRG)	5.59

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	\$88.42
Health Plan Premium	37.00
H.S.R. Bus Pass	58.00
WUSC Student Refugee Fee	1.12
Ancillary Fee for CFMU-FM	12.95
Ancillary Fee for MARMOR Yearbook	6.75
Sub Total	\$321.23

Plus:

- McMaster Student Union's University Student Centre Building fee (\$2.39 per unit), to a maximum of \$71.70.
- Student Services Fee (\$2.60 per unit), to a maximum of \$78.00.

And Student Society Fees According to Faculty:

Arts & Science Society	26.00
Bachelor of Kinesiology Society	15.00
Commerce Society	82.00
Engineering Society	73.00
Engineering Endowment	50.00
Humanities Society	15.00
Nursing Society	30.50
Nursing Learning Resource Fee	112.50
Occupational Therapy Learning Resource Fee	115.00
Physiotherapy Learning Resource Fee	57.00
Science Society	10.00
Social Science Society	15.00

Canadian Citizens and Landed Immigrant Students

(Examples of fees for full academic load.)

	Tuition Fee *	Supplementary Fees	Total Fees
➤ Arts & Science	3,421.80	496.93	3,918.73
➤ Business and Commerce	3,583.20	552.93	4,136.13
➤ Engineering and Eng. Mgt. III, V	3,891.36	593.93	4,485.29
➤ Eng. Mgt. II, IV	3,583.20	593.93	4,177.13
➤ Humanities and Social Sciences	3,421.80	485.93	3,907.73
➤ Kinesiology	3,421.80	485.93	3,907.73
➤ Medicine I, II (Admitted Sept 1998)	10,500.00	487.80	10,987.80
➤ Medicine I, II (Admitted prior to Sept 1998)	8,064.00	487.80	8,551.80
➤ Medicine III	5,376.00	487.80	5,863.80
➤ Midwifery 4 Yr. Programme	3,421.00	181.00	3,602.00
➤ Midwifery 3 Yr. Programme	5,132.00	181.00	5,313.00
➤ Nursing	3,421.80	613.93	4,035.73
➤ Occupational Therapy	3,777.00	585.93	4,362.93
➤ Physiotherapy	3,777.00	527.93	4,304.93
➤ Science	3,421.80	480.93	3,902.73

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

Visa Students

(Examples of fees for full academic load.)

	Supplementary		
	*Tuition Fee	Fees	Total Fees
➤ Arts & Science	12,000.00	496.93	12,496.93
➤ Business and Commerce	11,850.00	552.93	12,402.93
➤ Engineering and Eng. Mgt. II, IV	12,012.00	593.93	12,605.93
➤ Engineering and Eng. & Mgt. III, V	12,012.00	593.93	12,605.93
➤ Humanities and Social Sciences	11,250.00	485.93	11,735.93
➤ Kinesiology	11,250.00	485.93	11,735.93
➤ Science	12,000.00	480.93	12,480.93

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

Student Health Services Fees

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

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

Co-op Fees

Co-op students attending the full academic term (September-April) should add an \$850.00 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 \$425.00 Co-op Fee.

Listeners

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

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

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

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

Persons Aged 65+

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

RESIDENCE AND MEAL PLAN FEES

Regular Session

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

The fees below are those for 1998-99.

	Full Payment	Minimum Payment
Traditional Residences		
• Double/Triple/Quad	2,860.00	1,580.00
• Single	3,035.00	1,668.00
• Bates Residence	3,175.00	1,738.00

Meal Plans

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

	Full Payment	Minimum Payment
• Light	2,225.00	1,113.00
• Small	2,425.00	1,313.00
• Regular	2,625.00	1,513.00
• Large	2,825.00	1,713.00

If you wish to change your selection of meal plans, you may do so up to September 17, 1999. Please contact the Mac Express Centre, ext. 27448, for details on how to change your plan.

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

Summer Residence

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

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

PAYMENT OF FEES

Tuition fees and residence/meal plan fees are payable in full during the registration period in August/September. Prepayment of fees will significantly simplify the registration process (see Prepayment of Fees). If you are unable to make full payment at the time of registration, you may be registered by paying the minimum first payment at the time of registration. **Interest is added monthly to the unpaid balance. (Current rate is 1.2% per month.)** The balance plus interest must be paid no later than January 12. Failure to make payment by January 12 will result in a late payment fee.

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

In addition, if you refuse to pay fees, or any part of the fees, you may be refused admission to the University or you may be requested to withdraw with all privileges suspended. Fees to the date of withdrawal will be assessed. If you wish to re-register within the same academic session, you will also be assessed a \$100 reinstatement fee.

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

You will not be eligible for any examination results, transcripts, diplomas or the payment of awards of any kind, until fees and any other accounts owed to the University are paid, or until acceptable arrangements are made.

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

Prepayment of Fees

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

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

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

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

Refunds

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

MISCELLANEOUS FEES

The following fees were in effect for the 1998-99 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	35.00
➤ Certification of Enrolment Fee	8.00
➤ Contribution to Psycho-Educational Assessment	200.00
➤ Deferred Examination on campus	50.00
➤ Deferred Examination at Another Centre	100.00
➤ Examination Reread (Refunded if grade is changed)	50.00
➤ Letter of Permission	50.00
➤ Notarizing Fee (plus 50 cents per page over 10)	10.00
➤ Photocopying of Examination Script	10.00
➤ Replacement of Diploma	30.00
➤ Replacement of Student I.D. Card	30.00
➤ Supervision of Examinations at Other Universities	50.00
➤ Transcript (per copy)	8.00
➤ Transcript Assessment Fee	50.00

Financial/Administrative User Fees

➤ Replacement Fee	
• Income Tax Receipt/Education Credit Certificate	8.00
➤ Certification of Fee Payment	8.00
➤ Meal Plan Withdrawal Fee	50.00
➤ Fine for Meal Card Misuse	25.00
➤ Returned Cheque Charge (NSF, Stopped Payment)	
• First Occurrence	28.00
• Each Subsequent Occurrence (Additional)	10.00
➤ Late Document Fee	50.00
➤ Late Registration Fee	
• Full-time Students	50.00
• Part-time Students	50.00
➤ Late Payment Fee	32.00
➤ Deferment Fee	32.00
➤ Reinstatement Fee	100.00
➤ Locker Rentals	12.00
➤ Library Charges	
• Overdue Recalled Books (per day)	2.00
• Overdue Reserve Material (per hour)	2.00
• Replacement Cost, plus Fine: up to	100.00
• Returned Books After Billing	10.00

EXPENSES

Costs Other Than Fees

For Students in Clinical Courses

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

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

Registration Examinations

Graduates of the B.Sc.N. programme can expect to pay fees (\$200 in 1997) 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 PROGRAMME

WEB ADDRESS: <http://www.mcmaster.ca/artsci>

E-MAIL ADDRESS:

FOR PROGRAMME-SPECIFIC QUESTIONS: ryank@mcmaster.ca

FOR UNIVERSITY ADMISSION INFORMATION: macadmit@mcmaster.ca

Director

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

The Arts & Science Programme has been designed for students who wish to use their university years to further their intellectual growth through study of significant achievements in both arts and sciences and in practice of methods of inquiry. The programme also allows for substantial specialization in a discipline or area through the use of electives. The philosophy of the Arts & Science Programme can be expressed by quoting A.N. Whitehead:

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

— The Aims of Education and Other Essays, 1929

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

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

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

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

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

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

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

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

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

INQUIRY SEMINAR REQUIREMENTS

Inquiry seminars are comprised of ARTS&SCI 1C06 and a set of upper-level inquiry seminars on a variety of topics that change from time to time. The upper-level inquiry seminars are designated as 3C at the beginning of the course code (3CA6, 3CB6, etc.) and are described in the programme listing as *upper-level Inquiry*. See the course listing for topic designations. ARTS&SCI 1C06 must be completed in Level I. One upper-level inquiry seminar is required and is normally taken in Level II or III.

COMBINED HONOURS

Students in the Arts & Science Programme may undertake Combined Honours programmes in many disciplines within the Faculties of Humanities, Science and Social Sciences. The combined programmes with Biology, Chemistry and Physics need five years for completion. Combined programmes that are already established are described below. Students should consult the Director of the Arts & Science Programme for consideration of other possible combinations. **Application for Admission to Level II (mid March) is required for all Combined Honours Programmes.**

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

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

INTERNATIONAL/CANADIAN EXCHANGE PROGRAMMES

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

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

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

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

ARTS & SCIENCE PROGRAMMES

B.Arts Sc. (Honours) {2027} and B.Arts Sc.

NOTES

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

REQUIREMENTS

LEVEL I: 30 UNITS

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3 (BIOLOGY requirement must be completed by the end of Level II)

LEVEL II: 30 UNITS

18 units ARTS&SCI 2A06, 2D06, 2R06
6 units Electives or Upper-level Inquiry (Inquiry may be taken in Level III)
6 units Electives or BIOLOGY 1A03, 1AA3 (if not completed in Level I)

LEVEL III: 30 UNITS

6 units ARTS&SCI 3B03, 3BB3
6 units from ARTS&SCI 3A06, 3L03, 3S03
6 units Electives, or Upper-level Inquiry if this requirement has not already been completed.
12 units Electives

LEVEL IV: 30 UNITS

6 units from ARTS&SCI 3A06, 3L03, 3S03 (whichever not completed in Level III)

6-12 units from ARTS&SCI 4A06, 4A12, 4C06, 4C12

12-18 units Electives

ARTS & SCIENCE AND ANOTHER SUBJECT

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

Honours Arts & Science and Anthropology {2027010}**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0 including an average of at least 7.0 in ANTHROP 1A03, 1B03, 1Z03.

NOTE:

Students who have taken ANTHROP 2I03 are not allowed to take ANTHROP 3L03.

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06

6 units from ANTHROP 1A03, 1B03, 1Z03

LEVEL II: 30 UNITS

12 units ARTS&SCI 2A06, 2R06

6 units BIOLOGY 1A03, 1AA3

9 units ANTHROP 2E03, 2F03, 2PA3

3 units Anthropology

LEVEL III: 30 UNITS

12 units ARTS&SCI 2D06, 3A06

6 units Upper-level Inquiry

3 units from ANTHROP 2B03, 2P03, 2S03, 2V03, 3A03, 3B03, 3D03, 3F03

3 units from ANTHROP 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03

3 units ANTHROP 3L03

3 units Anthropology

LEVEL IV: 30 UNITS

12 units ARTS&SCI 3B03, 3BB3, 3L03, 3S03

6 units ANTHROP 4I03; three units Level IV Anthropology

6 units Anthropology

6 units Electives

Honours Arts & Science and Biochemistry {2027040}**ADMISSION**

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

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06

6 units CHEM 1A03, 1AA3

LEVEL II: 33 UNITS

12 units ARTS&SCI 2A06, 2R06

6 units BIOCHEM 2A06

6 units BIOLOGY 1A03, 1AA3

9 units CHEM 2OA3, 2OB3, 2R03

LEVEL III: 33 UNITS

12 units ARTS&SCI 2D06, 3A06

12 units BIOCHEM 3B03, 3BB3, 3L03, 3P03

6 units BIOLOGY 2B03, 2C03

3 units CHEM 3F03

LEVEL IV: 33 UNITS

12 units ARTS&SCI 3B03, 3BB3, 3L03, 3S03

6 units Upper-level Inquiry

3 units BIOCHEM 4E03

3-9 units BIOCHEM 4B06, 4BB6, 4F09, 4G03, 4L03, 4P03

3-9 units from BIOCHEM 3C03, 4A03, 4D03, 4I03, 4M03

Honours Arts & Science and Biology {2027050}**ADMISSION**

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

NOTES

1. Continuation in the programme beyond Level II requires a grade of at least B- in BIOLOGY 1A06 or an average of at least 7.0 in BIOLOGY 1A03, 1AA3.

2. Students are advised to note carefully the prerequisites for all Level III and IV courses listed in the programme, particularly BIOCHEM 3A03, 3AA3.

COURSE LIST

All Level III and IV Biology courses except BIOLOGY 4C09, 4L09; BIOCHEM 2EE3, 3B03, 3BB3, 3C03, 3G03, 3H03, 3N03, 4D03, 4DD3, 4E03, 4EE3, 4I03, 4M03; GEO 2P03, 3B03, 3C03, 3P03, 4B03; MOL BIOL 4F03, 4H03, 4J03; PHARMAC 4B03; PSYCH 2F03, 3FA3, 3R03, 3S03, 3T03

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06

6 units CHEM 1A03, 1AA3

LEVEL II: 30 UNITS

18 units ARTS&SCI 2A06, 2D06, 2R06

6 units BIOLOGY 1A03, 1AA3

6 units CHEM 2OA3, 2OB3

LEVEL III: 30 UNITS

6 units ARTS&SCI 3B03, 3BB3

6 units Upper-level Inquiry

12 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03

6 units BIOCHEM 2EE3, 3G03

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3A06 or 3L03, 3S03

18-21 units from Course List

3-6 units Electives

LEVEL V: 30 UNITS

6 units ARTS&SCI 3A06 or 3L03, 3S03 (whichever not completed)

6 units ARTS&SCI 4C06

9 units from Course List

9 units Electives

Honours Arts & Science and Chemistry {2027070}**ADMISSION**

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

NOTES

1. Students who have completed CHEM 2OA3 and 2OB3 may substitute this for CHEM 2BA3 and 2BB3 and students who have completed ARTS&SCI 2D06 may substitute this for PHYSICS 1A06 or PHYSICS 1B06, or 1B03 (or 1C03) and 1BA3 (or 1BB3).

2. For those students considering postgraduate studies in Chemistry, it should be noted that 18 units of Level IV Chemistry are required for consideration for admission at McMaster.

COURSE LIST

ARTS&SCI 3A06, 3B03, 3BB3, 3L03, 3S03

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06

6 units CHEM 1A03, 1AA3

LEVEL II: 33 UNITS

12 units ARTS&SCI 2A06, 2R06

6 units PHYSICS 1B03, 1BA3 (or 1BB3)

6 units BIOLOGY 1A03, 1AA3

6 units CHEM 2BA3, 2BB3

3 units MATH 1B03

LEVEL III: 30 UNITS

6 units from Course List
 15 units CHEM 2A03, 2I03, 2L03, 2PA3, 2PB3
 3 units MATH 2A03
 6 units Electives

LEVEL IV: 30 UNITS

6 units from Course List
 6 units Upper-level Inquiry
 18 units CHEM 3A03, 3BA3, 3BB3, 3D03 (or 3F03), 3P03, 3Q03

LEVEL V: 30 UNITS

6 units from Course List
 6 units CHEM 4G06
 6 units Level IV Chemistry
 12 units Electives

Honours Arts & Science and Comparative Literature {2027142}

ADMISSION

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

NOTES

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

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
 6 units COMP LIT 1A06

LEVEL II: 30 UNITS

18 units ARTS&SCI 2A06, 2R06, BIOLOGY 1A03, 1AA3
 6 units COMP LIT 2A03, 2AA3
 6 units Language Requirement (See Note 1 above.)

LEVEL III: 30 UNITS

12 units ARTS&SCI 2D06, 3B03, 3BB3
 6 units Upper-level Inquiry
 9 units COMP LIT 3D03, 3DD3, 3QQ3
 3 units Comparative Literature

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
 6 units from COMP LIT 4AA3, 4B03, 4C03, 4E03
 12 units Comparative Literature
 6 units Electives

Honours Arts & Science and Computer Science {2027145}

ADMISSION

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

NOTE:

It is possible to take COMP SCI 1MD3 if COMP SCI 1SA3 was completed with a grade of B+ or better, in which case COMP SCI 1SA3 can be used as a substitute for COMP SCI 1MC3.

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
 6 units COMP SCI 1MC3, 1MD3

LEVEL II: 33 UNITS

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

LEVEL III: 33 UNITS

12 units ARTS&SCI 3A06, 3B03, 3BB3
 6 units Upper-level Inquiry
 3 units COMP SCI 2MJ3
 9 units COMP SCI 3MG3, 3MH3, 3MI3
 3 units from COMP SCI 3CB3, 3EA3, 3IA3

LEVEL IV: 30 UNITS

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

Honours Arts & Science and Drama {2027148}

ADMISSION

Completion of Arts & Science I with a Cumulative Average of at least 6.0 in 12 units of Level I work, including a grade of at least B- in DRAMA 1A06.

REQUIREMENTS**LEVEL I: 30 UNITS**

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

LEVEL II: 30 UNITS

12 units ARTS&SCI 2A06, 2R06
 6 units BIOLOGY 1A03, 1AA3
 6 units Level II Drama
 6 units from DRAMA 2D06, 2M06

LEVEL III: 30 UNITS

12 units ARTS&SCI 2D06, 3A06
 6 units Upper-level Inquiry
 12 units Level III or IV Drama

LEVEL IV: 30 UNITS

12 units ARTS&SCI 3B03 and 3BB3, 3L03 and 3S03
 6 units Level III or IV Drama
 6 units Level IV Drama approved as the Arts & Science Programme Individual Study/Thesis requirement
 6 units Electives

Honours Arts & Science and Economics

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

ADMISSION

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

NOTE

One of OAC Finite Math, STATS 1L03, or 2D03 is a prerequisite for the research methods course offered by the Department of Economics (ECON 2B03).

REQUIREMENTS**OPTION A {2027151}****LEVEL I: 30 UNITS**

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

LEVEL II: 30 UNITS

12 units ARTS&SCI 2A06, 2D06
 6 units BIOLOGY 1A03, 1AA3
 12 units ECON 2G03, 2GG3, 2H03, 2HH3

LEVEL III: 30 UNITS

12 units ARTS&SCI 3A06, 3B03, 3BB3
 6 units ECON 2B03 and 3U03 or ARTS&SCI 2R06
 3 units from ECON 2K03, 3I03
 9 units Electives

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
 6 units Upper-level Inquiry
 18 units ECON 3LL3, 4A03 and 12 additional units Economics, of which at least six units must be from Levels III and IV; six of these units must be approved as substitutes for ARTS&SCI 4A06 or 4C06

OPTION B {2027152}**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS

18 units ARTS&SCI 2A06, 2D06, 2R06
6 units ECON 1A06
6 units Electives

LEVEL III: 30 UNITS

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

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
3 units from ECON 2K03, 3I03
6 units ECON 3LL3, 4A03
6 units Economics to replace ARTS&SCI 4A06 or 4C06
3 units Economics
6 units Electives

Honours Arts & Science and English {2027200}**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0 including a grade of at least B- in ENGLISH 1D06.

NOTES

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

COURSE LIST 1 (SIX UNITS REQUIRED)

ENGLISH 3C06, 3I06, 3K06, 3L06, 3L06, 3V06

COURSE LIST 2 (SIX UNITS REQUIRED)

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

COURSE LIST 3 (SIX UNITS REQUIRED)

ENGLISH 2G06, 2H06, 3R06

COURSE LIST 4 (SIX UNITS REQUIRED)

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

COURSE LIST 5 (SIX UNITS REQUIRED)

Courses in Lists 1-4 and: ENGLISH 3B03, 3CC3, 3F03, 3HH3, 3II3, 3P03, 3S03, 3W03, 3X03, 3XX3, 3Z03

REQUIREMENTS**LEVEL I: 30 UNITS**

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

LEVEL II: 30 UNITS

18 units ARTS&SCI 2A06, 2R06; BIOLOGY 1A03, 1AA3
12 units Level II or III English from Course Lists 1-5

LEVEL III: 30 UNITS

12 units ARTS&SCI 2D06, 3B03, 3BB3
6 units Upper-level Inquiry
12 units Level II or III English from Course Lists 1-5

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
6 units Level II or III English from Course Lists 1-5
6 units Level IV English seminars
12 units Electives

Honours Arts & Science and French {2027230}**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0, including a grade of at least B- in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6.

NOTES

1. When selecting their courses, students must ensure that the overall total includes a minimum of 24 units of Level III and IV French courses.

2. Upon completion of 60 units of work (including at least 12 units of required Level II French courses), and with the approval of the Department of French, the Associate Dean of Humanities (Studies), and the Director of the Arts & Science Programme, up to 15 units of Level III French may be replaced by courses of study at a French-language university.

COURSE LIST (SIX UNITS REQUIRED)

FRENCH 4F03, 4I03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4X03, 4Y03

REQUIREMENTS**LEVEL I: 30 UNITS**

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

LEVEL II: 30 UNITS

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

LEVEL III: 30 UNITS

12 units ARTS&SCI 2D06, 3B03, 3BB3
6 units Upper-level Inquiry
3 units FRENCH 3C03
6 units FRENCH 3K03 or 3KK3; FRENCH 3Q03 or 3QQ3
3 units from FRENCH 3AA3, 3BB3, 3Z03, 4U03

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
9 units FRENCH 4A03; two three-unit Level IV French courses from Course List
3 units from FRENCH 3A03, 3SS3, 4J03
12 units Electives

Honours Arts & Science and Geography {2027240}**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0 including a minimum average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03. (See Note below.)

NOTE

Beginning in 2000-2001, admission to the programme will require completion of Arts & Sci I with a Cumulative Average of at least 6.0 including and average of at least 7.0 in GEO 1HS3 and 1HU3 (or a grade of at least B- in GEO 1HB6 if previously completed).

COURSE LIST 1:

GEO 4A03, 4B03, 4CC3, 4C03, 4D03, 4FE3, 4G03, 4HS3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4I03, 4R06, 4S03, 4W03, 4WW3

COURSE LIST 2:

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3, 3I03, 3R03, 3S03, 3W03, 3Y03

COURSE LIST 3:

GEO 2B03, 2C03, 2G03, 2HA3, 2HB3, 2HD3, 2HR3, 2HY3, 2W03

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units from GEO 1A03, 1B03, 1G03

LEVEL II: 30 UNITS

12 units ARTS&SCI 2A06, 2D06
6 units BIOLOGY 1A03, 1AA3
6 units from ARTS&SCI 2R06, GEO 2S03, STATS 1CC3
3 units GEO 2I03
3 units Course List 3

LEVEL III: 30 UNITS

12 units ARTS&SCI 3A06, 3B03, 3BB3
3 units from GEO 3FE3 or 3HF3
9 units Course List 2
6 units Course List 3

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
6 units Upper-level Inquiry
12 units Course List 1, including one of GEO 4CC3, 4R06
6 units Electives

Honours Arts & Science and History {2027290}**ADMISSION**

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

NOTES

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

REQUIREMENTS**LEVEL I: 30 UNITS**

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

LEVEL II: 30 UNITS

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

LEVEL III: 30 UNITS

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

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
12 units six units Level IV History; six units Level IV History approved as substitutes for ARTS&SCI 4A06 or 4C06
12 units Electives

Honours Arts & Science and Mathematics {2027320}**ADMISSION**

Completion of Arts & Science I with an average of at least 6.0 including a weighted average of 7.0 in ARTS&SCI 1D06 or MATH 1A03 or 1AA3, and MATH 1B03.

REQUIREMENTS**LEVEL I: 33 UNITS**

27 units ARTS&SCI 1A06, 1B06, 1C06, 1D06; MATH 1B03
6 units BIOLOGY 1A03, 1AA3

LEVEL II: 33 UNITS

18 units ARTS&SCI 2A06, 2D06, 2R06
15 units MATH 2A03, 2AB3, 2C03, 2R03, 2S03

LEVEL III: 33 UNITS

12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
15 units MATH 3A03, 3AA3, 3E03, 3EE3, 3X03

LEVEL IV: 30 UNITS

6 units ARTS&SCI 3L03, 3S03
6 units ARTS&SCI 4A06 or 4C06
3 units from MATH 4B03, 4E03, 4X03
12 units Level III or IV Mathematics or Statistics courses
3 units Electives

Honours Arts & Science and Philosophy {2027420}**ADMISSION**

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

NOTES

- Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
- 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.
- Upon completion of 60 units of work and with the approval of the Department of Philosophy, the Associate Dean of Humanities (Studies), and the Director of the Arts & Science Programme, one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS

18 units ARTS&SCI 2A06, 2D06, 2R06
6 units PHILOS 2A06
6 units Level III or IV Philosophy

LEVEL III: 30 UNITS

12 units ARTS&SCI 3A06, 3B03, 3BB3
6 units Upper-level Inquiry
6 units PHILOS 2C06
6 units Level III or IV Philosophy

LEVEL IV: 30 UNITS

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

Honours Arts & Science and Physics {2027440}**ADMISSION**

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

NOTES

- Continuation in the programme beyond Level II requires at least an average of 6.0 in 6 units from PHYSICS 1B03, 1BA3 (or 1BB3).
- BIOLOGY 1A03 and 1AA3 may be replaced by BIOLOGY 1A06. PHYSICS 1B03 and 1BA3 (or 1BB3) may be replaced by PHYSICS 1A06 or 1B06.
- BIOLOGY 1A03, 1AA3, PHYSICS 1B03, 1BA3 (or 1BB3) must be completed by the end of Level II.
- Students who do not have some familiarity with a programming language such as Basic C, Fortran or Pascal should elect COMP SCI 1SA3 (Level III Elective).

REQUIREMENTS**LEVEL I: 33 UNITS**

18 units ARTS&SCI 1A06, 1B06, 1C06
6 units from ARTS&SCI 1D06, MATH 1A03, 1AA3
6 units from BIOLOGY 1A03, 1AA3, PHYSICS 1B03, 1BA3 (or 1BB3)
3 units MATH 1B03

LEVEL II: 30 UNITS

6 units ARTS&SCI 2A06
6 units Upper-level Inquiry
6 units from BIOLOGY 1A03, 1AA3, PHYSICS 1B03, 1BA3 (or 1BB3)
6 units from CHEM 1A06, 1A03, 1AA3
3 units MATH 2A03
3 units MATH 2C03

LEVEL III: 31 UNITS

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

LEVEL IV: 31 UNITS

6 units	ARTS&SCI 3A06 or 3L03, 3S03 (whichever not completed)
16 units	PHYSICS 3H04, 3K03, 3M03, 3MM3 and 3N03
6 units	MATH 3C03, 3D03
3 units	Electives

LEVEL V: 29 UNITS

6 units	ARTS&SCI 4C06
11 units	PHYSICS 4B04, 4F03, 4J04
9 units	from Level III or IV Physics, Level III Astronomy, GEO 3ZZ3, excluding PHYSICS 4Q04
3 units	Electives

Honours Arts & Science and Political Science {2027450}**ADMISSION**

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

NOTES

(Also, see notes under *Faculty of Social Science, Political Science* section):

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

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units	ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units	BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS

12 units	ARTS&SCI 2A06, 2D06
6 units	ARTS&SCI 2R06 (See Note 2 above.)
12 units	Level II or III Political Science

LEVEL III: 30 UNITS

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

LEVEL IV: 30 UNITS

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

Honours Arts & Science and Psychology {2027460}**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0, an average of at least 7.0 in PSYCH 1A03 and 1AA3 and a grade of at least C- in ARTS&SCI 1D06.

NOTES

1. ARTS&SCI 1D06 with a grade of at least C- must be completed before entrance into Level II of the programme.
2. PSYCH 2RR3 and STATS 1CC3 must be completed before entrance into Level III.
3. BIOLOGY 1A03 is a prerequisite for PSYCH 2F03.
4. At some time during the programme, the student must meet a laboratory requirement by completing one of 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3. Enrolment in Psychology Laboratory courses is limited. Permission of the Department is required by March 1.
5. Students who are planning to do graduate studies in Psychology and who meet the prerequisites should complete PSYCH 4D06 and MATH 1B03.

COURSE LIST

PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units	ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units	PSYCH 1A03, 1AA3

LEVEL II: 30 UNITS

12 units	ARTS&SCI 2A06, 2D06
6 units	BIOLOGY 1A03, 1AA3
6 units	STATS 1CC3 and PSYCH 2RR3 (or ARTS&SCI 2R06)
6 units	from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03

LEVEL III: 30 UNITS

12 units	ARTS&SCI 3A06, 3B03, 3BB3
6 units	Upper-level Inquiry
3 units	from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03 (whichever not taken in Level II)
6 units	Level III Psychology (See Note 4 above.)
3 units	Electives

LEVEL IV: 30 UNITS

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

Honours Arts & Science and Religious Studies {2027475}**ADMISSION**

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

NOTES:

1. All honours students are required to consult a departmental undergraduate advisor in the selection of their Level III and IV courses.
2. See faculty of Social Sciences note under RELIGIOUS STUDIES regarding possible language requirement.
3. ARTS&SCI 1A06 serves as the Level I Religious Studies requirement; all Religious Studies courses taken must be above Level I.

COURSE LISTS

Three units from Course List 1: three units each from two other Course Lists.

1. ASIAN RELIGIONS

ARTS&SCI 3L03; RELIG ST 2E03, 2J06, 2L03, 2P06, 2RR3, 2T03, 3AA3, 3E03, 3H03, 3I03, 3L03, 3S03, 3U03, 3UU3; SANSKRIT 3A06, 4B06

2. BIBLICAL STUDIES

RELIG ST 2B03, 2DD3, 2EE3, 2GG3, 2HH3, 2VV3, 2YY3, 2Z03, 3DD3, 3M03, 3N03, 3R03, 3T03; HEBREW 2A03, 2B03, 3A03, 3B03

3. WESTERN RELIGIOUS THOUGHT

RELIG ST 2C03, 2CC3, 2H03, 2I03, 2JJ3, 2KK3, 2U03, 2UU3, 2Y03, 2ZZ3, 3D03, 3I03, 3KK3, 3LL3, 3MM3, 3NN3, 3W03, 3Z03, 3ZZ3

4. CONTEMPORARY AND COMPARATIVE RELIGIONS

RELIG ST 2AA3, 2BB3, 2EA3, 2EB3, 2M03, 2N03, 2Q03, 2QQ3, 2SS3, 2V03, 2W03, 2WW3

REQUIREMENTS**LEVEL I: 30 UNITS**

24 units	ARTS&SCI 1A06, 1B06, 1C06, 1D06
6 units	BIOLOGY 1A03, 1AA3

LEVEL II: 30 UNITS

12 units	ARTS&SCI 2A06, 2R06
3 units	Course List 1
6 units	Course List 2, 3, 4 (three units each of two lists)
3 units	Religious Studies
6 units	Electives

LEVEL III: 30 UNITS

- 12 units ARTS&SCI 2D06, 3A06
- 6 units Upper-level Inquiry
- 3 units RELIG ST 3F03
- 6 units Level III Religious Studies
- 3 units Course List 1

LEVEL IV: 30 UNITS

- 6 units ARTS&SCI 3B03, 3BB3
- 12 units RELIG ST 4A06, 4J06
- 12 units Electives

Honours Arts & Science {2027520} and Sociology

ADMISSION

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

NOTES

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

REQUIREMENTS

LEVEL I: 30 UNITS

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

LEVEL II: 30 UNITS

- 12 units ARTS&SCI 2A06, 2D06
- 6 units BIOLOGY 1A03, 1AA3
- 12 units SOCIOL 2S06, 2Z03; three units Sociology

LEVEL III: 30 UNITS

- 6 units ARTS&SCI 3B03, 3BB3
- 15 units SOCIOL 3H06, nine units Sociology
- 3 units from SOCIOL 3A03, 3P03, 3PP3
- 3 units from SOCIOL 3I03, 3O03, 3W03
- 3 units Electives

LEVEL IV: 30 UNITS

- 12 units ARTS&SCI 3A06, 3L03, 3S03
- 6 units Upper-Level Inquiry
- 6 units Level IV Sociology
- 6 units SOCIOL 4M03 and 4N03 or 4MM6 to replace ARTS&SCI 4A06 or 4C06

MICHAEL G. DEGROOTE

SCHOOL OF BUSINESS

(FACULTY OF BUSINESS)

WEB ADDRESS: <http://www.business.mcmaster.ca>

E-MAIL ADDRESS: buscom@mcmaster.ca

Dean of Business

D.W. Conrath/B.A., M.S., M.A., Ph.D., P.Eng.

Associate Dean of Business (Academic)

R.D. Hackett/B.Sc., M.A., Ph.D.

Manager, Academic Programmes

E.A. Csordas/B.Sc., M.B.A., C.M.A.

Manager, Recruiting and Admissions

D. Anderson/B.A.

Administrator, Undergraduate Programmes

D. Ellis

Undergraduate Student Advisor

B. Pegg/B.A.

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

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

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

THE COMMERCE PROGRAMMES

In Level I, a student who wishes to pursue either of the Commerce programmes establishes a foundation in business, computer science, economics and mathematics, and also undertakes elective work. While this course of study is prescribed in Business I, a student who establishes a similar background in the Level I programme of another Faculty may be considered for admission to Level II Commerce. Such a student should consult with the Academic Programmes Office in the School of Business.

A student must gain admission to Commerce II in order to proceed towards the Honours B.Com. or B.Com. degrees. In Level II a wide range of business subjects including accounting, finance, marketing, human resources/labour relations, management information systems and communications are introduced and further 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 programmes diverge at Level III. In the Honours Commerce programme, about three-quarters of the work is in Commerce courses, with the remainder of the load coming from electives outside the Faculty. In the Commerce programme the work is approximately evenly divided between Commerce and non-Commerce courses.

INTERNATIONAL/CROSS-CULTURAL/LANGUAGE MENU

In its revised programmes, the School of Business is stressing the importance of breadth of knowledge. Students are required to take courses in a variety of business disciplines, thus giving them a sound understanding of business functions and their relationships. They also obtain exposure to international and cross-cultural issues. This will provide them with the knowledge needed for the world of global organizations. Prior to graduation, students are required to complete successfully **two courses** from an International/Cross-Cultural/Language menu. 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, student may choose from those additional courses as well. **The menu for 1999-2000 is as follows:**

All Anthropology courses

All courses in the Faculty of Humanities, except all English courses

All Indigenous Studies courses

All Political Science courses, except POL SCI 1G06, 3C03, 3DD3, 3F03, 3FF3, 3JJ3, 3S03, 4O06, 4S06

All Religious Studies courses

ECON 2C03 Asian-Pacific Economies

ECON 2F03 Globalization and Economic Development

ECON 2L03 Peace, Human Security and Economic 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 Economic Development: Agriculture and Population

GEO 1HS3 Social Geography

GEO 1HU3 Urban/ Economic Geography

GEO 3HG3 Geography of Japan (JAPAN ST 3JJ3)

SOCIOL 2E06 Racial and Ethnic Group Relations

SOCIOL 3Z03 Ethnic Relations

All courses included under the Peace Studies minor (see *Interdisciplinary Minors and Thematic areas* section of the Calendar)

FULL-TIME/PART-TIME STUDIES

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

CONTINUING STUDENTS

Graduates of McMaster's Commerce programmes or one of the Engineering and Management programmes may take, as part-time students, Level III and IV Commerce courses (not previously taken, to a maximum of 18 units), excluding COMMERCE 4AG3*, 4AH3*, 4AI3*, with the permission of the Academic Programmes Office. Such permission will be given only if normal prerequisites are satisfied and if space permits after meeting the requirements of in-course students. Registrations will be approved after classes start. (See the *Admission Requirements* section of this Calendar under the heading *Continuing Students*.)

*These courses are available as ACC 500, ACC 501, ACC 502, through the School of Business, subject to sufficient enrolments and availability of qualified instructors. For details concerning these courses, please see the McMaster University Spring/Summer Calendar.

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 programmes. Such a student may wish to apply for admission to the M.B.A. programme.

CREDIT TOWARDS PROFESSIONAL DESIGNATIONS

Educational requirements toward a variety of professional designations can be met in varying degrees within the Commerce programmes and the Engineering and Management programmes.

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 of Ontario.

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

MINOR

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

ACADEMIC REGULATIONS

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

QUALIFYING FOR HONOURS COMMERCE

To be considered for Level III of the Honours Commerce programme, students must have attempted at least 24 units of course work for Level II Commerce (as described in the School of Business Programmes 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 programme upon entry to Level III, there is one final opportunity for consideration. To be considered for Level IV of the Honours Commerce programme, students must have attempted at least 24 units of course work for Level III Commerce (as described in the School of Business Programmes 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 PROGRAMME

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

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

WORKLOAD

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

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

COURSE CHANGES

It is the responsibility of the student to ensure that the programme of work undertaken meets the requirements of the degree. All course changes must be made through the Academic Programmes Office.

WITHDRAWALS

Failure to complete a course, without obtaining approval to withdraw, will result in a course grade that includes zero on all grade components not completed. All withdrawals require approval from the Academic Programmes Office by the stated deadlines if they are to be made without academic penalty.

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 programme requirements for continuation in the programme will not necessarily be permitted to undertake further work before clearing deferred examinations. Please note that students registered in the School of Business are not normally granted a second deferral of an examination which has been previously deferred. Students who fail to write a deferred examination for medical or compassionate reasons must submit the appropriate documentation to the Academic Programmes Office by the end of the examination schedule and will be granted a grade of "Not Complete" or "N.C." on their transcripts. Students who receive a grade of "N.C." in a required course must re-register for that course in the following Fall/Winter academic session and pay the associated tuition fee. Students who receive a grade of "N.C." in an elective course may repeat the course or choose a replacement and in either case must pay the associated tuition fee.

REPEATED COURSES

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

EXTRA COURSES

Courses in addition to those which constitute the student's programme must be designated Extra at registration. Extra courses may be taken only upon successful completion of Level III of any of the Commerce programmes. No Extra courses may be scheduled in a manner which would delay completion of a student's programme. Commerce courses previously taken cannot be repeated as Extras. **The designation of Extra can be neither added nor removed retroactively.**

The last day to change the Extra designation is the last day for withdrawal without failure by default of the term to which it pertains.

LEVEL I COURSES

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

LEVEL OF REGISTRATION

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

READMISSION

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

Application for readmission must be made in writing to the Associate Dean (Academic) by June 30 for entry in September. This application should explain why the applicant would expect to succeed in the programme if readmitted. Forms for this purpose may be obtained from the Academic Programmes Office in the M.G. DeGroot Building, Room 104.

A student who is readmitted after having become ineligible to continue in a Commerce programme must repeat all the courses of the level at which he/she became ineligible to continue unless specific course exemptions 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 programme within the past five years, including those who were in good standing at the time of their most recent registration, must apply for readmission through the Office of the Registrar.

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 programme or at another University during that time, OR
2. Applicants from other Faculties.

Students seeking reinstatement must complete the *Returning Student Application* form available at the Office of the Registrar. The completed application and the \$50 application fee must be submitted to the Office of the Registrar by June 30 for entry in September.

Applications 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.

FORMER COMMERCE STUDENTS

If a student was previously registered in a McMaster Commerce programme and was in good standing but did not attend in the preceding year, the student must write to the Academic Programmes 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 programmes should refer to *Continuing Students* above.

INQUIRIES RE: ACADEMIC REGULATIONS

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

COMMERCE INTERNSHIP PROGRAMME

This is a programme designed to provide students with an opportunity to participate in career oriented work terms. Positions begin after the successful completion of Level III and may continue for periods of eight, twelve or sixteen months. Students compete for opportunities with participating companies through an application and interview process. Upon completion of the Internship, students return to campus to complete their degree programme. Students securing positions will be required to register in COMMERCE 3IN0, Commerce Internship Programme, successfully complete a minimum of an eight-month Internship, obtain a satisfactory employer evaluation, and submit a 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. Students are also required to attend a series of six preparatory career development sessions prior to competing for Internship opportunities. For more information, please contact the Manager, Commerce Career Resource Centre, Michael G. DeGroot School of Business, Room 112.

EXCHANGE PROGRAMMES

There are a number of official exchange programmes offered to undergraduate students registered in the School of Business. The countries involved are: Denmark, England, Norway, Mexico, France and Singapore. Official exchange programmes offer students the most inexpensive means of studying abroad as students participating in these exchanges avoid the foreign student fees by paying fees to McMaster. All students must be in good standing to be eligible to participate in an exchange. In most cases, students who participate in exchange programmes go abroad for Level III of their programme. Information is available from Prof. M. Adams, Exchange Programmes Coordinator, M.G. DeGroot Building, Room 320.

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

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

**STUDENT EXCHANGES
HAMILTON HALL, ROOM 405**

TELEPHONE: (905) 525-9140, EXTENSION 24748

PROGRAMMES**PROGRAMME NOTES**

1. Students in Business I are not eligible to take upper Level Commerce course work.
2. 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 the 30 units of course work for Business I (on first attempts only);
 - b) successfully completed on first attempts only all Business I required courses (ECON 1A06, COMMERCE 1S03, COMP SCI 1BA3, MATH 1M03 or MATH 1A03. For students without OAC Calculus or whose credit in same is older than five years, MATH 1K03 must be taken before MATH 1M03 or MATH 1A03; students without OAC Finite or whose credit in same is older than five years, must take STATS 1L03;
 - c) have no more than six units of failure in the elective component of Business I courses.
3. 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.
4. 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.**

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

- | | |
|------------|--|
| 3 units | COMMERCE 1S03 |
| 3 units | COMP SCI 1BA3 |
| 6 units | ECON 1A06 |
| 3 units | MATH 1M03 or 1A03 (see Note 4 above) |
| 0-3 units | MATH 1K03 (for those without OAC Calculus or whose credit in same is older than five years) |
| 0-3 units | STATS 1L03 (for those without OAC Finite or whose credit in same is older than five years) |
| 9-15 units | Electives to total 30 units. See also the <i>International/Cross-Cultural/Language Menu</i> in this section of the Calendar. |

Commerce II {2140}

REQUIREMENTS

LEVEL II: 30 UNITS

- | | |
|----------|--|
| 24 units | COMMERCE 2AA3, 2AB3, 2BA3, 2FA3, 2MA3, 2QA3, 2QB3, 2S03 |
| 3 units | ECON 2X03 |
| 3 units | Electives from non-Commerce courses. See also the <i>International/Cross-Cultural/Language Menu</i> in this section of the Calendar. |

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

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

REQUIREMENTS

LEVEL III: 30 UNITS

- | | |
|----------|--|
| 15 units | COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3 |
| 6 units | Level III or IV Commerce |
| 9 units | Electives from non-Commerce courses. See also the <i>International/Cross-Cultural/Language Menu</i> in this section of the Calendar. |

LEVEL IV: 30 UNITS

- | | |
|---------|--|
| 6 units | COMMERCE 4PA3, 4SA3 |
| 9 units | Level III or IV Commerce |
| 6 units | Level III or IV Commerce courses or electives from non-Commerce courses |
| 9 units | Electives from non-Commerce courses. See also the <i>International/Cross-Cultural/Language Menu</i> in this section of the Calendar. |

Commerce (B.Com.) {2140}

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

REQUIREMENTS

LEVEL III: 30 UNITS

- | | |
|----------|--|
| 15 units | COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3 |
| 15 units | Electives from non-Commerce courses. See also the <i>International/Cross-Cultural/Language Menu</i> in this section of the Calendar. |

LEVEL IV: 30 UNITS

- | | |
|----------|--|
| 6 units | COMMERCE 4PA3, 4SA3. |
| 24 units | Electives from non-Commerce courses. See also the <i>International/Cross-Cultural/Language Menu</i> in this section of the Calendar. |

Minor in Business

NOTES:

- 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) is limited to 40 students who are registered in a four- or five-level McMaster degree programme. Places in these courses will be allocated on a first-come, first-served basis.
- Beginning September 1999, COMMERCE 2AA3, 2FA3 and 2MA3 will also require completion of ECON 1A06 or 1B03 with a minimum grade of B- as a prerequisite.
- For purposes of the Business Minor, KINESIOL 3L03 will be accepted as a substitute for COMMERCE 2BA3; STATS 1CC3 will be accepted as a substitute for COMMERCE 2QA3.

REQUIREMENTS

- | | |
|----------|---|
| 6 units | ECON 1A06 or 1B03 and 1BB3 |
| 18 units | COMMERCE 2AA3, 2AB3, 2BA3, 2FA3, 2MA3, 2QA3, 2QB3, 3BC3, 3FA3, 3MC3 |

FACULTY OF ENGINEERING

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

E-MAIL ADDRESSES:

(Faculty Office): zywina@mcmaster.ca

(Engineering Physics): mascher@mcmaster.ca

Dean of Engineering

M. Shoukri/B.Sc., M.Sc., Ph.D., P.Eng.

Associate Dean of Engineering

P.E. Wood/B.A.Sc., Ph.D., F.C.I.C., P.Eng.

Director of Engineering I

P.M. Smith/B.Eng.Mgt., M.Eng., Ph.D., P.Eng.

Undergraduate Student Advisors

S.D. Verhage

J. Zywina

An engineer, as originally defined, is an ingenious person. The engineer today is concerned with the creation of devices, systems, and structures for human use. In this role of creator and of innovator, the engineer finds resourcefulness and capacity for invention at the heart of the practice of engineering. Modern society is challenged to advance from heedless exploitation of our world to an era of exercising responsible stewardship of resources, and the useful management of both the products and wastes of our industries. Engineering education at McMaster provides a host of choices which lead to this creative and fulfilling role in society.

For information concerning the Bachelor of Technology programme, please see the Programme for B.Tech. Degree section of this Calendar.

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

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Engineering Physics
- Manufacturing Engineering
- Materials Engineering
- Mechanical Engineering
- Software Engineering

A five-year programme, leading to the Bachelor of Engineering and Society Degree, is offered in:

- Chemical Engineering and Society
- Civil Engineering and Society
- Computer Engineering and Society
- Engineering Physics and Society
- Electrical Engineering and Society
- Manufacturing Engineering and Society
- Materials Engineering and Society
- Mechanical Engineering and Society
- Software Engineering and Society

In addition, and in conjunction with the School of Business, five-year programmes 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
- Manufacturing Engineering and Management
- Materials Engineering and Management
- Mechanical Engineering and Management
- Software Engineering and Management

Both five-year programmes have limitations on enrolment. Students are admitted to the programme following successful completion of Level I. Admission procedures and criteria can be obtained from the Office of the Associate Dean of Engineering.

McMaster baccalaureate degree programmes in Engineering are accredited by the Canadian Engineering Accreditation Board (CEAB) of the Canadian Council of Professional Engineers, except the programmes in Software Engineering which will be examined for the first time at the next accreditation. Provincial Engineering Associations accept the accreditation as a major requirement for admission to the qualification Professional Engineer. The B.Eng., B.Eng.Mgt. and B. Eng.Society programmes are honours degree programmes.

At McMaster, B.Eng. students take a common Level I programme comprising Mathematics, Physics, Chemistry, Engineering Design, Computation and a complementary studies elective. The specialized programmes are entered at Level II. Students interested in one of the Engineering and Management programmes must take COMMERCE 1S03 and ECON 1B03 as their electives in Level I. Students interested in one of the Engineering and Society programmes are advised to choose the six units complementary studies in Level I to be consistent with their chosen focus of the programme.

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

Complementary Studies Electives are broadening courses which are not in subjects that are an integral part of B.Eng. programmes.

In addition to ENGINEER 4A03 or equivalent and 2B03 or 4B03, complementary studies electives are required in all B.Eng. programmes. Of these, three units must be selected from courses that are designated as being above Level I.

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

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

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

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

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

THEME SCHOOL PARTICIPATION

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

INDUSTRIAL INTERNSHIPS

The Faculty of Engineering offers 12 to 16-month full-time paid work placements in industry to provide B.Eng. students with the technical work experience based on their course work. Students who qualify complete ENGINEER 3IN0 which includes career planning preparation, and a competitive application and interviewing process with participating companies. Students must be in their second or third level of a four-level programme, or third or fourth level of a five-level programme and be eligible to return to complete their undergraduate engineering degree in order to accept an Internship Placement. Students must have a minimum of 24 units to complete upon returning to studies at McMaster after the work term. An administrative fee is assessed following the start of the Placement. Industrial Internships are open to all disciplines and B.Eng. programmes within the Faculty of Engineering.

EXCHANGE PROGRAMMES

Formal exchange programmes with a number of universities in other countries are available for B.Eng. students wishing to attend a foreign university and receive credit at McMaster. For further information please see *International Study* in the *General*

Academic Regulations section in this Calendar. For information on the *Group of Ten Student Exchange Programme*, please refer to the *Academic Facilities, Student Services and Organizations* section of this Calendar under the heading *Student Exchanges*.

ACADEMIC REGULATIONS FOR B.ENG. PROGRAMMES

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

ENGINEERING I

To be eligible for Level II a student must successfully complete all Level I courses with an overall Cumulative Average (CA) of 4.0 or greater. To help students who may have had academic difficulty during the year, the Faculty of Engineering has a remedial studies plan (called the *M-Opportunity*) that provides the opportunity to 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.

SEQUENCE OF COURSES

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

REPEATED COURSES

All failed courses must be repeated if they are required courses for the Engineering programme or may be replaced if the courses are not explicitly required. Courses must be repeated following failure or if required by the Faculty.

LEVEL OF REGISTRATION

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

FALL/WINTER SESSION WORKLOAD

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

REINSTATEMENT TO ENGINEERING

A student who is ineligible to continue in the Faculty of Engineering or who *May not continue at the university* may normally 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 *Returning Student Application* available at the Office of the Registrar or the Office of the Associate Dean of Engineering. The completed application and the \$50 application fee must be submitted to the Office of the Registrar by June 30. Applications must be accompanied by a written explanation of the reason for the student's previous unsatisfactory academic performance, reasons for reinstatement at this time (including documentation of what has been done to correct previous problems), reasons why the student would expect to succeed in the desired programme if reinstated (i.e. what was the previous problem and what has been done to correct it), 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 programme probation.

PROGRAMME CHANGES

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

LEVEL I PROGRAMME {0730}

ENGINEERING I: 34 UNITS

3 units	CHEM 1E03
8 units	ENGINEER 1A00, 1C04, 1D04
11 units	MATH 1H05, 1N03, 1NN3
6 units	PHYSICS 1D03, 1E03
6 units	approved complementary studies electives

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

Admission to Level II Engineering Programmes

Admission to Level II Engineering programmes requires completion of Engineering I with a minimum CA of 4.0. A programme selection form must be submitted to the Office of the Associate Dean of Engineering by April 7, 2000. All programmes have limited enrolment; should there be more applicants than the limiting number in any programme, admission to that programme will be based on a full load using the Level I CA. Admission to a Level II programme for students registered in a reduced load will be by selection and/or an interview.

In addition, admission to a B.Eng.Mgt. programme requires the completion of COMMERCE 1S03 and ECON 1B03 with an average of 5.0 in these two courses; an interview may also be required.

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

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

Chemical Engineering (B.Eng.) {4080}

ADMISSION

See *Admission to Level II Engineering Programmes*.

LEVEL II: 37 UNITS

16 units	CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02
6 units	CHEM 1AA3, 2A03
6 units	MATH 2M06
3 units	STATS 3N03
6 units	approved complementary studies electives

LEVEL III: 36 UNITS

27 units	CHEM ENG 3D03, 3E04, 3G03, 3K04, 3L02, 3M04, 3O04, 3P03
3 units	CHEM 2E03
6 units	from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 3I03, ENGINEER 2O03

LEVEL IV: 34 UNITS

13 units	CHEM ENG 4L02, 4M03, 4N04, either 4W04 or 4Y04
3 units	from ENGINEER 4A03, 4H03, ENG PHYS 4C03
9 units	from CHEM ENG 4B03, 4C03, 4E03, 4K03, 4T03, 4X03, 4Z03, ELEC ENG 4CB3, ENGINEER 4U03
3 units	complementary studies electives (above Level I)
6 units	approved Level III or IV technical electives

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

ADMISSION

See *Admission to Level II Engineering Programmes*.

LEVEL II: 37 UNITS

16 units	CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02
3 units	CHEM 1AA3
6 units	COMMERCE 2AA3, 2MA3
6 units	ECON 1BB3, 2X03
6 units	MATH 2M06

LEVEL III: 39 UNITS

- 24 units CHEM ENG 3D03, 3E04, 3G03, 3K04, 3L02, 3M04, 3O04
 3 units CHEM 2E03
 12 units COMMERCE 2AB3, 2FA3, 3MC3

LEVEL IV: 34 UNITS (1999-2000 ONLY)

- 11 units CHEM ENG 3G03, 3P03, 4L02, 4M03
 12 units COMMERCE 2BA3, 2QA3 3FA3, 3QC3
 2 units ENGN MGT 3AA1, 4A01
 3 units approved complementary studies electives (above Level I)
 6 units from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 2A03, 3I03, ENGINEER 2O03

LEVEL V: 32 UNITS

- 8 units CHEM ENG 4N04; one of CHEM ENG 4W04 or 4Y04
 3 units COMMERCE 4PA3
 3 units ENGN MGT 5B03
 9 units from CHEM ENG 4B03, 4C03, 4E03, 4K03, 4T03, 4X03, 4Z03, ELEC ENG 4CB3, ENGINEER 4U03
 3 units from ENGINEER 4A03, 4H03, ENG PHYS 4C03
 3 units Commerce electives selected from Level III or IV Commerce or COMMERCE 2QB3 (six units in 2000-2001)
 3 units approved Level III or IV technical electives

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

See Admission to Level II Engineering Programmes.

NOTE

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

LEVEL II: 34-37 UNITS

- 16 units CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02
 3 units CHEM 1AA3
 6 units ENGSOCTY 2X03, 2Y03
 6 units MATH 2M06
 3-6 units Engineering and Society focus electives

LEVEL III: 32-35 UNITS

- 17 units CHEM ENG 3D03, 3K04, 3L02, 3M04, 3O04
 6 units CHEM 2A03, 2E03
 6 units ENGSOCTY 3Y03, 3Z03
 3-6 units Engineering and Society focus electives

LEVEL IV: 30-33 UNITS (1999-2000 ONLY)

- 15 units CHEM ENG 3E04, 3G03, 3P03, 4L02, 4M03
 6 units ENGSOCTY 3X03, 3Z03
 3 units STATS 3N03
 3 units from BIOCHEM 2EE3, CHEM ENG 3Q03, CHEM 3I03, ENGINEER 2O03
 3-6 units Engineering and Society focus electives

LEVEL V: 32 UNITS

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

Civil Engineering (B.Eng.) {4120}**ADMISSION**

See Admission to Level II Engineering Programmes.

NOTE

Level IV Civil Engineering courses must be selected in accordance with regulations which require a 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 a Level IV Registration Form.

LEVEL II: 37 UNITS

- 20 units CIV ENG 2A02, 2C04, 2E03, 2I03, 2J04, 2O04
 11 units ENGINEER 2C03, 2P04, 2Q04
 6 units MATH 2M06

LEVEL III: 36 UNITS

- 26 units CIV ENG 3A03, 3B03, 3C03, 3G03, 3J04, 3K03, 3M04, 3S03
 3 units ENGINEER 3P03
 4 units MATH 3J04
 3 units approved complementary studies electives

LEVEL IV: 34-36 UNITS (1999-2000 ONLY)

- 3 units CIV ENG 4B03
 6 units ENGINEER 4B03; and ENGINEER 4A03, 4H03 or ENG PHYS 4C03
 22-24 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
 3 units approved complementary studies electives (above Level I)

LEVEL IV: 31-33 UNITS (EFFECTIVE 2000-2001)

- 6 units ENGINEER 4B03; and ENGINEER 4A03, 4H03 or ENG PHYS 4C03
 22-24 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
 3 units approved complementary studies electives (above Level I)

Civil Engineering and Management (B.Eng.Mgt.) {4120325}**ADMISSION**

See Admission to Level II Engineering Programmes.

NOTE

Level V Civil Engineering courses must be selected in accordance with regulations which require a 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 a Level V Registration Form.

LEVEL II: 39 UNITS

- 17 units CIV ENG 2A02, 2C04, 2I03, 2J04, 2O04
 6 units COMMERCE 2AA3, 2MA3
 6 units ECON 1BB3, 2X03
 4 units ENGINEER 2P04
 6 units MATH 2M06

LEVEL III: 39 UNITS

- 13 units CIV ENG 2E03, 3G03, 3M04, 3S03
 9 units COMMERCE 2AB3, 2BA3, 2FA3
 7 units ENGINEER 2C03, 2Q04
 4 units MATH 3J04
 3 units STATS 3Y03
 3 units approved complementary studies electives (above Level I)

LEVEL IV: 38 UNITS (1999-2000 ONLY)

- 22 units CIV ENG 3A03, 3B03, 3C03, 3G03, 3J04, 3K03, 3S03
 12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
 3 units ENGINEER 3P03
 1 unit ENGN MGT 3AA1

LEVEL IV: 35 UNITS (EFFECTIVE 2000-2001)

- 16 units CIV ENG 3A03, 3B03, 3C03, 3J04, 3K03
 12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
 3 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
 3 units ENGINEER 3P03
 1 unit ENGN MGT 3AA1

LEVEL V: 37-38 UNITS (1999-2000 ONLY)

- 3 units CIV ENG 4B03
 21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
 3 units COMMERCE 4PA3
 4 units ENGN MGT 4A01, 5B03
 3 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
 3 units from ENGINEER 4A03, 4H03, ENG PHYS 4C03

LEVEL V: 37-38 UNITS (2000-2001 ONLY)

21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
 3 units COMMERCE 4PA3
 4 units ENGN MGT 4A01, 5B03
 6 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
 3 units from ENGINEER 4A03, 4H03, ENG PHYS 4C03.

LEVEL V: 34-35 UNITS (EFFECTIVE 2001-2002)

21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
 3 units COMMERCE 4PA3
 4 units ENGN MGT 4A01, 5B03
 3 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
 3 units from ENGINEER 4A03, 4H03 or ENG PHYS 4C03

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

ADMISSION

See Admission to Level II Engineering Programmes.

NOTES

1. Level V Civil Engineering courses must be selected in accordance with regulations which require a 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 a Level V Registration Form.
2. A minimum of 18 units of focus elective courses is required for the programme.

LEVEL II: 36-39 UNITS

17 units CIV ENG 2A02, 2C04, 2I03, 2J04, 2O04
 4 units ENGINEER 2P04
 6 units MATH 2M06
 6 units ENGSOCTY 2X03, 2Y03
 3-6 units Engineering and Society focus electives

LEVEL III: 30-33 UNITS

13 units CIV ENG 2E03, 3G03, 3M04, 3S03
 7 units ENGINEER 2C03, 2Q04
 4 units MATH 3J04
 3 units ENGSOCTY 3Y03
 3-6 units Engineering and Society focus electives

LEVEL IV: 34-37 UNITS (1999-2000 ONLY)

22 units CIV ENG 3A03, 3B03, 3C03, 3G03, 3J04, 3K03, 3S03
 3 units ENGINEER 3P03
 6 units ENGSOCTY 3X03, 3Z03
 3-6 units Engineering and Society focus electives

LEVEL IV: 31-34 UNITS (EFFECTIVE 2000-2001)

16 units CIV ENG 3A03, 3B03, 3C03, 3J04, 3K03
 3 units ENGINEER 3P03
 6 units ENGSOCTY 3X03, 3Z03
 6-9 units Engineering and Society focus electives

LEVEL V: 36-40 UNITS (1999-2000 ONLY)

3 units CIV ENG 4B03
 3 units ENGINEER 4B03
 6 units ENGSOCTY 4X03, 4Z03
 3-6 units Engineering and Society focus electives
 21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03

LEVEL V: 36-40 UNITS (2000-2001 ONLY)

3 units ENGINEER 4B03
 6 units ENGSOCTY 4X03, 4Z03
 6-9 units Engineering and Society focus electives
 21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03

LEVEL V: 33-37 UNITS (EFFECTIVE 2001-2002)

3 units ENGINEER 4B03
 6 units ENGSOCTY 4X03, 4Z03
 3-6 units Engineering and Society focus electives
 21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03

Computer Engineering (B.Eng.) {4144}

ADMISSION

See Admission to Level II Engineering Programmes.

LEVEL II: 37 UNITS

8 units COMP ENG 2DI4, 2SI4
 12 units ELEC ENG 2CI4, 2CJ4, 2EI4
 6 units ENGINEER 2B03, 2E03
 8 units MATH 2P04, 2Q04
 3 units approved complementary studies electives (above Level I)

LEVEL III: 39 UNITS

16 units COMP ENG 3DJ4, 3SJ4, 3SK4, 3SL4
 20 units ELEC ENG 3CK4, 3EJ4, 3FI4, 3TI4, 3TJ4
 3 units MATH 3K03

LEVEL IV: 36-38 UNITS

4 units ELEC ENG 4HI3, 4HJ1
 20 units COMP ENG 4DK4, 4DL4, 4DM4, 4OI4, 4SN4
 3-4 units technical electives from Electrical Engineering or Computer Engineering Level III or IV
 3 units Science technical electives (approved by the department)
 3-4 units technical electives (from Level III and IV of the Faculty of Engineering)
 3 units from ENGINEER 4A03, 4H03, ENG PHYS 4C03

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

ADMISSION

See Admission to Level II Engineering Programmes.

LEVEL II: 38 UNITS

3 units COMMERCE 2AA3
 8 units COMP ENG 2DI4, 2SI4
 6 units ECON 1BB3, 2X03
 8 units ELEC ENG 2CI4, 2CJ4
 2 units ENGN MGT 2AA2
 8 units MATH 2P04, 2Q04
 3 units Science technical elective approved by the department

LEVEL III: 36 UNITS (1999-2000 ONLY)

9 units COMMERCE 2AB3, 2FA3, 2MA3
 8 units COMP ENG 2SI4, 3SJ4
 12 units ELEC ENG 2EI4, 3TI4, 3TJ4
 3 units ENGINEER 2E03
 1 unit ENGN MGT 3AA1
 3 units MATH 3K03

LEVEL III: 38 UNITS (EFFECTIVE 2000-2001)

12 units COMMERCE 2AB3, 2BA3, 2FA3, 2MA3
 4 units COMP ENG 3SJ4
 12 units ELEC ENG 2EI4, 3TI4, 3TJ4
 3 units ENGINEER 2E03
 1 unit ENGN MGT 3AA1
 3 units MATH 3K03
 3 units approved complementary studies electives (above Level I)

LEVEL IV: 39 UNITS

13 units ELEC ENG 3CK4, 3EJ4, 3FI4, 4HJ1
 8 units COMP ENG 3DJ4, 3SL4
 9 units COMMERCE 3BC3, 3FA3, 3MC3
 3 units STATS 3Y03
 3 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
 3 units from ENGINEER 4A03, 4H03, ENG PHYS 4C03

LEVEL V: 37-39 UNITS (1999-2000 ONLY)

6 units COMMERCE 3QC3, 4PA3
 12 units COMP ENG 4DK4, 4DL4, 4SN4
 1 unit ELEC ENG 4HJ1
 3 units from ENGINEER 4A03, 4H03, ENG PHYS 4C03
 3 units ENGN MGT 5B03
 6 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
 6-8 units from COMP SCI 3SD3, 4CB3, Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering (not ELEC ENG 4QA3 or 4HI3)

LEVEL V: 40 UNITS (2000-2001 ONLY)

6 units	COMMERCE 3QC3, 4PA3
24 units	COMP ENG 3SK4, 4DK4, 4DL4, 4DM4, 4OI4, 4SN4
4 units	ENGN MGT 4A01, 5B03
3 units	Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
3 units	approved complementary studies electives (above Level I)

Computer Engineering and Society (B.Eng. Society) {4144535}**ADMISSION**

See *Admission to Level II Engineering Programmes.*

NOTE

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

LEVEL II: 36-39 UNITS

8 units	COMP ENG 2DI4, 2SI4
8 units	ELEC ENG 2CI4, 2CJ4
3 units	ENGINEER 2E03
6 units	ENGSOCTY 2X03, 2Y03
8 units	MATH 2P04, 2Q04
3-6 units	Engineering and Society focus electives

LEVEL III: 33-36 UNITS (1999-2000 ONLY)

8 units	COMP ENG 2SI4, 3SJ4
16 units	ELEC ENG 2EI4, 3CK4, 3TI4, 3TJ4
3 units	ENGSOCTY 3Y03
3 units	MATH 3K03
3 units	Engineering and Society focus electives

LEVEL III: 32-35 UNITS (EFFECTIVE 2000-2001)

4 units	COMP ENG 3SJ4
3 units	ENGINEER 2B03
16 units	ELEC ENG 2EI4, 3CK4, 3TI4, 3TJ4
3 units	ENGSOCTY 3Y03
3 units	MATH 3K03
3-6 units	Engineering and Society focus electives

LEVEL IV: 33-36 UNITS

9 units	ELEC ENG 3EJ4, 3FI4, 4HJ1
12 units	COMP ENG 3DJ4, 3SK4, 3SL4
6 units	ENGSOCTY 3X03, 3Z03
3-6 units	Engineering and Society focus electives
3 units	Science electives (approved by department)

LEVEL V: 34-40 UNITS (1999-2000 ONLY)

12 units	COMP ENG 4DK4, 4DL4, 4OI4
1 unit	ELEC ENG 4HJ1
6 units	ENGSOCTY 4X03, 4Z03
3 units	ENGINEER 4B03
3-6 units	Engineering and Society focus electives
9-12 units	from COMP SCI 3SD3, 4CB3, Level III or IV Electrical Engineering or Engineering Physics or Level IV Com- puter Engineering (not ELEC ENG 4QA3 or 4HI3)

LEVEL V: 32-36 UNITS (EFFECTIVE 2000-2001)

20 units	COMP ENG 4DK4, 4DL4, 4DM4, 4OI4, 4SN4
6 units	ENGSOCTY 4X03, 4Z03
3-6 units	Engineering and Society focus electives
3-4 units	technical electives from Electrical Engineering or Com- puter Engineering Level III or IV (not ELEC ENG 4HI3)

Electrical Engineering (B.Eng.) {4170}**ADMISSION**

See *Admission to Level II Engineering Programmes.*

NOTE

Students in the Electrical Engineering programme will follow a revised course structure leading to two options in the final level: Telecommunications and Systems.

PROGRAMME OPTION COMPULSORY COURSES:

- Systems: ELEC ENG 4CL4, 4PK4, 4PL4, MECH ENG 4H03
- Telecommunications: COMP ENG 4DK4, ELEC ENG 4FJ4, 4TK4, 4TL4

LEVEL II: 37 UNITS

8 units	COMP ENG 2DI4, 2SI4
12 units	ELEC ENG 2CI4, 2CJ4, 2EI4
6 units	ENGINEER 2B03, 2E03
8 units	MATH 2P04, 2Q04
3 units	approved complementary studies electives (above Level I)

LEVEL III: 39 UNITS

12 units	COMP ENG 3DJ4, 3SJ4, 3SK4
24 units	ELEC ENG 3CK4, 3EJ4, 3FI4, 3PI4, 3TI4, 3TJ4
3 units	MATH 3K03

LEVEL IV: 36-38 UNITS

8 units	ELEC ENG 4HI3, 4HJ1, 4OI4
16 units	Compulsory Courses for one Programme Option (see above)
3-4 units	technical electives from Electrical Engineering or Computer Engineering Level III or IV
3 units	Science electives (approved by department)
3-4 units	technical electives (from Level III and IV of the Faculty of Engineering)
3 units	from ENGINEER 4A03, 4H03, ENG PHYS 4C03

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

See *Admission to Level II Engineering Programmes.*

PROGRAMME OPTION COMPULSORY COURSES:

- Systems: ELEC ENG 4CL4, 4PK4, 4PL4, MECH ENG 4H03
- Telecommunications: COMP ENG 4DK4, ELEC ENG 4FJ4, 4TK4, 4TL4

LEVEL II: 38 UNITS

3 units	COMMERCE 2AA3
8 units	COMP ENG 2DI4, 2SI4
6 units	ECON 1BB3, 2X03
8 units	ELEC ENG 2CI4, 2CJ4
2 units	ENGN MGT 2AA2
8 units	MATH 2P04, 2Q04
3 units	Science technical electives approved by department

LEVEL III: 39 UNITS (1999-2000)

9 units	COMMERCE 2AB3, 2FA3, 2MA3
8 units	COMP ENG 2SI4, 3SJ4
12 units	ELEC ENG 2EI4, 3TI4, 3TJ4
3 units	ENGINEER 2E03
1 unit	ENGN MGT 3AA1
3 units	MATH 3K03
3 units	approved complementary studies electives (above Level I)

LEVEL III: 38 UNITS (EFFECTIVE 2000-2001)

12 units	COMMERCE 2AB3, 2BA3, 2FA3, 2MA3
4 units	COMP ENG 3SJ4
12 units	ELEC ENG 2EI4, 3TI4, 3TJ4
3 units	ENGINEER 2E03
1 unit	ENGN MGT 3AA1
3 units	MATH 3K03
3 units	approved complementary studies electives (above Level I)

LEVEL IV: 39 UNITS

17 units	ELEC ENG 3CK4, 3EJ4, 3FI4, 3PI4, 4HJ1
4 units	COMP ENG 3DJ4
9 units	COMMERCE 3BC3, 3FA3, 3MC3
3 units	STATS 3Y03
3 units	Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
3 units	from ENGINEER 4A03, 4H03, ENG PHYS 4C03

LEVEL V: 35-36 UNITS (1999-2000 ONLY)

6 units	COMMERCE 3QC3, 4PA3
5 units	ELEC ENG 4HJ1, 4OI4
3 units	ENGN MGT 5B03
6 units	Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3

15-16 units Level III or IV approved technical electives, of which at least twelve units must be selected from Electrical Engineering Level IV or Computer Engineering Level III or IV courses (not ELEC ENG 4QA3 or 4HI3)

LEVEL V: 40 UNITS (2000-2001 ONLY)

- 6 units COMMERCE 3QC3, 4PA3
- 4 units ELEC ENG 4OI4
- 4 units ENGN MGT 5B03, 4A01
- 4 units COMP ENG 3SK4
- 3 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
- 16 units Compulsory Courses for one Programme Option (see above)
- 3 units approved complementary studies electives (above Level I)

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

ADMISSION

See Admission to Level II Engineering Programmes.

NOTE

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

PROGRAMME OPTION COMPULSORY COURSES:

- Systems: ELEC ENG 4CL4, 4PK4, 4PL4, MECH ENG 4H03
- Telecommunications: COMP ENG 4DK4, ELEC ENG 4FJ4, 4TK4, 4TL4

LEVEL II: 36-39 UNITS

- 8 units COMP ENG 2DI4, 2SI4
- 8 units ELEC ENG 2CI4, 2CJ4
- 3 units ENGINEER 2E03
- 6 units ENGSOCTY 2X03, 2Y03
- 8 units MATH 2P04, 2Q04
- 3-6 units Engineering and Society focus electives

LEVEL III: 33-36 UNITS (1999-2000 ONLY)

- 8 units COMP ENG 2SI4, 3SJ4
- 16 units ELEC ENG 2EI4, 3CK4, 3TI4, 3TJ4
- 3 units ENGSOCTY 3Y03
- 3 units MATH 3K03
- 3-6 units Engineering and Society focus electives

LEVEL III: 32-35 UNITS (EFFECTIVE 2000-2001)

- 4 units COMP ENG 3SJ4
- 3 units ENGINEER 2B03
- 16 units ELEC ENG 2EI4, 3CK4, 3TI4, 3TJ4
- 3 units ENGSOCTY 3Y03
- 3 units MATH 3K03
- 3-6 units Engineering and Society focus electives

LEVEL IV: 36-39 UNITS

- 13 units ELEC ENG 3EJ4, 3FI4, 3PI4, 4HJ1
- 8 units COMP ENG 3DJ4, 3SK4
- 6 units ENGSOCTY 3X03, 3Z03
- 6-9 units Engineering and Society focus electives
- 3 units Science electives (approved by department)

LEVEL V: 32-33 UNITS (1999-2000 ONLY)

- 5 units ELEC ENG 4HJ1, ELEC ENG 4OI4
- 6 units ENGSOCTY 4X03, 4Z03
- 3 units ENGINEER 4B03
- 6 units Engineering and Society focus electives
- 12-13 units Electrical Engineering Level IV or Computer Engineering Level III or IV (not ELEC ENG 4QA3 or 4HI3)

LEVEL V: 31 UNITS (EFFECTIVE 2000-2001)

- 4 units ELEC ENG 4OI4
- 6 units ENGSOCTY 4X03, 4Z03
- 16 units Compulsory Courses for one Programme Option (see above)
- 6-9 units Engineering and Society focus electives
- 3-4 units technical electives from Electrical Engineering or Computer Engineering Level III or IV (not ELEC ENG 4HI3)

Engineering Physics (B.Eng.) {4190}

ADMISSION

See Admission to Level II Engineering Programmes.

NOTE

The following areas and courses are suggested as technical electives for Level IV:

- Computer Systems PHYSICS 4D06
- Lasers and Optical Communications ENG PHYS 4G03, 4K03, 4S04
- Nuclear Engineering ENG PHYS 4D03, 4L03, 4N03
- Microelectronic Devices ENG PHYS 4E03, 4F03

LEVEL II: 39 UNITS

- 4 units COMP ENG 2DI4
- 7 units ENGINEER 2O03, 2P04
- 11 units ENG PHYS 2A03, 2E04, 2H04
- 8 units MATH 2P04, 2Q04
- 3 units PHYSICS 2D03
- 6 units approved English literature

LEVEL III: 37 UNITS

- 16 units ENG PHYS 3D03, 3E03, 3F03, 3O03, 3W04
- 9 units MATH 3C03, 3D03, 4Q03
- 9 units PHYSICS 3B06, 3M03
- 3 units Complementary studies electives (above Level I)

LEVEL IV: 36-38 UNITS

- 3 units ENGINEER 4B03
- 11 units ENG PHYS 4A04, 4C03, 4U04
- 22-24 units approved Level III or IV technical electives, of which 10 units must be selected from the following courses: ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06

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

ADMISSION

See Admission to Level II Engineering Programmes.

LEVEL II: 38 UNITS

- 6 units COMMERCE 2AA3, 2MA3
- 4 units COMP ENG 2DI4
- 2 units ENGN MGT 2AA2
- 7 units ENGINEER 2O03, 2P04
- 11 units ENG PHYS 2A03, 2E04, 2H04
- 8 units MATH 2P04, 2Q04

LEVEL III: 40 UNITS

- 9 units COMMERCE 2AB3, 2BA3, 2FA3
- 6 units ECON 1BB3, 2X03
- 10 units ENG PHYS 3E03, 3F03, 3W04
- 6 units MATH 3C03, 3D03
- 9 units PHYSICS 2D03, 3B06

LEVEL IV: 38-39 UNITS

- 12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
- 1 unit ENGN MGT 3AA1
- 13 units ENG PHYS 3D03, 3O03, 4C03, 4U04
- 3 units MATH 4Q03
- 3 units PHYSICS 3M03
- 3 units approved complementary studies elective (above Level I)
- 3-4 units approved Level III or IV technical electives

LEVEL V: 35-37 UNITS

- 3 units COMMERCE 4PA3
- 4 units ENGN MGT 4A01, 5B03
- 4 units ENG PHYS 4A04
- 18-20 units approved Level III or IV technical electives, of which 10 units must be selected from the following courses: ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
- 6 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3

Engineering Physics and Society (B.Eng. Society)**{4190535}****ADMISSION**See *Admission to Level II Engineering Programmes.***NOTE**

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

LEVEL II: 35-38 UNITS

- 7 units ENGINEER 2O03, 2P04
- 11 units ENG PHYS 2A03, 2E04, 2H04
- 6 units ENGSOCTY 2X03, 2Y03
- 8 units MATH 2P04, 2Q04
- 3-6 units Engineering and Society focus electives

LEVEL III: 35-38 UNITS

- 4 units COMP ENG 2DI4
- 10 units ENG PHYS 3E03, 3F03, 3W04
- 3 units ENGSOCTY 3Y03
- 6 units MATH 3C03, 3D03
- 9 units PHYSICS 2D03, 3B06
- 3-6 units Engineering and Society focus electives

LEVEL IV: 31-35 UNITS

- 13 units ENG PHYS 3D03, 3O03, 4C03, 4U04
- 6 units ENGSOCTY 3X03, 3Z03
- 3 units MATH 4Q03
- 3 units PHYSICS 3M03
- 3-4 units approved Level III or IV technical electives
- 3-6 units Engineering and Society focus electives

LEVEL V: 35-40 UNITS (1999-2000 ONLY)

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

LEVEL V: 34-39 UNITS (EFFECTIVE 2000-2001)

- 3 units ENGINEER 4B03
- 4 units ENG PHYS 4A04
- 6 units ENGSOCTY 4X03, 4Z03
- 18-20 units approved Level III or IV technical electives, of which 10 units must be selected from the following courses:
ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
- 3-6 units Engineering and Society focus electives

Manufacturing Engineering (B.Eng.) {4314}**ADMISSION**See *Admission to Level II Engineering Programmes.***LEVEL II: 36 UNITS**

- 14 units ENGINEER 2MM3, 2O03, 2P04, 2Q04
- 3 units MANUFACT 2C03
- 6 units MATH 2M06
- 10 units MECH ENG 2A03, 2W04, 3C03
- 3 units approved English literature (Term I)

LEVEL III: 35 UNITS

- 3 units ENGINEER 3N03
- 2 units MANUFACT 3M02
- 3 units MATLS 3M03
- 21 units MECH ENG 3A03, 3E04, 3F04, 3O04, 3R03, 4D03
- 3 units STATS 3Y03
- 3 units complementary studies electives (above Level I)

LEVEL IV: 39 UNITS

- 3 units COMMERCE 3QC3
- 9 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03, and ENGINEER 4B03, 4J03
- 9 units MANUFACT 4A03, 4M04, 4P02
- 15 units MECH ENG 4H03, 4K03, 4Q03, 4R03, 4Z03
- 3 units approved technical electives (See *Level IV Mechanical Engineering.*)

Manufacturing Engineering and Management (B.Eng.Mgt.) {4314325}**ADMISSION**See *Admission to Level II Engineering Programmes.***LEVEL II: 37 UNITS**

- 9 units COMMERCE 2AA3, 2BA3, 2MA3
- 6 units ECON 1BB3, 2X03
- 4 units ENGINEER 2P04
- 2 units ENGN MGT 2AA2
- 3 units MANUFACT 2C03
- 6 units MATH 2M06
- 7 units MECH ENG 2A03, 2W04

LEVEL III: 38 UNITS

- 6 units COMMERCE 2AB3, 2FA3
- 13 units ENGINEER 2O03, 2MM3 (Term 1), 2Q04, 3N03
- 2 units MANUFACT 3M02
- 14 units MECH ENG 3C03, 3F04, 3O04, 3R03
- 3 units STATS 3Y03

LEVEL IV: 35 UNITS

- 9 units COMMERCE 3BC3, 3FA3, 3MC3
- 2 units ENGN MGT 3AA1, 4A01
- 5 units MANUFACT 4A03, 4P02
- 3 units MATLS 3M03
- 13 units MECH ENG 3A03, 3E04, 4D03, 4Z03
- 3 units complementary studies electives (above Level I)

LEVEL V: 37 UNITS (1999-2000 ONLY)

- 6 units COMMERCE 3QC3, 4PA3
- 6 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03, and ENGINEER 4J03
- 3 units ENGN MGT 5B03
- 4 units MANUFACT 4M04
- 12 units MECH ENG 4H03, 4Q03, 4R03, 4Z03
- 6 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3

LEVEL V: 37 UNITS (EFFECTIVE 2000-2001)

- 6 units COMMERCE 3QC3, 4PA3
- 6 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03, and ENGINEER 4J03
- 3 units ENGN MGT 5B03
- 4 units MANUFACT 4M04
- 12 units MECH ENG 4H03, 4K03, 4Q03, 4R03
- 6 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3

Manufacturing Engineering and Society (B.Eng. Society) {4314535}**ADMISSION**See *Admission to Level II Engineering Programmes.***NOTE**

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

LEVEL II: 32-35 UNITS

- 7 units ENGINEER 2O03, 2P04
- 6 units ENGSOCTY 2X03, 2Y03
- 3 units MANUFACT 2C03
- 6 units MATH 2M06
- 7 units MECH ENG 2A03, 2W04
- 3-6 units Engineering and Society focus electives

LEVEL III: 34-37 UNITS

- 10 units ENGINEER 2MM3 (Term 1), 2Q04, 3N03
- 3 units ENGSOCTY 3Y03
- 2 units MANUFACT 3M02
- 13 units MECH ENG 3A03, 3C03, 3E04, 3R03
- 3 units STATS 3Y03
- 3-6 units Engineering and Society focus electives

LEVEL IV: 33-36 UNITS (1999-2000 ONLY)

- 3 units ENGINEER 4J03
- 6 units ENGSOCTY 3X03, 3Z03
- 2 units MANUFACT 4P02
- 3 units MATLS 3M03
- 16 units MECH ENG 3A03, 3F04, 4D03, 4H03, 4R03
- 3-6 units Engineering and Society focus electives

LEVEL IV: 34-37 UNITS (EFFECTIVE 2000-2001)

- 3 units ENGINEER 4J03
- 6 units ENGSOCTY 3X03, 3Z03
- 2 units MANUFACT 4P02
- 3 units MATLS 3M03
- 17 units MECH ENG 3F04, 4D03, 4H03, 3O04, 4R03
- 3-6 units Engineering and Society focus electives

LEVEL V: 34-37 UNITS

- 3 units COMMERCE 3QC3
- 3 units ENGINEER 4B03
- 6 units ENGSOCTY 4X03, 4Z03
- 7 units MANUFACT 4A03, 4M04
- 9 units MECH ENG 4K03, 4Q03, 4Z03
- 3-6 units Engineering and Society focus electives
- 3 units approved Level III or Level IV technical electives (See *Level IV Mechanical Engineering.*)

Materials Engineering (B.Eng.) {4315}

ADMISSION

See *Admission to Level II Engineering Programmes.*

NOTE

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

LEVEL II: 37 UNITS

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

LEVEL III: (MATERIALS ENGINEERING STREAM): {4315} 36-38 UNITS

- 4 units CHEM ENG 2A04
- 20 units MATLS 3B03, 3C03, 3D03, 3E04, 3M03, 3T04
- 3 units MATH 3I03
- 3 units from STATS 3N03 or 3Y03
- 6-8 units from CHEM ENG 3O04, 3Q03, GEO 2M04 (formerly GEOLOGY 2B04), ENG PHYS 3F03, MATLS 4P03, 4R03 or 4S03, MECH ENG 3O04

LEVEL IV: (MATERIALS ENGINEERING STREAM): 36-37 UNITS

- 9 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03, and ENGINEER 4B03, 4J03
- 12 units MATLS 4A02, 4B04, 4L02; and one of MATLS 4K04 or 4Z04
- 3 units approved complementary studies electives (above Level I)
- 12-13 units approved Level III or IV technical electives, which must include ENG PHYS 3F03 and either CHEM ENG 3O04 or MECH ENG 3O04, if not completed

LEVEL III: (CERAMIC ENGINEERING STREAM): {4316} 37 UNITS

- 4 units CHEM ENG 2A04
- 4 units GEO 2M04 (formerly GEOLOGY 2B04)
- 23 units MATLS 3B03, 3C03, 3D03, 3E04, 3M03, 3T04; 4R03 or 4S03
- 3 units MATH 3I03
- 3 units from STATS 3N03 or 3Y03

LEVEL IV: (CERAMIC ENGINEERING STREAM): 34 UNITS

- 4 units from CHEM ENG 3O04 or MECH ENG 3O04
- 3 units ENG PHYS 3F03
- 9 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03, and ENGINEER 4B03, 4J03
- 15 units MATLS 4A02, 4B04, 4L02; one of MATLS 4K04 or 4Z04 and one of MATLS 4R03 or 4S03
- 3 units approved complementary studies electives (above Level I)

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

ADMISSION

See *Admission to Level II Engineering Programmes.*

LEVEL II: 36 UNITS

- 4 units CHEM 2WW4
- 3 units COMMERCE 2MA3
- 6 units ECON 1BB3, 2X03
- 2 units ENGN MGT 2AA2
- 6 units ENGINEER 2MM3, 2O03
- 6 units MATH 2M06
- 9 units MATLS 2B03, 2D03, 2H03

LEVEL III: 39 UNITS

- 4 units CHEM ENG 2A04
- 6 units COMMERCE 2BA3, 2FA3
- 1 unit ENGN MGT 3AA1
- 4 units ENGINEER 2P04
- 3 units ENG PHYS 3F03
- 12 units MATLS 2X02, 3C03, 3D03, 3E04
- 3 units MATH 3I03
- 3 units from STATS 3N03 or 3Y03
- 3 units COMMERCE 2AA3

LEVEL IV: (MATERIALS ENGINEERING STREAM): {4315325} 36 UNITS

- 4 units from CHEM ENG 3O04 or MECH ENG 3O04
- 12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3
- 1 unit ENGN MGT 4A01
- 10 units MATLS 3B03, 3M03, 3T04
- 3 units approved complementary studies electives (above Level I)

- 6 units approved technical electives

LEVEL V: (MATERIALS ENGINEERING STREAM): 36-37 UNITS

- 6 units COMMERCE 3QC3, 4PA3
- 6 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03; ENGINEER 4J03
- 3 units ENGN MGT 5B03
- 12 units MATLS 4A02, 4B04, 4L02; one of MATLS 4K04 or 4Z04
- 6 units Commerce selected from Level III and IV Commerce or COMMERCE 2QB3
- 3-4 units approved technical electives

LEVEL IV: (CERAMIC ENGINEERING STREAM): {4316325} 37 UNITS

- 12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3
- 4 units from CHEM ENG 3O04 or MECH ENG 3O04
- 1 unit ENGN MGT 4A01
- 4 units GEO 2M04 (formerly GEOLOGY 2B04)
- 13 units MATLS 3B03, 3M03, 3T04; MATLS 4R03 or 4S03
- 3 units approved complementary studies electives (above Level I)

LEVEL V: (CERAMIC ENGINEERING STREAM): 36 UNITS

- 6 units COMMERCE 3QC3, 4PA3
- 6 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03; ENGINEER 4J03
- 3 units ENGN MGT 5B03
- 15 units MATLS 4A02, 4B04, 4L02; MATLS 4K04 or 4Z04; MATLS 4R03 or 4S03
- 6 units Commerce selected from Level III and IV Commerce or COMMERCE 2QB3

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

ADMISSION

See *Admission to Level II Engineering Programmes.*

NOTE

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

LEVEL II: 34-37 UNITS

- 4 units CHEM 2WW4
- 6 units ENGINEER 2MM3, 2O03
- 6 units ENGSOCTY 2X03, 2Y03
- 9 units MATLS 2B03, 2D03, 2H03
- 6 units MATH 2M06
- 3-6 units Engineering and Society focus electives

LEVEL III: 35-38 UNITS

4 units CHEM ENG 2A04
 4 units ENGINEER 2P04
 3 units ENG PHYS 3F03
 3 units ENGSOCTY 3Y03
 12 units MATLS 2X02, 3C03, 3D03, 3E04
 3 units MATH 3I03
 3 units from STATS 3N03 or 3Y03
 3-6 units Engineering and Society focus electives

LEVEL IV: (MATERIALS ENGINEERING STREAM): 4315535) 32-36 UNITS

4 units from CHEM ENG 3O04 or MECH ENG 3O04
 6 units ENGSOCTY 3X03, 3Z03
 10 units MATLS 3B03, 3M03, 3T04
 3-6 units Engineering and Society focus electives
 9-10 units approved technical electives

LEVEL V: (MATERIALS ENGINEERING STREAM): 30-34 UNITS

6 units ENGINEER 4B03, 4J03
 6 units ENGSOCTY 4X03, 4Z03
 12 units MATLS 4A02, 4B04, 4L02; MATLS 4K04 or 4Z04
 3-4 units approved technical electives
 3-6 units Engineering and Society focus electives

LEVEL IV: (CERAMIC ENGINEERING STREAM): {4316535} 33-36 UNITS

4 units from CHEM ENG 3O04 or MECH ENG 3O04
 6 units ENGSOCTY 3X03, 3Z03
 4 units GEO 2M04 (formerly GEOLOGY 2B04)
 13 units MATLS 3B03, 3M03, 3T04; MATLS 4R03 or 4S03
 3-6 units Engineering and Society focus electives
 3 units approved technical electives

LEVEL V: (CERAMIC ENGINEERING STREAM): 30-33 UNITS

6 units ENGINEER 4B03, 4J03
 6 units ENGSOCTY 4X03, 4Z03
 15 units MATLS 4A02, 4B04, 4L02; MATLS 4K04 or 4Z04;
 MATLS 4R03 or 4S03
 3-6 units Engineering and Society focus electives

Mechanical Engineering (B.Eng.) {4330}**ADMISSION**

See Admission to Level II Engineering Programmes.

LEVEL II: 36 UNITS

11 units ENGINEER 2O03, 2P04, 2Q04
 6 units MATH 2M06
 16 units MECH ENG 2A03, 2B03, 2C03, 2W04, 3C03
 3 units approved English literature (Term I)

LEVEL III: 35 UNITS

6 units ENGINEER 2MM3 (Term 1), 3N03
 3 units MATH 3I03
 23 units MECH ENG 3A03, 3D03, 3E04, 3F04, 3M02, 3O04, 3R03
 3 units STATS 3Y03

LEVEL IV: 36 UNITS

3 units MATLS 3M03
 18 units MECH ENG 3D03, 4M04, 4P02, 4Q03, 4R03, 4S03
 6 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03
 and ENGINEER 4B03
 3 units complementary studies electives (above Level I)
 6 units from CHEM ENG 4T03, CIV ENG 3K03, COMMERCE
 3QC3, ELEC ENG 3PI4, ENGINEER 4J03, 4X03, ENG
 PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4D03,
 4H03, 4I03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03,
 4Z03, MANUFACT 4A03

Electives must be chosen so that no more than 21 units are taken in any one term.

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

See Admission to Level II Engineering Programmes.

LEVEL II: 37 UNITS

9 units COMMERCE 2AA3, 2BA3, 2MA3
 6 units ECON 1BB3, 2X03
 7 units ENGINEER 2MM3, 2P04

6 units MATH 2M06
 7 units MECH ENG 2A03, 2W04
 2 units ENGN MGT 2AA2

LEVEL III: 36 UNITS

3 units COMMERCE 2FA3
 7 units ENGINEER 2O03, 2Q04
 1 unit ENGN MGT 3AA1
 3 units MATH 3I03
 19 units MECH ENG 2C03, 3A03, 3C03, 3F04, 3M02, 3O04
 3 units STATS 3Y03

LEVEL IV: 34 UNITS

12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3
 1 unit ENGN MGT 4A01
 18 units MECH ENG 3D03, 3E04, 3R03, 4P02, 4R03, 4S03
 3 units Level III or IV approved technical electives

LEVEL V: 34 UNITS

6 units COMMERCE 3QC3, 4PA3
 3 units ENGN MGT 5B03
 7 units MECH ENG 4M04, 4Q03
 3 units from ENGINEER 4A03 or 4H03 or ENG PHYS 4C03
 6 units Commerce electives selected from Level III and IV
 Commerce or COMMERCE 2QB3
 6 units from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG
 3PI4, ENGINEER 3N03, 4J03, 4X03, ENG PHYS
 3F03, 3X03, 4D03, 4L03, MECH ENG 4D03, 4H03,
 4I03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03, 4Z03,
 MANUFACT 4A03, MATLS 3P03
 3 units approved complementary studies elective (above
 Level I)

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

See Admission to Level II Engineering Programmes.

NOTE

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

LEVEL II: 32 UNITS

7 units ENGINEER 2O03, 2P04
 6 units ENGSOCTY 2X03, 2Y03
 6 units MATH 2M06
 7 units MECH ENG 2A03, 2W04
 6 units Engineering and Society focus electives

LEVEL III: 34-37 UNITS

7 units ENGINEER 2MM3, 2Q04
 3 units ENGSOCTY 3Y03
 3 units MATH 3I03
 15 units MECH ENG 2C03, 3A03, 3M02, 3O04, 3R03
 3 units STATS 3Y03
 3-6 units Engineering and Society focus electives

LEVEL IV: 31-34 UNITS

6 units ENGSOCTY 3X03, 3Z03
 19 units MECH ENG 3C03, 3D03, 3E04, 3F04, 4P02, 4S03
 3-6 units Engineering and Society focus electives
 3 units approved Level III or Level IV technical electives

LEVEL V: 31-34 UNITS

3 units COMMERCE 3QC3
 3 units ENGINEER 4B03
 6 units ENGSOCTY 4X03, 4Z03
 10 units MECH ENG 4M04, 4Q03, 4R03
 3-6 units Engineering and Society focus electives
 6 units approved Level III or Level IV technical electives

Software Engineering (B.Eng.) {4517}**ADMISSION**

See Admission to Level II Engineering Programmes.

LEVEL II: 39 UNITS

3 units ENGINEER 2O03
 6 units MATH 2M06
 24 units SFWR ENG 2A04, 2B04, 2C04, 2D04, 2E04, 2F04
 6 units approved complementary studies elective

LEVEL III: 37 UNITS

- 6 units ENGINEER 3K03, 3L03
- 28 units SFWR ENG 3B04, 3C03, 3E03, 3F03, 3G03, 3H03, 3I03, 3J03, 3X03
- 3 units STATS 3N03

LEVEL IV: 36 UNITS (EFFECTIVE 2000-2001)

- 3 units ENGINEER 4B03
- 27 units SFWR ENG 4A03, 4C03, 4D03, 4E03, 4F03, 4G03, 4H03, 4I03, 4J03
- 6 units approved technical electives

Software Engineering and Management (B.Eng.Mgt.) {4517325}

ADMISSION

See Admission to Level II Engineering Programmes.

LEVEL II: 39 UNITS

- 6 units COMMERCE 2AA3, 2MA3
- 3 units ECON 1BB3
- 6 units MATH 2M06
- 24 units SFWR ENG 2A04, 2B04, 2C04, 2D04, 2E04, 2F04

LEVEL III: 37 UNITS

- 6 units COMMERCE 2BA3, 2FA3
- 3 units ECON 2X03
- 25 units SFWR ENG 3B04, 3C03, 3E03, 3F03, 3G03, 3H03, 3I03, 3X03
- 3 units STATS 3Y03

LEVEL IV: 38 UNITS (EFFECTIVE 2000-2001)

- 12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3
- 9 units ENGINEER 2O03, 3K03, 3L03
- 2 units ENGN MGT 3AA1, 4A01
- 12 units SFWR ENG 3J03, 4E03, 4I03, 4J03
- 3 units approved complementary studies elective (above Level I)

LEVEL V: 39 UNITS (EFFECTIVE 2001-2002)

- 6 units COMMERCE 3QC3, 4PA3
- 3 units ENGN MGT 5B03
- 18 units SFWR ENG 4A03, 4C03, 4D03, 4F03, 4G03, 4H03
- 6 units Commerce electives selected from Level III and IV Commerce or COMMERCE 2QB3
- 6 units approved technical electives

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

ADMISSION

See Admission to Level II Engineering Programmes.

NOTE:

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

LEVEL II: 39 UNITS

- 6 units ENGSOCTY 2X03, 2Y03
- 6 units MATH 2M06
- 24 units SFWR ENG 2A04, 2B04, 2C04, 2D04, 2E04, 2F04
- 3 units Engineering and Society focus electives

LEVEL III: 34-37 UNITS

- 3 units ENGSOCTY 3Y03
- 25 units SFWR ENG 3B04, 3C03, 3E03, 3F03, 3G03, 3H03, 3I03, 3X03
- 3 units STATS 3N03
- 3-6 units Engineering and Society focus electives

LEVEL IV: 33-36 UNITS (EFFECTIVE 2000-2001)

- 12 units ENGINEER 2O03, 3K03, 3L03, 4B03
- 6 units ENGSOCTY 3X03, 3Z03
- 12 units SFWR ENG 3J03, 4E03, 4I03, 4J03
- 3-6 units Engineering and Society focus electives

LEVEL V: 33-36 UNITS (EFFECTIVE 2001-2002)

- 6 units ENGSOCTY 4X03, 4Z03
- 18 units SFWR ENG 4A03, 4C03, 4D03, 4F03, 4G03, 4H03
- 6 units approved technical electives
- 3-6 units Engineering and Society focus electives

PROGRAMME FOR THE B.TECH. DEGREE

The Manufacturing Engineering Technology Programme is offered jointly by Mohawk College of Applied Arts and Technology and McMaster University. The objectives of the programme are to upgrade the knowledge and skills of existing technologists/technical specialists and to allow them to perform with a broad technical and academic background along with solid hands-on experience. The programme is designed to complement and enhance the student's background in basic engineering sciences, mathematics and advanced manufacturing technologies. An attempt has been made to structure the curriculum in concert with examinations typically assigned by the Professional Engineers of Ontario (PEO) to individuals seeking licensure in the field of Mechanical Engineering, so that the number of examinations required by the PEO may be minimized.

ACADEMIC REGULATIONS

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

MINIMUM REQUIREMENTS TO CONTINUE IN THE PROGRAMME

All students must maintain a CA of at least 3.5 at each academic review to continue at the University. Students may be allowed to continue on academic probation for one reviewing period with a CA of 3.0 to 3.4. If your CA is less than 3.0, you may not continue at the University.

REINSTATEMENT

A student who is ineligible to continue may apply for reinstatement to the programme. Application for reinstatement must be made in writing to the Committee of Instruction and should include a recommendation from the current employer. **Reinstatement is not guaranteed.**

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

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

ADMISSION

Enrolment in this programme is limited. Admission requires satisfactory completion of a three-year Mechanical Engineering Technology Diploma (or equivalent). Applicants who meet the academic requirements will be interviewed, and some applicants may be required to write specific entrance examinations.

NOTES

1. Advance credit can be considered at the time of admission. However, a minimum of 33 units of work must be completed at McMaster in order to obtain the degree.
2. The Sessional Dates in this Calendar do not apply to this programme. Further information with regard to course offering dates and academic deadlines will be made available upon request to the Office of the Associate Dean (Studies) of Engineering.

LEVEL 1: 18 UNITS

- 3 units ENG TECH 1MA3
- 3 units ENG TECH 1ML3
- 3 units ENG TECH 1PG3
- 3 units MAN TECH 1CD3
- 3 units MAN TECH 1ID3
- 3 units MAN TECH 1TF3

LEVEL 2: 18 UNITS

- 3 units ENG TECH 2CT3
- 3 units ENG TECH 2FE3
- 3 units ENG TECH 2MN3
- 3 units MAN TECH 2MD3
- 3 units MAN TECH 2MT3
- 3 units MAN TECH 2TF3

LEVEL 3: 15 UNITS

- 3 units MAN TECH 3FB3
- 3 units MAN TECH 3FM3
- 3 units MAN TECH 3FT3
- 3 units MAN TECH 3MT3
- 3 units MAN TECH 3ST3

FACULTY OF HEALTH SCIENCES

WEB ADDRESS: <http://www-fhs.mcmaster.ca>

Dean and Vice-President

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Acting Associate Dean (Research)

R. Rathbone, M.B., B.S., M.D., Ph.D.

For information concerning Health Sciences education programmes 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 programmes 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 new School of Physiotherapy and Occupational Therapy (School of Rehabilitation Science) was added and in 1993 the Midwifery Education Programme was established. The Faculty offers the following undergraduate degree programmes: Doctor of Medicine (M.D.), Bachelor of Science in Nursing (B.Sc.N.), Bachelor of Health Science (B.H.Sc.) in Occupational Therapy, Physiotherapy or Midwifery. In addition to its undergraduate programmes, the Faculty of Health Sciences also has responsibility for Postgraduate (Internship and Residency) Education programmes.

Through the School of Graduate Studies, the Faculty offers the Medical Sciences programme 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. programmes in Clinical Health Sciences (Health Research Methodology) are available through Medical Sciences. The Clinical Health Sciences (Nursing) Programme, Master's or Ph.D., began in 1995.

Interprofessional programmes, postprofessional in nature and leading to an academic diploma, include: Child Life Studies; Clinical Behavioural Sciences; Environmental Health; and Occupational Health and Safety.

The Faculty of Health Sciences collaborates with the Division of Health Sciences at Mohawk College in educational programmes for other health professions based at the College.

Research programmes encompassing the broad spectrum of health have been established, including basic and applied research and various aspects of health-care delivery. The graduate programmes in medical 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 Division of the Hamilton Health Sciences Corporation) with extensive ambulatory clinics for primary and specialized aspects of patient care. The building has been designed to bring into close proximity the programmes for the various health professions and to integrate the facilities for education, research and patient care in the Faculty of Health Sciences.

In addition to the Health Sciences Centre, education, research and clinical programmes are based at other Hamilton Health Sciences Corporation sites (Chedoke, General, Henderson), Hamilton Psychiatric Hospital, 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 programme has been developed with institutions in Northwestern Ontario. In accordance with the plan to coordinate the development of specialized health services among the Hamilton and District hospitals, the Postgraduate Education programmes in medicine have been developed on a regional basis.

UNDERGRADUATE HEALTH PROFESSIONAL EDUCATION PROGRAMMES

ADMISSION AND REGISTRATION

Application to any programme in the Faculty of Health Sciences implies acceptance on the part of the applicant of the admission policies and procedures, and the methods by which applicants are chosen for the Health Sciences programmes.

Registration in any programme in the Faculty of Health Sciences implies acceptance on the part of the student of the objectives of that programme and the methods by which progress toward the achievement of those objectives is evaluated.

The following describes the regulations governing admission and registration in the Health Sciences programmes, and should be considered in conjunction with specific admission requirements described on the following pages for the School of Medicine (M.D.), the Midwifery programme (B.H.Sc.), the School of Nursing (B.Sc.N.) and the School of Rehabilitation Science (B.H.Sc.).

The following application deadlines are strictly enforced. Deadline dates are for consideration of admission to a programme in the following September.

<u>Programme</u>	<u>Deadline</u>
• Medicine(M.D.)	October 15
• Midwifery (B.H.Sc.).....	February 1
• Nursing (B.Sc.N.)	
Applicants directly from Ontario Secondary Schools.....	May 1
Diploma Registered Nurses.....	February 15
Nurse Practitioner.....	February 1
Applicants with Other Qualifications.....	February 15
Transfers from other degree Nursing programmes.....	June 30
• Occupational Therapy and Physiotherapy: (Second Degree Programme) (B.H.Sc.).....	December 1

The University reserves the right to change the admission requirements at any time without notice.

As places in the degree programmes of the Faculty of Health Sciences are limited, admission is by selection of applicants, and possession of published minimum requirements does not guarantee admission. The University, therefore, reserves the right to grant admission to a limited number of students, and to refuse readmission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the programme for a period in excess of one academic year.

An evaluation of Unsatisfactory in the School of Medicine signifies that the student has failed to meet these objectives and the University may require the student to withdraw from the School at any time.

The University reserves the right to require the withdrawal of a student should his or her conduct so warrant.

FALSIFICATION OF ADMISSION INFORMATION

An applicant supplying documentation or evidence which, at the time, or subsequently, is found to be falsified will be withdrawn from consideration. Any student admitted to the programme having submitted false evidence will be withdrawn.

HEALTH REGULATIONS FOR ADMISSION

Before registration, students must file with the University evidence of a recent health examination, immunization screening and chest X-ray. More detailed medical information will be required upon acceptance into the programme.

CLINICAL COURSE REQUIREMENTS

Where 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 programmes, a faculty member is selected for each student in the September of entry to a degree programme and provides each student with advice on evaluations, electives and other educational needs throughout the programme. In the M.D. programme, the advisor is also responsible for the collation of all evaluations and completion of the final transcript. Changes in advisors may be entertained as each student becomes acquainted with Faculty well enough to 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 PROGRAMMES**DIPLOMA PROGRAMME IN CHILD LIFE STUDIES**

This is an eight-month applied professional programme in the Faculty of Health Sciences, focussing on the development of knowledge and skills for individuals working with children, adolescents and families in a health care setting.

The learning objectives are:

1. to examine and review the growth and development of children and adolescents, incorporating communication, play, expression of feelings, discovery and mastery of 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.

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 programme.

A related university degree or diploma is required with an overall B average. Relevant experience is strongly recommended. Admission is based on the assessed strengths of each applicant as determined by the application package and interviews. Applications must be submitted by late March for the study period beginning in September of the same year. Application information outlining specific dates and application requirements can be obtained by contacting the Child Life Studies programme office at (905) 525-9140, ext. 22795.

DIPLOMA PROGRAMME IN CLINICAL BEHAVIOURAL SCIENCES

The Clinical Behavioural Sciences (CBS) Post-Baccalaureate Diploma and Selected Studies Programme is offered through Continuing Health Sciences Education. This part-time programme is designed to expand the knowledge and skills of allied health professionals by demonstrating a variety of approaches to understanding clinical problems. The aim is to enable health workers to more effectively carry out the mandate of their professional designations. Single courses vary from 10 to 20 weeks in length and a diploma should be completed within five years. A small group learning format is used.

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 (HSC 3G49) by April for September courses and by October for January courses. Personal interviews will be arranged. Applications can be obtained by contacting the CBS Office at (905) 521-2100 ext. 6427.

DIPLOMA PROGRAMME IN ENVIRONMENTAL HEALTH

The diploma programme is offered through the McMaster Institute of Environment and Health. The programme is of eight months duration, admitting up to 15 students per academic year. Students have the option of enrolling in the campus-based instruction programme or the distance education programme. It is designed to provide new and/or upgraded skills and knowledge in the principles and practice of environmental health, suitable for public health unit professionals, physicians, community health nurses, environmental industrial professionals, and those in labour and non-governmental organizations dealing with environmental health issues. Participants must be sufficiently motivated to undertake self-directed learning.

Students will be selected to give the class a multidisciplinary character. A relevant university degree or equivalent will normally be required. Admission is based on the number of places available and on the experience of applicants. Those without environmental health experience may also be considered.

Applications must be submitted by the end of March for the study period beginning 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 admission decisions by the beginning of June.

DIPLOMA PROGRAMME IN OCCUPATIONAL HEALTH AND SAFETY

The Programme in Occupational Health and Environmental Medicine offers two programmes each year for this Diploma. A full-time programme starts in September catering to those who wish to complete the course in three months. A part-time programme is designed so that students within commuting distance from Hamilton can continue their normal employment. This programme also starts in September and continues through the end of April, one day per week, but includes two extended periods of full-time study each lasting two weeks.

While special consideration will be given to those already in the occupational health field, interested individuals without such experience may also be considered. Physicians, nurses, hygienists, related professionals and others are invited to apply. A relevant university degree or equivalent is generally required.

Applications must be submitted by February 1 each year for the course beginning in September. Applications can be obtained by contacting the Programme in Occupational Health and Environmental Medicine at (905) 525-9140, ext. 22332.

THE SCHOOL OF MEDICINE

WEB ADDRESS: <http://www-fhs.mcmaster.ca/mdprog/>

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

The Undergraduate Medical Programme for the MD degree was initiated in 1969, graduating its first students in May 1972. At present, 100 students are admitted to the programme each year. The academic programme operates on an 11 months-a-year basis and students qualify for the M.D. degree at the end of the third academic year. The curriculum has been designed to involve medical students in a broad range of human health problems throughout their education and to prepare them for effective working relationships with patients, colleagues, and society.

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

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

The Northwestern Ontario Medical Programme (NOMP) has been developed in cooperation with the Thunder Bay Medical Society and physicians in towns in Northwestern Ontario. Clinical training opportunities exist in community hospitals adjacent to Hamilton. Excellent clinical experience in these settings is part of both the undergraduate and postgraduate medical programmes.

Graduate programmes leading to the M.Sc. and Ph.D. degrees are offered in Biochemistry and in Medical Sciences. An M.H.Sc. (Health Care Practice) programme is interprofessional in nature and is for experienced health professionals who wish advanced preparation as clinicians.

The Undergraduate Medical Programme {7880}

The three-year programme in Medicine uses a problem-based approach to learning that should apply throughout the physician's career. The components have been organized in sequential units with early exposure to patients and case management. Flexibility is ensured to allow for the variety of student backgrounds and career goals.

GENERAL OBJECTIVES

The aim of the Undergraduate Medical Programme is to provide students with a general professional education as physicians. The programme enables students to build on previous education and experience, using available learning resources and opportunities. The competencies achieved by graduates will qualify them to proceed to further postgraduate training. While most graduates will be involved directly with the care of individual patients, it is expected that some will choose careers concerned with the health of populations and the development of new knowledge.

The overriding objective to be achieved is the demonstrated ability to identify, analyze and manage clinical problems in order to provide effective, efficient and humane patient care.

The enabling objectives of knowledge, skills and professional behaviour comprise the following:

> KNOWLEDGE

To acquire and put into practice concepts and information required to understand and manage health-care problems. The study of human structure, function and behaviour will be guided by an analysis of the determinants of health and illness. A spectrum of factors will be considered in both the external and internal environments of individuals when deciding on preventive, therapeutic, rehabilitative and supportive management.

> SKILLS

To acquire and use the following skills:

1. **Critical Thinking Skills:** The application of certain rules of evidence to clinical, investigational and published data in order to determine their validity and applicability.
2. **Clinical Skills:** The ability to acquire, interpret, synthesize and record clinical information in managing the health problems of patients, considering their physical, social and emotional function. Included is the use of the clinical reasoning process.
3. **Self-Directed Learning Skills:** The ability to identify areas of deficiency in one's own performance, find appropriate educational resources, evaluate personal learning progress and use new knowledge and skills in the care of patients.

> PROFESSIONAL BEHAVIOUR

To recognize, develop and maintain the professional behaviour required for a career as a health professional. Acquiring the authority to intervene in the lives of patients carries with it the obligation to act responsibly:

1. toward oneself: to recognize and acknowledge personal assets, emotional reactions and limitations in one's own knowledge, skills and attitudes, to build on one's assets and to overcome areas of limitation;
2. toward patients and their families: to be able, under appropriate supervision, to take responsibility for the assessment and care of patients and their families;
3. toward colleagues: to contribute to productive communication and cooperation among colleagues engaged in learning, research or health care;
4. toward the community: to contribute to the maintenance and improvement of the health of the general population.

LEARNING METHODS

To achieve the objectives of the Undergraduate Medical Programme, students are introduced to patients within the first unit of the curriculum. In this way, students understand the relevance of what they are learning, maintain a high degree of motivation and begin to understand the importance of responsible professional attitudes.

The students are presented with a series of health-care problems, requiring for their solution the understanding of underlying physical, biological, population and behavioural principles, the appropriate collection of data and the critical appraisal of evidence. In each problem area, the student may select the most appropriate issues to ensure the understanding and application of fundamental concepts. This flexibility provides an opportunity for early consideration of individual interests and goals. The faculty function as learning resources or guides. Learning by a process of inquiry is stressed.

The central focus of the programme is the tutorial. The class is divided into small groups, each with a tutor. In the tutorial session students develop a series of learning objectives from each health-care problem and negotiate how they will approach their learning tasks. They then acquire the knowledge and skills to meet the objectives of the unit in which they are working. They also learn to work as a team, helping and learning from peers. The study habits and sense of responsibility to self and others provides a basis for life long working and learning habits. Attendance is mandatory.

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

STUDENT EVALUATION METHODS

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

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

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

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

The Evaluation Committee, a subcommittee of the Medical Education Committee, has the responsibility of working with the Medical Programme to assist with the development and implementation of evaluation methods to provide timely and helpful information to assist students and faculty in assessing progress and performance.

The Curriculum Plan

The following curriculum plan is subject to approval by the Senate of McMaster University.

The curriculum outline presented below reflects curriculum modifications which will be implemented in September, 2000 for the Class of 2003. Students currently enrolled in the MD programme should reference the 1998-99 Undergraduate Calendar (http://registrar.mcmaster.ca/calendar/year9899/sec_198.htm) or contact Deborah Martin, MD Programme Administrator, (905) 525-9140, ext. 22141 to determine the former Curriculum Plan.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
								UNIT 1 (12 weeks)		UNIT 2 (14 weeks)	
								UNIT 2 continued		UNIT 3 (14 weeks)	
UNIT 5 (CLERKSHIP) (24 weeks)					UNIT 5 (CLERKSHIP) (24 weeks; includes 8 weeks block elective time)						
ELECTIVE (7 weeks)		UNIT 6 (10 weeks)		Total 130 weeks GRADUATION							



The curriculum of the Undergraduate Medical Programme comprises six units and an elective programme.

There is less of a division between the pre-clinical components and the clinical components of the MD Programme than in more traditional schools. Patient contact and clinical skills development start in Unit 1 and increase throughout the programme. The scientific background for understanding patients' problems, while more intensively studied in earlier units, continues to be applied as it is relevant to the care of patients in clinical situations.

PROGRAMME OUTLINE FOR UNIT 1

The 12-week Unit 1 provides an opportunity for students to become familiar working and learning in a small-group tutorial, problem-based learning environment. The major learning objectives comprise selected topics spanning the molecular to the global environment. Students will be introduced to concepts and information from three knowledge perspectives: the population perspective, the behavioural perspective, and the biological perspective. In addition, a major theme of the entire curriculum, the life cycle, is developed as a perspective and anchors the three subunits of Unit 1: Early Development, Maturation and Aging. Basic issues of critical thinking, clinical skills and communication skills are introduced which become further developed in the subsequent units.

PROGRAMME OUTLINE FOR UNITS 2-4

These units are concerned with the systematic study of human structure, function and behaviour throughout the Life Cycle, and are organized around systems of the body, as follows:

- Unit 2 Cardiovascular, Respiratory and Renal Systems
- Unit 3 Hematologic, Gastroenterologic and Endocrine Systems
- Unit 4 Neurologic, Locomotor and Behavioural Systems

Throughout these body-systems oriented units, students are expected to become self-directed learners capable of critically evaluating newly acquired information.

PROGRAMME OUTLINE FOR UNIT 5 - THE CLERKSHIP

In this component of the programme students participate in the direct care of patients as they learn about the management of health and illness. All prior objectives apply, but the health-care problems are now real patients or populations. Students become self-sufficient in contemporary medicine, but are able to sense when today's medicine becomes out-of-date by adopting good habits of learning and assessment.

The Clerkship programme consists of rotations in Medicine, Surgery, Family Medicine, Psychiatry, Pediatrics, Obstetrics and Gynecology, and in elective time of which one-half must be spent in clinical medicine. The compulsory components of the clerkship are carried out in teaching practices and in all the teaching hospitals in the Hamilton region. The elective experience can be spent in various activities utilizing local, regional or distant resources.

PROGRAMME OUTLINE FOR UNIT 6

The main theme for this unit is the *practicing physician*. With a knowledge of the biological bases of medicine acquired in previous units and the clinical experience of the Clerkship, the students are now ready to tackle issues derived from societal expectations of practicing physicians. In both seminar and clinical settings, students will consider important legal, ethical and clinical practice organization issues. Health economics and health policy analysis comprise two major population perspective topics covered in this unit. Students will also consider complex health problems of individuals and populations using a multi-disciplinary approach.

ELECTIVES

Elective studies form an integral part of the Curriculum Plan. They may be considered the epitome of self-directed learning, since students must define goals for electives which are appropriate for their own learning objectives. These objectives represent specific areas of educational need or interest. The responsibility for planning electives rests with each student in collaboration with the student advisor.

The three types of electives in the Undergraduate Medical Programme are:

- 1. Block Electives:** These are blocks of curriculum time dedicated to full-time elective activities. Their satisfactory completion is a mandatory component of the Undergraduate Medical Programme. Block Electives occur after Unit 3 (eight weeks), after Unit 4 (four weeks), during the Clerkship (eight weeks) and immediately following the Clerkship (seven weeks).
- 2. Horizontal Electives:** These are undertaken concurrently with other parts of the curriculum. Horizontal electives are entirely voluntary, not being required for completion of the programme. It is particularly important that the student's advisor be involved in all decisions concerning the selection and carrying out of horizontal electives.
- 3. Enrichment Electives:** There are arrangements in place for a small number of students from each class to devote longer periods of time (from six to 12 months) to the pursuit of special academic experiences. The intent is to encourage students to explore special *frontier* areas of medicine and health care. Examples include: research training and experience; community health projects; international health opportunities. These experiences are often undertaken following Unit 4 or during the first half of Unit 5. Some experiences may potentially have partial funding (e.g. by student research fellowships).

REGULATIONS FOR LICENCE TO PRACTISE

A degree in medicine does not in itself confer the right to practise medicine in any part of Canada. To acquire this right, university graduates in medicine must hold a certificate of the College of Physicians and Surgeons of the province in which they elect to engage in practice. Students in Ontario medical schools are not required to register as students with the College of Physicians and Surgeons of Ontario. 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 Canadian medical students obtain the post-MD programme of their choice, and to help programme directors obtain the students of their choice. It provides an orderly method for students to decide where to train and for programme directors to decide which applicants they wish to enrol. For both students and directors, it removes the factors that generate unfair pressures and premature decisions.

Further information is available from Deborah Martin, MD Programme Administrator, (905) 525-9140, ext. 22141.

BASIC CARDIAC LIFE SUPPORT TRAINING

All students are required to have obtained a current certificate in Basic Cardiac Life Support (Adult and Child CPR) prior to registration in the medical programme. Courses are readily available in most communities. Information will be sent to successful applicants prior to registration.

Specific questions can be directed to Deborah Martin, M.D. Programme 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, once students have been enrolled in the M.D. Programme, they must complete Pre-Clinical Communicable Disease Screening through the Student Health Services. More information will be sent to specific applicants prior to registration. Specific questions can be directed to Deborah Martin, M.D. Programme Administrator, (905) 525-9140, ext. 22141.

Admission Policy for the Medical Programme

The official admission policy and deadlines for the Undergraduate Medical Programme for September 2000 shall be as published in the 2000 Ontario Medical School Application Booklet. This booklet is available through:

Ontario Medical School Application Service (OMSAS)

PO Box 1328

650 Woodlawn Road West

Guelph, Ontario, N1H 7P4

(519) 823-1940

email: omsas@netserv.ouac.on.ca

Please note that the admission policy is reviewed annually, and the admission requirements from the previous year may not apply. Because of the nature of the selection procedures, deadlines are enforced strictly. All relevant documentation must be provided by the specified deadlines. Applicants must follow the instructions precisely.

SELECTION PROCEDURE

The intention of the McMaster Undergraduate Medical Programme is to prepare students to become physicians who have the capacity and flexibility to select any area in the broad field of medicine. The applicant is selected with this goal in mind. Faculty, medical students and members of the community are normally involved in the admissions process.

Application to the medical programme implies acceptance by the applicant of the admission policies and procedures, and the methods by which candidates are chosen for the programme.

Applications received in the fall of 1999 are for the academic year commencing in the fall of 2000. Applicants who will not be ready or able to begin studies in the fall may withdraw their applications without prejudice. Application fees cannot be refunded.

Applications must be submitted by October 15, 1999, 4:30 pm EST. Approximately 400 applicants will be invited for interviews in Hamilton in March or April. Invitations for interview are determined on the basis of applicants' academic performance, and an assessment of their preparedness for a career in medicine and suitability for the McMaster Undergraduate Medical Programme. From this group a class of 100 is selected.

ACADEMIC ELIGIBILITY

Applicants must report on the Academic Record Form all grades received in the degree credit courses in which they have ever registered. Failure to report courses, programmes or grades on the Academic Record Form will result in the disqualification of the application. All grades are converted by the applicant on the Academic Record Form to a 4.0 scale according to the OMSAS Undergraduate Grading System Conversion Table. (The Conversion Table is provided with the OMSAS Application.)

All applicants must fulfill the requirements described below in both (a) and (b).

a) By September 1, 2000, applicants must have completed a minimum of three years of undergraduate work. Only degree credit courses taken at an accredited university will be considered.

Two of the three years must be above Level/Year I. A year is the full block of work specified for a year or level of the programme as indicated on the university transcript and in the appropriate university calendar. If requested, applicants must provide evidence that this requirement has been met.

An applicant who has completed a diploma at a CEGEP must have completed by September 1, 2000, at least two additional years of degree credit work at an accredited university. One of those years must be a full programme of courses above Level/Year I.

Applicants who have satisfactorily completed the requirements for a baccalaureate degree in less than three years by October 15, 1999 are also eligible.

b) By October 15, 1999, applicants must have achieved an overall simple average of at least second-class B standing in their academic work to date. A B average is considered to be an OMSAS overall converted average of at least 3.0 on the 4.0 scale. Marks on supplementary courses will be included in the grade point average calculation.

If an applicant has not achieved the overall B standing in the OMSAS converted average, but has completed a graduate degree, the graduate degree will be taken into account to assess eligibility.

Academic Assessment will be as outlined in the Ontario Medical School Application Instruction Booklet.

TRANSCRIPT REQUIREMENTS

It is expected that applicants will request all transcript materials in a timely fashion, to allow adequate time for processing requests and for receipt at OMSAS by the prescribed deadline. For this reason, applicants are strongly urged to request two sets of transcripts. One must be sent by the institution directly to, and received at OMSAS by November 16, 1999; the second copy should be sent to the applicant to ensure that the request has been fulfilled. Applicants should retain all receipts and correspondence related to their transcript request. Evidence to show that applicants have requested transcripts in a timely fashion may be requested by McMaster University.

It is not normally possible to notify applicants of any outstanding transcripts before November 16, 1999. Therefore, it is totally the applicant's responsibility to ensure that all transcripts and Registrar statements are received at OMSAS by November 16, 1999. Failure to meet this requirement will result in the disqualification of the application.

All transcripts must be submitted directly to OMSAS by the post-secondary institutions attended. McMaster requires that applicants provide transcripts of all courses/programmes attended at any post-secondary institution. This includes community colleges, CEGEPs, junior colleges, pre-university programmes, etc.

Failure by the applicant to comply with the instructions or to meet the deadlines will result in disqualification of the application.

AUTOBIOGRAPHICAL SUBMISSION

Applicants must provide an Autobiographical Submission which is a description about their preparedness for medicine and suitability for the McMaster Undergraduate Medical Programme.

The Autobiographical Submission Booklet is included in the application kit provided by OMSAS.

The Autobiographical Submission Booklet includes detailed instructions with regard to the length and format of responses. Those instructions are considered to be part of the Admission Policy and Procedures for the McMaster Undergraduate Medical Programme.

Failure to comply with the instructions for the Autobiographical Submission Package will result in disqualification of the application.

GEOGRAPHICAL CONSIDERATION

The geographical status is determined from the Autobiographic Sketch. Applicants may be asked to provide evidence of geographical status. In selecting applicants for interview, the bona fide place of residence will be used in the following order of priority:

1. the province of Ontario;
2. the rest of Canada; and
3. other countries.

To qualify for 1 above, an applicant must:

- a) be a Canadian citizen or permanent resident by October 15, 1999, and
- b) have resided for at least three years in the province of Ontario since the age of 14. Attendance at a university in Ontario for at least three years by the date of possible entry to the programme satisfies the second requirement.

Any other applicant who is a Canadian citizen or permanent resident qualifies for 2.

All other applicants qualify for 3. While all applicants from this Geographic Category are considered, they may be selected for interview only if they are judged on each criterion to be clearly superior to other applicants.

INTERVIEWS

Approximately 400 applicants will be invited to Hamilton for an interview. The selection of these applicants is based on the composite score which weights equally the grade point average from the Academic Assessment and the scores from the Autobiographical Submission. Geographical consideration is applied to determine the composition of the pool of applicants that are selected for interview.

Because the interviews involve many other people, applicants must attend on the date and time specified. Applicants are responsible for their own travel expenses.

Each applicant is assessed in two activities: the Simulated Tutorial and the Personal Interview. In the Simulated Tutorial, a group of applicants discuss a health-related problem or situation. The applicant's group skills and problem-exploration skills are assessed.

In the Personal Interview, the applicant is interviewed by a team which is not involved in the assessment of the Simulated Tutorial. Before an applicant meets the interview team, the interviewers are provided with the candidate's Autobiographic Sketch.

This Autobiographic Sketch is not assessed but serves as background for the interviewers. In making the overall assessment of the applicant, the Personal Interview team considers the following areas: depth and breadth of experience, personal characteristics and preparation for medical school.

SELECTION

All the information resulting from the process described above, as well as the Confidential Assessments from referees, is reviewed and used in the final selection.

Applicants will be notified the last working day in May 2000.

APPLICATION FOR DEFERRED REGISTRATION

Deferred registration may be granted **only** under **exceptional** circumstances. Deferred registration applications may be requested only by those candidates offered a place in the class on the last working day in May and who have accepted that offer. The request for deferral must be submitted within two weeks of the offer of admission.

SPECIAL APPLICANTS

Candidates who wish to determine if they qualify as Special Applicants, **must** contact, in writing, the Chair of the MD Admissions Committee, McMaster Undergraduate Medical Programme, HSC Room 1B7, **before** making a formal application. All relevant information and documentation, including transcripts, must be provided by September 15 to be considered for eligibility for that year's selection and admission cycle.

This category is designed to provide opportunities only to those who meet all of the following. They must:

- 1. not have attended any post-secondary institution, including those offering diploma or certificate programmes, as a full-time student;
- 2. have completed, at the time of application, the equivalent of at least four but not more than ten full degree credit courses as a part-time student, obtaining an overall OMSAS converted average of at least 3.0. A current university transcript must accompany the request for consideration;
- 3. have been employed or active in the community for at least seven years since leaving high school;
- 4. must be a resident of Ontario at the time of application, and

- 5. must be assessed as having made an exceptional contribution to society. In this, candidates must have shown creativity, initiative and leadership. A letter from the candidate, outlining any activities and contributions to society must accompany the request for assessment. Only those who meet the above criteria will be eligible to apply to the programme.

First Nation applicants who do not meet the criteria for application through the regular stream must meet all of the above requirements except #1.

ADVANCED STANDING/TRANSFER

The structure of the McMaster Programme requires that all students begin in Unit 1. There is no provision for advanced standing or transfer into the programme.

UNSUCCESSFUL APPLICANTS

Applications from one year are not held over to another year. If an unsuccessful applicant wishes to reapply, a new application package, including supporting documentation must be submitted, using the OMSAS Application, the OMSAS Instruction Booklet, and the McMaster Autobiographical Submission for the new admission selection cycle.

Unsuccessful applicants may enquire about their application for the current year. Their percentile ranking on the application instruments is the only feedback that is available. The applicant **must** make the request in writing to the Chair of the Admissions Committee, McMaster Undergraduate Medical Programme, HSC Room 1B7, by June 30 of the year of application, after which time feedback will be provided.

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 Programme to clarify immediately their personal financial situation and to secure or identify sufficient support to meet their financial obligations over the subsequent three years. The Undergraduate MD Programme cannot assume this responsibility.

In 1998-99, the academic fees (tuition and student supplementary fees) for a student in the McMaster Undergraduate Medical Programme were:

CANADIAN CITIZENS AND LANDED IMMIGRANTS

Year I	\$10,987.80
Year II	\$8,551.80
Year III	\$5,863.80

(Please note that Year II and III fees were for students admitted prior to September 1998, prior to de-regulation of tuition.)

In addition, the cost of books and diagnostic equipment for a Year I student was approximately \$1,900. It is strongly recommended that students purchase the full complement of medical equipment necessary for clinical skills. Equipment lists and special prices will be offered to medical students within the first few months of medical school. Students are also responsible for their transportation costs related to clinical study.

Financial assistance is available to Ontario residents from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). To be eligible a student must be a Canadian Citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario. Students who are legal residents of other provinces need to check with their respective provincial financial aid programmes about eligibility for support 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 in financial need and are disbursed during the fall of each year. Bursaries are intended to offset provincial financial assistance and cannot supplement the full cost of medical education. For further information about bursaries, please contact Deborah Martin, (905) 525-9140, ext. 22141.

ACADEMIC AWARDS

The Undergraduate Medical Programme 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 M.D. Programme 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 Programme 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 Electives Office, outlining the nature of their work and the need for funds. For further information, contact Deborah Martin, (905) 525-9140, ext. 22141.

ABBOTT MEMORIAL SCHOLARSHIP LOAN FUND

This fund was established by the Federation of Medical Women of Canada. Small loans are available to any female medical student or first-year resident. In special cases, a loan up to \$1,000 may be made to a student for recognized postgraduate training. Loans are payable within five years of date of issue, after which time interest will be charged at a rate of 5% compounded annually.

Information regarding these loans may be obtained from Kay Moffat, Executive Coordinator, Federation of Medical Women of Canada, Box 8244, Ottawa, Ontario, K1G 3H7.

MEDICAL OFFICER TRAINING PLAN

The Department of National Defence administers a programme for medical students known as the Canadian Forces Medical Officer Training Plan. Under this plan, students may be subsidized (tuition, plus pay) throughout their undergraduate medical studies and internship. To qualify for enrolment a student must be acceptable without condition in a course in medicine in a Canadian university or in an accredited internship.

Further information on this programme and on the career opportunities in medicine in the Canadian Armed Forces may be obtained from local Canadian Forces Recruiting Centres. In Hamilton, the Recruiting Centre is at 100 Main Street East, (905) 572-4000.

LOAN FUNDS

The Undergraduate Medical Programme administers a small loans programme 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 Ontario Medical Association Loan Fund, 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 Robert Wakefield, (905) 525-9140, ext. 22979.

B.H.SC. MIDWIFERY PROGRAMME {6501}

WEB ADDRESS: <http://www-fhs.mcmaster.ca/midwifery>

Programme Overview

The baccalaureate programme in midwifery was announced by the Ontario Government in December 1992. The first class was admitted in August 1993. The programme is jointly offered by McMaster University, Laurentian University and Ryerson Polytechnic University and leads to the degree Bachelor of Health Sciences (B.H.Sc.) in Midwifery. In addition to meeting all requirements of the joint programme, students must satisfy the academic regulations of the institution in which they are enrolled.

The curriculum includes courses from basic sciences, social sciences, health sciences, women's studies and electives, in addition to clinical courses. A variety of course formats are used, with a mix of large and small group sessions. Distance learning formats, such as teleconferencing, and print-based courses, will be used extensively. Full-time students will complete the programme in four years. **Students should note that due to the shortage of clinical placements/preceptors, students must be prepared for the possibility that they may not complete the programme in four years.**

In 1999, applicants wishing to complete the programme in four years (full-time), should apply to McMaster University (English Stream) or Laurentian University (French Stream). Part-time applicants should apply to Ryerson Polytechnic University. The part-

time programme can be completed in five to seven years depending on a student's preference, course availability and on the amount, if any, of transfer credits awarded. The suitability of part-time study for meeting clinical requirements is being carefully assessed. **Periods of full-time participation will be necessary in order to participate in intensive courses and clinical placements.**

Each student is assigned to a midwifery practice for an extended period of clinical practice. This ensures that students will provide continuity of care to clients and obtain continuity of supervision from a clinical preceptor. During the programme students will be placed in at least one other midwifery practice and other sites to facilitate their learning. In addition to a placement with a midwife preceptor, clinical experience is obtained in hospital settings and in conjunction with a family physician, an obstetrician and in elective placements. Students will be brought together for several days five times during the four-year programme as a means of fostering professional identity and group support.

The programme reflects the philosophy of midwifery in Ontario and its focus on women's participation in their health care. The importance of public involvement in the evolution of the profession is evident in the ongoing participation of health-care users in programme advisory and evaluation activities and in the applicant admission process. The programme works closely with practising midwives and other maternity-care providers to ensure a high-quality clinical environment for students.

Curriculum Plan

The course sequence moves from foundation courses in basic and social sciences, women's studies and health sciences to the application of knowledge in clinical practice.

The distance learning format (teleconferencing) requires that students convene in small groups. These will usually be on the university campus, but may be in other locations. Students undertake some focused clinical activities in Level I to foster an understanding of clinical basis of the profession. In Levels II, III and IV there are extended opportunities to acquire clinical skills and to integrate theoretical material with clinical experience in addition to completing the courses necessary to acquire the broad base of knowledge of a health professional. While efforts will be made to place students in the geographic location of their choice for their extended clinical practice, students may be required to travel or relocate in order to be placed in a practice that can provide suitable clinical supervision. Students must be prepared to supply their own transportation and to cover their travel and living costs during clinical placements.

There are five (5) opportunities for students in the three (3) locations to meet together. The week-long intensive orientation and beginning of the course, Introduction to Midwifery, is held in August of the year of entering the programme. Students are required to attend this session and to live in residence. The exact dates and locations of these opportunities are arranged on a year to year basis.

LEVEL I: 30 UNITS

6 units	HTH SCI 1D06 ¹
6 units	HTH SCI 1C06 ¹
6 units	WOMEN ST 1A06 ¹
3 units	HTH SCI 3A03 ¹ (Term II)
6 units	MIDWIF 1A06 ³
3 units	MIDWIF 1C03

LEVEL II: 30 UNITS

3 units	MIDWIF 2D03
6 units	from HTH SCI 3B03, 3LL3, MIDWIF 3D03
15 units	MIDWIF 2A03, 2E12 ²
3 units	MIDWIF 2F03
3 units	Electives

LEVEL III: 42 UNITS

15 units	MIDWIF 2B15 ²
9 units	MIDWIF 3A09
15 units	MIDWIF 2C15 ²
3 units	MIDWIF 3F03

LEVEL IV: 30 UNITS

15 units	MIDWIF 3B15 ²
12 units	MIDWIF 3C12 ²
3 units	MIDWIF 3E03 ³

- ¹ Transfer/challenge credit may be available.
- ² Clinical course consists of a placement in a practice and concurrent problem-based tutorials that span antenatal, intrapartum, postnatal and newborn care.
- ³ Includes a week when all students are brought together at one site.

Admission Process and Criteria

The following are the requirements for admission in the academic year 1999-2000. Please note that the admission policy is reviewed annually and the admission requirements from previous years may not apply.

As places in the Midwifery Programme are limited, the admission process is competitive. **Possession of the published minimum requirements does not guarantee admission.**

ADMISSION CRITERIA

Applicants to the Midwifery Education Programme come from a wide variety of educational backgrounds; however, **all applicants must meet or be in the process of completing the following basic admission requirements by the date of application (i.e. February 1 of the year in which the applicant is seeking admission).**

A. OSSD with 6 OAC (Ontario Academic Credit) courses including the following three prerequisites:

1. One of OAC English I or OAC anglais I or OAC anglais II
2. One of OAC Biology or OAC Chemistry
3. An OAC in social science (i.e. history, sociology, psychology, geography, law)

AND

B. Students must obtain a minimum overall final average of 70% in six OAC courses including the three prerequisite subjects

OR

The equivalent of OAC courses from other provinces/countries with a 70% average.

For those currently registered in required subjects, interim grades must be submitted. Courses must be completed by June 30, 1999 and final grades made available immediately thereafter.

Prior/Current Community College (C.A.A.T.) Applicants

Applicants with studies completed at an Ontario Community College (CAAT) or equivalent, must have full courses that are equivalent to the OACs in the three subject areas specified. The average from at least two years of college work must be a minimum of 70% or better. In addition, students must also have 70% in each of the three prerequisite subjects. Applicants with CEGEP background should consult the OAC equivalence chart found in the *Admission Requirements* section of this Calendar.

Prior/Current University Applicants

Applicants with at least two full-time years at an accredited university at the time of application must have completed OACs or equivalent university courses in at least two of the three subject areas noted. The applicant's overall average from the best 10 full courses equivalent to two years of university work, must be a minimum of 70%. Students must also have a minimum of 70% in two of the prerequisite subjects.

Mature Applicants

1. Mature students are required to possess the three prerequisite subjects as described in the basic requirements.
2. Mature candidates lacking the academic background described below will be advised to upgrade by either taking OACs or introductory university level courses. Those who take OAC upgrading may have the two year absence from formal studies guideline waived.
3. Mature candidates are expected to have a 70% overall average or better in the required courses or subject areas.
4. Other specific requirements are:
 - i) must be at least 21 years of age, or will be, prior to the first day of classes for the session to which application is made;
 - ii) have not attended secondary school for at least two years;
 - iii) have never attended university;
 - iv) have not been enrolled in a college diploma programme within the last five years.

Transfer or Challenge Credit

Applicants with previous university courses may be eligible for credit for electives or other non-clinical courses in Level 1 and 2. **Transfer/challenge credit will not be available for midwifery courses.** The actual amount of credit awarded to an applicant

will not be determined until the conclusion of the overall admissions process; each application will be assessed on an individual basis. An offer of admission does not guarantee that credit will be awarded. Applicants should be aware of the University's residency requirements and time span completion policies. Transfer or challenge credit will not generally reduce the time span required to complete the programme.

Successful applicants are able to challenge the following courses: Social and Cultural Dimensions of Health (HTH SCI 1C06), Topics in Biological Science (HTH SCI 1D06), Life Sciences for Midwifery (HTH-SCI-1C03) and Critical Appraisal of Research Literature (HTH SCI 3A03). Further details about the availability of challenge exams or other means of obtaining credit for programme requirements will be available at a later time in the admissions process.

Deferral of Registration

Those students offered admission will not be granted a deferral and will be asked to reapply.

SELECTION PROCEDURE

The intention of the Midwifery Education Programme is to prepare students to become midwives who have the ability to give the necessary supervision, care and advice to women during pregnancy, labour and the postpartum period, to conduct deliveries on her/his own responsibility and to care for the newborn infant. In order to fulfill this criteria, midwives must have a thorough and rigorous academic preparation.

Midwives, as primary health care providers within our society, are expected to have well-developed interpersonal skills. They must be highly competent in areas of health education, counselling and interprofessional collaboration. Applicants to this programme should expect to be thoroughly assessed for their ability to exhibit and further develop these important personal/professional qualities.

The admission process is detailed in three parts:

1. **Assessment of Academic Eligibility:** Review of applications for completeness and evidence of academic eligibility according to the criteria listed above.
2. **Review of Personal Questionnaire:** Each applicant is asked to answer five (5) questions in a typed submission not exceeding five double-spaced pages. The personal questionnaire is the opportunity for applicants to show how their background experiences and personal attributes are well-suited to being a midwife. The personal questionnaire will be scored by teams of two evaluators who have no information about the academic background of the applicant.
3. **Personal Interviews:** Selected candidates will be invited for a personal interview. Interviews will be conducted by teams of three, consisting of a consumer, faculty member, midwife or midwifery student who have no previous information about the applicant. Interviewers will assess applicants in areas such as their motivation to become a midwife, their awareness of midwifery in Ontario and career goals. Candidates may be asked to participate in a test of writing skill on site.

A total review of each applicant's file will help determine offers of admission at the conclusion of this three part process. A waiting list will be formed for any places that become available.

UNSUCCESSFUL APPLICANTS

Applications are not held over from one year to another. If an unsuccessful applicant wishes to reapply to the Midwifery Education Programme, a new application, including transcripts and supplementary materials must be submitted. Unsuccessful applicants may request feedback about their application for the current year. Applicants must make their requests in writing to the programme no later than June 30th of the year of application. Depending on the volume of requests it may take several months for the programme to reply.

APPLICATION DEADLINE

Submission of completed application forms to the Ontario Universities' Application Centre and all supporting documents/transcripts, must be received by the University no later than **February 1** of the year in which registration is expected.

Financial Information

In 1998-99 the tuition fees for a student in the Midwifery Education Programme were \$3,602.00. Supplementary fees are estimated at \$400.00 per year.

A confirmation fee may be required at the time of acceptance of an offer of admission.

Financial assistance is available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). Students intending to apply for OSAP may begin their application process to OSAP once they are notified about receiving an interview. The final status of your application can be confirmed with OSAP at a later date.

Additional costs include books, supplies, and other learning resources estimated at \$500.00-\$1000.00.

Students should expect to cover their own travel and accommodation costs for the clinical components of the programme. Students are expected to cover a portion of costs for accommodation and meals when students meet together at one site three different times during the programme.

Academic Regulations

In addition to meeting the General Academic Regulations of the University, students enrolled in the Midwifery Education Programme shall be subject to the following programme regulations.

Where the performance of a student in clinical midwifery practice may jeopardize or endanger the welfare of a client, or the client's family, the student may be removed from clinical experience at any time during the academic year until continuation in the course is reviewed.

CONTINUATION IN THE PROGRAMME

All required (clinical and non-clinical) Midwifery and Health Science courses and WOMEN ST 1A06 are required for the degree. Students are reviewed at the end of each term and academic year. Students must achieve a CA of at least 4.0 (C-) in **all graded courses** and achieve a pass/satisfactory performance in all clinical courses at **each** review to continue in good standing in the programme. A CA of 3.5 or lower will result in the student being required to withdraw from the programme.

PROBATION

A student will be placed on probation if he/she:

1. obtains a CA less than 4.0 but not lower than 3.5, overall in all graded courses or
2. obtains a grade of less than 65% in HTH SCI 1D06 (Topics in Biological Sciences), or
3. does not achieve a pass/satisfactory performance in all clinical (midwifery) courses or
4. fails any one course.

If students fail to meet the minimum grade requirements in the required courses or a pass/satisfactory designation in the clinical courses, they may, at the discretion of the Programme Chair in consultation with a reviewing committee, be allowed to repeat the course on programme probation. A student must obtain a minimum grade of 4.0 (or pass/satisfactory in clinical courses) at the completion of the programme probation.

A student will be granted programme probation for one reviewing period if his/her CA is less than 4.0, but no lower than 3.5, and if he/she has not been on probation before.

REQUIRED TO WITHDRAW

A student will be required to withdraw from the programme if he/she has a:

1. failure in more than one clinical course.
2. more than one failure in any academic session.
3. failure after the second attempt at a required course.
4. cumulative Average (CA) which falls below 3.5.
5. failure to complete the programme within its maximum time limit.

DEAN'S HONOUR LIST

Students will be evaluated for standing on the Dean's Honour List only upon completion of the programme. Students will be named to the Dean's Honour List if they receive no failing, provisional or unsatisfactory grades in any courses throughout the programme and achieve a minimum average of 9.5, calculated using the grades on all graded courses taken throughout the programme.

GRADUATION REQUIREMENTS

To graduate with a Bachelor of Health Science in Midwifery a student must:

1. complete all required courses, including electives, with a CA of at least 4.0 on all graded courses (and a minimum grade of 65% in HTH SCI 1D06).
2. satisfy and complete all requirements for clinical performance throughout the programme.
3. complete all courses for the degree within five years of the first midwifery course.

Professional Membership

The programme requires that all students become members of the College of Midwives and the Association of Ontario Midwives when they enter the programme. The total cost for these memberships is approximately \$200.00 annually. Please note that the College of Midwives requires all applicants to disclose any past criminal or professional proceedings.

Qualifying for Registration by the College of Midwives

The practice of midwifery is regulated by the College of Midwives under the Midwifery Act, 1991 and the Regulated Health Professions Act, 1991. The College of Midwives has approved a set of core competencies for entry to practice which guide the Midwifery programme's curriculum.

Regulations under the Midwifery Act set out the following for registration: attendance at a minimum of 60 births, of which the student must be involved as a primary caregiver for 40; 30 births must include care throughout pregnancy, labour and the puerperium.

Graduation from the Midwifery Education Programme does not guarantee registration with the College of Midwives. All applicants to the College must meet additional registration requirements.

Regulatory requirements are subject to change from time to time. The programme will maintain a close working relationship with the regulatory body so that students obtain the required clinical experiences to be eligible for registration.

THE SCHOOL OF NURSING

WEB ADDRESS: <http://www-fhs.mcmaster.ca/nursing>

In 1942, McMaster University began its first programme in Nursing, a cooperative effort between the University and the Hamilton General Hospital. Since the establishment of McMaster University's School of Nursing in 1946, students have received a Bachelor of Science in Nursing degree upon graduation. The programme has functioned completely under the supervision of the University, while 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. Programme was introduced. This second category of admission was created to provide Diploma Registered Nurses with the opportunity to work towards a B.Sc.N. degree.

McMaster University is one of ten Ontario universities collaborating with the Council of Ontario Universities for Program in Nursing to offer a Primary Health Care Nurse Practitioner Programme. The programme commenced in September 1995 and funding has been extended to 2003 by the Ministry of Health. This programme enables Nursing diploma prepared students to obtain a B.Sc.N. degree and a Nurse Practitioner Certificate. Those students who hold a Nursing Baccalaureate receive the Nurse Practitioner certificate upon completion of the programme.

In 1994, the first Ph.D. candidates entered the Clinical Health Sciences (Nursing) graduate programme which is offered by the School of Graduate Studies through the Faculty of Health Sciences. M.Sc. candidates entered in the fall term of 1995. All enquiries about the Clinical Health Sciences (Nursing) graduate programme should be directed to the Graduate Programme Office, HSC-3N10, (905) 525-9140, ext. 22982.

To find out more information about McMaster and the B.Sc.N. Programme, Information Sessions for high school students are hosted by the Student Liaison Office during the school year. For more details about these sessions or to register for a visit, please call the Office of the Registrar at (905) 525-4600. Applicants not applying directly from high school who require an application package should call (905) 525-4600.

The B.Sc.N. Programme

The B.Sc.N. programme promotes the development of nursing as a caring, client-centred, scientifically based profession. With an emphasis on problem-based, small group, self-directed learning, the programme provides a general baccalaureate education in nursing for the preparation of professional nurses who will practise in a variety of health-care settings. Central to our mission is the preparation of nurses who will work to enhance the quality of health of individuals, families, communities and society. In fulfilling its mission, the B.Sc.N. programme promotes skills in its graduates to prepare them for life-long, self-directed learning, critical thinking, advocacy and collective action.

As students progress in the B.Sc.N. programme, they will find an increasing emphasis on interpersonal skills, independent learning, and leadership qualities. Applicants should evaluate their own potential for developing abilities to interact with others and to assume leadership roles. Learning is a process of inquiry, a skill to develop as a life-long activity in an environment conducive to openness and sharing among faculty and students. Emphasis on small group tutorials and self-directed learning promotes the development of self-evaluation skills and critical thinking abilities. Extensive multimedia, laboratory and library resources support a belief in the importance of independent study. Students apply concepts from Nursing and related disciplines to their experiences in classroom and clinical settings (opportunities exist for international clinical practice experiences).

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

BELIEFS AND GOALS

We believe that nursing is a scientific activity which seeks to describe, understand and accept reality as human beings experience it, and to provide professional care in this context.

The scientific activity of nursing involves critical appraisal, the ability to selectively utilize research findings and the use of a problem-solving process.

We believe that all human beings are unique, self-interpreting individuals with potential and with freedom of choice in determining the quality of life. Both the nurse and the client (individual, group or community) are accountable for their decisions and actions.

The unique contribution of nursing is in professional caring, which has both scientific and humanistic components.

At McMaster, we believe that health care is a team responsibility and that nursing education can be offered most beneficially in an interprofessional setting.

We believe that we can contribute to the development of nursing as a profession by producing graduates who:

1. Demonstrate personal characteristics that reflect a developing professional meaning; that is:
 - a) recognize the intrinsic dignity, worth and uniqueness of persons
 - b) demonstrate sensitivity and awareness of personal assets and limitations
 - c) demonstrate advocacy, empathy, tolerance, accountability
 - d) maintain ethical standards
 - e) think rigorously and critically
 - f) foster independent and collaborative practice
 - g) provide leadership for change.
2. Accept responsibility for life-long learning and professional growth.
3. Identify and understand internal and external influences on human health.
4. Utilize knowledge of biological, physical, verbal, emotional and spiritual factors in nurse/client situations.
5. Demonstrate knowledge of the impact of interprofessional interchange on nursing, other health disciplines and the health-care system.
6. Demonstrate nursing practice that reflects knowledge of the processes of change, caring, coping, valuing, learning and critical appraisal.
7. Demonstrate a comprehensive approach to nursing practice in a variety of settings.
8. Support and promote a humanistic and scientific approach to the care of nursing clients.

Admission Policy and Procedure

ADMISSION POLICY

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

As places in the B.Sc.N. programme are limited, admission is by selection. Possession of the published minimum requirements does not guarantee admission.

There are three streams of study leading to the completion of the B.Sc.N. degree. The Basic (A) Stream requires four years of study, and is available to those applying directly from an Ontario secondary school with OACs; to those who have qualifications equivalent to OACs; to university students who wish to transfer into nursing; and to applicants with other qualifications who meet the admission requirements.

The Post Diploma (B) Stream is available to Diploma Registered Nurses only. Graduates of an approved diploma nursing programme who are admitted to the B.Sc.N. programme are granted advanced credit and may complete the programme in two calendar years of full-time study.

The Ontario Primary Health Care Nurse Practitioner Programme (C) Stream is a post diploma/post degree programme. Diploma prepared nurses require 24 months of full-time study to complete their BScN/NP degree, while degree prepared nurses require 12 months on a full-time basis or up to 36 months on a part-time basis to complete the Nurse Practitioner Certificate. Under current funding, all Nurse Practitioner courses must be completed by August 2003.

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

Detailed medical information will be required upon acceptance into the programme including a record of completion of required immunizations.

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 programme 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 (905) 529-7070, ext. 24028 or TTY (905) 521-8709.

Applicants Directly from Ontario Secondary Schools

The selection method for Ontario secondary school applicants is by academic qualifications. First round of early conditional offers of admission are made in late March and will be based on the following: a) six appropriate midterm/interim OAC grades, or b) at least three final OAC grades and Grade 11/12 advanced grades plus enrolment in the appropriate three additional OAC courses. Offers based on interim grades will be conditional upon maintaining satisfactory performance on final grades.

Applicants With Other Qualifications

For applicants not applying directly from Secondary School or without the necessary OAC equivalents, the selection method is based on academic qualifications, a rating obtained on a questionnaire and a personal interview. (Nurse Practitioner applicants will not be interviewed.) The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni, and the community. Applicants may be invited to a personal interview at McMaster on May 7, 1999. Applicants are responsible for their travel expenses. Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

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

POST DIPLOMA APPLICANTS

The selection method is based on academic qualifications, a rating obtained on a questionnaire and a personal interview. (Integrated BScN/NP applicants will not be interviewed.) The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni, and the community. Applicants may be invited to a personal interview at McMaster on May 7, 1999.

Applicants are responsible for their travel expenses. Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

Applicants will be informed of the admission decision by mid-June. Applicants enrolled in diploma nursing programmes at the time of application must be eligible to write the nursing registration examinations no later than June of the year of application to the B.Sc.N. Programme in order to assure possession of a current annual registration payment card from the College of Nurses of Ontario.

Admission Procedure**Applicants from Ontario Secondary Schools (A Stream)**

Applicants currently completing OACs apply through the Ontario Universities' Application Centre (OUAC). (See address below.) Application forms are available in secondary school guidance offices. Applications for all studies beginning in September must be received by OUAC no later than **May 1st**. Secondary schools will forward mid-term and final transcripts directly to OUAC in support of applications.

Applicants With Qualifications Equivalent to OAC (A Stream)

Applicants should contact the Ontario Universities' Application Centre (OUAC) for an application package and return it to them by May 1; to be considered for admission. (See address below.) Applicants must also have their official transcripts forwarded to the McMaster B.Sc.N. Programme from their secondary school by **May 1st**.

Return to:

Ontario Universities' Application Centre (OUAC)
650 Woodlawn Road West, P.O. Box 1328
Guelph, Ontario, N1H 7P4

Applicants with Other Qualifications and Post Diploma Applicants (A and B Stream)

Applicants should contact the Ontario Universities' Application Centre (OUAC) for an application form and the Admissions Coordinator (Nursing) for an application package.

Ontario Universities' Application Centre
650 Woodlawn Road West
P.O. Box 1328
Guelph, Ontario
N1H 7P4

Admissions Coordinator (Nursing)
McMaster University, HSC-2E10
1200 Main Street West
Hamilton, Ontario
L8N 3Z5

Ontario Primary Health Care Nurse Practitioner Programme (C Stream)

Applicants must contact the Ontario Universities' Application Centre (OUAC) to obtain the Primary Health Care Nurse Practitioner Education Programme Application Package. (Please see address above.) Applicants for all studies beginning in September must be received by OUAC no later than **February 1**.

ADMISSION REQUIREMENTS

A student who plans to enter the Undergraduate Nursing Programme may qualify under one of the categories described below.

I. BASIC (A) STREAM**Applicants Directly from Ontario Secondary Schools****Requirements**

1. One of OAC English I, OAC anglais I or OAC anglais II;
2. OAC Chemistry;
3. One of OAC Calculus, OAC Algebra and Geometry, OAC Finite Mathematics;
4. One of OAC Biology, or OAC Physics;
5. Two additional OACs to total six credits.

Note: Application to the programme must be made within two years of completion of the OAC requirements. The admission average will be calculated on the best six OAC subjects, including the four required subjects.

Applicants with Qualifications Equivalent to OAC

Applicants from other provinces and countries must achieve the equivalent to the qualifications listed above in their secondary school graduation year.

Applicants with Other Qualifications

Applicants normally should:

1. a) be currently enrolled in first year of a University programme and have achieved a university admission average of at least 75%; or
b) achieve a cumulative average of at least *B-* in all university degree credit courses taken. A minimum of 12 units or equivalent are required. (These courses may be taken as a full-time or part-time student. University correspondence degree courses are acceptable.)
2. submit Form 105D to OUAC along with the \$85 fee by February 15;
3. submit a completed original and three copies of the response to the questionnaire provided in the application package along with the \$50 fee to McMaster by February 15.

Note: University degree credit courses completed prior to admission will be assessed for advanced credit, by the Office of the Coordinator of Studies following admission to the programme.

Applicants From Other Degree Nursing Programmes

Applicants who are currently enrolled in a Nursing degree programme at another university may apply to transfer into the B.Sc.N. programme at McMaster. Availability of space and placement in the programme will be determined by the Level Chair.

Even if space is not available, the applicant may choose to complete the admission process and be placed on a waiting list.

The applicant may be invited to a personal interview at McMaster. Applicants are responsible for their own travel expenses. Failure to attend the interview will result in cancellation of the application. Applications for transfer into the B.Sc.N. programme to commence studies in September must be received by the Admissions Coordinator (Nursing) no later than **June 30**.

Applicants must:

1. contact the Admissions Coordinator (Nursing) to discuss placement in the programme;
2. submit Form 105D to OUAC along with the \$85 fee by June 30;
3. submit a completed original and three copies of their response to the questionnaire provided in the transfer application package; an official letter from the Dean/Director of the programme in which the applicant is currently enrolled stating that the applicant is in *good standing* in that programme (good standing is interpreted as at least a *B-* average in nursing courses); course descriptions/outlines for assessment of advanced credit; and a current transcript.

II. POST DIPLOMA (B) STREAM

Applicants normally must:

1. possess a current College of Nurses of Ontario annual registration payment card or be eligible for reciprocity, or be eligible to write and subsequently pass the Registration examinations..
2. have an Ontario diploma in nursing or the equivalent with a minimum overall average of 2.7 (*B-*).
3. submit Form 105D to OUAC along with the \$85 fee no later than February 15;
4. submit a completed original and three copies of the response to the questionnaire provided in the application package, a photocopy of the current College of Nurses of Ontario annual registration payment card, transcripts, and the \$50 fee to McMaster by February 15.

Note: University degree credit courses completed prior to admission will be assessed for advanced credit by the Office of the Coordinator of Studies following admission to the programme.

III. ONTARIO PRIMARY HEALTH CARE**NURSE PRACTITIONER PROGRAMME (C) STREAM**

Selection is based on academic qualifications, professional experience, clinical references, and personal questionnaire scores. The response to the questionnaire is assessed by teams normally representing the faculty, the students or alumni and the community. The scores awarded by the assessors are final. Applicants will be informed of the admission decision by May.

Applicants with a Diploma in Nursing must:

1. have an Ontario Diploma in nursing or the equivalent with a minimum overall average of 70%;
2. hold a current College of Nurses of Ontario annual registration payment card;
3. have the equivalent of a minimum of two years full-time nursing practice within the past five years as evidenced by the employer-completed Verification of Employment form(s);
4. submit Form 105D to OUAC along with the \$85 fee by February 1;
5. submit a copy of the current College of Nurses annual registration payment card, the relevant professional experience form, verification of employment forms(s), two clinical reference forms, a personal questionnaire response, official transcripts from a diploma nursing programme, copies of any additional professional registration, memberships or certificates listed on the relevant professional experience form (ie. RNAO, CPR), and any official transcripts of completed university degree course work along with the \$50 fee to McMaster by February 1.

Applicants with a Baccalaureate in Nursing must:

1. possess an Ontario baccalaureate in nursing or the equivalent with a minimum overall average of 70%. In cases where the minimum grade is not achieved, consideration may be given to university credit work completed following graduation which demonstrates equivalent academic ability;
2. hold a current College of Nurses of Ontario annual registration payment card;
3. have the equivalent of a minimum of two years full-time nursing practice within the past five years as evidenced by the employer-completed *Verification of Employment* form(s);
4. submit Form 105D to OUAC along with the \$85 fee by February 1;
5. submit a copy of the current College of Nurses annual registration payment card, the relevant professional experience form, verification of employment form(s), two clinical reference forms, a personal questionnaire response, official transcripts from a degree nursing programme, copies of any additional professional registrations, memberships or certificates listed on the relevant professional experience form (i.e. RNAO, CPR) to McMaster by February 1.

Preference will be given for:

- Ontario residents
- work experience in nursing that has been continuous
- practical experience in one or more of the following areas: primary health care, ambulatory care, public health, community health, long term care, emergency care or outpost nursing
- hands on practical experience

IV. ALL OTHER APPLICANTS

Certain provisions are available for applicants who wish to pursue a Nursing Degree at McMaster but do not qualify under any of the above three categories. For information on how to qualify, applicants should contact the Office of the Registrar (Admissions), Gilmour Hall, Room 108, McMaster University, Hamilton, ON L8S 4L8.

UNSUCCESSFUL APPLICANTS

Applications are not held over from one year to another. If an unsuccessful applicant wishes to reapply to the B.Sc.N. programme, a new application, including supporting documentation, must be submitted.

Unsuccessful applicants may inquire about their application for the current year. Applicants must make their requests in writing to the Chair of the Undergraduate Nursing Admissions Committee. No inquiries will be considered after August 31 of the year of application.

APPLICATION FOR DEFERRAL OF REGISTRATION

Deferred registration is granted only under exceptional circumstances to those candidates who have been admitted and have accepted the offer. Deferred registration, if granted, may be deferred for one year only. The request for deferral, outlining the reasons for the request, must be postmarked no later than July 31 of the year for which deferral is requested.

Academic Regulations

In addition to meeting the General Academic Regulations of the University, students enrolled in the B.Sc.N. programme shall be subject to the following programme regulations.

Registration in the B.Sc.N. programme implies acceptance on the part of the student of the objectives of that programme and the 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. Where the performance of the student in clinical nursing practice may jeopardize or endanger the welfare of the patient, or the patient's family, the student may be removed from clinical experience any time during the academic year until continuation in the course is reviewed. The clinical activities associated with any clinical course must be successfully achieved for attainment of a passing grade in the course.

PART-TIME STUDENTS

It is possible to complete the B.Sc.N. programme on a part-time basis. University and programme regulations governing full-time undergraduate students will govern part-time students although there are additional guidelines for part-time study.

As enrolment is limited, places reserved for part-time students at each level will be restricted. Normally, nursing courses are available only during the day. Electives may be taken either in the day or evening. Counselling sessions will be available for part-time students after admission.

B.SC.N. PROGRAMME ACADEMIC REGULATIONS**Basic (A) and Post Diploma (B) Stream**

A student must:

1. achieve a Cumulative Average (CA) of at least 3.5;
2. achieve a grade of at least *C-* in the graded Nursing and required Health Sciences courses with the exception that a grade of *D-*, *D* or *D+* is permissible in one Level I Health Sciences course and in only one required Health Sciences course beyond Level I; and
3. achieve a Pass designation in all clinical courses and the clinical component of NURSING 1F04 and 1G04.

The following courses are designated clinical courses:

- Basic (A) Stream: NURSING 2L03, 2P03, 3X04, 3Y04, 4J07, 4K07
- Diploma Registered Nurses (B) Stream: NURSING 3LL2, 3M05, 3MM3, 4S06, 4T06

All clinical courses above Level I are evaluated on a Pass/Fail basis. Areas of excellence in practice are noted in a detailed evaluation summary for each course.

(A course for which credit has not been granted may be repeated only when approval is granted by the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee.)

Nurse Practitioner (C) Stream and Nurse Practitioner Certificate Stream

A post-diploma student must:

1. achieve a Cumulative Average (CA) of at least 3.5;
2. achieve a grade of at least *C-* in the graded Nursing and required Health Sciences courses with the exception that a grade of *D-*, *D* or *D+* is permissible in one Level I Health Sciences course and only once in required Health Sciences courses beyond Level I;

Both post-diploma and post-degree students must:

1. achieve a Pass designation in the clinical component as well as a grade of *B-* in the theoretical component in each of NURSPRAC 4A10, 4C13, 4T10;
2. achieve a grade of *B-* in NURSPRAC 4P03, 4R03.

The following courses are designated clinical courses:

- NURSPRAC 4A10, 4C13, 4T10

Under existing funding, all Nurse Practitioner courses must be successfully completed by August, 2003.

CONTINUATION IN THE PROGRAMME

To continue in the B.Sc.N. programme a student must obtain a CA of at least 3.5. A student whose CA is at least 3.0, at the discretion of the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee, may proceed in the programme and will be placed on programme probation. A student may be placed on programme probation only once during the total programme.

FAILURE

A student whose CA is less than 3.5, and who has not been granted programme probation, may not continue at the University.

A student who fails to obtain a CA of 3.5 at the completion of the programme probation may not continue at the University.

A student may normally repeat a level of work only once.

If a student fails to meet the minimum grade requirements in the required graded Nursing and required Health Sciences courses or a Pass designation in the clinical nursing courses, the student may, at the discretion of the Programme Chair in consultation with the programme Reviewing Committee, be allowed to repeat the course in which the minimum grade or Pass requirement has not been met. If a student fails to meet the minimum grade or Pass requirements after repeating the course, he or she may not continue in the Faculty. A student may normally be allowed to repeat only one clinical and one non-clinical Nursing or Health Sciences course during the programme.

Only one Nurse Practitioner course may be repeated. If a grade of less than *B-* or *unsatisfactory* is obtained in the Nurse Practitioner course on the second attempt, the student will be removed from the programme.

Curriculum for the B.Sc.N. Programme**BASIC (A) STREAM {6390}**

The Faculty has planned the curriculum so that the study of nursing, the physiological, psychological and social sciences, and the humanities are interrelated and span the entire programme. In Level I, the amount of nursing experience is relatively small; the major proportion of study is in the behavioural and natural sciences. The nursing component increases progressively through Levels II, III, and IV, as the study of natural sciences is completed. Normally, because of timetable constraints, courses must be taken in the level indicated in the curriculum.

ELECTIVES

Thirty units of electives are to be selected from disciplines of the student's choice, of which a minimum of 12 units are to be chosen from courses designated as Level II or above. For some courses, the amount of duplication of required content will preclude their being used for elective credit in the B.Sc.N. programme.

LEVEL I: 33 UNITS

(Units graded: 33)

13 units HTH SCI 1A06, 1B07
8 units NURSING 1F04, 1G04
6 units PSYCH 1A03 and 1AA3
6 units Electives

LEVEL II: 31 UNITS

(Units graded: 25; Units pass/fail: 6)

8 units HTH SCI 2B08
14 units NURSING 2L03, 2M03, 2N03, 2P03, 2Q02
9 units Electives

LEVEL III: 32 UNITS

(Units graded: 25; Units pass/fail: 8)

7 units 3B03, 3C04
16 units NURSING 3S03, 3T03, 3U02, 3X04, 3Y04
9 units Electives

LEVEL IV: 30 UNITS

(Units graded: 16; Units pass/fail: 14)

2 units HTH SCI 4L02
22 units NURSING 4A02, 4E03, 4F03, 4J07, 4K07
6 units Electives

TOTAL UNITS: 126

REGISTRATION TO PRACTISE NURSING

On receiving the B.Sc.N. degree after successful completion of the (A) Stream of the B.Sc.N. programme, graduates are eligible to write the RN Licensing Examinations which are administered by the College of Nurses of Ontario. Application to write the RN Licensing Examinations is made through the Faculty of Health Sciences.

DIPLOMA RN (B) STREAM {6391}

The programme 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 two full calendar years 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 programme requirements.

Each level of the programme will consist of eight months of academic study with concurrent clinical practice.

ELECTIVES

Thirty units of electives are to be selected from disciplines of the student's choice, of which a minimum of 12 units are to be chosen from courses designated as Level II or above. For some courses, the amount of duplication of required content will preclude their being used for elective credit in the B.Sc.N. programme.

ADVANCED CREDIT: 33 UNITS**LEVEL III: 45 UNITS**

(Units graded: 40; Units pass/fail: 5)

TERMS 1 AND 2: 33 UNITS

17 units HTH SCI 1A06, 1ZZ4, 3B03, 3C04
16 units NURSING 3LL2, 3M05, 3MM3, 3S03, 3T03

SPRING TERM: 6 UNITS

6 units Electives

SUMMER TERM: 6 UNITS

6 units Electives

LEVEL IV: 47 UNITS

(Units graded: 35; Units pass/fail: 12)

TERMS 1 AND 2: 29 UNITS

9 units HTH SCI 2C07, 4L02
20 units NURSING 4A02, 4E03, 4F03, 4S06, 4T06

SPRING TERM: 6 UNITS

6 units Electives

SUMMER TERM: 6 UNITS

6 units Electives

ADDITIONAL ELECTIVES (ANY TERM): 6 UNITS

6 units Electives

TOTAL UNITS: 125

DIPLOMA RN/NURSE PRACTITIONER (C) STREAM AND NURSE PRACTITIONER CERTIFICATE STREAM

This programme has been developed by a provincial consortium of ten Ontario universities offering one standardized curriculum since 1995.

The programme prepares students with a nursing diploma or a nursing baccalaureate with relevant experience to provide individuals, families and communities with the five basic components of comprehensive primary health care services (promotion, prevention, cure, rehabilitation and support) within an extended scope of nursing. Computer and Internet access is mandatory.

With existing funding, all Nurse Practitioner courses must be completed by August 2003. Full-time BScN/NP students attend classes for 24 consecutive months. Full-time certification NP students must attend classes for 12 consecutive months. Once NP core courses are started, the five courses must be completed within three calendar years.

DIPLOMA RN/NURSE PRACTITIONER (C) STREAM {6397}**ADVANCED CREDIT: 29 UNITS****LEVEL III: 50 UNITS**

(Units graded: 50)

TERMS 1 AND 2: 35 UNITS

21 units HTH SCI 1CC7, 2C07, 3B03, 3C04
8 units NURSING 3S03, 3T03, 4A02
6 units Electives

SUMMER TERM: 15 UNITS

15 units Electives

LEVEL IV: 47 UNITS

(Units graded: 47)

TERMS 1 AND 2: 34 UNITS

2 units HTH SCI 4L02
26 units NURSPRAC 4A10, 4P03, 4R03, 4T10
6 units Electives

SUMMER TERM: 13 UNITS**(Units graded: 3; Units pass/fail: 10)**

13 units NURSPRAC 4C13

TOTAL UNITS: 126**NURSE PRACTITIONER CERTIFICATE STREAM****39 UNITS****(Units graded: 29; Units pass/fail: 10)****TERMS 1 AND 2: 26 UNITS****(Units graded: 26)**

26 units NURSPRAC 4A10, 4P03, 4R03, 4T10

SUMMER TERM 13 UNITS**(Units graded: 3; Units pass/fail: 10)**

13 units NURSPRAC 4C13

TOTAL UNITS: 39**EXTENDED CLASS OF REGISTRATION (RN/EC)**

On successful graduation of the Ontario Primary Health Care Nurse Practitioner Programme, nurses meet partial eligibility to write the Extended Class Licensing examination through the College of Nurses of Ontario (CNO). Updates regarding this process are available to registered students on the NP Network.

**Nursing Leadership/
Management Programme {6396}**

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

The course work is designed to familiarize Registered Nurses with the theory and clinical application necessary to function effectively in a formal or informal leadership position. Content includes theory and techniques of management, leadership, organizational development and change, motivation, labour relations, legal implications, ethics, finance and the Canadian Health Care System. Separate modules are available in budgeting and total quality management.

Enrolment is by approval of the Coordinator. Further information may be obtained through the Programme Office.

CURRICULUM**(Units graded: 6; Units pass/fail: 2)**

6 units NURSING 4B06

1 unit NURSING 4C01

1 unit NURSING 4D01

TOTAL UNITS: 8

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for the equivalent courses in the B.Sc.N. programme.

Oncology Programmes**ADMISSION POLICY**

All candidates must reside in Ontario and be registered to practice nursing by the College of Nurses of Ontario. Selection criteria for admission to the Adult Oncology programme is based on recent, relevant oncology nursing experience and demonstrated commitment to oncology nursing practice. Selection criteria for admission to the Paediatric Oncology programme is based on recent, relevant paediatric oncology nursing experience and demonstrated commitment to paediatric oncology nursing practice. Further information may be obtained through the Oncology Programme Office in Health Sciences Centre, Room 2J32.

ACADEMIC REGULATIONS

Students in the Oncology programmes shall be subject to the General Academic Regulations of the University and the regulations of the B.Sc.N. programme.

Adult Oncology Programme {6398}

This programme has been established to provide registered nurses working with adult cancer patients the opportunity to develop enhanced knowledge and skills required for the evolving challenges of their roles across the cancer consortium.

The programme has been developed within the context of the existing post diploma stream. The McMaster model of Nursing and philosophy of student-centered and problem-based learning are maintained and provide the foundation for curriculum design. Key aspects of the programme include professional role development, evidence based practice, and development of assessment, communication, supportive care and collaborative practice skills.

The Adult Oncology programme is offered to nurses within the province of Ontario and will be made accessible through a distance education format.

CURRICULUM**(Units graded: 10; Units pass/fail: 10)**

3 units NURSING 3CC3

3 units NURSING 3DD3

5 units NURSING 3LL2, 3MM3

5 units NURSING 3HH5

4 units HTH SCI 3C04

TOTAL UNITS: 20

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for these courses (or their equivalent) in the B.Sc.N. programme.

Paediatric Oncology Programme {6394}

In order to accommodate the educational needs of registered nurses working in paediatric oncology, a programme has been developed within the context of the existing post-diploma stream. This programme affirms the McMaster curriculum model of student-centred, problem-based or problem-focused teaching and learning; respect for the adult learner; a curriculum cognizant of and responsive to evolving nursing practice, a commitment to interprofessional approaches and a commitment to a strong scientific component. Students enrolled in the programme will be actively linked with one of the provincial tertiary paediatric haematology-oncology sites and maintain their clinical practice at that institution. The courses themselves will emphasize the existing literature and practice modalities in paediatric haematology-oncology and incorporate these into some of the present post-diploma baccalaureate courses. Some courses are available using a distance education modality.

CURRICULUM**(Units graded: 10; Units pass/fail: 10)**

3 units NURSING 3P03

3 units NURSING 3Q03

5 units NURSING 3LL2, 3MM3

5 units NURSING 3W05

4 units HTH SCI 3C04

TOTAL UNITS: 20

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for these courses (or their equivalent) in the B.Sc.N. programme.

SCHOOL OF REHABILITATION SCIENCE**WEB ADDRESS:** <http://www-fhs.mcmaster.ca/rehab>

McMaster University offers two Bachelor of Health Science (B.H.Sc.) second-degree programmes in Occupational Therapy and Physiotherapy. McMaster will no longer offer the B.H.Sc. degree completion programme for those who currently hold a diploma from Mohawk College in Occupational Therapy or Physiotherapy.

B.H.Sc. (OT/PT) Second Degree Programmes

The two second degree programmes, offered in collaboration with Lakehead University, have been designed to graduate therapists in two calendar years. These graduates will possess the knowledge, skills and professional behaviour to practice in a complete range of settings in either urban or rural locations. The collaboration with Lakehead University will add a further dimension, that of understanding the specific health issues unique to northern Ontario, as well as an awareness of the career opportunities available in these regions.

The content of the curricula is in accordance with accreditation guidelines and the scope of practice as described by each of the professions. Students are expected to achieve a sense of the influence of family, society, and culture as they explore the mechanisms of health, disease, disability, prevention and treatment.

The aim of the Bachelor of Health Sciences programmes in Occupational Therapy and Physiotherapy is to provide students with the opportunity to build on their first degree and to acquire a professional education. Upon graduation they will be able to function as competent basic-level clinicians in a variety of hospital and/or community health settings. Competence entails the integration of knowledge, skills, and professional behaviour in order to analyze and manage health problems.

PROGRAMME GOALS

The B.H.Sc. programmes in Occupational Therapy and Physiotherapy allow graduates to practise their disciplines with the following skills:

➤ **KNOWLEDGE**

1. understand and apply the theoretical and scientific bases of Occupational Therapy or Physiotherapy;
2. understand the biological, social, cultural and environmental determinants of health, and their relationship with one another;
3. understand the basic principles and methods of scientific inquiry and critical appraisal;
4. understand the importance of disease prevention, health maintenance, health promotion and treatment;
5. understand the factors which affect health policy and the delivery of health care;
6. understand change.

➤ **SKILLS**

1. demonstrate clinical reasoning while managing health-care problems;
2. demonstrate competence in assessment and treatment techniques in Occupational Therapy or Physiotherapy;
3. demonstrate effective oral and written communication skills;
4. function as members of an interdisciplinary health-care team;
5. implement programmes for prevention, health maintenance and health promotion;
6. function in advocacy roles in order to enhance quality of life;
7. demonstrate teaching and supervisory skills in professional practice;
8. demonstrate critical thinking and critical appraisal skills;
9. assess effectiveness of professional practice;
10. adapt to and initiate change.

➤ **PERSONAL QUALITIES**

1. recognize, develop and maintain the personal qualities that are required for professional life:
 - a) respect for each person's individuality;
 - b) empathy in client relationships;
 - c) ethical and professional behaviour;
 - d) self-appraisal of personal attributes in order to build on strengths and overcome weaknesses.
2. function as self-directed, life-long learners and leaders in the profession.

Curriculum Design

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
								ORIENTATION	UNIT I Introductory Unit 14 weeks		HOLIDAYS
								UNIT II Specialty Unit 8 weeks 6 weeks		HOLIDAYS	UNIT III Specialty Unit 8 weeks 6 weeks
UNIT V Specialty Unit 8 weeks 6 weeks		HOLIDAYS	UNIT VI Integration Unit 14 weeks 6 weeks								

Problem-based Tutorials, Inquiry Seminars, Clinical Skill Labs, Independent Study (Unit VI only)

Six-week blocks of full-time clinical fieldwork

Unit Content

The Unit Content presented below for the Occupational Therapy programme reflects curriculum modifications which will be implemented in September 1999 and will apply only to those students entering the programme at that time. Those students currently registered in the programme should reference the 1998-99 Undergraduate Calendar (http://registrar.mcmaster.ca/calendar/year9899/sec_241.htm) or contact Helena Collins, Programme Administrator, (905) 525-9140, ext. 27801 to determine the former Unit Content.

UNIT	OCCUPATIONAL THERAPY	PHYSIOTHERAPY
I	INTRO TO HEALTH CARE AND PROFESSIONAL PRACTICE BASIC SKILLS	MUSCULOSKELETAL I
II	ADULT MENTAL HEALTH	MUSCULOSKELETAL II
III	ADULT PHYSICAL HEALTH	MUSCULOSKELETAL III
IV	CHILD HEALTH	CARDIOPULMONARY
V	AGING AND HEALTH	NEUROLOGY
VI	ADVANCED INTEGRATION OF SKILLS AND KNOWLEDGE IN PREPARATION FOR ENTRY INTO PRACTICE	

Curriculum

The time is divided into six units of full-time study over a period of 24 months. The content of each unit is profession specific; however, there are occasions when Occupational Therapy and Physiotherapy students study together. The total programme consists of 100 units of credit; 70 units of academic study and 30 units (30 weeks) of clinical practice. One of the unique features of the programmes is the integration of clinical education/fieldwork experiences with academic study. Within each of the specialty units, a six-week clinical placement follows eight weeks of academic study.

NORTHERN STUDIES STREAM

Both programmes, Occupational Therapy and Physiotherapy, offer a Northern Studies Stream option. The goal of the NSS is for students to develop an awareness and appreciation of Northern health issues. Half of the students in each programme will participate. Interested students apply for this option during the first term of the programme. Final selection of students for the Northern Studies Stream remains with the University.

The Northern Studies Stream encompasses either one 14-week specialty unit or one six-week clinical fieldwork placement. The eight weeks of academic study occurs at Health Sciences North on the Lakehead University Campus in Thunder Bay and the clinical fieldwork placements occur in various Northwestern Ontario communities.

Currently, the 14-week units offered in the NSS are Units II and III (Physiotherapy) and Unit IV (Occupational Therapy). Limited numbers of the other six-week clinical fieldwork placements are also offered in the Northern Studies Stream.

Funded by the Ministry of Health, travel to and from McMaster and accommodation in Northwestern Ontario is provided for the Northern Studies Stream students. All students are required to agree to the terms and conditions of the Northern Studies Stream.

TEACHING/LEARNING METHODS

The curricula of both programmes emphasize that the process of learning is equal in importance to the content. The learning methods are, therefore, based on the philosophies of self-directed and problem-based learning:

Problem-Based Tutorials

Problem-based learning takes place in small groups in which a tutor acts as a facilitator of student learning. Students are presented with health-care problems that have been carefully designed and selected for each unit. These problems promote the exploration of the underlying biological, psychological, and behavioural determinants of health as well as the principles of therapy. Large group interactive resource sessions may be offered to enhance access to content experts and other resources.

Students learn and practice group skills, share knowledge, become comfortable with changing leadership positions, and give and receive feedback.

The size of tutorial groups may vary from five to seven students. Tutorial group membership is changed for each unit in the programme in order to maximize interaction among students and faculty.

Tutors are usually occupational therapists or physiotherapists who are knowledgeable in the content area of the unit, and expert in tutoring in a problem-based format. The same tutor meets regularly with the group throughout the unit. Tutors also serve as role models in the professional socialization process.

Clinical Skills Laboratories

Clinical skills laboratories use a variety of formats to help students learn the clinical skills of assessment, treatment and other aspects of clinical practice. Laboratory sessions are designed to complement the health-care problems used in problem-based tutorials. The clinical skills learned in the laboratory section of each unit are applied and integrated into the clinical education component of the specialty units.

The focus of clinical skills laboratories changes through the units. Unit I stresses basic clinical skills, Units II through V focus on specialty areas of practice, and Unit VI is designed to develop skills in consultation, administration, and other advanced clinical skills.

Inquiry Seminars

These seminars are designed to provide opportunities to explore and discuss major topic areas and theoretical concepts which are central to the development and practice of the professions. Presentations by content experts, small-group problem-solving, and large-group discussion are utilized to provide the means and impetus for these investigations.

Topics chosen for inquiry seminars are used to complement the major themes in each programme unit and may vary from year to year. The seminar leaders include faculty members and experts from the community.

Clinical Education

Students spend a total of 30 weeks in full-time clinical practice. Clinical education is organized in a variety of health-care facilities including teaching hospitals, community hospitals, health-care agencies, specialized centres, private clinics, and other community facilities throughout Ontario. Students integrate academic learning into practice under the supervision of qualified therapists.

The Academic Coordinator of Clinical Education (PT) or University Fieldwork Coordinator (OT) is responsible for arranging all clinical placements. No student may make her/his own arrangements with any clinical facility.

Placements are limited and subject to availability. Therefore, students will be required to complete some clinical education units in Northwestern Ontario or elsewhere outside of the Hamilton area.

The students are expected to provide their own means of transportation to each clinical facility and to cover costs of travel and parking. Travel to and from the cities where clinical placements will be offered in Northwestern Ontario will be arranged by the Northern Studies Stream, through funding made available through the Ontario Ministry of Health.

Students will be assessed an additional fee for the use of the computerized clinical placement service of the Canadian Association of Occupational Therapists. All students are required to agree to the terms and conditions of the clinical education/fieldwork placements.

Research Internship

An independent study is completed during Unit VI. It may consist of an extensive literature review on a selected topic, a simple research design/proposal, or participation in an ongoing research study or clinical project. Evaluation of the independent study is based on a learning contract which is negotiated by the student with a faculty member during Unit V.

Student Evaluation Methods

A variety of methods are used to assess student performance throughout the programmes, including written and oral evaluations, presentations, and tests of clinical skills.

Admission Policy and Procedure

Enrolment in the second-degree programmes in Occupational Therapy or Physiotherapy is limited to 60 in each programme. Final selection of applicants for admission is made by McMaster University. The admission process considers academic achievement, personal qualities and experience. Personal qualities and experience are assessed on the basis of an autobiographical submission and a personal interview. Assessors are drawn from the faculty, the community, and students.

ELIGIBILITY

Applicants must:

1. At the time of application, for September 1999, have achieved a minimum grade point average of *B-* or 70% (2.7 on the 4 point grade scale) over the last two years of full-time academic study or the equivalent. Effective September 2000, the minimum grade point average will be raised to a *B* or 75% (3.0 on the 4 point grade scale).
2. By June 30 in the year of admission, have completed an undergraduate baccalaureate degree at a recognized university, and have achieved/maintained a minimum overall grade point average of *B-* or 70% over the last two years of full-time academic study or the equivalent.

For those who have pursued their undergraduate degree on a part-time basis, eligibility assessment will be made using the courses equivalent to the last two years.

No preference will be given for any specific subject area in which the degree has been obtained.

Non-convertible grades will be assessed according to the policies and guidelines of the School of Rehabilitation Science, Faculty of Health Sciences.

APPLICATION PROCEDURE

Application packages with detailed instructions are available from:

**OFFICE OF THE REGISTRAR
MCMASTER UNIVERSITY
GILMOUR HALL, ROOM 108
HAMILTON, ONTARIO, L8S 4L8**

or

REGISTRAR'S OFFICE, LAKEHEAD UNIVERSITY

The procedures outlined below must be followed:

- a) The OUAC 105D application form and application fee must be submitted to the Ontario Universities' Application Centre on or before **December 1**. A supplementary application form, consisting of the items in b) and c) below, will be mailed upon receipt of the OUAC application.
- b) The autobiographical submission, the academic record form, and the \$50 assessment fee must be submitted directly to Admissions, OT/PT Building, McMaster University on or before the date in January specified in the application package.
- c) Transcripts for all university degree credit courses and programmes in which the applicant has been enrolled must be submitted directly to Admissions, OT/PT Building, McMaster University on or before the date in January specified in the application package.

Academically eligible applicants are ranked on the basis of their grade point average over the last 2 years of full-time university study or the equivalent, and the score on their autobiographical submission. Those ranked among the top applicants to each of the Occupational Therapy and Physiotherapy programmes are invited for a personal interview.

Interviews are conducted between **April 1** and **May 15** in either **Hamilton** or **Thunder Bay**, according to the applicant's preference. Applicants invited to an interview are notified approximately three weeks in advance of their interview. All applicants are responsible for their own travel costs to and from the interview.

All applicants will be notified of the admission decision by June 1.

DEFERRAL OF REGISTRATION

All applications received by the deadline are considered only for admission in the fall of the same calendar year. Applicants who cannot enter the programme as planned in September of that year may withdraw their application or decline their offer of admission at any time without penalty. Application fees cannot be refunded. Subsequent applications to the programmes will be accepted without prejudice.

Deferred registration is normally not granted. Under exceptional circumstances, candidates who have been offered admission may write a letter to the Programme Chair requesting deferral and stating their reasons. If deferral is granted, the individual **must** register in the following academic year i.e. the approval to defer registration is limited to one year.

FINANCIAL INFORMATION

In 1998-99 the academic fees (tuition and supplementary fees) for a student in the McMaster Undergraduate Occupational Therapy or Physiotherapy Second-Degree programmes were approximately \$6,500 for three terms, September to August. It is estimated that books and supplies cost an additional \$1,500 and in-transit placement costs approximately \$2000 annually.

Financial difficulties are frequently experienced by second degree students. For these programmes difficulties are intensified by the lack of opportunity for summer employment as well as the relative scarcity of financial assistance available to second degree students.

Financial assistance may be available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). To be eligible a student must be a Canadian citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario.

Academic Regulations

Students in the B.H.Sc.(OT) and B.H.Sc.(PT) programmes, in addition to meeting the general University academic regulations, must follow these specific programme requirements.

Registration in the B.H.Sc.(OT) and B.H.Sc.(PT) programmes implies acceptance on the part of the student of the objectives of that programme and the method by which progress towards those objectives is measured. The University reserves the right to cancel the academic privileges of any student at any time that the student's scholastic record or conduct warrants doing so. Where the performance of the student in a clinical setting may jeopardize or endanger the welfare or safety of a patient or a patient's family, the student may be removed from the clinical setting any time during the academic year, until continuation in the course is reviewed.

COURSE LOAD

All courses are required. No exemptions or substitutions will be granted. All course work toward the B.H.Sc.(PT) and B.H.Sc.(OT) must be completed as McMaster University courses. A student may not take a course load consisting of a partial unit. All courses within each unit must be taken concurrently.

DEANS' HONOUR LIST

Students will be evaluated for standing on the Deans' Honour List only upon completion of the programme. Students will be named to the Deans' Honour List if they receive no failing or remedial course grades throughout the programme, and achieve a minimum average of 9.5, calculated using the grades on all courses taken throughout the programme.

CONTINUATION IN THE PROGRAMME

Students are reviewed at the end of each unit, and at the end of the academic component in each of the specialty units (Units II to V). Students must achieve a grade of at least C- in every course at each review to continue in the programme. A grade of F in any course results in a student being required to withdraw from the programme.

A student who obtains a credit for a course, but achieves a grade below C-, is required to successfully complete remedial work in order to continue in the programme. Upon successful completion of the remedial work, the new grade assigned for the course is C- in all cases. The remedial work must be completed prior to the beginning of the next unit unless otherwise specified by the Programme Academic Review Committee. If the remedial work is not successfully completed, the original grade will stand, and the student will be required to withdraw from the programme.

A student is allowed to do remedial work only twice during the programme. Upon the third time that credit is obtained in a course but the grade is below C-, the student is not allowed to perform remedial work, and is required to withdraw from the programme.

The first time a student becomes ineligible for continuation in the programme or voluntarily withdraws from the programme, he/she is permitted to apply for readmission in writing to the Programme Chair. The request must be made at least three months prior to the beginning of the unit to which the student is requesting readmission. Readmission will be dependent on availability of space in the unit to which the student wishes to return and evidence of readiness to return as assessed by the Programme Academic Review Committee. Normally, a student who is readmitted to the programme must repeat all courses of the unit in which he/she became ineligible to continue. A student who voluntarily withdraws from the programme is normally required to complete Unit I before permission to re-enter the programme is given.

A student who either becomes ineligible for continuation in the programme or who voluntarily withdraws from the programme a second time, may reapply only through the regular admissions process.

The latest possible date for readmission is two years from the beginning of the unit from which the student withdrew.

Programmes

B.H.Sc.(OT)

{6405}

YEAR I: 47 UNITS

Unit I OCCUP TH 1T15, 1L17, 1S13
Unit II OCCUP TH 1T23, 1L24, 1S23, 1C26
Unit III OCCUP TH 1T33, 1L34, 1S33, 1C36

YEAR II: 53 UNITS

Unit IV ADULT MENTAL HEALTH (SEPTEMBER 1999 ONLY):
OCCUP TH 2T43, 2L44, 2S43, 2C46
Unit IV CHILD HEALTH (EFFECTIVE SEPTEMBER 2000):
OCCUP TH 2T43, 2L44, 2S43, 2C46
Unit V OCCUP TH 2T53, 2L54, 2S53, 2C56
Unit VI OCCUP TH 2T64, 2M63, 2I65, 2S63, 2C66

B.H.Sc.(PT)

{6444}

YEAR I: 47 UNITS

Unit I PHYSIOTH 1T15, 1L17, 1S13
Unit II PHYSIOTH 1T23, 1L24, 1S23, 1C26
Unit III PHYSIOTH 1T33, 1L34, 1S33, 1C36

YEAR II: 53 UNITS

Unit IV PHYSIOTH 2T43, 2L44, 2S43, 2C46
Unit V PHYSIOTH 2T53, 2L54, 2S53, 2C56
Unit VI PHYSIOTH 2I65, 2M63, 2P62, 2A63, 2G62, 2C66

Honours Biology and Pharmacology Programme (Co-op)

This is a joint programme between the Faculty of Health Sciences and the Faculty of Science (Department of Biology). The Pharmacology courses, which are run in a small group, problem-based format, are the responsibility of the Faculty of Health Sciences, drawn from the following departments: Biomedical Sciences, Medicine, Obstetrics and Gynecology, and Pathology.

Please see the *Faculty of Science, Department of Biology* section for admission requirements.

FACULTY OF HUMANITIES

WEB ADDRESS: <http://www.humanities.mcmaster.ca>

E-MAIL: humfclty@mcmaster.ca

Acting Dean of Humanities

R.H. Johnston/B.A., M.A., Ph.D.

Associate Dean of Humanities (Studies)

F. Minelli/B.A., M.A., Ph.D.

Director of Academic and Administrative Services

P.A. Kalnins/B.A.

Academic Advisors

S.A. Richard/B.A.

C. Schlechta/B.A.

K. Singer

Programme Information Assistant

P. Goodall

Business Manager

S. Mercer

Faculty Advancement Officer

N. Alexanian/B.A.

Advancement Coordinator

C. Wiedemann

Faculty Liaison Officer

P. Self/B.A.

The Humanities at McMaster partake in a distinguished tradition. Our subjects- languages and literatures, history and philosophy, art, drama, music and women's studies- are crucial to self-knowledge and social awareness. They also develop the intellectual skills- critical and creative thinking, oral and written communication, understanding other people- that are vital in a *knowledge society*.

Our faculty members are dedicated scholars who are eager to share their knowledge. We welcome students and scholars who are interested in the application of computers to their subjects, who aspire to excellence in the fine and performing arts, who want deeper understanding of other cultures and mastery of their languages, or who desire to pursue classical, historical or philosophical studies.

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' seven academic units. These are:

- School of Art, Drama and Music
- Department of Classics (Ancient History and Archaeology, Classical Languages and Literature)
- Department of English
- Department of French
- Department of History
- Department of Modern Languages (German, Hispanic Studies, Italian, Japanese, Russian)
- Department of Philosophy

In addition, the Faculty offers the following interdepartmental programmes:

- Combined Honours in Comparative Literature
- Honours Linguistics
- Honours Modern Languages
- Honours Modern Languages and Linguistics
- Combined Honours in Multimedia
- Combined Honours in Women's Studies

PROGRAMMES AND DEGREES

A. Level I Programmes

HUMANITIES I

PROGRAMME NOTES

1. The Faculty offers INQUIRY 1HU3, Inquiry in the Humanities. Humanities I students may choose this course as an elective. For a course description see *Inquiry* or *Humanities* in the *Course Listings* section of this Calendar.

2. Humanities I students are restricted to taking no more than six units of work in any single subject, except in the case of CLASSICS 1B06 and 1L06.
3. Students with an OAC in Greek or Latin will register for six units of Level II Greek or Latin in lieu of the 1Z06 course.
4. Humanities I students are restricted to taking no more than 12 units of introductory (1Z06) language courses.
5. **Portfolio Required: ART 1F06:** The prerequisite for ART 1F06 requires permission of the School of Art, Drama and Music based on a **required portfolio** interview. If you intend to take ART 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the School for a portfolio interview in February/March of the calendar year in which you wish to register for the programme. The portfolio should contain a variety of original work in different media, including work derived from both firsthand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. **Acceptance into ART 1F06 is contingent upon receiving a written confirmation from the School of Art, Drama and Music.**
6. Students wishing to take Music courses other than MUSIC 1A06 must make arrangements with the School of Art, Drama and Music for qualifying tests.

REQUIREMENTS:

Students admitted to Humanities I (0700) must complete 30 units as follows:

18 units	from ART 1F06; ART HIST 1A06; CAYUGA 1Z06; CLASSICS 1B06, 1L06; COMP LIT 1A06; DRAMA 1A06; ENGLISH 1D06; FRENCH 1A06, 1N06, 1Z06; GERMAN 1B06, 1Z06; GREEK 1Z06; HISPANIC 1A06, 1Z06; HISTORY 1A06, 1L06; ITALIAN 1A06, 1Z06, 1ZZ6; JAPANESE 1Z06; LATIN 1Z06; LINGUIST 1A06; MMEDIA 1A03, 1B03, 1C03; MOHAWK 1Z06; MUSIC 1A06, 1B06, 1CC3, 1D03; (See Note 6 above.) OJIBWE 1Z06; PHILOS 1B06, 1D06; POLISH 1Z06; RUSSIAN 1Z06; WOMEN ST 1A06
12 units	Electives, which may include INQUIRY 1HU3

MUSIC I

REQUIREMENTS

Students admitted to Music I (0370) must complete 33 units of work as follows:

21 units	MUSIC 1B06, 1CC3, 1D03, 1E06, 1G03
12 units	Electives, which may include INQUIRY 1HU3

B. Degree Programmes

Upon successful completion of Humanities I, a student may be admitted to a programme of study leading toward a Bachelor of Arts degree. (Completion of Music I may lead to a Bachelor of Music or Bachelor of Arts degree.) There are three ways to complete a Bachelor's degree in the Faculty of Humanities.

SINGLE HONOURS PROGRAMME

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 PROGRAMME

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

MINOR

A minor is an option available to a student enrolled in a four-level programme. A minor consists of at least 18 units of Level II, III, or IV courses beyond the designated Level I course(s), **using elective units only**, that meet the requirements set out in the programme description of that minor. A student is responsible for ensuring that the courses taken meet these requirements. When

registering for courses to be applied towards a minor, in the case of cross-listed courses, students must ensure that they register in the appropriate subject for the minor designation. Those who have the necessary requirements may apply for recognition of that minor when they graduate. If recognition for a minor is granted, this recognition will be recorded on the student's transcript. Minors cannot be revoked once approved, nor applied for retroactively. Students may return for a second degree in the subject in which they have obtained a minor, but only at the Honours level. For further information please refer to *Minors* in the *General Academic Regulations* section in this Calendar.

B.A. PROGRAMME

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. programmes are found after the *Academic Regulations* below.

There are a number of Humanities courses which may be taken as electives without prerequisites. Individual course descriptions, by Department, are given under the section entitled *Course Listings*.

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

SECOND LANGUAGE PROFICIENCY

Students embarking on Humanities programmes should be aware that most graduate schools require, for admission, proficiency in at least one, and frequently two, languages other than English. In this Faculty, proficiency in at least one language other than English is regarded as an essential tool for students interested in Comparative Literature and Linguistics. Generally, proficiency in more than one language is a hallmark of most highly-qualified Humanities' graduates seeking the widest range of post-graduation academic and employment opportunities.

PART-TIME STUDY

Students wishing to enter any programme offered by the Faculty of Humanities and pursue a programme on a part-time basis should consult the appropriate Departmental Counsellor(s) before making their plans.

ACADEMIC REGULATIONS

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

TRANSFER TO THE FACULTY OF HUMANITIES

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

REINSTATEMENT TO THE FACULTY OF HUMANITIES

Students seeking reinstatement must complete the *Returning Student Application* form available at the Office of the Registrar (Gilmour Hall, Room 108) and the Faculty of Humanities (Chester New Hall, Room 112). The completed application and the \$50.00 fee must be submitted to the Office of the Registrar by June 30 for September entry and by November 30 for January entry.

Applications should explain the reasons for the student's inadequate performance, corroborated by two Letters of Reference, and should include relevant documentary evidence, for example a letter from a physician outlining any medical condition that might have affected the student's academic performance or final grades. Reinstatement cases will be carefully screened and the evidence considered will include the student's academic performance before and after admission to McMaster, as well as the nature of the reasons cited in the application letter, the Letters of Reference, and the accompanying documentation. **Reinstatement is not guaranteed.**

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.

REGISTRATION AND COURSE CHANGES

It is the responsibility of the student to ensure that the programme of work undertaken meets the requirements for the degree. When registering or making changes to course selection, students must seek the written approval of the Associate Dean (Studies). Dates for final registration and course changes appear in the *Sessional Dates* section of this Calendar and are rigidly adhered to.

SUMMER IMMERSION PROGRAMMES IN FRENCH

Students must obtain approval from the Associate Dean (Studies) prior to participating in any language immersion programme.

The government-sponsored summer language bursary programme offers university students the opportunity to take French courses at a large number of accredited institutions. Students wishing to attend another university in order to participate in a language immersion programme must: (a) petition the Associate Dean (Studies), (b) submit detailed course descriptions for assessment, and (c) obtain a Letter of Permission.

Students registered in a programme in French may take a maximum of six units of credit in this manner as elective work only. Students not registered in a programme in French may take up to 12 units of credit.

EXCHANGE PROGRAMMES WITHIN CANADA

For information on the *Group of Ten Student Exchange Programme (GOTSEP)*, please refer to the *Academic Facilities, Student Services and Organizations* section of this Calendar under the heading *Student Exchanges*.

THIRD YEAR STUDY ELSEWHERE/ HUMANITIES STUDY ABROAD

Humanities Study Abroad During Level III of Honours Programmes

There are two ways to undertake international studies during Level III of an Honours programme: (i) a Formal Exchange Programme or (ii) a Third Year Study Elsewhere Programme.

(i) Formal Exchange Programme

During Level III of Honours Programmes

Formal Exchange Programmes are those in which McMaster University has an agreement with another institution involving a temporary exchange of students. Exchange students register and pay tuition fees and supplementary fees at McMaster. No tuition is paid at the other institution. See the *General Academic Regulations* section in this Calendar and the sections on *Eligibility* and *Application* below.

(ii) Third Year Study Elsewhere Honours Programme

Qualified Level III students may undertake studies at a university abroad for one or two terms in the Third Year Study Elsewhere Programme. This programme is not available at universities with which McMaster University has a Formal Exchange Agreement.

Students register at McMaster but do not pay tuition to McMaster University. In addition to paying tuition fees at the other institution, students must pay all associated travel, study and living expenses. See the *General Academic Regulations* section in this Calendar and the sections on *Eligibility* and *Application* below.

ELIGIBILITY

Students registered in any Honours or Combined Honours programme in the Faculty of Humanities may apply to replace all or part of the work of their third year with an acceptable programme of study taken at a university or equivalent institution approved by the Faculty of Humanities.

To be eligible to take part in this programme, students must have completed at least 60 units of work with a Cumulative Average of at least 7.0. Individual programmes may have additional requirements. All requirements must be satisfied by the end of the Fall/Winter session (September-April) preceding the commencement

of study elsewhere. Students taking part in this programme do not have the option of graduating with a three-year B.A. degree on the basis of work completed in this programme, but must return to McMaster University to complete their final 30 units of work.

Students may receive up to 30 units of credit for a full year of study at another institution. The awarding of all credit for work completed elsewhere may be confirmed only after departments have received transcripts and reviewed students' academic achievements following their return and after they have officially registered for Level IV. In certain cases, students may be recommended for the Deans' Honour List on the basis of work completed elsewhere.

APPLICATION

Students interested in applying for this programme should consult the Coordinator, Humanities Study Abroad, Togo Salmon Hall, Room 607, and the students' department(s) or School approximately one year before planning to begin their study abroad (i.e. during the Fall term of the year in which they enter Level II). A plan for the completion of the academic programme, approved by the programme counsellor(s), must be submitted together with the application to the Coordinator no later than the end of January. However, application for some exchanges may be due as early as December.

SPRING COUNSELLING

During the Spring Counselling period:

1. Information sessions are held by departments in the Faculty of Humanities to discuss undergraduate programmes, course offerings for the next academic session, etc.;
2. Students seeking admission to a Level II programme for the following Fall/Winter session must complete an **Application for Admission to Level II** available in the Humanities Faculty Office in Chester New Hall, Room 112;
3. Students in Levels II, III, or IV obtain a copy of the new Undergraduate Calendar from the Office of the Registrar and updated Degree Audit Reports from the department offering the programme in which they are registered.

The dates for the Spring Counselling period may vary somewhat from year to year; however, the specific dates and information will be posted on campus, outlined in the campus newspaper and will be announced in some classes. It is the student's responsibility to participate in these counselling activities.

SCHOOL OF ART, DRAMA AND MUSIC

WEB ADDRESS:

<http://www.humanities.mcmaster.ca/~sadm/sadmhome.htm>

The School of Art, Drama and Music offers programmes in:

- Art
- Art History
- Drama
- Multimedia
- Music

In addition, Minors are available in: Art History, Drama, Film and Music.

Programmes In Art and Art History

NOTE

Students intending to do graduate work in the field of Art History should note that most universities offering such programmes require undergraduate work in French, German or Italian for admission. These students are strongly encouraged to include one of these language courses as early as possible in their programme.

Honours Art {2028}

Students wishing to enter this programme must complete an **Application for Admission to Level II** in mid-March in order to be considered for admission.

ADMISSION

Enrolment in Honours Art is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and: (a) a Cumulative Average of at least 6.0, (b) an average of at least 7.0 in ART 1F06 and ART HIST 1A03 and 1AA3 or 1A06, and (c) a grade of at least B- in ART 1F06.

NOTES

1. Students in Honours Art must complete ART 2A06, 2B06, 2C06, and 2F06 before registering in Level III or IV Art courses.
2. Students must achieve a minimum grade of B- in ART 3E06 or 3G06 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 programme may be counted toward the Minor of 24 units.
4. Students wishing to obtain a Minor in Film should note that 24 units of Film courses, listed under Drama courses, are required.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 51 units ART 2A06, 2B06, 2C06, 2F06, 3C03, 3D03, 3DD3, 3E06, 4E12
- 6 units from ART 3A03, 3B03, 3P03, SADM 3A03 or 4A03
- 9 units ART HIST 2A03, 2D03, 3AA3
- 6 units Levels III and IV Art History
- 18 units Electives

Combined Honours in Art and Another Subject

Students wishing to enter this programme must complete an **Application for Admission to Level II** in mid-March in order to be considered for admission.

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and: (a) a Cumulative Average of at least 6.0, (b) a grade of at least B- in ART 1F06; and (c) the successful completion of ART HIST 1A03 and 1AA3 or 1A06.

NOTES

1. Students in Combined Honours Art must complete ART 2A06, 2B06, 2C06 and 2F06 before registering in Level III or IV Art courses.
2. Students are advised of the availability of SADM 4A03 which may be taken for programme credit.
3. Students wishing to substitute ART 4E12 for ART 4C06 must seek permission of the Studio Committee of Instruction.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 39 units ART 2A06, 2B06, 2C06, 2F06, 3D03, 3E06, 4C06
- 6 units ART HIST 2D03, 3AA3
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 9 units Electives

Honours Art History {2029}

Students wishing to enter this programme must complete an **Application for Admission to Level II** in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ART HIST 1A03 and 1AA3 or 1A06.

NOTES

1. Before choosing Level III courses, students should become familiar with the prerequisites for Level IV courses.
2. Art History students may wish to pursue a Minor in Film by completing 24 units of Film courses listed under Drama courses.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 21 units ART HIST 2A03, 2B03, 2C03, 2D03, 2E03, 2I03, 3P03
- 9 units Level III Art History
- 9 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 programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ART HIST 1A03 and 1AA3 or 1A06.

NOTE

Before choosing Level III courses, students should become familiar with the prerequisites for Level IV courses.

REQUIREMENTS

120 units total (Levels I-IV)

30 units	from the Level I programme completed prior to admission into the programme
21 units	ART HIST 2A03, 2B03, 2C03, 2D03, 2E03, 2I03, 3P03
6 units	Level III Art History
3 units	from ART HIST 4AA3, 4BB3, 4C03, 4E03, 4H03, 4V03, 4X03
6 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 programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in ART HIST 1A03 and 1AA3 or 1A06.

REQUIREMENTS

90 units total (levels I-III)

30 units	from the Level I programme completed prior to admission into the programme
15 units	ART HIST 2A03, 2B03, 2C03, 2D03, 2I03
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.

Programmes In Drama

NOTES

- The School of Art, Drama and Music offers a broadly based programme of study in the history, theory, and critical understanding of the dramatic text in performance. Programme requirements at Level II are designed to expose students to the breadth of the study. Level III courses offer more specific approaches to the study of performance. A limited amount of student specialization within the programme is possible at this level. The Honours Seminars at Level IV focus on independent research and are restricted to Level IV Honours Drama students. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
- Students registered in Honours Drama are strongly urged to complete six units of non-introductory work in a language other than English. Students in Combined Honours are strongly urged to complete an introductory course in a language other than English (OAC level or equivalent).

Honours Drama {2148}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in DRAMA 1A06.

NOTES

- A Minor in Film is not permitted in the Honours Drama programme.
- A number of courses that directly pertain to the study of Drama are offered by other departments: Classics, English, French, Modern Languages, Kinesiology, and Women's Studies. These are recommended as electives listed at the end of the Drama course descriptions. Up to nine units from the list may be made available as substitutes for Drama courses, and counted toward the fulfillment of a programme in Drama. Students are advised that there may be restrictions on enrolment in these courses.

REQUIREMENTS

120 units total (Levels I-IV)

30 units	from the Level I programme completed prior to admission into the programme
6 units	from DRAMA 2D06 or 2M06
6 units	Level II Drama
27 units	Level III or IV Drama
6 units	Level IV Drama including at least three units from DRAMA 4C03, 4CC3, 4E03, 4EE3, 4FF3
45 units	Electives

Combined Honours in Drama and Another Subject

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in DRAMA 1A06.

NOTES

- A Minor in Film is not permitted in the Honours Drama programme.
- A number of courses that directly pertain to the study of Drama are offered by other departments: Classics, English, French, Modern Languages, Kinesiology, and Women's Studies. These are recommended as electives listed at the end of the Drama course descriptions. Up to nine units from the list may be made available as substitutes for Drama courses, and counted toward the fulfillment of a programme in Drama. Students are advised that there may be restrictions on enrolment in these courses.

REQUIREMENTS

120 units total (Levels I-IV)

30 units	from the Level I programme completed prior to admission into the programme
6 units	from DRAMA 2D06 or 2M06
6 units	Level II Drama
18 units	Level III or IV Drama
6 units	Level IV Drama including at least three units from DRAMA 4C03, 4CC3, 4E03, 4EE3, 4FF3
36 units	Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
18 units	Electives to total 120 units

B.A. in Drama {1148}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in DRAMA 1A06.

REQUIREMENTS

90 units total (Levels I-III)

30 units	from the Level I programme completed prior to admission into the programme
6 units	from DRAMA 2D06 or 2M06
6 units	Level II Drama
12 units	Level III or IV Drama
36 units	Electives

Minor in Drama

24 units of Drama, of which no more than six units may be from Level I.

Minor in Film

24 units of DRAMA 2X06, 3H03, 3J03, 3R03, 3RR3, 3T03, 3TT3

Multimedia Studies

WEB ADDRESS: <http://www.humanities.mcmaster.ca/~mmedia/>

Subject to final approval, beginning in the 1999-2000 academic year, the School of Art, Drama and Music will offer the following new programme.

Combined Honours B.A. in Multimedia and Another Subject

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in each of two courses from MMEDIA 1A03, 1B03, and 1C03 (formerly HUMAN 1A03, 2E03, and 2H03).

COURSE LIST 1

COMP SCI 1MC3, 1MD3, 1SA3, 2SC3, 3SE3; MMEDIA 2D03, 2E03, 2F03, 2G03, 2H03, 2I03, 3C03, 3D03, 3E03, 3F03, 4C03, 4D03

REQUIREMENTS

- 30 units from the Level I programme completed prior to admission into the programme (including two of MMEDIA 1A03, 1B03, or 1C03)
- 24 units MMEDIA 2A03, 2B03, 2C06, 3A03, 3B03, 4A03, 4B03
- 12 units from Course List 1
- 36 units Courses specified for the other subject
- 18 units Electives to total 120 units

Programmes in Music

NOTES

1. Completion of a Music degree requires considerable daytime attendance.
2. Normally, students with an undergraduate degree in Music will not be admitted to a B.Mus. degree programme as a second undergraduate degree.

MUSIC I {0370}

REQUIREMENTS

Students admitted to Music I must complete 33 units of work as follows:

- 21 units MUSIC 1B06, 1CC3, 1D03, 1E06, 1G03
- 12 units Electives, which may include INQUIRY 1HU3

STUDENTS WHO ENTERED A MUSIC PROGRAMME PRIOR TO SEPTEMBER 1997 SHOULD CONTACT THE MUSIC COUNSELLOR FOR WAYS OF MEETING THEIR PROGRAMME REQUIREMENTS.

Honours Music (B.Mus.) {2370}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of Music I and a Cumulative Average of at least 6.0.

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, 4O03, 4P03, 4Q03

COURSE LIST 2

MUSIC 3B03, 3BB3, 3C03, 3H03, 3R03, 4B03, 4BB3, 4C03, 4H03, 4I03

COURSE LIST 3

SADM 3A03, 4A03; MUSIC 2AA3, 3G03, 3T03, 3U03, 4G03, 4S03, 4U03, 4X03, 4Z03, 4ZZ3

COURSE LIST 4

MUSIC 3E03, 3E06, 4E03, 4E06
(Lesson fees are charged to students taking these courses).

REQUIREMENTS

- 123 units total (Levels I-IV)
- 33 units Music I
- 27 units MUSIC 2B03, 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2G03, 2H03
- 21 units from Course Lists 1 and 2
- 12 units from Course Lists 3 and 4
- 30 units Electives

Combined Honours B.A. in Music and Another Subject

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of Music I and a Cumulative Average of at least 6.0.

COURSE LIST 1

SADM 4A03 and all Level III and IV Music courses except MUSIC 3T03, 3U03, 4X03

COURSE LIST 2

MUSIC 2AA3, 2G03, 3T03, 3U03, 4X03, SADM 3A03

REQUIREMENTS

- 120 units total (Levels I to IV)
- 33 units Music I programme
- 24 units MUSIC 2B06, 2B03, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2H03
- 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.)
- 9 units Electives

B.A. in Music {1378}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of Music I and a Cumulative Average of at least 3.5.

NOTE

Students from another Level I programme may be admitted with a Cumulative average of at least 3.5, a grade of at least C- in MUSIC 1A06, and a successful audition.

COURSE LIST 1

SADM 3A03 and all Level II, III and IV Music courses, except MUSIC 2G03, 3G03, 4G03.

REQUIREMENTS

- 90 units total (Levels I-III)
- 33 units Music I programme
- 15 units MUSIC 2B03, 2B06, 2BB3, 2CC3, 2D03, 2H03
- 12 units from Course List 1
- 30 units Electives

Minor in Music

24 units of Music, of which no more than 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 an Honours Music degree programme at McMaster; and
2. Students enrolled in other McMaster degree programmes, as well as musicians in the community, such as graduates from the Royal Conservatory of Music, Mohawk College, etc., who wish to receive formal recognition for their musical achievements.

The Diploma will require completion of **30 units** as follows:

18 units MUSIC 1E06, 1G03, 2E06, 2G03

12 units from MUSIC 3E06, 3G03, 4E06, 4G03

Lesson fees: Lesson fees are charged over and above tuition for MUSIC 1E06, 2E06, 3E06 and 4E06. Students registered in Honours Music will not be charged extra fees for MUSIC 1E06 and 2E06.

For those registered in a degree programme at McMaster University, the 12 units of Levels III and IV courses must be taken over and above the total number of units required for a McMaster degree.

Upon completion of the course work, students will be required to complete a recital presentation of approximately 40 minutes.

GROUP 1 - MCMASTER B.MUS. STUDENTS

Students who wish to receive a Diploma in Music Performance must have completed MUSIC 2E06 with a grade of at least A-. Students should request consideration, in writing, from the School of Art, Drama and Music by April 15 of their second year in the programme, or for transfer students, at the time of enrolment in the Honours Music programme.

GROUP 2 - OTHERS

ADMISSION:

Completion of 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 of rudiments of theory (Grade 2 level); and
5. Interview.

Auditions take place between January and March. Applicants must contact the School of Art, Drama and Music to arrange for an audition. Advanced credit, up to a maximum of 18 units, may be determined on an individual basis.

DEPARTMENT OF CLASSICS

WEB ADDRESS:

<http://www.humanities.mcmaster.ca/~classics/clashome.htm>

NOTES

1. Students in a Classics programme may choose courses from the following subfields: Ancient History and Society, Ancient Philosophy, Classical Archaeology and Art History, Classical Literature in Translation, Greek Language and Literature, Latin Language and Literature.
2. With the approval of the Department of Classics and the Associate Dean of Humanities (Studies), students who have completed 60 units of work of any Honours programme in Classics may replace all or part of their Level III work by courses of study at a university or equivalent institution abroad. Consult the Department for further details.
3. Students may receive up to six units of credit for archaeological field work at an approved Classical site. Consult the Department for further details.

4. Students intending to do graduate work in the field of Classics should note that most universities offering such programmes require undergraduate work in Greek and Latin for admission. These students are strongly encouraged to include Greek and Latin courses as early as possible in their programme.
5. Students intending to do graduate work in the field of Classics are strongly encouraged to include an independent study course (CLASSICS 4T03) in the final level of their programme.

Honours Classics

(PROGRAMME A: ANCIENT HISTORY AND ARCHAEOLOGY) {2131}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in one of: CLASSICS 1B06, 1L06, GREEK 1Z06, or LATIN 1Z06. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

REQUIREMENTS

120 units total (Levels I-IV)

- | | |
|----------|--|
| 30 units | from the Level I programme completed prior to admission into the programme |
| 24 units | from CLASSICS 2A03, 2B03, 2C03, 2K03, 2L03, 2LL3, 2Z03, 3C03, 3CC3, 3E03, 3EE3, 3G03, 3H03, 3LL3, 3MM3, 3Q03, 3R03, 3S03, 3T03, 3UU3, 3VV3 |
| 6 units | from CLASSICS 4B03, 4BB3, 4D06, 4E03, 4LL6, 4T03 |
| 24 units | Levels II, III and IV Classics, Greek, Latin |
| 36 units | Electives |

Honours Classics

(PROGRAMME B: CLASSICAL LANGUAGES AND LITERATURE) {2132}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in one of GREEK 1Z06 or LATIN 1Z06. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.) Students are encouraged to include a Level I Classics course in their Level I programme.

REQUIREMENTS

120 units total (Levels I-IV)

- | | |
|----------|--|
| 30 units | from the Level I programme completed prior to admission into the programme |
| 6 units | from CLASSICS 2D03, 2E03, 2H03, 3EE3, 3I03, 3II3, 3T03 |
| 24 units | Greek (including GREEK 1Z06, if not completed in Level I) |
| 24 units | Latin (including LATIN 1Z06, if not completed in Level I) |
| 6 units | Levels II, III and IV Classics, Greek, Latin |
| 30 units | Electives |

Combined Honours in Classics and Another Subject

(PROGRAMME A: ANCIENT HISTORY AND ARCHAEOLOGY)

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in one of: CLASSICS 1B06, 1L06, GREEK 1Z06, or LATIN 1Z06 (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 21 units from CLASSICS 2A03, 2B03, 2C03, 2K03, 2L03, 2LL3, 2Z03, 3C03, 3CC3, 3E03, 3EE3, 3G03, 3H03, 3LL3, 3MM3, 3Q03, 3R03, 3S03, 3T03, 3UU3, 3VV3
- 6 units from CLASSICS 4B03, 4BB3, 4D06, 4E03, 4LL6, 4T03
- 9 units Levels II, III and IV Classics, Greek, Latin
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

Combined Honours in Classics and Another Subject

(PROGRAMME B: CLASSICAL LANGUAGES AND LITERATURE)

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in GREEK 1Z06 or LATIN 1Z06. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 6 units from CLASSICS 2D03, 2E03, 2H03, 3EE3, 3I03, 3II3, 3T03
- 24 units Greek or Latin
- 6 units Levels II, III and IV Classics, Greek, Latin
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

B.A. in Classics {1130}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 and a grade of at least C- in one of: CLASSICS 1B06, 1L06, GREEK 1Z06, or LATIN 1Z06. (Students with OAC Ancient Greek may substitute six units of Level II Greek; students with OAC Latin may substitute six units of Level II Latin.)

NOTES

1. Students entering the programme with six units of Greek or Latin who have not also completed a Level I Classics course are strongly encouraged to include CLASSICS 2L03, 2LL3 in their Level II programme.
2. Students are encouraged to include at least six units of Greek or Latin in their programme. GREEK 1Z06 and LATIN 1Z06, if not completed in the Level I programme, may be taken as elective courses.

REQUIREMENTS

90 units total (Levels I-III)

- 30 units from the Level I programme completed prior to admission into the programme
- 24 units Classics, Greek, Latin, including at least nine units of Levels III and IV courses
- 36 units Electives

Minor in Classics

24 units of Classics, of which no more than six units may be from Level I.

Minor in Greek

24 units of Greek, of which no more than six units may be from Level I.

Minor in Latin

24 units of Latin, of which no more than six units may be from Level I.

DEPARTMENT OF ENGLISH

WEB ADDRESS:

<http://www.humanities.mcmaster.ca/~english/enghome.htm>

Honours Arts & Science and English

(B.Arts Sc.; See Arts & Science Programme)

STUDENTS WHO ENTERED AN ENGLISH PROGRAMME PRIOR TO SEPTEMBER 1997 SHOULD CONTACT THE DEPARTMENTAL COUNSELLOR FOR WAYS OF MEETING THEIR PROGRAMME REQUIREMENTS.

AREAS OF STUDY

The Department has defined four areas of study. Students should consult the Programme Notes for their specific programme to determine their requirements regarding these areas. Level II and III courses are allocated to the areas as follows:

	AREA	COURSES
AREA 1	British Literature to 1660	3C06, 3I06, 3K06, 3L06, 3V06
AREA 2	British Literature 1660 to Present	2I06, 3G06, 3M03, 3MM3
AREA 3	Canadian, American and Post-Colonial	2G06, 2H06, 3R06
AREA 4	Theory and Genre	2B06, 2K06, 3J06, 3Q03, 3QQ3, 3N06

Honours English {2200}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ENGLISH 1D06.

NOTES

1. When registering, students should distribute their required English courses (see *Requirements* below) as follows:
 - Level II 18 units of Levels II and/or III English
 - Level III 18 units of Levels II and/or III English
 - Level IV six units of Levels II and/or III English; 12 units of Level IV English seminars (No student may take more than 12 units of Level IV seminars.)
2. With permission of the Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in second term. Students who are interested in taking 4X03 should contact the faculty member chairing the 4X03 committee early in the **first** term.
3. Most graduate programmes in English require proficiency in a second language. Students who plan to pursue graduate studies in English are strongly encouraged to include in their programme a second language beyond the introductory level.

REQUIREMENTS*120 units total (Levels I-IV)*

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units from Area 1 English courses
- 6 units from Area 2 English courses
- 6 units from Area 3 English courses
- 12 units from Area 4 English courses
- 6 units from Areas 1-4 and ENGLISH 3B03, 3CC3, 3F03, 3HH3, 3II3, 3P03, 3S03, 3W03, 3X03, 3XX3, 3Z03
- 12 units Level IV English seminars
- 36 units Electives

Combined Honours in English and Another Subject

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ENGLISH 1D06.

NOTES

- 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.)
- With permission of the Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in second term. Students who are interested in taking 4X03 should contact the faculty member chairing the 4X03 committee early in the **first** term.
- Most graduate programmes in English require proficiency in a second language. Students who plan to pursue graduate studies in English are strongly encouraged to include in their programme a second language beyond the introductory level.

REQUIREMENTS*120 units total (Levels I-IV)*

- 30 units from the Level I programme completed prior to admission into the programme
- 6 units from Area 1 English courses
- 6 units from Area 2 English courses
- 6 units from Area 3 English courses
- 6 units from Area 4 English courses
- 6 units from Areas 1-4 and ENGLISH 3B03, 3CC3, 3F03, 3HH3, 3II3, 3P03, 3S03, 3W03, 3X03, 3XX3, 3Z03
- 6 units Level IV English seminars
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units)
- 18 units Electives to total 120 units

B.A. in English {1200}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in ENGLISH 1D06.

NOTE

- When registering, students should distribute their required English courses (see *Requirements* below) as follows
- Level II 12 units of Levels II and/or III English
 - Level III 18 units of Levels II and/or III English

REQUIREMENTS*90 units total (Levels I-III)*

- 30 units from the Level I programme completed prior to admission into the programme
- 6 units from Area 1 English courses
- 6 units from Area 2 English courses
- 6 units from Area 3 English courses
- 6 units from Area 4 English courses
- 6 units from Areas 1-4 and ENGLISH 3B03, 3CC3, 3F03, 3HH3, 3II3, 3P03, 3S03, 3W03, 3X03, 3XX3, 3Z03
- 30 units Electives

Minor in English

ENGLISH 1D06 and 18 units of Levels II and III English.

DEPARTMENT OF FRENCH**WEB ADDRESS:**

<http://www.humanities.mcmaster.ca/~french/frenhome.htm>

Honours Arts & Science and French

(B.Arts Sc.; See Arts & Science Programme)

Honours French**PROGRAMME A: LANGUAGE AND LITERATURE {2231}**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6.

NOTE

Upon completion of 60 units of work (including 18 units of required Level II French courses), and with the approval of the Department of French and the Associate Dean of Humanities (Studies), Level III of Honours French may be replaced by courses of study at a French-language university.

COURSE LIST 1

FRENCH 4F03, 4I03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4X03, 4Y03

REQUIREMENTS*120 units total (Levels I-IV)*

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units FRENCH 2B03, 2BB3, 3C03, 4A03
- 6 units from FRENCH 2G03, 3CC3, 3F03, 4B03, 4BB3
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 2D03, 2E03, 3AA3, 3BB3, 3Z03, 4U03
- 3 units from FRENCH 3K03, 3KK3
- 3 units from FRENCH 3Q03, 3QQ3
- 3 units from FRENCH 3A03, 3SS3, 4J03
- 9 units from Course List 1
- 9 units Levels III and IV French
- 36 units Electives

Honours French**PROGRAMME B: LANGUAGE, LINGUISTICS AND TRANSLATION {2232}**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6. Students who are interested in entering this programme are advised to take LINGUIST 1A06.

NOTE

Upon completion of 60 units of work (including 18 units of required Level II French courses), and with the approval of the Department of French and the Associate Dean of Humanities (Studies), Level III of Honours French may be replaced by courses of study at a French-language university.

COURSE LIST 1

FRENCH 3A03, 3AA3, 3BB3, 3K03, 3KK3, 3Q03, 3QQ3, 3SS3, 3Z03, 4F03, 4I03, 4J03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4U03, 4Y03

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units FRENCH 2B03, 2BB3, 2G03, 2H03
- 12 units FRENCH 3C03, 3CC3, 3GG3, 3H03
- 6 units FRENCH 4A03, 4BB3
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 9 units from Course List 1
- 9 units from FRENCH 3I03, 4E03, 4H03, 4S03, 4X03
- 12 units Linguistics courses beyond Level I
- 24 units Electives

Combined Honours in French and Another Subject

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in FRENCH 1A06 or 2M06 or a grade of at least B+ in FRENCH 1N06 or 1NN6.

NOTE

Upon completion of 60 units of work (including at least 12 units of required Level II French courses), and with the approval of the Department of French and the Associate Dean of Humanities (Studies), up to 15 units of Level III French may be replaced by courses of study at a French-language university.

COURSE LIST 1

FRENCH 4F03, 4I03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4X03, 4Y03

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units FRENCH 2B03, 2BB3, 3C03, 4A03
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 3K03, 3KK3
- 3 units from FRENCH 3Q03, 3QQ3
- 3 units from FRENCH 3A03, 3BB3, 3Z03, 4U03
- 6 units from Course List 1
- 3 units from FRENCH 3A03, 3SS3, 4J03
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

B.A. in French {1230}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in FRENCH 1A06 or 2M06 or a grade of at least C+ in FRENCH 1N06 or 1NN6.

REQUIREMENTS

90 units total (Levels I-III)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units FRENCH 2B03, 2BB3, 3C03, 3F03
- 3 units from FRENCH 2J03, 2JJ3

- 3 units from FRENCH 2W03, 2WW3
- 6 units from FRENCH 3A03, 3K03, 3KK3, 3Q03, 3QQ3, 3SS3
- 12 units Levels II, III or IV French
- 24 units Electives

Minor in French

- 6 units from FRENCH 1A06/2M06, 1N06
- 9 units FRENCH 2B03, 2BB3, 3C03
- 3 units from FRENCH 2E03, 2J03, 2JJ3, 2W03, 2WW3, 3AA3, 3BB3, 3K03, 3KK3, 3Q03, 3QQ3, 3Z03
- 6 units Level II or III French, excluding FRENCH 2M06 and 2Z06

DEPARTMENT OF HISTORY

WEB ADDRESS:

<http://www.humanities.mcmaster.ca/~history/histhome.htm>

SUBFIELDS

The Department has defined six fields of study. Students should consult the Programme Notes for their specific programme to determine the requirements regarding these fields. Level II and III courses are allocated to the fields as follows:

- European HISTORY 2A06, 2BB6, 2C06, 2I06, 3D03, 3F03, 3HH3, 3H06, 3I03, 3Q03, 3R03, 3Z03, 3ZZ3
- Ancient HISTORY 2K03, 2L03, 2LL3, 3C03, 3CC3, 3DD3, 3EE3, 3LL3, 3MM3, 3UU3, 3VV3
- Asian HISTORY 2EA3, 2EB3, 2GG3, 3A03, 3AA3, 3B03, 3GG3
- Canadian HISTORY 2J06, 3K03, 3G03, 3N03, 3P03, 3U03
- British HISTORY 2N06, 3JJ3, 3RR3, 3S03, 3SS3, 3TT3
- The Americas HISTORY 2H06, 3BB3, 3X03, 3XX3, 3YY3

Honours Arts & Science and History

(B.Arts Sc.; See Arts & Science Programme)

Honours History {2290}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I History course.

NOTES

1. In selecting courses, students must ensure that they take a minimum of six units in each of three fields of History. For this purpose the Department has established the following six fields: European, Ancient, Asian, Canadian, British and the Americas (excluding Canada). This requirement must be satisfied by the end of Level III. All Level II and III History courses from the above list may be used towards this requirement. Students are permitted a maximum of 24 units of work in any one of the preceding fields. Additional History courses may be taken as electives.
2. The first 36 units of History beyond Level I must include one Level IV seminar, to be taken following the completion of at least 12 units of Level II History.
3. HUMAN 2F03 (Selected Interdisciplinary Topics in Medieval Life and Culture) may be taken as a substitute for three units of Level II History.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 18 units Level II History
- 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 programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I History course.

NOTES

- In selecting courses, students must ensure that they take a minimum of three units in each of three fields of History. For this purpose the Department has established the following six fields: European, Ancient, Asian, Canadian, British and the Americas (excluding Canada). This requirement must be satisfied by the end of Level III. All Level II and III History courses from the above list may be used toward this requirement. Students are permitted a maximum of 18 units of work in any one of the preceding fields. Additional History courses may be taken as electives.
- No Level IV seminar may be taken before completion of 12 units of History beyond Level I.
- HUMAN 2F03 (Selected Interdisciplinary Topics in Medieval Life and Culture) may be taken as a substitute for three units of Level II History.

REQUIREMENTS

120 units total (Levels I-IV)

- | | |
|----------|---|
| 30 units | from the level I programme completed prior to admission into the programme |
| 12 units | Level II History |
| 6 units | Level III History |
| 12 units | Level IV History |
| 36 units | Courses specified by the other subject. (Combinations with Social Sciences may require more than 36 units.) |
| 24 units | Elective to total 120 units |

B.A. in History {1290}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in any Level I History course.

NOTES

- In selecting courses, students must ensure that they take a minimum of three units in each of three fields of History. For this purpose the Department has established the following six fields of History: European, Ancient, Asian, Canadian, British, and the Americas (excluding Canada). All Level II and III History courses from the above list may be used towards this requirement. Students are permitted a maximum of 12 units of work in any one of the preceding fields. Additional History courses may be taken as electives.
- HUMAN 2F03 (Selected Interdisciplinary Topics in Medieval Life and Culture) may be taken as a substitute for three units of Level II History.

REQUIREMENTS

90 units total (Levels I-III)

- | | |
|----------|--|
| 30 units | from the level I programme completed prior to admission into the programme |
| 12 units | Level II History |
| 12 units | Level III History |
| 36 units | Electives |

Minor in History

24 units of History of which no more than six units may be from Level I. Consult the *Course Listings* section for course prerequisites and limited enrolment courses.

JAPANESE STUDIES

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

Combined Honours in Japanese Studies and Another Subject

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in JAPANESE 1Z06. Students who have not fulfilled this requirement should consult the Director of the Committee of Instruction.

REQUIREMENTS

120 units total (Levels I-IV)

- | | |
|----------|---|
| 30 units | from the Level I programme completed prior to admission into the programme |
| 18 units | JAPANESE 2Z06, 3ZZ6, 4L03, 4Z03 |
| 6 units | JAPAN ST 2P06 |
| 12 units | from JAPANESE 3B03, JAPAN ST 2C03, 3B03, 3E03, 3H03, 3J03, 3JJ3, 3P03, 3S03, 3UU3, 4A06, 4B03, HISTORY 4BB6, POL SCI 4MM6 |
| 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 Japanese Studies

JAPANESE 1Z06 and JAPAN ST 2P06 and 12 additional units of Japanese or Japanese Studies courses.

DEPARTMENT OF MODERN LANGUAGES

WEB ADDRESS:

<http://www.humanities.mcmaster.ca/~modlang/mihome.htm>

The Department of Modern Languages offers B.A. Honours programmes in:

- Comparative Literature
- Linguistics
- Modern Languages and Linguistics
- Modern Languages (German, Italian, Spanish)

In addition, Minors are available, using electives only, in: Comparative Literature, German, Hispanic Studies, Italian, Linguistics, Russian.

Language courses in Japanese and Polish are also offered by the Department.

Honours Arts & Science and Comparative Literature

(B.Arts.Sc.; See Arts & Science Programme)

Combined Honours in Comparative Literature and Another Subject

This programme is designed for students who wish to combine the study of Comparative Literature (taught in English) with one of German, Italian, or Spanish from the Department of Modern Languages or with a subject offered by another department.

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in COMP LIT 1A06. Students are strongly advised to include a language other than English in their Level I programme.

NOTES

- Students combining with a subject other than a language must successfully complete six units of a language other than English, if this was not completed in Level I. The Department strongly advises students to fulfill this requirement before Level III.

- Upon completion of 60 units of work and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 15 units COMP LIT 2A03, 2AA3, 3D03, 3DD3, 3QQ3
- 6 units from COMP LIT 4AA3, 4B03, 4C03, 4E03
- 15 units from Levels II, III and IV Comparative Literature
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units (See Note 1 above.)

Honours Linguistics {2312}

STUDENTS WHO ENTERED THIS PROGRAMME PRIOR TO SEPTEMBER 1999 SHOULD CONTACT THE DEPARTMENTAL COUNSELLOR FOR WAYS OF MEETING THEIR PROGRAMME REQUIREMENTS.

This programme is designed for students who are interested in exploring the scientific study of speech (phonology, morphology, syntax, semantics, etc.) while acquiring practical skills in one or more languages.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in LINGUIST 1A06 and completion of at least six units of language study.

NOTES

- In this programme students are required to study at least two languages. The department has defined four language groups (see below) for this purpose and students must take at least six units from two of these groups. By graduation, therefore, students will have completed at least six units of one language and 18 units of a second language, including 12 units above Level I.

a. Modern Indo-European

French, German, Italian, Russian, Spanish

b. Classical

Greek, Hebrew, Latin, Sanskrit

c. Modern Non-Indo-European

Japanese

d. Indigenous Languages

Cayuga, Mohawk, Ojibwe

- Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.
- Students who intend to take Psychology courses from Course List 1 should take PSYCH 1A03 and 1AA3 in their Level I programme.

COURSE LIST 1

All Linguistics courses beyond Level I; all language courses (this includes all courses which study texts in languages other than English, or are taught in languages other than English); ANTHROP 2L03, 3L03, 4T03; HUMAN 2C03, 2E03, 3F03, 3G03; MMEDIA 1A03, 2A03, 2D03; PHILOS 2B03, 3F03, 4D03; PSYCH 2E03, 2H03, 2O03, 3A03, 3B03, 3O03, 3P03, 3U03

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 15 units from LINGUIST 2LL3, 3I03, 3II3, 3M03, 4XX3; ANTHROP 2L03, 2M03
- 9 units from LINGUIST 3P03, 3X03, 4D03, 4X03
- 6 units LINGUIST 2A03, 2AA3
- 3 units LINGUIST 4B03
- 12 units from one of the languages taken in Note 1 above
- 21 units from Course List 1
- 24 units Electives

Combined Honours Linguistics and Another Subject

This programme is designed for students who want to study the core components, acquire practical knowledge of one language, and combine this with another subject either from the Faculty of Humanities or from another Faculty. This programme is a good preparation for careers in which linguistics is applied in other fields such as speech pathology, communications, language acquisition and computing.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in LINGUIST 1A06 and completion of at least six units of language study.

NOTES

- Students wishing to combine Linguistics with a Modern Language (German, Italian or Spanish) should register in the Honours Modern Languages and Linguistics programme.
- Students who combine Linguistics with the study of French or Japanese Studies will substitute additional Linguistic courses for the 12 units of language beyond Level I required in the programme.
- Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from Level I programme completed prior to admission into the programme
- 12 units from LINGUIST 2A03, 2AA3, 2LL3, 3P03, 3X03, 4B03, 4D03, 4X03, 4XX3
- 12 units from ANTHROP 2L03, 2M03, LINGUIST 3I03, 3II3, 3M03
- 12 units from a language other than English, above Level I (See Note 2 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

Honours Modern Languages and Linguistics {2363}

This programme combines the study of two or more modern languages (French, German, Italian, Japanese, Spanish) with a concentration in Linguistics (focusing on sociolinguistics, pragmatics, applied linguistics).

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including 12 units covering two different languages other than English with grades of at least B-. Students are strongly urged to complete LINGUIST 1A06 in their Level I programme. If not, LINGUIST 1A06 must be included in Level II of their programme.

NOTES

- Students entering the programme with FRENCH 1Z06 must complete FRENCH 1N06 or 2Z06, in addition to the 18 units of French, beyond Level I.
- Upon completion of 60 units and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

COURSE LIST 1

All Linguistics and language courses beyond Level I (these include all courses which study texts in languages other than English, or are taught in languages other than English); ANTHROP 2L03, 2LC3, 2M03, 3LC3, 4T03; HUMAN 3F03, 3G03; MMEDIA 2A03, 2D03

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme

18 units LINGUIST 2A03, 2AA3, 3X03, 4B03, 4D03, 4X03

18 units from a language other than English (above Level I)

18 units from a second language other than English (above Level I)

18 units from Course List 1

18 units Electives

Honours Modern Languages {2362}

This programme combines the study of two modern languages (German, Italian and Spanish) and literature in those languages with literary and linguistic theory.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including 12 units covering two different languages with grades of at least B- in each course chosen from the following: GERMAN 1B06, 1Z06, HISPANIC 1A06, 1Z06, ITALIAN 1A06, 1Z06, 1ZZ6. In addition, students must successfully complete at least six units from COMP LIT 1A06 and LINGUIST 1A06, whichever course was not taken in Level I must be included in Level II of the programme.

NOTES

1. When selecting their courses, students must ensure that the overall total includes at least 24 units of Level III and IV Comparative Literature, Linguistics and language courses.
2. Upon completion of 60 units and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

COURSE LIST 1

All Level II, III and IV courses in Comparative Literature, Linguistics, German, Hispanic Studies, Italian and Russian

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme

3 units COMP LIT 2C03

6 units LINGUIST 2A03, 2AA3

3 units from COMP LIT 2A03, 2AA3

54 units 27 units above Level I in each of two languages (German, Italian or Spanish) and their literatures

6 units from Course List 1 (excluding the two languages chosen)

18 units Electives to total 120 units

Combined Honours in Modern Languages and Another Subject

This programme is designed for students who wish to combine the study of one modern language (German, Italian or Spanish) and literature in that language with another subject.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0, including six units from the following list with a grade of B- in each course chosen: GERMAN 1B06, 1Z06, HISPANIC 1A06, 1Z06, ITALIAN 1A06, 1Z06, 1ZZ6. In addition, students must successfully complete at least six units from COMP LIT 1A06 or LINGUIST 1A06.

NOTES

1. When selecting their courses, students must ensure that the overall total includes at least 18 units of Level III and IV Comparative Literature, Linguistics and language courses.
2. Upon completion of 60 units and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

COURSE LIST 1

All Level II, III and IV courses in Comparative Literature, Linguistics, German, Hispanic Studies, Italian and Russian.

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme

3 units COMP LIT 2C03

3 units LINGUIST 2A03

3 units from Course List 1

27 units courses above Level I from one of: German, Italian or Spanish

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

Minors**Minor in Comparative Literature**

24 units of Comparative Literature, of which no more than six units may be taken from Level I.

Minor in German

24 units of German, of which no more than six units may be taken from Level I.

Minor in Hispanic Studies

24 units of Hispanic Studies, of which no more than six units may be taken from Level I.

Minor in Italian

24 units of Italian, of which no more than six units may be taken from Level I.

Minor in Linguistics

24 units of Linguistics, of which no more than six units may be taken from Level I.

Minor in Russian

24 units of Russian, of which no more than six units may be from Level I.

MULTIMEDIA STUDIES

WEB ADDRESS: <http://www.humanities.mcmaster.ca/~mmedia/>

Subject to final approval, beginning in the 1999-2000 academic year, the School of Art, Drama and Music will offer the following new programme.

Combined Honours B.A. in Multimedia and Another Subject

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in each of two courses from MMEDIA 1A03, 1B03, and 1C03 (formerly HUMAN 1A03, 2E03, and 2H03).

COURSE LIST 1

COMP SCI 1MC3, 1MD3, 1SA3, 2SC3, 3SE3; MMEDIA 2D03, 2E03, 2F03, 2G03, 2H03, 2I03, 3C03, 3D03, 3E03, 3F03, 4C03, 4D03

REQUIREMENTS

30 units from the Level I programme completed prior to admission into this programme (including two of MMEDIA 1A03, 1B03 or 1C03)
 24 units MMEDIA 2A03, 2B03, 2C06, 3A03, 3B03, 4A03, 4B03
 12 units from Course List 1
 36 units Courses specified for the other subject
 18 units Electives to total 120 units

DEPARTMENT OF PHILOSOPHY

WEB ADDRESS:

<http://www.humanities.mcmaster.ca/~philos/philhome.htm>

Honours Arts & Science and Philosophy

(B.Arts Sc.; See Arts & Science Programme)

Honours Philosophy {2420}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES

1. Students 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 Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme
 27 units PHILOS 2A06, 2C06, 3A06, 3G03, 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 programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES

1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme
 12 units PHILOS 2A06, 2C06
 3 units from PHILOS 2B03, HUMAN 2C03
 15 units Levels III and IV Philosophy
 6 units Level IV Philosophy
 36 units Courses specified by the other subject. (Combinations with Social Science may require more than 36 units.)
 18 units Electives to total 120 units

Honours Philosophy and Biology (B.A.) {2420050}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in any Level I Philosophy course (or, 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 with a grade of at least B- and six units of Level I Mathematics. Students are cautioned to observe that CHEM 1AA3 is the normal prerequisite for BIOLOGY 2B03 and BIOLOGY 2C03, which are required courses in the programme. **Enrolment in this programme is limited.**

NOTES

1. Students 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 Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme
 12 units BIOLOGY 2B03, 2C03, 2E03, 2F03 (CHEM 2O06 or both CHEM 2O0A3 and 2O0B3 may replace six units of Biology courses)
 24 units Level III and IV Biology courses
 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 Level III or IV Philosophy
 3 units Level IV Philosophy
 18 units Electives to total 120 units

Honours Philosophy and Mathematics (B.A.) {2320420}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in each of MATH 1A03 or 1AA3 and MATH 1B03, and a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in six units of work acceptable to the Department of Philosophy.

NOTES

1. Students 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 Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 24 units MATH 2A03, 2A03, 2C03, 2R03, 2S03, 3A03, 3E03, 3X03
- 3 units from MATH 3AA3, 3EE3
- 3 units from MATH 4B03, 4E03, 4X03
- 12 units from Level III and IV Mathematics, Statistics
- 12 units PHILOS 2A06, 2C06
- 3 units PHILOS 2B03
- 21 units Level III or Level IV Philosophy
- 3 units Level IV Philosophy course
- 9 units Electives

B.A. in Philosophy {1420}

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in any Level I Philosophy course.

NOTE

Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.

REQUIREMENTS

90 units total (Levels I-III)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units PHILOS 2A06, 2C06
- 3 units from PHILOS 2B03, HUMAN 2C03
- 3 units Levels II, III or IV Philosophy
- 6 units Levels III or IV Philosophy
- 36 units Electives

Minor in Philosophy

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 PROGRAMME

WEB ADDRESS: <http://www.mcmaster.ca/womensst>

Combined Honours B.A. in Women's Studies and Another Subject

Women's Studies may be taken as a Combined Honours degree or as a Minor. All Women's Studies courses are interdisciplinary, allowing students to explore the relationship between different branches of knowledge and to examine critically different approaches to knowledge construction and theoretical positions in understanding the contributions and social locations of women. Graduates of the Programme will be able to choose from a wide career list which includes industrial and government consulting, personnel management, labour relations, education and health care professions. The Programme's focus on research prepares students for graduate school.

ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in WOMEN ST 1A06.

NOTES

- Students who have not taken WOMEN ST 1A06 because they have transferred from another university may be considered for admission to the programme if they are deemed by the Admissions Committee to have fulfilled requirements equivalent to WOMEN ST 1A06.

- In Levels II, III and IV, students must take the required six-unit Women's Studies course appropriate to their level and six additional units of approved discipline-related courses at each level.
- The courses required for the Women's Studies portion of the Combined Honours programme may not include courses offered in the student's other subject area.

REQUIREMENTS

- 30 units from Level I, completed prior to admission to the Programme (See Admission above.)
- 6 units WOMEN ST 2A06
- 6 units from WOMEN ST 2B06, 2C06, 2D03, 2H03, 2HH3, 2K06; ANTHROP 2R03; HUMAN 2F03; RELIG ST 2B03, 2BB3, 2SS3; SOCIOL 2Q06, 2U06
- 6 units WOMEN ST 3A06
- 6 units WOMEN ST 3B03, 3C03, 3CC3, 3D06, 3E03, 3F06, 3X03; ANTHROP 3RR3; LABR ST 3E03; SOCIOL 3D03, 3E03, 3X03
- 6 units WOMEN ST 4A06
- 6 units WOMEN ST 4B06, 4BJ3, 4C06; HISTORY 4H06; KINESIOL 4T03; SOCIOL 4U03; SOC WORK 4C03, 4R03
- 18 units Elective course work beyond Level I

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, French, Geo (formerly Geography courses), 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

- 6 units WOMEN ST 1A06
- 18 units Level II, III Women's Studies courses as listed under *Women's Studies* in the *Course Listings* section of this Calendar

FACULTY OF SCIENCE

WEB ADDRESS: <http://www.science.mcmaster.ca>

Dean of Science

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

Associate Dean of Science (Studies)

T.M.K. Davison/B.Sc., M.A., Ph.D. (until June 30, 1999)

Student Advisors

P.G. Henry/B.Sc.

J. Paradise-McCurdy/B.A., B.Sc.

R. Tebbutt/B.A.

M. White/B.Sc.

The Faculty of Science provides studies through the following Departments:

- Biochemistry
- Biology
- Chemistry
- Computing and Software
- Geography and Geology
- Kinesiology
- Mathematics and Statistics
- Materials Science and Engineering
- Physics and Astronomy
- Psychology

PROGRAMMES AND DEGREES

A. Level I Programme

Level I students should select courses carefully to meet the Level II admission requirements of a specific programme (see **Faculty of Science Programme Listings in this section of the Calendar for Level II programme admission requirements**). A suitable choice of Level I options will allow successful students to enter Level II of any one of several programmes.

SCIENCE I: 30 UNITS {0710}

REQUIREMENTS

- 3 units MATH 1A03
- 3 units from MATH 1AA3, STATS 1CC3
- 12 units from Level I Science Core Course List 1 (see below)
- 6 units from Level I Course List 2 (see below)
- 6 units from Level I Course Lists 2 and 3 (see below)
- 1 course SCIENCE 1A00

LEVEL I COURSE LISTS:

COURSE LIST 1: (SCIENCE CORE)

- BIOLOGY 1A03
- CHEM 1A03
- COMP SCI 1MC3* (or 1SA3)
- GEO 1G03** (or 1A03 or 1B03)
- MATH 1B03
- PHYSICS 1B03
- PSYCH 1A03

*Students with little or no previous computer experience may substitute COMP SCI 1SA3 for COMP SCI 1MC3; however, students must achieve a grade of at least B+ in COMP SCI 1SA3 to satisfy the prerequisite for COMP SCI 1MD3.

**Students may substitute GEO 1B03 or 1A03 for GEO 1G03; however, GEO 1G03 provides more Level II course and programme choices.

COURSE LIST 2:

- ASTRON 1F03 Introduction to Astronomy and Astrophysics
- BIOLOGY 1A03 Structural and Functional Relations in Living Systems
- BIOLOGY 1AA3 Reproduction and Adaptation in Living Systems
- CHEM 1A03 Introductory Chemistry I
- CHEM 1AA3 Introductory Chemistry II
- COMP SCI 1SA3 Computing Fundamentals

- COMP SCI 1MC3 Computer Science I
- COMP SCI 1MD3 Computer Science II
- GEO 1A03 Atmosphere and Hydrosphere
- GEO 1B03 Biosphere
- GEO 1G03 Geosphere
- MATLS 1A03 Introduction to Materials
- MATH 1AA3 Calculus II
- MATH 1B03 Linear Algebra I
- PHYSICS 1B03 Mechanics and Waves
- PHYSICS 1BA3 Introduction to Modern Physics A
- PHYSICS 1BB3 Introduction to Modern Physics B
- PSYCH 1A03 Introduction to Experimental Psychology
- PSYCH 1AA3 The Psychology of Interpersonal Behaviour
- STATS 1CC3 Introductory Computer-Aided Statistics

COURSE LIST 3:

All Level I Humanities Courses

All Level I Social Sciences Courses, excluding Kinesiology

COMP SCI 1TA3 Elementary Computing and Computer Use

INQUIRY 1SC3 Inquiry in Science

PHYSICS 1P03 Introductory Physics

WOMEN ST 1A06

With the permission of the Associate Dean of Science (Studies), well-prepared students may be permitted to elect up to six additional units.

Science I students who achieve a grade of at least B+ in the Calculus Placement Examination in September and who successfully complete MATH 1AA3 in term one will be exempt from taking MATH 1A03. These students must complete at least one of STATS 1CC3, MATH 1B03 or may complete both MATH 1B03 and MATH 2AB3. MATH 1B03 and MATH 2AB3 are recommended. Please note that a student who is exempt from taking MATH 1A03 is not given 3 units of advanced credit for this course.

It is possible to complete Science I through evening/summer studies. Students wishing this option should consult the Office of the Registrar for timetable information.

B. Degree Programmes

HONOURS B.SC. PROGRAMMES

There are two options available for most four level Honours B.Sc. programmes offered by each department/school in the Faculty of Science. The **Specialist Option** requires a concentration of studies in a specific discipline and completion of a Senior Project or Thesis in the final year. The **Complementary Studies Option** requires at least 15 units of complementary studies from faculties other than the Faculty of Science and completion of 6 units of Inquiry course work in the final year.

There are also four **Honours Science Programmes (Complementary Studies Option)** that provide a breadth of study in science. Each programme requires a concentration of studies from one of the four areas of science: geo science, life science, mathematical science or physical science. They also require the completion of at least 21 units from the remaining three areas of science, completion of 15 units from faculties other than the Faculty of Science and completion of 6 units of Inquiry course work in the final year.

Combined Honours Programmes

A number of Departments offer Combined Honours degrees which are academically more challenging than single Honours programmes. Molecular Biology, Biochemistry & Molecular Biology, Biology & Psychology, Neural Computation, and Biology & Pharmacology Co-op are the Combined Honours B.Sc. programmes.

Honours degrees in Molecular Biology and in Biology and Pharmacology (a five-year Co-op programme) are organized by Committees of Instruction involving the Faculties of Health Sciences and Science. The Honours Neural Computation programme is organized by a Committee of Instruction involving the Faculties of Science and Engineering.

Honours Co-op Programmes

The Faculty of Science has instituted Cooperative Education programmes, beginning in Level III, in Honours Biochemistry, Honours Biology and Pharmacology, Honours Chemistry, Honours Environmental Science, and Honours Medical and Health Physics.

Honours Co-op programmes have **limited enrolment** and admission is by selection. Please see the admission statement for each programme in this section of the Calendar. Employment must be full-time during the work term. Students enrolled in Co-op programmes must be registered in full-time studies during the academic terms of their programme. With written permission from the work term supervisor, one three unit course may be taken during each four-month period of a work term. These units may not be used to reduce the academic term course load. A Science Co-op Fee will be charged for each academic term of a Co-op programme.

For further information, please consult the Associate Dean of Science (Studies) or Science Cooperative Education in the Faculty of Science.

Minors

Minors are available to students registered in most Honours programmes. In addition to the University's regulations governing the designation of a Minor, all Departments in the Faculty of Science require the inclusion of at least six units of Level III or IV courses for Minors in a Science subject.

Depending on the student's programme, there may be certain minors which are excluded. Please see the Programme Notes for individual programmes in this section of the Calendar.

Please see *Minors* in the *General Academic Regulations* section in this Calendar.

Cooperative 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 in Level II or III of an Honours B.Sc. Computer Science programme, who have at least 24 units left and are eligible to return to complete their undergraduate degree. 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 the Associate Dean of Science (Studies), Science Cooperative Education in the Faculty of Science or Engineering Career Services in the Faculty of Engineering.

International Study During Level III Of Honours Programmes

There are two ways to undertake international studies during Level III of an Honours programme; via a Formal Exchange Programme or a Third Year Study Elsewhere programme.

Formal Exchange Programme

During Level III of Honours Programmes

See the heading *International Study* in the *General Academic Regulations* section in this Calendar.

Third Year Study Elsewhere Honours Programme

Third Year Study Elsewhere is not available at universities with which McMaster University has a Formal Exchange Agreement.

Students registered in single or Combined Honours programmes in the Faculty of Science are encouraged to apply to study the whole of a third year at an appropriate university* (see below).

To be eligible to take part in this programme, students are expected to complete Level II with a Cumulative Average of at least 6.0. Students must pay all associated travel, study and living expenses. For students in need of financial assistance, OSAP (Ontario Student Aid Programme) grants and loans may be available for this programme. Furthermore, McMaster University offers some bursaries to those in need of help.

Students interested in this programme should begin discussions with the Associate Dean of Science (Studies) about one year before they plan to enrol elsewhere.

Students must propose an academic programme that must be submitted to their Department for approval. Academic approval must be completed by the end of February for registration in the following Fall.

Students must maintain links through correspondence with their departments at McMaster University while they are engaged in study elsewhere. All credit for work completed may only be confirmed after departments have reviewed the students' academic achievement following their return and registration in their final year of study. The maximum credit available in this way is nor-

mally 30 units for the full year of study, equivalent to Level III. In certain cases, students may be recommended for the Deans' Honour List on the basis of work undertaken in the programme.

*There are approved universities in the following areas: Rhone-Alpes (France), Baden-Wurttemberg (Germany), Lombardy (Italy) and Catalonia (Spain).

Exchange Programmes Within Canada

For information on the *Group of Ten Student Exchange Programme (GOTSEP)*, please refer to the *Academic Facilities, Student Services and Organizations* section of this Calendar under the heading *Student Exchanges Officer*.

B.SC. PROGRAMMES

Three-level B.Sc. programmes provide a science education which is less demanding than the Honours programmes. Three-level B.Sc. programmes are offered in Geoscience, Life Science, Mathematical Science and Physical Science.

Students are advised to seek counselling to ensure that their course selections are appropriate. Students who identify a subject area of emphasis should seek counselling from the corresponding department.

The programme requirements for B.Sc. programmes are listed under the heading *Three-Level B.Sc. Programmes* in this section.

ACADEMIC REGULATIONS

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

ADMISSION TO HONOURS B.SC. PROGRAMMES

The admission criteria for the Honours B.Sc. programmes are described explicitly in the individual programmes descriptions in this section.

Limited Enrolment Programmes

Admission is limited for the following programmes:

- Honours Biochemistry (Specialist Option)
- Honours Biochemistry & Molecular Biology
- Honours Biology (Specialist Option)
- Honours Biology and Psychology
- Honours Kinesiology
- Honours Molecular Biology
- Honours Psychology (Specialist Option)

Each of these programmes, except Honours Kinesiology, requires a thesis or project in Level IV. Resource limitations in providing a thesis or project supervisor for each student dictates that the number of students admitted must be limited. Admission is by selection based on academic achievement. Admission is limited at Level I for Honours Kinesiology.

For further information please see *Admission to Level II Programmes* in this section of the Calendar.

ADMISSION TO B.SC. PROGRAMMES

The admission criteria for the B.Sc. programmes, in each of the areas Geoscience, Life Science, Mathematical Science and Physical Science, are listed under the heading *Three-Level B.Sc. Programmes* in this section. For further information please see *Admission to Level II Programmes* in this section of the Calendar.

CONTINUATION IN HONOURS B.SC.

AND B.SC. PROGRAMMES

For information regarding requirements for continuing in Faculty of Science programmes, please see the *General Academic Regulations* section in this Calendar.

PROGRAMME PROBATION

Please refer to the *General Academic Regulations* section in this Calendar for changes to regulations concerning Programme Probation in the Faculty of Science.

REINSTATEMENT TO THE FACULTY OF SCIENCE

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

Students seeking reinstatement must complete the *Returning Student Application* available at the Office of the Registrar or the Office of the Associate Dean of Science (Studies). The completed application and the \$50 application fee must be submitted to the Office of the Registrar by June 30. Applications must be accompanied by a written explanation of the student's previous academic performance, reasons why the student would expect to succeed in the desired programme if reinstated, and activities since last registered at McMaster including all academic work. Reference letters are also recommended.

Reinstatement is not guaranteed.

FORMER SCIENCE STUDENTS AND READMISSION

Students who were previously registered in a Science programme and in good standing but did not register during the last academic year (Fall/Winter or Summer session) must write to the Office of the Associate Dean of Science (Studies) to seek permission to continue their studies. The letter should explain academic activities since the last registration.

If five years have passed since the last registration at McMaster, students must apply for Readmission through the Office of the Registrar. Please see the *Application Procedures* section of this Calendar.

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 (Studies).

SEQUENCE OF COURSES

Students in the Faculty of Science must have completed or be registered in the courses required for Level I before they may register for courses beyond Level I.

COURSE SELECTION

It is the responsibility of the student to ensure that the selection of courses meets the degree requirements for the programme in which the student is registered and that the stated prerequisite courses were completed with a grade of at least D-.

COURSE CHANGES

All course changes must be made through the Office of the Associate Dean of Science (Studies) and are subject to the deadline dates for adding and withdrawing established by the University. (See *Sessional Dates* section of this Calendar.)

Beyond the September deadline date, first-term three-unit courses may be cancelled up to the November deadline. A cancelled three-unit first-term course may not be replaced by a second-term course for students who were registered for a full academic load in September. Beyond the January deadline date, second-term courses may not be replaced. Students who cancel a full-year course by the January deadline date may add a three-unit second-term course.

To add a limited enrolment course or a course requiring permission, a signed permission slip must be attached to the *Application for Change of Student Record*.

WORKLOAD

All programmes in the Faculty of Science may be taken by full-time and part-time students, with the exception of the Honours Co-op programmes. Students enrolled in Co-op programmes must be registered in full-time studies during the academic terms of their programme.

Students must maintain a full academic load during the Fall/Winter session to be eligible for scholarships available to full-time students. To be eligible for the Deans' Honour List, an academic load in the Fall/Winter session of at least 30 units is necessary.

Students are expected to avoid timetable conflicts among their courses, and students on a full academic load should ensure the number of courses is balanced in each term.

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

LETTERS OF PERMISSION

Students enrolled in science programmes may apply to the Office of the Associate Dean of Science (Studies) to take courses at another university on Letter of Permission. A fee must be paid to the Office of the Registrar. Students must achieve a grade of at least C- for transfer credit. The transcript designation reads *COM*, indicating *complete*, when a grade of C- or better is attained, or *NC*, indicating *not complete*, when a grade of less than C- is attained.

Required courses given by the department offering the programme may not be taken elsewhere unless departmental approval is given. Courses required by the programme but not given by the department offering the programme may be taken elsewhere. For example, for a student registered in a Biology programme, all Biology courses must be taken at McMaster, however, the required Chemistry course may be taken elsewhere. Electives may be taken elsewhere.

Courses taken at another university cannot be used to satisfy the university's minimum residence requirements, will not be included in the calculation of the Cumulative or Sessional Averages, and therefore cannot be used to raise standing. Students may take up to six units of courses towards a Minor on Letter of Permission.

Students must be in good standing to be eligible to take courses on a Letter of Permission.

PROGRAMME TRANSFERS

Up to the end of Level III, students may be permitted to transfer between Faculty of Science programmes on the recommendation of the Department concerned and with the approval of the Associate Dean of Science (Studies).

Students are eligible to apply for transfer from a B.Sc. programme to a related Honours Programme or between Honours programmes provided that they have:

1. attained a Cumulative Average of at least 6.0, and
2. completed the courses required for admission to the programme.

Permission to transfer to a programme is subject to any exceptions or special restrictions outlined in the *Admission* statement or the *Programme Notes* for that programme.

Note: The minimum Cumulative Average required to transfer to an Honours programme in the Faculty of Science is 6.0. Students entering Level III of a three-level B.Sc. programme should note that if they have completed 60 units with a Cumulative Average of 5.5, they must attain a Sessional Average of at least 7.0 on 30 units of course work to raise their Cumulative Average to 6.0. Students with a Cumulative Average of less than 5.5, who wish to transfer to an Honours programme, are advised to satisfy graduation requirements for their current three-level programme.

For further information please see *Transfer Procedures* and *Transferring to Graduate with a three-level B.Sc. degree from an Honours B.Sc. programme* in this section of the Calendar.

GRADUATION

From Honours B.Sc. and B.Sc. Programmes

To graduate from a programme, students must meet the course requirements stated in the Calendar in force when they enter that programme, with the exception that a later Calendar may explicitly modify such requirements.

The requirements for graduation from these programmes are described under the heading *Graduation* in the *General Academic Regulations* section in this Calendar.

Transferring to Graduate with a Three-Level B.Sc. Degree from an Honours B.Sc. Programme

Students who successfully complete the first three Levels of any Honours B.Sc. degree may request permission from the Associate Dean of Science (Studies) Office for transfer to graduate with a three-level B.Sc. Science degree.

SECOND BACHELOR'S DEGREE PROGRAMMES

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

For many of the four-level Honours degrees in science, a Cumulative Average of at least 7.0 (overall average of B-) will be required for admission. For three-level degrees, a Cumulative Average of at least 5.0 (overall average of C) will be required for admission.

Students will be admitted to Second Degree studies only if their studies involve a significant additional component of work in the subject of concentration of a programme. Certain subject combinations are not permitted for Second Degrees. Students interested in applying for a Second Degree programme should consult the Office of the Associate Dean of Science (Studies) for further details.

Please see the *Application Procedures* section of this Calendar.

Special Course Requirements**SCIENCE INQUIRY COURSE LIST**

Note: No more than six units of Science Inquiry may be taken unless permission for a nine unit Senior Project or Thesis is obtained.

The following are restricted to students in an Honours (Complementary Studies Option) programme:

CHEM 4I03	Inquiry in Chemistry
COMP SCI 4Z13	Inquiry in Computer Science
MATH 4Z13	Inquiry in Mathematics
PHYSICS 4ZI3	Inquiry: Energy, Physics and the Environment
PHYSICS 4ZJ3	Inquiry: Relativity and Gravitation

The following are restricted to students in specified programmes:

BIOCHEM 4A03	Presentations and Critical Evaluation
BIOCHEM 4C03	Inquiry in Biochemistry
BIOCHEM 4P03	Research Project
BIOLOGY 4C09	Senior Thesis
BIOLOGY 4F06	Senior Project
BIOLOGY 4FF3	Inquiry in Biology
CHEM 4G06	Senior Thesis
COMP SCI 4MP6	Project for Combined Programmes
COMP SCI 4ZP6	Project
GEO 4CC3	Review Paper
GEO 4R06	Senior Thesis
PHYSICS 4A03	Inquiry in Physics
PSYCH 4D06	Psychology Thesis
PSYCH 4J03	Inquiry in Psychology I
PSYCH 4K03	Inquiry in Psychology II

The following are restricted to students with the specified course prerequisites:

GEO 4X03	Inquiry: Climate Change: A Geological Perspective
GEO 4P03	Inquiry: Ecology and Geology of Coral Reefs
GEO 4KK3	Inquiry: Minerals and Society
MATH 3Z03	Inquiry: History of Mathematics

FIELD COURSES

Field courses are offered through the Department of Biology and the School of Geography and Geology. Some of these courses are taken outside the Fall/Winter session, during the spring or summer.

Students who enrol in field courses must pay **both**:

- a fee to the department to cover travel expenses, room and board **and**
- the associated tuition fee to McMaster at Fall registration.

Although students initially register for field courses through the appropriate departmental offices, it is their responsibility to include field courses on their registration forms for the appropriate Fall/Winter session.

Detailed information regarding field courses and deadlines for registration may be obtained from the individual departmental offices.

March Counselling and Important Procedures

Counselling is available throughout the year from the Office of the Associate Dean of Science (Studies) and the academic departments in the Faculty of Science. In addition, it is highly recommended that all students in the Faculty of Science make a counselling appointment with a Departmental Undergraduate Advisor during the March Counselling period.

During the March Counselling period:

1. information sessions are held by the departments in the Faculty of Science to discuss undergraduate programmes, graduate study opportunities, career options, etc.;
2. students obtain a copy of the new Undergraduate Calendar;
3. all Level I students seeking admission to a Level II programme for the following Fall/Winter session must complete an application form. See *Admission to Level II Programmes*;
4. students in Levels II or III who wish to transfer to another programme for the following Fall/Winter session must complete an application form. See *Transfer Procedures*;
5. students wishing to take courses requiring permission for the Fall/Winter session, including limited enrolment courses and Science Inquiry courses, apply to the appropriate department for permission. See *Limited Enrolment Courses*.

The dates for the March Counselling period may vary somewhat from year to year. The dates and information will be posted on campus, on the Web, outlined in the campus newspaper, and will be announced during classes. Application forms mentioned above will be available in the General Sciences Building, Room 116. It is the student's responsibility to participate in March Counselling activities.

ADMISSION TO LEVEL II PROGRAMMES

Any student seeking admission to a Level II programme in the Faculty of Science for the following Fall/Winter session must complete an *Application for Admission to Level II* during the March Counselling period. This form, which allows students to rank four programme choices, must be completed and returned to the Office of the Associate Dean of Science (Studies) **by the end of March**.

Admission to limited enrolment programmes is also based on Cumulative Average achieved; students will be admitted by a selection committee. See *Limited Enrolment Programmes* in this section of the Calendar.

Level I students must meet the admission criteria for a Level II programme according to the Calendar in effect when they registered for Level I. Students must follow the programme requirements of the Calendar in force when they enter Level II, except when a later Calendar explicitly modifies such requirements.

Students will receive an admission decision on their grade reports in June. The Office of the Associate Dean of Science (Studies) will approve registrations only for the programme to which a student was granted admission.

Students who have a *Result of Session of May Continue at the University* but who do not achieve the admission requirements for any Level II programme must return to Science I, or apply to transfer to another Faculty. Students may repeat or upgrade any of the previous Level I courses but are advised to take only twelve units of additional Level I courses. Only forty-two units of Level I courses may be used as credit towards a three-level programme.

TRANSFER PROCEDURES

To be eligible to transfer between programmes in the Faculty of Science, students must meet the criteria as described under the heading *Programme Transfers* in this section of the Calendar.

Students in Levels II or III who wish to transfer to another programme in the Faculty of Science for the following Fall/Winter session must complete an *Application to Transfer to Another Programme* during the March Counselling period. This form must be completed and returned to the Office of the Associate Dean of Science (Studies) **by the end of March**. Students will be notified of the results of their applications on their grade reports in early June. Programme transfers are not normally permitted during the Fall/Winter academic session.

LIMITED ENROLMENT COURSES

There are two types of limited enrolment courses as follows:

1. Limited enrolment courses requiring permission:

These courses have a prerequisite stating as a requirement: *Permission of the instructor, department, coordinator, chair, etc.* During the March Counselling period and before March 31st, it is the student's responsibility to apply to the corresponding departmental office for permission for courses in which they wish to register for the following Fall/Winter session.

Students will be informed by a sentence on their grade report if permission has been given or denied. If permission is given, the student may list the course on their registration form. However, if permission has not been given, registration for the course will not be approved.

If a limited enrolment course is an absolute requirement for a programme, then students in that programme have a guaranteed place in the course. This will be noted in the course prerequisite.

2. Limited enrolment courses:

These courses do not have a prerequisite stating as a requirement: *Permission of the instructor, department, coordinator, chair, etc.* Enrolment in these courses is handled on a first-come, first-served basis until the end of August. Students must state an alternate course on their registrations for each limited enrolment course they list. Students should check MUGSI in the first week of September, before classes begin, to determine if they are registered for their limited enrolment course(s) or their alternate course(s).

Note: During the September and January Drop and Add Periods, students must obtain a signed permission slip for both types of limited enrolment courses as mentioned above. Students are encouraged to obtain permission as soon as possible. They must attach the signed permission slip to their Application for Change of Student Record form to be permitted to enter their desired limited enrolment course(s).

DEPARTMENT OF BIOCHEMISTRY

WEB ADDRESS: <http://www.science.mcmaster.ca/biochem/>

Honours Arts & Science and Biochemistry

(B.Arts.Sc; See Arts & Science programme)

**Honours Biochemistry {2042}
(Complementary Studies Option)****ADMISSION**

Completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03
- 3 units from Level I Science Core Course List 1
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

While STATS 1CC3 is strongly recommended, students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3. Students wishing to take CHEM 2PA3 and 2PB3 in Level II must complete MATH 1AA3.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3, and MATH 1A03.

NOTES

1. 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.
2. Students planning to apply for admission to a Biochemistry Co-op programme must take BIOLOGY 2B03 in Level II.
3. A minor in Biology or Chemistry is not permitted in the Honours Biochemistry (Complementary Studies Option) programme.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

18 units BIOCHEM 2A06, BIOLOGY 2C03, CHEM 2OA3, 2OB3, 2R03

6 units from the Faculty of Humanities and/or the Department of Religious Studies

6 units Electives, excluding Biochemistry

LEVEL III: 30 UNITS

15 units BIOCHEM 3B03, 3BB3, 3L03, BIOLOGY 2B03, CHEM 2N03

3 units HUMAN 2C03

6 units from the Faculties of Business, Humanities, Social Sciences

6 units Electives, excluding Biochemistry

LEVEL IV: 30 UNITS

3 units from BIOCHEM 4C03, 4A03

3 units from the Science Inquiry Course List

3 units from BIOCHEM 3H03, 3N03, 4Q03, 4P03

3 units from BIOCHEM 4D03, 4E03

3 units from BIOCHEM 4I03, 4M03

3 units from Level III, IV Biochemistry, BIOLOGY 3O03, 3X03, 4V03

6 units from Level III, IV courses, excluding Biochemistry

6 units Electives

Honours Biochemistry (Specialist Option) {2040}**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03
- 3 units from Level I Course List 1
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

While STATS 1CC3 is strongly recommended, students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3. Students wishing to take CHEM 2PA3 and 2PB3 in Level II must complete MATH 1AA3.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3, and MATH 1A03.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada
2. A minor in Biology or Chemistry is not permitted in the Honours Biochemistry (Specialist Option) programme.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

21 units BIOCHEM 2A06, BIOLOGY 2B03, 2C03, CHEM 2N03, 2OA3, 2OB3

3-6 units from either CHEM 2R03 or both CHEM 2PA3 and 2PB3

3-6 units Electives. CHEM 2I03, COMP SCI 1SA3 (or 1MC3) and STATS 2MA3 are suggested

LEVEL III: 30 UNITS (BIOCHEMISTRY OPTION) {2040}

12 units BIOCHEM 3B03, 3BB3, 3L03, 3P03

6 units BIOLOGY 3O03, CHEM 3F03

6 units from Level III, IV Biochemistry, Biology, Chemistry

6 units Electives, excluding Biochemistry

LEVEL IV: 30 UNITS (BIOCHEMISTRY OPTION)

- 9 units BIOCHEM 4E03, 4I03, 4M03
 12 units from Level III, IV Biochemistry courses which must include one of BIOCHEM 4B06, 4F09, 4L03, 4P03
 3 units from Level III, IV Science courses, excluding Biochemistry
 6 units Electives

LEVEL III: 30 UNITS (BIOTECHNOLOGY AND GENETIC ENGINEERING OPTION) {2041}

- 12 units BIOCHEM 3B03, 3BB3, 3L03, 3P03
 9 units BIOLOGY 3O03, 3E03, CHEM 3F03
 3 units from Level III, IV Biochemistry, Biology, Chemistry
 6 units Electives, excluding Biochemistry

LEVEL IV: 30 UNITS (BIOTECHNOLOGY AND GENETIC ENGINEERING OPTION)

- 9 units BIOCHEM 4D03, 4DD3, 4E03
 15 units including:
 3-9 units from BIOCHEM 4BB6, 4F09, 4G03
 3-6 units from BIOCHEM 4I03, 4M03
 3-6 units from Level III, IV Biochemistry, Biology, Chemistry (BIOLOGY 3X03 or 4V03 is recommended)
 6 units Electives

Honours Biochemistry Co-op {2045}**ADMISSION**

Enrolment in this programme is limited to a maximum of 25 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, a Cumulative Average of at least 7.0 and completion of either Level II Honours Biochemistry, Honours Biochemistry and Molecular Biology, or Honours Molecular Biology.

Information about the programme and the selection procedure may be obtained from the Chair and will be explained in the month of February in an Information Session.

NOTES

- This is a five-year co-op programme which includes two eight-month work terms which must be spent in Biochemistry related placements.
- Students must be registered full-time and take a full academic workload.
- Students are required to complete a Work Orientation Course before the first work placement.
- Students who are entering Level III Honours Biochemistry Co-op have two choices:
 - Honours Biochemistry Co-op;
 - Honours Biochemistry Co-op (Biotechnology and Genetic Engineering Option)
- 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.
- No minors or Theme Schools are permitted in the Honours Biochemistry (Co-op) programme.

REQUIREMENTS

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

LEVEL I

- 30 units from the Science I requirements

LEVEL II

- 30 units from Honours Biochemistry (BIOLOGY 2B03 must be completed), Honours Biochemistry and Molecular Biology, or Honours Molecular Biology

(Biochemistry Option) {2045}**YEAR 3****FALL/WINTER, TERM 1**

- 9 units BIOCHEM 3B03, 3L03, BIOLOGY 3O03
 3 units from Level III, IV Biochemistry, Biology, Chemistry, or CHEM 2N03 if not completed
 3 units Electives
 → Work Orientation Course

FALL/WINTER TERM 2 AND SUMMER

First eight month Work Term

YEAR 4**FALL/WINTER, TERM 1**

- 6 units BIOCHEM 4E03, 4M03
 6 units from Level III, IV Biochemistry, Biology, Chemistry
 3 units Electives

FALL/WINTER, TERM 2

- 9 units BIOCHEM 3BB3, 3P03, CHEM 3F03; (Students who have obtained appropriate experience during the previous work term may request permission from the Department to take 3 units of Level III, IV Biochemistry instead of BIOCHEM 3P03)

- 3 units from Level III, IV Biochemistry, Biology, Chemistry
 3 units Electives

SUMMER AND FALL/WINTER, TERM 1

Second eight month Work Term

YEAR 5**FALL/WINTER, TERM 1**

Work Term

FALL/WINTER, TERM 2

- 3 units BIOCHEM 4I03
 3 units from BIOCHEM 4L03, 4P03
 3 units Level III, IV Biochemistry
 3 units from Level III, IV Science courses
 3 units Electives

(Biotechnology and Genetic Engineering Option) {2046}**YEAR 3****FALL/WINTER, TERM 1**

- 12 units BIOCHEM 3B03, 3L03, BIOLOGY 3O03, 3E03
 3 units Electives or CHEM 2N03 if not completed
 → Work Orientation Course

FALL/WINTER TERM 2 AND SUMMER

First eight month Work Term

YEAR 4**FALL/WINTER, TERM 1**

- 9 units BIOCHEM 4D03, 4E03, 4M03
 3 units from Level III, IV Biochemistry, Biology, Chemistry
 3 units Electives

FALL/WINTER, TERM 2

- 9 units BIOCHEM 3BB3, 3P03, CHEM 3F03; (Students who have obtained appropriate experience during the previous work term may request permission from the Department to take 3 units of Level III, IV Biochemistry instead of BIOCHEM 3P03)

- 3 units from Level III, IV Biochemistry, Biology, Chemistry
 3 units Electives

SUMMER AND FALL/WINTER TERM 1

Second eight month Work Term

YEAR 5**FALL/WINTER, TERM 1**

Work Term

FALL/WINTER, TERM 2

- 6 units BIOCHEM 4DD3, 4I03
 3 units from BIOCHEM 4G03, 4P03
 3 units from Levels III, IV Science courses
 3 units Electives

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1	Term 2	Summer Term
YEAR 3	15 units from Academic Level III + Work Orientation Course	Work Term	
YEAR 4	15 units from Academic Level IV	15 units from Academic Level III	Work Term
YEAR 5	Work Term	15 units from Academic Level IV	

Honours Biochemistry and Molecular Biology {2040365}

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03
- 3 units from Level I Science Core Course List 1
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

While STATS 1CC3 is strongly recommended, students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3. Students wishing to take CHEM 2PA3 and 2PB3 in Level II must complete MATH 1AA3.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of C+ in each of four of BIOLOGY 1A03, 1AA3, CHEM 1A03, 1AA3 and MATH 1A03.

NOTE

A minor in Biology or Chemistry is not permitted in the Honours Biochemistry and Molecular Biology programme.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 21 units BIOCHEM 2A06, BIOLOGY 2B03, 2C03, CHEM 2N03, 2OA3, 2OB3
- 3-6 units from either CHEM 2R03 or both CHEM 2PA3 and 2PB3
- 3-6 units Electives. CHEM 2I03, COMP SCI 1SA3 (or 1MC3) and STATS 2MA3 are suggested

LEVEL III: 30 UNITS

- 15 units BIOCHEM 3B03, 3BB3, 3C03, 3L03, 3P03
- 6 units BIOLOGY 3O03, CHEM 3F03
- 3 units from Level III, IV Biochemistry, Biology, Chemistry (BIOLOGY 3E03 is recommended)
- 6 units Electives, excluding Biochemistry

LEVEL IV: 30 UNITS

- 9 units BIOCHEM 4D03, 4E03, 4EE3
- 3 units from BIOCHEM 4I03, 4M03
- 9 units from Level III, IV Biochemistry or Molecular Biology courses which must include one of BIOCHEM 4BB6, 4F09, 4G03
- 3 units Level III, IV Biochemistry, Biology, Chemistry
- 6 units Electives

Minor in Biochemistry

- 6 units from CHEM 1A06, 1A03, 1AA3
- 6 units from either CHEM 2O06 or 2B06 or both 2OA3 and 2OB3 or both CHEM 2BA3 and 2BB3
- 6 units from BIOCHEM 3G03 and one of 2EE3, 3GG3, or 3A03 and 3AA3, or 3B03 and 3BB3
- 6 units from Level III, IV Biochemistry

DEPARTMENT OF BIOLOGY

WEB ADDRESS:

<http://www.science.mcmaster.ca/biology/dept.html>

Honours Philosophy and Biology

(B.A.; See Faculty of Humanities, Department of Philosophy)

Honours Arts & Science and Biology

(B.Arts Sc; See Arts & Science programme)

Honours Molecular Biology

(See Molecular Biology)

Honours Biology {2052}

(Complementary Studies Option)

ADMISSION

Completion of Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03
- 3 units from Level I Science Core Course List 1
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, and a grade of C+ in each of three of MATH 1A03, CHEM 1A03, 1AA3, PHYSICS 1B03, STATS 1CC3.

NOTES

1. Students in Levels III and IV of this programme should select courses in consultation with the Chair of the Department of Biology.
2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. The prerequisites should be considered when choosing your Level II (III) courses.

COURSE LIST

All Level III and IV Biology courses, except BIOLOGY 4C09 and 4L09; BIOCHEM 2EE3, 3B03, 3BB3, 3C03, 3G03, 3H03, 3N03, 4D03, 4DD3, 4E03, 4EE3, 4I03, 4M03; GEO 2P03, 3B03, 3C03, 3P03, 4B03; MOL BIOL 4F03, 4H03, 4J03; PHARMAC 4B03; PSYCH 2F03, 3FA3, 3R03, 3S03, 3T03

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 15 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03, BIOCHEM 2EE3
- 3-6 units from either CHEM 2E03, or both CHEM 2OA3 and 2OB3
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies
- 3-6 units Electives

LEVEL III: 30 UNITS

- 3 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03, BIOCHEM 2EE3 (whichever is not completed)
- 6 units from Level III, IV Biology
- 6 units from the Course List (see above)

3 units	HUMAN 2C03
6 units	from the Faculties of Business, Humanities, Social Sciences
6 units	Electives, excluding Biology

LEVEL IV: 30 UNITS

6 units	from the Science Inquiry Course List
6 units	from Level III, IV Biology
6 units	from the Course List (see above)
6 units	from Level III, IV courses, excluding Biology
6 units	Electives

Honours Biology (Specialist Option) {2050}**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Science I requirements, including:

6 units	MATH 1A03, STATS 1CC3
6 units	BIOLOGY 1A03, 1AA3
6 units	CHEM 1A03, 1AA3
3 units	PHYSICS 1B03
3 units	from Level I Science Core Course List 1
6 units	from Level I Course Lists 2, 3
1 course	SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, and a grade of C+ in each of three of MATH 1A03, CHEM 1A03, 1AA3, PHYSICS 1B03, STATS 1CC3.

NOTES

- Students are advised to note carefully the prerequisites for all Level III and IV courses listed in the following programme, particularly BIOCHEM 2EE3, 3G03.
- The Department of Biology has the following areas of specialization:
 - Animal Physiology
 - Molecular, Cellular and Developmental Biology
 - Ecology and Environmental Science
 - Genetics and Evolution
 - Microbiology
 - Plant Biology
- Admission to Honours Biology and Pharmacology (Co-op) requires CHEM 2OA3 and 2OB3 or 2O06.

COURSE LIST

All Level III and IV Biology courses; BIOCHEM 2EE3, 3B03, 3BB3, 3C03, 3G03, 3H03, 3N03, 4D03, 4DD3, 4E03, 4EE3, 4I03, 4M03; GEO 2P03, 3B03, 3C03, 3P03, 4B03; MOL BIOL 4F03, 4H03, 4J03; PHARMAC 4B03; PSYCH 2F03, 3FA3, 3R03, 3S03, 3T03

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

18 units BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03; BIOCHEM 2EE3

3-6 units from either CHEM 2E03 or both CHEM 2OA3 and 2OB3 (See Note 3 above.)

3 units STATS 2MA3

3-6 units Electives, excluding Biochemistry and Biology

LEVEL III: 30 UNITS

18 units from Levels III, IV Biology

6 units from the Course List (see above)

3 units Electives, excluding Biochemistry and Biology

3 units Electives

LEVEL IV: 30 UNITS

18 units from Levels III, IV Biology (which must include either BIOLOGY 4F06 or 4C09)

6 units from the Course List (see above)

6 units Electives

BIOLOGY 4C09 is highly recommended

Honours Biology and Mathematics {2050320}**ADMISSION**

Completion of the Science I requirements, including:

6 units	MATH 1A03, 1AA3
6 units	BIOLOGY 1A03, 1AA3
6 units	CHEM 1A03, 1AA3
3 units	MATH 1B03
3 units	from Level I Science Core Course List 1
6 units	from Level I Course Lists 2, 3
1 course	SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3 and an average of 6.0 in MATH 1A03, 1AA3, 1B03.

NOTES

- Students should seek counselling for this programme in either the Department of Mathematics and Statistics or in the Department of Biology.
- Students are advised to carefully note graduate programme requirements.
- Students considering graduate studies in Biology are recommended to complete BIOLOGY 4C09 or BIOLOGY 4F06.
- Students considering graduate studies in Mathematics, are recommended to complete MATH 2AB3, 2R03 and either 2S03 or 2T03 in Level II, MATH 3A03 and 3X03 in Level III, and MATH 3AA3 and 4X03 in Level IV. MATH 3E03 is recommended.
- Students must complete at least nine units from Level IV Biology courses.
- A minor in Statistics is not permitted in the Honours Biology and Mathematics programme.

REQUIREMENTS

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses and with at least 9 units from Level IV courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

12 units BIOLOGY 2B03, 2C03, 2E03, 2F03

15 units MATH 2A03, 2AB3, 2C03, 2E03, 2R03

3 units Electives

If not completed: MATH 1B03

LEVEL III: 30 UNITS

12 units from Level III, IV Biology (See Note 5 above.)

6 units MATH 3F03, 3N03

3 units from MATH 2S03, 2T03, 3A03

3-6 units STATS 2D03, 2MB3

3-6 units Electives

LEVEL IV: 30 UNITS

18 units from Level III, IV Biology, Mathematics, Statistics, PSYCH 4I03 which must include at least 9 units of Level IV Biology (See Note 5 above.)

3-6 units from MATH 3A03, 3E03, 3FF3, 3X03, STATS 3D06, 3S03, 3U03

6-9 units Electives

Honours Biology and Pharmacology (Co-op) {2050419}**ADMISSION**

Enrolment in this programme is limited to a maximum of 25 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II of an Honours Biology or Molecular Biology programme (including CHEM 2OA3 and 2OB3 or 2O06) with a Cumulative Average of at least 6.0.

Information about this programme and the selection procedure can be obtained from the Chair of the Committee of Instruction and will also be explained in the month of February in an Information Session. It is highly recommended that students interested in enrolling in the programme attend the Information Session. Students

wishing to apply must submit a formal written application to the Office of the Dean of Science Studies in the first week of March. The selection will be based on interviews and/or tutorial sessions to be held the first weekend in March, as well as on academic performance. Successful candidates will be notified in writing.

NOTES

1. This is a five-year co-op programme, three terms of which must be spent off-campus in work related to pharmacology, toxicology or pharmaceuticals. These three terms will include the summer term following the completion of Level III, the second term of Level IV and the first term of the fifth year. Level IV continues through the fourth and fifth year of the programme. A senior thesis will be completed during the summer of the fourth year. PHARMAC 3A06, 3B06, 4A03, 4AA3, 4C03, 4D03 and 4E03 will use a self-directed problem-based learning approach. PHARMAC 4B03 may be taught in a lecture format in some years.
2. Students must be registered full-time and take a full academic workload.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. Students should seek academic counselling for this programme in the Department of Biology.
5. No minors or Theme Schools are permitted in the Honours Biology and Pharmacology Co-op programme.

COURSE LIST

BIOCHEM 3B03, 3BB3, 3C03, 3G03, 3H03, 3N03; All Level III and IV Biology courses; CHEM 3F03, 4DD3; GEO 3B03, 4A03, 4B03; MOL BIOL 4F03, 4H03, 4J03

REQUIREMENTS

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

LEVEL I

30 units from the Science I requirements

LEVEL II: 30 UNITS

- 6 units BIOLOGY 2B03; 2C03
- 3-6 units BIOCHEM 2A06 or 2EE3
- 6 units BIOLOGY 2D03, 2E03, 2F03
- 6 units CHEM 2OA3, 2OB3
- 3 units STATS 2MA3
- 3-6 units Electives, excluding Biochemistry and Biology. CHEM 2R03 is recommended.

YEAR 3

30 units from Academic Level III, Terms 1 and 2, plus Work Orientation course, and completion of first four-month work term, Summer Term

TERMS 1 AND 2

- 6 units from the Course List (see above). Must include BIOCHEM 3G03 if BIOCHEM 2A06 is not completed.
- 9 units BIOLOGY 3P03, 3U03, 3UU3
- 12 units PHARMAC 3A06, 3B06
- 3 units Electives
- Work Orientation Course

SUMMER

Work Term

YEAR 4

15 units from Academic Level IV, Term 1, completion of second four-month work term, Term 2, completion of senior thesis, Summer Term.

TERM 1

- 6 units BIOLOGY 3X03; PHARMAC 4A03
- 3 units from PHARMAC 4B03, 4C03
- 6 units from the Course List (see above)

TERM 2

Work Term

SUMMER

9 units PHARMAC 4F09

YEAR 5

15 units from Academic Level IV, Term 2, and completion of third four-month work term, Term 1.

TERM 1

Work Term

TERM 2

- 6 units from PHARMAC 4AA3, 4D03, 4E03
- 3 units from the Course List (see above)
- 6 units Electives

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
	Term 1				Term 2				Summer Term			
YEAR 3	15 units from Academic Level III				15 units from Academic Level III + Work Orientation Course				Work Term			
	Term 1				Term 2				Summer Term			
YEAR 4	15 units from Academic Level IV				Work Term				Senior Thesis			
	Term 1				Term 2				Summer Term			
YEAR 5	Work Term				15 units from Academic Level IV							

Honours Biology and Psychology {2050460}

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units BIOLOGY 1A03, 1AA3
- 6 units CHEM 1A03, 1AA3
- 3 units PHYSICS 1B03
- 3 units PSYCH 1A03
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

PSYCH 1AA3 must be completed by the end of Level II and is strongly recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03, 1AA3, a grade of C+ in PSYCH 1A03, and an average of 6.0 in CHEM 1A03, 1AA3.

NOTES

1. Counselling for this programme is shared by the Departments of Biology and Psychology and alternates each year.
2. MATH 1B03 and PHYSICS 1BB3 are strongly recommended for students intending to pursue graduate work in Experimental Psychology or Neuroscience.
3. In Level III or IV students must complete at least one laboratory course in Psychology (see Course List 3). Enrolment is limited for the Psychology laboratory courses.
4. Students who hope to obtain scholarships should complete all 30 units of Levels II and III in the fall and winter terms.
5. A minor in Biochemistry is not permitted in the Honours Biology and Psychology programme.

COURSE LIST 1

BIOLOGY 2D03, 2E03, 2F03, All Level III and IV Biology courses; BIOCHEM 3H03, 3N03, 4D03, 4DD3, 4E03, 4EE3, 4I03, 4M03; MOL BIOL 4F03, 4H03; PHARMAC 4B03

COURSE LIST 2

PSYCH 2E03, 2F03, 2H03, 2T03, All Level III and IV Psychology courses (PSYCH 2AA3, 2B03 and 2C03 may only be used as elective credit)

COURSE LIST 3

PSYCH 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3 (All Psychology lab courses, except PSYCH 3LL3, are Limited Enrolment courses)

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

15 units BIOLOGY 2B03, 2C03, CHEM 2OA3, 2OB3, BIOCHEM 2EE3

6 units from PSYCH 2E03, 2F03, 2H03, 2T03

3 units PSYCH 2RR3

6 units Electives. CHEM 2R03 is recommended.

If not completed: PSYCH 1AA3

LEVEL III: 30 UNITS

3 units BIOCHEM 3G03

9 units from Course List 1 (see above) which may not include more than 3 units of Level II Biology

6 units from Course List 2 (see above) which must include at least 3 units of Level III or IV Psychology

3 units from Level III or IV courses from Course List 1 or 2 (see above)

3 units from Course List 3 (see Note 3 above.)

6 units Electives. BIOCHEM 2EE3 if not completed

LEVEL IV: 30 UNITS

24 units from Level III or IV courses from Course Lists 1 and 2 (see above), including at least nine units from Course List 1 and nine units from Course List 2. One of BIOLOGY 4C09, 4F06 or PSYCH 4D06 must be included.

6 units Electives

B.Sc. Three-Level Degree

A three-level programme with a Biology Orientation is available through the **B.Sc. in Life Science** programme which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Biology

6 units from BIOLOGY 1A06, 1A03, 1AA3

18 units from Level II, III, IV Biology courses, including at least six units from Level III, IV Biology courses

DEPARTMENT OF CHEMISTRY

WEB ADDRESS: <http://www.chemistry.mcmaster.ca>

NOTES

1. Students in all Chemistry programmes are expected to have basic skills in the use of personal computers, word processing software and spreadsheet software. COMP SCI 1SA3 is recommended for students without those skills.
2. Students are encouraged to seek academic counselling from the Undergraduate Advisor for Chemistry programmes.
3. Students who wish to transfer from Level II or III to an Honours Chemistry programme must have a C.A. of at least 6.0 and must have completed the equivalent of Science I including all the courses required for Admission to an Honours Chemistry programme.

Honours Arts & Science and Chemistry

(B.Arts.Sc.; See Arts & Science programme)

Honours Chemistry

{2072}

(Complementary Studies Option)**ADMISSION**

Completion of the Science I requirements, including:

6 units MATH 1A03, 1AA3

6 units CHEM 1A03, 1AA3

6 units from PHYSICS 1B03, 1BA3 (or 1BB3)

3 units MATH 1B03

3 units from Level I Science Core Course List 1

6 units from Level I Course Lists 2, 3

1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in CHEM 1A03, 1AA3.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. COMP SCI 2MF3, MATH 2C03, and PHYSICS 2A03 or 2B06 are recommended electives.
3. For those considering postgraduate studies in Chemistry, it should be noted that 18 units of Level IV Chemistry are required for consideration for admission at McMaster.
4. In some cases there are Level II (and III) prerequisites for Level III (and Level IV) courses. The prerequisites should be considered when choosing your Level II (III) courses.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

21 units CHEM 2A03, 2BA3, 2BB3, 2I03, 2L03, 2PA3, 2PB3

3 units MATH 2A03

6 units from the Faculty of Humanities and/or the Department of Religious Studies

If not completed: PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS

15 units CHEM 3A03, 3BA3, 3BB3, 3D03, 3Q03

3 units HUMAN 2C03

6 units from the Faculties of Business, Humanities, Social Sciences

6 units Electives, excluding Chemistry

LEVEL IV: 30 UNITS

6 units from the Science Inquiry Course List

3 units CHEM 4TA3

3 units from Level III, IV Chemistry

6 units from Level IV Chemistry

6 units Electives from Level III, IV, excluding Chemistry

6 units Electives

Honours Chemistry (Specialist Option) {2070}**ADMISSION**

Completion of the Science I requirements, including:

6 units MATH 1A03, 1AA3

6 units CHEM 1A03, 1AA3

6 units from PHYSICS 1B03, 1BA3 (or 1BB3)

3 units MATH 1B03

3 units from Level I Course List 1

6 units from Level I Course Lists 2, 3

1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in CHEM 1A03, 1AA3.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. For students interested in physical chemistry recommended electives throughout the programme include MATH 2C03, STATS 1CC3 and 2MA3.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

21 units CHEM 2A03, 2BA3, 2BB3, 2I03, 2L03, 2PA3, 2PB3

3 units MATH 2A03

3-6 units from PHYSICS 2A03, 2B06

0-3 units Electives, excluding Chemistry

If not completed: PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS

21 units CHEM 3A03, 3BA3, 3BB3, 3D03, 3P03, 3Q03, 3Z03
 6 units Electives, excluding Chemistry
 3 units Electives

LEVEL IV: 30 UNITS

6 units from CHEM 4G06, or both CHEM 4TA3 and 3 units from Level III, IV Chemistry
 12 units from Level IV Chemistry
 6 units from Level III, IV Science, Engineering
 6 units Electives

Honours Chemistry Co-op {2073}

ADMISSION

Enrolment in this programme is limited to a maximum of 10 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II Honours Chemistry (Complementary Studies Option) or Honours Chemistry (Specialist Option) or Honours Biological Chemistry or Honours Biochemistry and Chemistry with a Cumulative Average of at least 6.0.

Information about the programme and the selection procedure may be obtained from Science Cooperative Education and will be explained in the month of February in an Information Session.

NOTES

1. This is a five-year co-op programme which includes two eight-month work terms that must be spent in Chemistry-related placements.
2. Students must be registered full-time and take a full academic workload.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. No minors or Theme Schools are permitted in the Honours Chemistry (Co-op) programme.
5. 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.
6. This programme is based on the requirements of the Honours Chemistry (Complementary Studies Option) programme.
7. Students considering postgraduate studies in Chemistry should note that 18 units of Level IV Chemistry are required for consideration for admission at McMaster.
8. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.

REQUIREMENTS

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

LEVEL I

30 units from the Science I requirements

LEVEL II

30 units from Level II of Honours Chemistry (Complementary Studies Option), Honours Chemistry (Specialist Option), Honours Biological Chemistry, or Honours Biochemistry and Chemistry

Year 3

15 units from Academic Level III, Term 1, plus Work Orientation course, and first work term of eight months duration, Term 2 and Summer term.

TERM I

6 units CHEM 3A03, 3Q03
 3 units HUMAN 2C03
 6 units Electives. Students who wish to take CHEM 4G06 in Year 4 must complete CHEM 3BA3 and 3I03 in Year 3.
 → Work Orientation Course

TERM 2 AND SUMMER

Work Term

Year 4

30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer term.

TERMS 1 AND 2

15 units CHEM 3BA3, 3BB3, 3D03, 3I03, 4TA3
 3 units from the Science Inquiry Course List
 6 units from the Faculties of Business, Humanities, Social Sciences
 6 units from Level III, IV courses, excluding Chemistry

SUMMER

Work Term

Year 5

15 units from Academic Level IV, Term 2, plus completion of second eight-month work term, Term 1.

TERM 1

Work Term

TERM 2

3 units from Level III, IV Chemistry
 3 units from Level IV Chemistry
 3 units from the Science Inquiry List
 6 units Electives

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
	Term 1				Term 2				Summer Term			
YEAR 3	15 units from Academic Level III + Work Orientation Course				Work Term							
	Term 1				Term 2				Summer Term			
YEAR 4	15 units from Academic Level IV				15 units from Academic Level III				Work Term			
	Term 1				Term 2				Summer Term			
YEAR 5	Work Term				15 units from Academic Level IV							

Honours Biological Chemistry {2048}

ADMISSION

Completion of the Science I requirements, including:

6 units MATH 1A03, 1AA3
 6 units BIOLOGY 1A03, 1AA3
 6 units CHEM 1A03, 1AA3
 3 units PHYSICS 1B03
 3 units MATH 1B03
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

PHYSICS 1BA3 (or 1BB3) must be completed by the end of Level II and is very strongly recommended in Level I, because Physics labs are very difficult to schedule in the Level II programme.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in CHEM 1A03, 1AA3.

NOTES

1. This programme fulfills the academic requirements for membership in the Chemical Society of Canada.
2. A minor in Biochemistry is not permitted in the Honours Biological Chemistry programme.
3. Students considering BIOCHEM 3L03 in Level IV should select BIOCHEM 2EE3 in Level III, students considering BIOCHEM 4I03 in Level IV should select BIOCHEM 3BB3 in Level III.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

3 units BIOLOGY 2B03
 21 units CHEM 2A03, 2BA3, 2BB3, 2I03, 2L03, 2PA3, 2PB3
 3 units MATH 2A03
 3 units Electives, excluding Chemistry
 If not completed: PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS

6 units BIOCHEM 3G03; BIOLOGY 2C03
 3 units from BIOCHEM 2EE3, 3BB3 (See Note 3 above.)
 12 units CHEM 3A03, 3BA3, 3BB3, 3Q03
 3 units from CHEM 3D03, 3F03
 6 units Electives

LEVEL IV: 30 UNITS

6 units CHEM 4D03, 4DD3
 3 units from BIOCHEM 3B03, 3BB3, 4I03
 6 units from CHEM 4G06 or both CHEM 4TA3 and 3 units of Level III, IV Chemistry
 3 units from BIOCHEM 3L03, Level IV Biochemistry
 3 units from Level III, IV Biology
 3 units Electives, excluding Biology
 6 units Electives

B.Sc. Three-Level Degree

A three-level programme with a Chemistry orientation is available through the **B.Sc. in Physical Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Chemistry

6 units from CHEM 1A06, 1A03, 1AA3
 18 units Level II, III, IV Chemistry courses, including at least 6 units from Level III, IV Chemistry courses

DEPARTMENT OF COMPUTING AND SOFTWARE

WEB ADDRESS: <http://www.cas.mcmaster.ca>

NOTES

- It is possible to take COMP SCI 1MD3 after COMP SCI 1SA3 with a grade of B+ or better. In that case COMP SCI 1SA3 can be used as a substitute for COMP SCI 1MC3. Nevertheless, students who intend to enter a Comp. Sci. programme are recommended to take COMP SCI 1MC3.
- For students transferring from Engineering to Science, ENGI-NEER 1D04 can be used as a substitute for COMP SCI 1MC3.

Honours Economics and Computer Science

(B.A.; See Faculty of Social Sciences, Department of Economics)

Honours Arts & Science and Computer Science

(B.Arts Sc.; See Arts & Science programme)

Honours Computer Science {2147} (Complementary Studies Option)

ADMISSION

Completion of any Level I programme, including:

6 units MATH 1A03, 1AA3
 3 units MATH 1B03
 6 units COMP SCI 1MC3, 1MD3
 15 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3.

NOTES

- COMP SCI 3EA3 is listed as required in Level IV but may be taken in Level III.
- In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. The prerequisites should be considered when choosing your Level II (III) courses.

- A minor in Mathematics or Mathematics and Statistics is not permitted in the Honours Computer Science (Complementary Studies) programme.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

12 units COMP SCI 2MD3, 2MF3, 2MJ3, 2SC3
 6 units MATH 2R03, 2T03
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 6 units Electives, excluding Computer Science
 If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

6 units COMP SCI 3MG3, 3MH3
 6 units from COMP SCI 3CB3, 3GA3, 3IA3, 3TA3
 3 units COMP SCI 2ME3
 3 units HUMAN 2C03
 6 units from the Faculties of Business, Humanities, Social Sciences
 6 units Electives, excluding Computer Science

LEVEL IV: 30 UNITS

6 units COMP SCI 3EA3, 3MI3
 6 units from COMP SCI 4ZP6 or the Science Inquiry Course List from Level IV Computer Science, (excluding COMP SCI 4MP6, 4ZI3, 4ZP6), NEURCOMP 3W03
 6 units Electives from Level III, IV, excluding Computer Science
 6 units Electives

Honours Computer Science {2145} (Specialist Option)

ADMISSION

Completion of any Level I programme, including:

6 units MATH 1A03, 1AA3
 3 units MATH 1B03
 6 units COMP SCI 1MC3, 1MD3
 15 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3.

NOTES

- COMP SCI 3EA3 is listed as required in Level III but may be taken in Level IV.
- Level II and III courses should be selected carefully so that prerequisites for the Level III and IV courses in the desired area are satisfied.
- A minor in Mathematics or Mathematics and Statistics is not permitted in the Honours Computer Science (Specialist Option) programme.

COURSE LIST

All Level III and IV Computer Science (excluding COMP SCI 4MP6, 4ZP6, 4ZI3), all Level III, IV Mathematics and Statistics courses; NEURCOMP 3W03; PHYSICS 3B06, 3BA3, 3BB3, 4D06, 4DA3, 4DB3

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

Students entering from a Faculty other than the Faculty of Science must complete the requirements of the Science I programme before entry to Level IV.

LEVEL II: 30 UNITS

15 units COMP SCI 2MD3, 2ME3, 2MF3, 2MJ3, 2SC3
 6 units MATH 2A03, 2R03
 3 units from MATH 2S03, 2T03
 6 units Electives
 If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

- 12 units COMP SCI 3EA3, 3MG3, 3MH3, 3MI3
- 3 units from COMP SCI 3CB3, 3IA3, 3TA3
- 6 units from Level III, IV Mathematics, Statistics
- 6 units Electives, excluding Computer Science, Mathematics, Statistics
- 3 units Electives

LEVEL IV: 30 UNITS

- 6 units COMP SCI 4ZP6
- 18 units from the Course List (see above) which must include at least nine units of Level IV Computer Science
- 6 units Electives

Honours Computer Science {2145320} and Mathematics

ADMISSION

- Completion of any Level I programme, including:
 - 6 units MATH 1A03, 1AA3,
 - 6 units COMP SCI 1MC3, 1MD3
 - 3 units MATH 1B03
- 15 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03.

NOTE

A minor in Statistics or Mathematics and Statistics is not permitted in the Honours Computer Science and Mathematics programme.

COURSE LIST

All Level III and IV Computer Science, Mathematics and Statistics courses; MATH 2E03; NEURCOMP 3W03; PHYSICS 2C03, 2D03, 2K03, 2L03; STATS 2D03, 2MA3, 2MB3

REQUIREMENTS

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

LEVEL I

- 30 units (See Admission above.)

LEVEL II: 30 UNITS

- 9 units COMP SCI 2MD3, 2MF3, 2SC3
- 12 units MATH 2A03, 2AB3, 2C03, 2R03
- 3 units from MATH 2S03, 2T03
- 6 units Electives
- If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

- 12 units COMP SCI 2ME3, 3MG3, 3MH3, 3MI3
- 3 units from COMP SCI 3CB3, 3EA3, 3GA3, 3IA3, 3TA3
- 6 units MATH 3A03, 3X03
- 3 units from Level III, IV Mathematics, Statistics
- 6 units Electives

LEVEL IV: 30 UNITS

- 6 units COMP SCI 4MP6
- 3 units from MATH 3AA3, 4C03, 4J03, 4Q03 4S03, 4X03
- 6 units from Level III, IV Mathematics, Statistics
- 3 units from the Course List (see above)
- 6 units Electives, excluding Computer Science, Mathematics, Statistics
- 6 units Electives

Honours Computer Science {2145542} and Statistics

ADMISSION

- Completion of any Level I programme, including:
 - 6 units MATH 1A03, 1AA3
 - 6 units COMP SCI 1MC3, 1MD3
 - 3 units MATH 1B03
- 15 units from Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03.

NOTE

A minor in Mathematics or Mathematics and Statistics is not permitted in the Honours Computer Science and Statistics programme.

REQUIREMENTS

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

LEVEL I

- 30 units (See Admission above.)

LEVEL II: 30 UNITS

- 9 units COMP SCI 2MD3, 2MF3, 2SC3
- 15 units MATH 2A03, 2AB3, 2R03, 2S03, 2D03
- 6 units Electives
- If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

- 12 units COMP SCI 2ME3, 3MG3, 3MH3, 3MI3
- 3 units MATH 2C03
- 9 units STATS 2MB3, 3D06
- 3 units Electives, excluding Computer Science, Mathematics, Statistics
- 3 units Electives

LEVEL IV: 30 UNITS

- 3 units from COMP SCI 3CB3, 3EA3, 3GA3, 3IA3, 3TA3
- 6 units COMP SCI 4MP6
- 6 units from Level III, IV Mathematics
- 9 units from Level III, IV Statistics
- 3 units from Level III, IV Computer Science (excluding COMP SCI 4ZI3), Mathematics, Statistics, NEURCOMP 3W03
- 3 units Electives, excluding Computer Science, Mathematics, Statistics, NEURCOMP 3W03

Honours Computer Science B.Sc. {2149} as a Second Degree

ADMISSION

Completion of a Bachelor's degree in a discipline other than computer science with a Cumulative Average of least 7.0 from a recognized university; completion of MATH 1A03, 1AA3, 1B03, and COMP SCI 1MC3, 1MD3 or equivalent.

As Second Degree candidates, applicants must first apply for admission to the University, through the Office of the Registrar (Admissions) indicating they wish to apply for the Honours Computer Science B.Sc. as a Second Degree programme.

NOTE

If a student in the programme has previously taken a required course (or its equivalent), he/she does not have to re-take the course. However, if the credit from that course has been used for a previous degree, the student will be required to take another course with the required number of units.

COURSE LIST

All Level III, IV Computer Science courses (excluding COMP SCI 4MP6, 4ZI3, 4ZP6), Mathematics and Statistics courses; NEURCOMP 3W03; PHYSICS 3B06, 3BA3, 3BB3, 4D06, 4DA3, 4DB3

REQUIREMENTS:

- 60 units total
 - 15 units COMP SCI 2MD3, 2ME3, 2MF3, 2MJ3, 2SC3
 - 9 units MATH 2A03, 2R03, 2T03
 - 12 units COMP SCI 3EA3, 3MG3, 3MH3, 3MI3
 - 15 units from the Course List, which must include at least nine units of Level IV Computer Science
- 6 units from COMP SCI 4ZP6, Level IV Computer Science
- 3 units from COMP SCI 3CB3, 3GA3, 3IA3, 3TA3, Level IV Computer Science
- 1 course SCIENCE 1A00

B.Sc. Three-Level Degree

A three-level programme with a Computer Science orientation is available through the **B.Sc. in Mathematical Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Computer Science**NOTE**

24 units of Computer Science courses in total are required.

6 units	COMP SCI 1MC3, 1MD3
3 units	COMP SCI 2SC3
15 units	from Level II, III, IV Computer Science, including at least six units from Level III, IV Computer Science

SCHOOL OF GEOGRAPHY AND GEOLOGY

WEB ADDRESS: <http://www.science.mcmaster.ca/geo/geomain.html>

**Honours Geography (B.A.) and
B.A. in Geography and
Honours Geography and
Environmental Studies (B.A.)**

(See B.A. programmes, Faculty of Social Sciences, School of Geography and Geology)

**Honours Arts & Science and Geography
(B.Arts Sc.; See Arts & Science programme)**

**PROGRAMMES FOR STUDENTS ENTERING IN
SEPTEMBER 1999**

Honours Geography (B.Sc.) {2241}

ADMISSION

Completion of the Science I requirements, including:

6 units	MATH 1A03, STATS 1CC3
3 units	BIOLOGY 1A03
6 units	CHEM 1A03, 1AA3
3 units	GEO 1G03
3 units	PHYSICS 1B03
3 units	from GEO 1A03, 1B03
6 units	from Level I Course Lists 2, 3
1 course	SCIENCE 1A00

Both GEO 1A03 and GEO 1B03 must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in GEO 1G03 and in either GEO 1A03 or 1B03.

NOTES

- There are Level II (and III) prerequisites for many Level III (and IV) courses. The prerequisites should be considered when choosing your Level II courses.
- Students in this programme may select a Geographic Information Systems (GIS) specialist stream in Levels III and IV.
- While registered in Level II students may apply to the School of Geography and Geology by March 31st to be admitted to the GIS specialist stream. Students are required to have a minimum grade of C+ in GEO 2I03 to be admitted to the GIS stream. Students will be notified of the stream to which they are admitted on their June grade report and will register for the appropriate stream courses beginning in Level III. It is highly recommended that students make a counselling appointment with the Academic Advisor in the School of Geography and Geology during the March Counselling Period. Students may request that the School of Geography and Geology authorizes a transcript notation attesting that they have followed and/or completed their chosen stream.
- It is highly recommended that students make a counselling appointment with the Academic Advisor in the School of Geography and Geology during the March Counselling Period.
- The field component of GEO 3FE3 is normally taken in the two weeks before the start of the fall term in Level III.

COURSE LIST

GEO 3A03, 3B03, 3C03, 3E03, 3FG3, 3G03, 3I03, 3S03, 3W03, 3Y03, 4A03, 4B03, 4C03, 4D03, 4FE3, 4G03, 4I03, 4S03, 4W03

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

6 units	GEO 2I03, 2S03
9 units	from GEO 2B03, 2C03, 2G03, 2W03
15 units	Electives

If not completed: GEO 1A03 and 1B03

LEVEL III: 30 UNITS

6 units	GEO 3R03, 3FE3
6 units	from GEO 3B03, 3C03, 3G03, 3W03
6 units	from the Course List (students who have been admitted to the GIS specialist stream must complete GEO 3I03, 3Y03; See Notes 2 and 3 above.)
12 units	Electives

LEVEL IV: 30 UNITS

6 units	from GEO 4B03, 4C03, 4G03, 4W03
1 course	from GEO 4CC3, 4R06 (students admitted to the GIS specialist stream must complete GEO 4R06)
6-9 units	from the Course List (students admitted to the GIS specialist stream must complete GEO 4I03, 4S03)
12 units	Electives

Honours Environmental Science (B.Sc.) {2211}

ADMISSION

Completion of the Science I requirements, including:

6 units	MATH 1A03, STATS 1CC3
3 units	BIOLOGY 1A03
6 units	CHEM 1A03, 1AA3
3 units	GEO 1G03
3 units	PHYSICS 1B03
3 units	from GEO 1A03, 1B03
6 units	from Level I Course Lists 2, 3
1 course	SCIENCE 1A00

Both GEO 1A03 and GEO 1B03 must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in GEO 1G03 and in either GEO 1A03 or 1B03.

NOTES

- There are Level II (and III) prerequisites for many Level III (and IV) courses. The prerequisites should be considered when choosing your Level II courses. Students should take the Level II Required Specialist course required for the Specialist Stream they wish to follow in Levels III and IV.
- Students in this programme may choose a specialist stream at the end of Level II and may follow this stream through completion of the programme. The five possible Specialist Streams are as follows:

- **Geochemistry Stream:**

Required Specialist courses: GEO 2E03, 3Q03, 4Q03
Specialist Course List: GEO 2K03, 2KK3, 3E03, 3FG3, 3K03, 3Y03, CHEM 3A03

- **Surficial Geoscience Stream:**

Required Specialist courses: GEO 2G03, 3G03, 4G03
Specialist Course List: GEO 2E03, 3E03, 3FG3, 3W03, 3Y03, 3Z03, 3ZZ3, 4E03, 4Z03, 4ZZ3

- **Biogeochemistry Stream:**

Required Specialist courses: GEO 2B03, 3B03, 4B03
Specialist Course List: BIOLOGY 2D03, 3SS3, 3TT3, 4A03, 4Y03, BIOCHEM 3E03

- **Hydrology Stream:**

Required Specialist courses: GEO 2W03, 3W03, 4W03
Specialist Course List: GEO 2C03, 2WW3, 3C03, 3G03, 3Y03, 4WW3, 4Z03, ECON 3W03

- **Climatology Stream:**

Required Specialist courses: GEO 2C03, 3C03, 4C03
Specialist Course List: GEO 2W03, 3W03, 3Y03, 4FE3, 4W03, BIOLOGY 3TT3, ECON 3W03

To qualify for specialisation in a particular field (stream) a student must complete 9 units of the required specialist courses and 12 units from the corresponding specialist course list.

- While registered in Level II, students must apply to the School of Geography and Geology by March 31st to be admitted to a specific stream. Students will be notified of the stream to which they are admitted on their June grade report and will register for the appropriate stream courses beginning in Level III. It is highly recommended that students make a counselling appointment with the Academic Advisor in the School of Geography and Geology during the March Counselling Period. Students may request that the School of Geography and Geology authorizes a transcript notation attesting that they have followed and/or completed their chosen stream.
- The field component of GEO 3FE3 is normally taken in the two weeks **before** the start of the fall term in Level III.
- A minor in Geography or Geology is not permitted in the Honours Environmental Science programme.

COURSE LIST

BIOCHEM 3E03; BIOLOGY 2D03, 3SS3, 3TT3, 4A03, 4Y03; CHEM 3A03; ECON 3W03; GEO 2C03, 2E03, 2K03, 2KK3, 2W03, 3C03, 3E03, 3FG3, 3G03, 3K03, 3Q03, 3W03, 3Y03, 3Z03, 3ZZ3, 4E03, 4FE3, 4Q03, 4W03, 4WW3, 4Z03, 4ZZ3

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

9 units CHEM 2R03, GEO 2I03, 2S03
 6 units from BIOCHEM 2EE3, BIOLOGY 2F03, CHEM 2E03, 2A03 (or 2N03)

9 units from GEO 2B03, 2C03, 2E03, 2G03, 2W03
 6 units Electives

If not completed: GEO 1A03, 1B03

LEVEL III: 30 UNITS

12 units GEO 3A03, 3FE3, 3R03, 3U03
 6 units from GEO 3B03, 3C03, 3G03, 3Q03, 3W03
 6 units from the Course List (see above and Note 2.)
 6 units Electives

LEVEL IV: 30 UNITS

3 units GEO 4A03
 3-6 units GEO 4R06, 4CC3
 6 units from GEO 4B03, 4C03, 4G03, 4Q03, 4W03
 6-9 units from the Course List (see above and Note 2.)
 9 units Electives

Honours Environmental Science {2212} Co-op (B.Sc.)

ADMISSION

Enrolment in this programme is limited to a maximum of 10 students per year. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II Honours Geography and Environmental Science with a Cumulative Average of at least 6.0.

Information about the programme and the selection procedure may be obtained from the Co-ordinator of the Co-op programme in the School of Geography and Geology and will be explained in the month of February in an Information Session.

NOTES

- This is a five-year co-op programme which includes two eight month work terms which must be spent in placements related to Environmental Science.
- Students must be registered full-time and take a full academic programme.
- Students are required to complete a Work Orientation Course before the first work placement.
- There are Level II (and III) prerequisites for many Level III (and IV) courses. The prerequisites should be considered when choosing your Level II courses. Students should take the Level II Required Specialist course required for the Specialist Stream they wish to follow in Levels III and IV.

- Students in this programme may choose a specialist stream in Level III and may follow this stream through completion of the programme. The five possible Specialist Streams are as follows:

• Geochemistry Stream:

Required Specialist courses: GEO 2E03, 3Q03, 4Q03
 Specialist Course List: GEO 2K03, 2KK3, 3E03, 3FG3, 3K03, 3Y03, CHEM 3A03

• Surficial Geoscience Stream:

Required Specialist courses: GEO 2G03, 3G03, 4G03
 Specialist Course List: GEO 2E03, 3E03, 3FG3, 3W03, 3Y03, 3Z03, 3ZZ3, 4E03, 4Z03, 4ZZ3

• Biogeochemistry Stream:

Required Specialist courses: GEO 2B03, 3B03, 4B03
 Specialist Course List: BIOLOGY 2D03, 3SS3, 3TT3, 4A03, 4Y03, BIOCHEM 3E03

• Hydrology Stream:

Required Specialist courses: GEO 2W03, 3W03, 4W03
 Specialist Course List: GEO 2C03, 2WW3, 3C03, 3G03, 3Y03, 4WW3, 4Z03, ECON 3W03

• Climatology Stream:

Required Specialist courses: GEO 2C03, 3C03, 4C03
 Specialist Course List: GEO 2W03, 3W03, 3Y03, 4FE3, 4W03, BIOLOGY 3TT3, ECON 3W03

To qualify for specialisation in a particular field (stream) a student must complete 9 units of the required specialist courses and 12 units from the corresponding specialist course list.

- While registered in Level II, students must apply to the School of Geography and Geology by March 31st to be admitted to a specific stream. Students will be notified of the stream to which they are admitted on their June grade report and will register for the appropriate stream courses beginning in Level III. Students may request that the School of Geography and Geology authorizes a transcript notation attesting that they have followed and/or completed their chosen stream.
- It is highly recommended that students make a counselling appointment with the Academic Advisor in the School of Geography and Geology during the March Counselling Period.
- The field component of GEO 3FE3 is normally taken in the two weeks **before** the start of the fall term in Level III.
- A minor in Geography or Geology is not permitted in the Honours Environmental Science Co-op programme.

COURSE LIST

BIOCHEM 3E03; BIOLOGY 2D03, 3SS3, 3TT3, 4A03, 4Y03; CHEM 3A03; GEO 2C03, 2E03, 2K03, 2KK3, 2W03, 3C03, 3E03, 3FG3, 3G03, 3K03, 3Q03, 3W03, 3Y03, 3Z03, 3ZZ3, 4E03, 4FE3, 4Q03, 4W03, 4WW3, 4Z03, 4ZZ3, ECON 3W03

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II

30 units from Level II Honours Environmental Science (B.Sc.)

YEAR 3

15 units from Academic Level III, Term 1, plus Work Orientation course, and completion of first work term of eight-months duration, Term 2 and Summer Term.

TERM 1

6 units GEO 3FE3, 3R03
 3 units from GEO 3B03, 3C03, 3G03, 3Q03, 3W03
 3 units from the Course List (see Note 5 above.)
 3 units Electives
 → Work Orientation Course

TERM 2 AND SUMMER

Work Term

YEAR 4

30 units from Academic Level IV, Term 1 and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer Term.

TERMS 1 AND 2

6 units GEO 3U03, 3A03
 3-6 units GEO 4R06, 4CC3
 6 units from GEO 3B03, 3C03, 3G03, 3Q03, 3W03, 4B03, 4C03, 4G03, 4Q03, 4W03
 6-9 units from the Course List (see Note 5 above.)
 6 units Electives

SUMMER

Work Term

YEAR 5

15 units from Academic Level IV, Term 2, and completion of second eight-month work term, Term 1.

TERM 1

Work Term

TERM 2

3 units GEO 4A03
 3 units from GEO 3B03, 3C03, 3G03, 3W03, 3Q03, 4B03, 4C03, 4G03, 4Q03, 4W03
 3 units from the Course List (see Note 5 above.)
 6 units Electives

	SEP OCT NOV DEC	JAN FEB MAR APR	MAY JUN JUL AUG
	Term 1		Term 2
YEAR 3	15 units from Academic Level III + Work Orientation Course		Work Term
	Term 1		Term 2
YEAR 4	15 units from Academic Level IV		Work Term
	Term 1		Term 2
YEAR 5	Work Term		15 units from Academic Level IV
	Term 1		Term 2

Honours Geology

{2251}

ADMISSION

Completion of the Science I requirements, including:

6 units MATH 1A03, STATS 1CC3
 3 units BIOLOGY 1A03
 6 units CHEM 1A03, 1AA3
 3 units GEO 1G03
 3 units PHYSICS 1B03
 3 units from GEO 1A03, 1B03
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

Both GEO 1A03 and 1B03 must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in GEO 1G03 and in either GEO 1A03 or 1B03.

NOTES

- This programme aims to fulfill the academic requirements for registration of Geoscientists in Ontario. Please consult with the Academic Advisor in the School of Geography and Geology for specific requirements.
- In some courses there are Level II (and III) prerequisites for many Level III (and IV) courses. The prerequisites should be considered when choosing your Level II (III) courses.
- Students in this programme must choose a specialist stream in Level III and must follow this stream through completion of the programme. The two possible Specialist Streams are as follows:

• **Geo-resources:**

Specialist Course List: GEO 2B03, 2G03, 3G03, 3I03, 3K03, 3P03, 3W03, 3Y03, 4E03, 4FE3, 4I03, 4K03, 4Q03, 4S03, 4T03, 4R06, 4W03, 4Z03, 4ZZ3

• **Geo-environmental:**

Specialist Course List: BIOCHEM 2EE3; BIOLOGY 2F03, 3SS3; GEO 2B03, 2G03, 2W03, 3A03, 3C03, 3G03, 3P03, 3U03, 3W03, 3Y03, 4A03, 4E03, 4FE3, 4G03, 4K03, 4Q03, 4R06, 4WW3, 4Z03, 4ZZ3

A minimum of 30 units must be taken from the entire Geo-resources or Geo-environmental specialist course list to obtain specialization.

- While registered in Level II, students must apply to the School of Geography and Geology by March 31st to be admitted to a specific stream. Students will be notified of the stream to which they are admitted on their June grade report and will register for the appropriate stream courses beginning in Level III. Students may request that the School of Geography and Geology authorizes a transcript notation attesting that they have followed and/or completed their chosen stream.
- It is highly recommended that students make a counselling appointment with the Academic Advisor in the School of Geography and Geology during the March Counselling Period.
- Students must register for GEO 3FG3 in Level III, but normally take after the April exam period in Level II. GEO 4FE3 is normally taken in the summer after Level III, but is included in the Level IV registration.
- A minor in Environmental Science is not permitted in the Honours Geology programme.

COURSE LIST

BIOCHEM 2EE3; BIOLOGY 2F03, 3SS3; GEO 2B03, 2G03, 2W03, 3A03, 3C03, 3G03, 3I03, 3K03, 3P03, 3U03, 3W03, 3Y03, 4A03, 4E03, 4FE3, 4G03, 4I03, 4K03, 4Q03, 4R06, 4S03, 4T03, 4W03, 4WW3, 4Z03, 4ZZ3

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

3 units CHEM 2R03
 18 units GEO 2E03, 2I03, 2K03, 2KK3, 2P03, 2S03
 9 units Electives

LEVEL III: 30 UNITS

3 units from GEO 3A03, 3R03, ENGINEER 4B03
 15 units GEO 3E03, 3FG3, 3Q03, 3Z03, 3ZZ3
 6 units from Course List (See Note 3 above.)
 6 units Electives

LEVEL IV: 30 UNITS

24 units from Course List (see Note 3 above), including at least nine units from Level IV courses
 6 units Electives

B.Sc. Three-Level Degree

A three-level programme with a Geography/Geology orientation is available through the **B.Sc. in Geoscience** (formerly Earth Science) which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Geography

6 units from Level I GEO 1A03, 1B03, 1G03, 1HB6, 1HS3, 1HU3, ENVIR SC 1B03, 1G03, 1H03
 18 units from GEO 2B03, 2C03, 2G03, 2GG3, 2HA3, 2HB3, 2HC3, 2HD3, 2HR3, 2HU3, 2HY3, 2W03, 2WW3, 3A03, 3C03, 3G03, 3HD3, 3HG3, 3HH3, 3HJ3, 3HR3, 3HT3, 3HX3, 3HZ3, 3S03, 3W03, 4A03, 4B03, 4C03, 4D03, 4G03, 4HS3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4W03, including at least six units of Level III, IV courses. No more than 6 units can be from GEO 2GG3, 2HC3, 2HU3, 2WW3, 3HJ3, 3HR3

Minor in Geology

- 3 units from Level I GEO 1G03; ENVIR SC 1G03, GEOLOGY 1C03, GEOG 1G03
- 3 units from GEO 1A03, 1B03, ENVIR SC 1B03, 1H03
- 18 units from GEO 2E03, 2K03, 2KK3, 2P03, 3E03, 3FG3, 3K03, 3P03, 3Q03, 3Z03, 3ZZ3, 4E03, 4FE3, 4K03, 4KK3, 4P03, 4Q03, 4T03, 4X03, 4Z03, 4ZZ3, including at least six units from Level III, IV courses.

Minor in Environmental Science

- 6 units from Level I GEO 1A03, 1B03, 1G03; ENVIR SC 1B03, 1G03, 1H03, 1A06, GEOLOGY 1C03, GEOG 1C03, 1G03
- 18 units from BIOLOGY 2F03, 3R03, 3SS3, 3TT3, 4J03, 4Y03, CHEM 2A03, 2E03, 2R03, GEO 2B03, 2C03, 2E03, 2G03, 2W03, 3A03, 3B03, 3C03, 3G03, 3Q03, 3W03, 4A03, 4B03, 4C03, 4Q03, 4W03, including at least six units from Level III, IV GEO courses and at least 3 units from Level II, III, or IV BIOLOGY or CHEM courses.

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1998

- Honours Geography (B.Sc.) {2241}
- Honours Geography and Environmental Science (B.Sc.) {2242}
- Honours Geography and Environmental Science Co-op (B.Sc.) {2244}

Students who entered these programmes prior to September 1998 must consult the Academic Advisor for the School of Geography and Geology to discuss ways of fulfilling their programme requirements.

DEPARTMENT OF KINESIOLOGY

WEB ADDRESS: <http://kinlabserver.mcmaster.ca>

Bachelor of Kinesiology (B.KIN), Honours Bachelor of Kinesiology (B.KIN), and B.KIN as a Second Degree

(See B.A. programmes, Faculty of Social Sciences, Department of Kinesiology)

Honours Kinesiology {2671}

The offering of this programme is contingent upon approval by the Ministry of Education and Training.

ADMISSION

- Completion of the Kinesiology I requirements, including:
 - 12 units KINESIOL 1A06, 1D03, 1E03
 - 3 units MATH 1A03
 - 3 units STATS 1CC3
 - 6 units from Level I Science Core Course List 1 (See Note 3 below.)
 - 6 units Electives (See Note 3 below.)
 - 2 courses KINESIOL 1FL0 (See Note 1 below.), SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in KINESIOL 1A06, 1D03, 1E03.

NOTES

1. KINESIOL 1FL0 (Aspects of Fitness, Lifestyle Management & Recreation) is a non-credit requirement and must be completed in Level I.
2. Students who do not meet the admission criteria for the Honours Kinesiology programme, but whose Cumulative Average is between 3.0 and 4.9 may register in a three-level degree programme for which they qualify. Students with an average between 4.0 and 4.9 may transfer to the B.Kin (four level) programme.

3. BIOLOGY 1A03, 1AA3 and CHEM 1A03, 1AA3 are required for students wishing to take upper level Biology courses. PSYCH 1A03, 1AA3 are required for students wishing to take upper level Psychology courses.
4. Students transferring into the Honours Kinesiology programme with credit in KINESIOL 1B03 must take STATS 1CC3.
5. Students wishing to complete a minor in Science must carefully choose their Level I and II electives keeping in mind the various prerequisite requirements for Level III and IV courses.

COURSE LIST

KINESIOL 3AA3, 3D03; 3E03, 3K03; 4A06, 4B03; 4C03, 4CC3; 4H03, 4K03; 4KK3, 4Q03; 4RR6, 4S03; 4SS3, 4V03; 4W03, 4Y03

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I.

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS (EFFECTIVE 1999-2000)

- 15 units KINESIOL 2A03, 2B03, 2C06, 2G03
- 9 units from the Faculty of Science
- 3 units HUMAN 2C03
- 3 units Electives, excluding courses from the Department of Kinesiology
- 1 course KINESIOL 2FL0

LEVELS III AND IV: 60 UNITS (EFFECTIVE 2000-2001)

- 30 units Level III or IV Kinesiology, including at least 18 units from the Course List (see above)
- 6 units from Level II, III, IV Faculty of Science courses
- 12 units from Level III, IV Faculty of Science courses
- 12 units from the Faculties of Business, Humanities, Social Sciences

MATERIALS SCIENCE AND ENGINEERING

WEB ADDRESS: <http://mse.eng.mcmaster.ca>

Honours Materials Science {2360} (Specialist Option)

ADMISSION

Completion of the Science I requirements, including:

- 6 units MATH 1A03, 1AA3
 - 6 units CHEM 1A03, 1AA3
 - 3 units COMP SCI 1MC3
 - 6 units PHYSICS 1B03, 1BA3 (or 1BB3)
 - 3 units MATH 1B03
 - 6 units from Level I Course Lists 2, 3
 - 1 course SCIENCE 1A00
- PHYSICS 1BA3 is recommended.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of at least C+ in each of CHEM 1A03, 1AA3, MATH 1AA3.

OR

Completion of the Engineering I requirements, including:

- 3 units CHEM 1E03
- 8 units ENGINEER 1A00, 1C04, 1D04
- 5 units MATH 1H05
- 6 units MATH 1N03, 1NN3
- 6 units PHYSICS 1D03, 1E03
- 6 units Approved complementary studies electives

MINIMUM AVERAGES/GRADES:

A Cumulative Average of at least 4.0

COURSE LIST

All Level III and IV Materials courses; ENGINEER 3P03, 4J03; CHEM ENG 3Q03; ENG PHYS 3E03, 3F03, 4F03, 4Z03; MECH ENG 3O04; PHYSICS 3MM3, 3Q03, 4K03

REQUIREMENTS

125-127 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 33-34 UNITS

- 3-4 units from CHEM 2E03, 2I03, 2WW4
 6 units MATH 2A03, 2C03
 7 units ENGINEER 2O03 (unless MATLS 1A03 already taken), 2P04
 11 units MATLS 2B03, 2D03, 2H03, 2X02
 6 units PHYSICS 2B06

LEVEL III: 33 UNITS

- 4 units CHEM ENG 2A04
 14 units MATLS 3C03, 3D03, 3E04, 3T04
 3 units MATH 3I03
 3 units from STATS 3N03, 3Y03
 3 units from PHYSICS 3O03, 3M03
 6 units Electives

LEVEL IV: 29-30 UNITS

- 8 units MATLS 4A02, 4K04, 4L02
 15-16 units from the Course List (see above)
 6 units Electives, excluding Astronomy, Chemistry, Computer Science, Engineering, Engineering Physics, Materials, Mathematics, Physics, Statistics

Minor in Materials Properties**NOTE**

- In order to meet prerequisite requirements, at least 6 units of appropriate Level II Mathematics must be taken.
 3 units from ENGINEER 2O03, MATLS 1A03
 1 course from CHEM ENG 2A04, MATLS 3A03
 11-12 units MATLS 2X02, 3I05, 3C03, 3D03, 3T04
 6 units MATLS 2B03, 2D03

Minor in Materials Processing**NOTE**

- In order to meet prerequisite requirements, at least 6 units of appropriate Level II Mathematics must be taken.
 3 units from ENGINEER 2O03, MATLS 1A03
 1 course from CHEM ENG 2A04, MATLS 3A03
 11 units MATLS 3B03, 3E04, 4B04
 6 units MATLS 2B03, 2D03

DEPARTMENT OF MATHEMATICS AND STATISTICS**WEB ADDRESS:**

<http://www.science.mcmaster.ca/MathStat/Dept.html>

Honours Biology and Mathematics

(See Department of Biology)

Honours Computer Science and Mathematics

(See Department of Computing and Software)

Honours Computer Science and Statistics

(See Department of Computing and Software)

Honours Economics and Mathematics

(B.A.; See Faculty of Social Sciences, Department of Economics)

Honours Philosophy and Mathematics

(B.A.; See Faculty of Humanities, Department of Philosophy)

Honours Arts & Science and Mathematics

(B.Arts Sc.; See Arts & Science programme)

Honours Mathematics (Specialist Option) {2320}**ADMISSION**

- Completion of a Level I programme in any Faculty, including:
 9 units MATH 1A03, 1AA3, 1B03
 21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

NOTES

- By electing STATS 2D03 and STATS 2MB3 in Level II of this programme, a student can also complete Level II Honours Statistics (Specialist Option) or Level II Honours Mathematics and Statistics (Specialist Option).
- A minor in Statistics is not permitted in the Honours Mathematics (Specialist Option) programme.

COURSE LIST 1

MATH 2E03, STATS 2D03, 2MA3, 2MB3

COURSE LIST 2

All Level III and IV Mathematics and Statistics courses

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 15 units MATH 2A03, 2AB3, 2C03, 2R03, 2S03
 6 units from Course List 1 (see above)
 9 units Electives
 If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

- 15 units MATH 3A03, 3AA3, 3E03, 3EE3, 3X03
 6 units from Course Lists 1 and 2 (see above)
 9 units Electives

LEVEL IV: 30 UNITS

- 3 units from MATH 4B03, 4E03, 4G03, 4X03
 18 units from Course List 2 (see above)
 9 units Electives

Honours Applied Mathematics {2021}**ADMISSION**

Completion of the Science I requirements, including:

- 6 units MATH 1A03, 1AA3
 3 units CHEM 1A03
 3 units from COMP SCI 1MC3, 1SA3
 6 units PHYSICS 1B03, 1BA3 (or 1BB3)
 3 units MATH 1B03
 3 units from Level I Course List 2
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of four of MATH 1B03, 1AA3, PHYSICS 1BA3 (or 1BB3), CHEM 1A03, COMP SCI 1MC3, 1SA3.

OR

Completion of the Engineering I requirements with:

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of four of MATH 1H05, 1NN3, PHYSICS 1E03, CHEM 1E03, ENGINEER 1D04.

NOTES

- Students are encouraged to choose from the Course Lists to give an area of concentration. The courses listed in Course List B give offerings in fluid mechanics, solid mechanics (elasticity), software engineering, geophysics, materials science, thermodynamics and statistical mechanics. Other applied areas may be included, in consultation with a faculty advisor in the Department of Mathematics and Statistics.
- Selections from Course List A should be made carefully to provide the prerequisite courses necessary for admission to the desired courses from Course List B.
- Permission will be given to any student registered in this programme to replace MATH 2M06 or MATH 2P04 and 2Q04 with MATH 2A03 and 2C03 as prerequisites for Engineering courses.
- Courses in Chemical Engineering and Civil Engineering will be open to any student registered in the Honours Applied Mathematics programme. Entry to courses in Electrical and

Computer Engineering will be given subject to possible enrolment limitations. Please consult with an advisor in the appropriate department.

- As this programme involves two faculties, students may encounter difficulties in scheduling their preferred applied courses.

COURSE LIST A

CHEM ENG 2A04; CIV ENG 2C04; COMP ENG 2S14, 2D14; ELEC ENG 2C14; ENGINEER 2O03, 2P04; GEO 3ZZ3; MATLS 2X02; MATH 2E03; MECH ENG 2W04; PHYSICS 2B06, 2H04

COURSE LIST B

CHEM ENG 3O04; CIV ENG 3G03, 4K04; COMP ENG 3S14, 3DJ4, 3SK4; ENG PHYS 3O03; MATLS 3E04, 3P03, 3T04; MECH ENG 3A03, 3O04, 3R03, 4S03; PHYSICS 3C03, 3K03, 3M03, 3MM3, 3N03, 4B04, 4K03; Any other Level III or IV Engineering course, subject to the approval of a faculty advisor

REQUIREMENTS

120-125 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30-32 UNITS

12 units MATH 2A03, 2AB3, 2C03, 2R03
 3 units from MATH 2S03, 2T03
 3 units STATS 2D03
 6-8 units from Course List A (see above)
 6 units Electives

LEVEL III: 30-33 UNITS

15 units MATH 3A03, 3F03, 3FF3, 3Q03, 3X03
 3-4 units from Course Lists A and B (see above)
 6-8 units from Course List B (see above)
 6 units Electives

LEVEL IV: 30 UNITS

9 units from MATH 4G03, 4GG3, 4Q03, 4V03, 4X03
 3 units from MATH 3AA3, STATS 3U03
 9-12 units from Course List B (see above)
 6-9 units Electives

Honours Mathematics and Physics {2320440}

ADMISSION

Completion of the Science I requirements, including:

6 units MATH 1A03, 1AA3
 6 units CHEM 1A03, 1AA3
 6 units PHYSICS 1B03, 1BA3 (or 1BB3)
 3 units MATH 1B03
 3 units from Level I Science Core Course List 1
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00
 COMP SCI 1MC3 or 1SA3 is recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03, PHYSICS 1B03, 1BA3, 1BB3.

NOTES

- Students who complete Level II of Honours Mathematics and Physics are eligible to proceed to any Level III Honours (Specialist Option) programme in Mathematics or Physics.
- PHYSICS 3C03 is listed in Level III but is offered in alternate years, and may be taken in Level IV.
- A minor in Astronomy or Statistics is not permitted in the Honours Mathematics and Physics programme.

COURSE LIST

COMP SCI 2MD3, 2SC3; MATH 2E03; STATS 2D03, 2MB3; all Level III and IV Astronomy courses; all Level III and IV Mathematics and Statistics courses; PHYSICS 4J04, all Level III and IV Physics courses except PHYSICS 3T03, 4R06, 4T03

REQUIREMENTS

121-123 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 31 UNITS

12 units MATH 2A03, 2AB3, 2C03, 2R03
 3 units from MATH 2S03, 2T03
 16 units PHYSICS 2B06, 2H04, 2K03, 2L03

LEVEL III: 30-31 UNITS

9 units MATH 3A03, 3F03, 3X03
 12 units PHYSICS 3C03, 3K03, 3M03, 3MM3
 3-4 units from the Course List (see above)
 6 units Electives

LEVEL IV: 30-31 UNITS

6 units MATH 3AA3, 4X03
 4 units PHYSICS 4B04
 14-15 units from the Course List (see above)
 6 units Electives

Honours Mathematics and Statistics {2320543} (Complementary Studies Option)

ADMISSION

Completion of a Level I programme in any Faculty, including:

9 units MATH 1A03, 1AA3, 1B03
 21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

NOTES

- Students contemplating graduate studies in Mathematics or Statistics should consider Honours Mathematics and Statistics (Specialist Option).
- In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These should be considered when choosing your Level II (and III) courses.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

18 units MATH 2A03, 2AB3, 2C03, 2R03; STATS 2D03, 2MB3
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 6 units Electives, excluding Mathematics, Statistics
 If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

6 units STATS 3D06
 3 units from MATH 2S03, 2T03
 3 units from MATH 3A03, 3X03
 3 units from Level III Mathematics and Statistics, MATH 2K03
 3 units from HUMAN 2C03, MATH 2E03
 6 units from the Faculties of Business, Humanities, Social Sciences
 6 units Electives, excluding Mathematics, Statistics

LEVEL IV: 30 UNITS (EFFECTIVE 1999-2000)

6 units from the Science Inquiry Course List
 15 units from Level III, IV Mathematics and Statistics courses, MATH 2K03
 3 units from Level III, IV courses, excluding Mathematics, Statistics
 6 units Electives

LEVEL IV: 30 UNITS (EFFECTIVE 2000-2001)

6 units from the Science Inquiry Course List
 3 units from MATH 3A03, 3E03, 3X03
 12 units from Level III, IV Mathematics and Statistics courses, MATH 2K03
 3 units from Level III, IV courses, excluding Mathematics, Statistics
 6 units Electives

Honours Mathematics and Statistics {2320542} (Specialist Option)

ADMISSION

Completion of a Level I programme in any Faculty, including:
9 units MATH 1A03, 1AA3, 1B03
21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

15 units MATH 2A03, 2AB3, 2C03, 2R03, 2S03

6 units STATS 2D03, 2MB3

9 units Electives

If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

18 units MATH 3A03, 3AA3, 3E03, 3X03; STATS 3D06

6 units from Level III, IV Statistics

6 units Electives

LEVEL IV: 30 UNITS

6 units from MATH 3AA3, 3EE3, 4B03, 4E03, 4G03, 4X03

6 units STATS 4D03, 4M03

6 units from Level III, IV Mathematics

6 units from Level III, IV Statistics

6 units Electives

Honours Statistics (Specialist Option) {2542}

ADMISSION

Completion of a Level I programme in any Faculty, including:
9 units MATH 1A03, 1AA3, 1B03
21 units Level I courses to complete a Level I programme

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

NOTE

A minor in Mathematics is not permitted in the Honours Statistics (Specialist Option) programme.

COURSE LIST 1

COMP SCI 2MD3, 2ME3, 2SB3, 2SC3; MATH 2E03

COURSE LIST 2

All Level III and IV Statistics courses

COURSE LIST 3

COMP SCI 3IA3, 3SD3; MATH 3E03, 3EE3, 3F03, 3FF3, 3Q03, 3R03, 4C03, 4J03, 4K03, 4Q03, 4RR3, 4W03, 4X03

REQUIREMENTS

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

LEVEL I:

30 units (See Admission above.)

LEVEL II: 30 UNITS

12 units MATH 2A03, 2AB3, 2C03, 2R03

3 units from MATH 2S03, 2T03

6 units STATS 2D03, 2MB3

9 units Electives

If not completed: SCIENCE 1A00

LEVEL III: 30 UNITS

15 units MATH 3A03, 3AA3, 3X03; STATS 3D06

6 units from Course Lists 1, 2 and 3 (see above)

9 units Electives

LEVEL IV: 30 UNITS

6 units STATS 4D03, 4M03

6 units from Course List 2 (see above)

9 units from Course Lists 2 and 3 (see above)

9 units Electives

B.Sc. Three-Level Degree

A three-level programme with a Mathematics or Statistics orientation is available through the **B.Sc. in Mathematical Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Mathematics and Statistics

NOTES

1. It is possible for a student to complete this Minor through evening and summer study.
2. MATH 2L03 should not be taken by students wishing to complete this minor.

9 units MATH 1A03, 1AA3, 1B03

18 units from Level II, III, IV Mathematics and Statistics, including at least six units from Level III, IV Mathematics and Statistics

MOLECULAR BIOLOGY

Honours Biochemistry and Molecular Biology

(See Department of Biochemistry)

Honours Molecular Biology

{2365}

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Science I requirements, including:

6 units MATH 1A03, STATS 1CC3

6 units BIOLOGY 1A03, 1AA3

6 units CHEM 1A03, 1AA3

3 units PHYSICS 1B03

3 units from Level I Science Core Course List 1

6 units from Level I Course Lists 2, 3

1 course SCIENCE 1A00

PHYSICS 1BA3 (or 1BB3) must be completed by the end of Level II and is very strongly recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in BIOLOGY 1A03 and 1AA3 and a grade of C+ in each of three of CHEM 1A03, 1AA3, MATH 1A03, STATS 1CC3, PHYSICS 1B03.

NOTES

1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction and also draws on the Departments of Biology, Biochemistry and Pathology and the McMaster Institute for Molecular Biology and Biotechnology.
2. Information and counselling may be obtained through the Programme Coordinator.
3. A minor in Biochemistry, Biology, or Chemistry is not permitted in the Honours Molecular Biology programme.
4. This programme has the following areas of specialization:
 - a) Molecular Immunology
 - b) Molecular Microbiology
 - c) Molecular Pharmacology

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

21 units BIOCHEM 2A06; BIOLOGY 2B03, 2C03; CHEM 2OA3, 2OB3, 2R03

3 units from BIOLOGY 2D03, 2E03, CHEM 2N03

6 units Electives. BIOLOGY 2D03, 2E03, CHEM 2N03 are recommended

If not completed: PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS

- 3 units from BIOLOGY 3H03, BIOCHEM 3B03
 15 units BIOCHEM 3BB3, 3L03; BIOLOGY 3E03, 3O03, 3V03
 9 units from BIOLOGY 3AA3, 3B03, 3C03, 3HH3, 3I03, 3NN3, 3P03, 3X03
 3 units Electives

LEVEL IV: 30 UNITS

- 3-9 units from BIOCHEM 4L03, 4P03; BIOLOGY 4F06; MOL BIOL 4R09
 6 units BIOCHEM 4D03, 4E03
 3 units from BIOCHEM 4I03, 4M03
 12-18 units from BIOCHEM 4A03, 4I03, 4M03, 4Q03; BIOLOGY 4B03, 4I13, 4M03, 4P03, 4PP3, 4R03, 4T03, 4V03; MOL BIOL 4F03, 4H03, 4J03; PHARMAC 4B03
 0-6 units Electives. BIOLOGY 4M03 is highly recommended

NEURAL COMPUTATION**Honours Neural Computation {2381}****ADMISSION**

Completion of the Science I requirements, including:

- 6 units MATH 1A03, 1AA3
 3 units BIOLOGY 1A03
 6 units COMP SCI 1MC3, 1MD3
 3 units PHYSICS 1B03
 6 units PSYCH 1A03, 1AA3
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in PSYCH 1A03, 1AA3 and a grade of C+ in COMP SCI 1MD3.

NOTES

- This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction and also draws on the Departments Psychology, Mathematics and Statistics, and Computing and Software.
- Information and counselling may be obtained through the Programme Coordinator in the Department of Psychology.
- A Minor in Psychology, Computer Science or Mathematics is not permitted in the Honours Neural Computation Programme, although electives may be drawn from any of these areas.
- The Neural Computation thesis in Level IV may be taken from any participating department with permission of the Programme Coordinator.

COURSE LIST

COMP SCI 2MJ3, 3GA3, 3SD3, 3TA3, 4TC3; MATH 2E03, 4S03

REQUIREMENTS

121-122 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30-31 UNITS

- 6 units MATH 1B03, STATS 2D03
 1 course from MATH 2A03, 2Q04
 3 units COMP SCI 2MD3
 6 units from PSYCH 2E03, 2H03, 2T03
 3 units PSYCH 2F03
 3 units NEURCOMP 3W03
 6 units Electives

LEVEL III: 31 UNITS

- 3 units from the Course List (see above)
 4 units MATH 2P04
 6 units MATH 2R03, 2T03
 6 units PSYCH 3FA3, 4I03
 6 units STATS 3D06
 6 units Electives

LEVEL IV: 30 UNITS

- 9 units from the Course List (see above)
 3 units COMP SCI 4IB3
 9 units NEURCOMP 4D09
 9 units Electives

DEPARTMENT OF PHYSICS AND ASTRONOMY

WEB ADDRESS: <http://www.physics.mcmaster.ca/>

NOTE

Students in all Physics programmes are expected to have basic skills in the use of personal computers, word processing and spreadsheet software, and some familiarity with a programming language such as Basic, C, Fortran or Pascal. COMP SCI 1SA3 is recommended for students without those skills.

Honours Mathematics and Physics

(See Department of Mathematics and Statistics)

Honours Arts & Science and Physics

(B.Arts Sc.; See Arts & Science programme)

Honours Physics {2442}
(Complementary Studies Option)**ADMISSION**

Completion of the Science I requirements, including:

- 6 units MATH 1A03, 1AA3
 6 units CHEM 1A03, 1AA3
 6 units PHYSICS 1B03, 1BA3 (or 1BB3)
 3 units MATH 1B03
 3 units from Level I Science Core Course List 1
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in MATH 1A03, 1AA3, 1B03 and an average of 6.0 in 6 units from PHYSICS 1B03, 1BA3 (or 1BB3).

NOTES

- The Physics Department considers Honours Physics (Specialist Option) to be more appropriate for graduate studies in Physics.
- A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Physics (Complementary Studies Option) programme.

REQUIREMENTS

123-125 units total (Levels I to IV), of which no more than 48 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 31 UNITS

- 13 units PHYSICS 2B06, 2K03, 2H04
 6 units MATH 2A03, 2C03
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 6 units Electives

LEVEL III: 31-32 UNITS

- 7 units MATH 3C03; PHYSICS 3H04
 3 units from PHYSICS 3O03, 3M03
 6-7 units from Level III Physics, Level III Astronomy, GEO 3ZZ3, MATH 3D03
 3 units HUMAN 2C03
 6 units from the Faculties of Business, Humanities, Social Sciences
 6 units Electives, excluding Physics, Astronomy, GEO 3ZZ3

LEVEL IV: 31-32 UNITS

- 3 units PHYSICS 4A03
 3 units from the Science Inquiry Course List
 4 units PHYSICS 4J04
 9-10 units from Level III, IV Physics (excluding 4Z13, 4ZJ3), Level III Astronomy, GEO 3ZZ3
 6 units from Level III, IV courses, excluding Physics, Astronomy, GEO 3ZZ3
 6 units Electives

Honours Physics (Specialist Option) {2440}**ADMISSION**

Completion of the Science I requirements, including:

6 units	MATH 1A03, 1AA3
6 units	CHEM 1A03, 1AA3
6 units	from PHYSICS 1B03, 1BA3 (or 1BB3)
3 units	MATH 1B03
3 units	from Level I Science Core Course List 1
6 units	from Level I Course Lists 2, 3
1 course	SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in MATH 1A03, 1AA3, 1B03 and an average of 6.0 in 6 units from PHYSICS 1B03, 1BA3 (or 1BB3).

NOTES

- Students who have completed Level II of Honours Physics (Specialist Option) with a Cumulative Average of 6.0 are eligible to proceed to Level III of Honours Physics (Specialist Option), or Honours Astrophysics (with completion of either ASTRON 1F03 or 2E03).
- Students are required to take six units from PHYSICS 3B06, 3BA3, 3BB3, 4D06, 4DA3, 4DB3. This requirement is listed in Level III but may be completed in Level IV. It is recommended that any courses selected from PHYSICS 3B06, 3BA3, 3BB3 are taken in Level III and any courses selected from PHYSICS 4D06, 4DA3, 4DB3 are taken in Level IV.
- Students interested in applied physics should include PHYSICS 3B06, 4D06 in their programme.
- Students transferring to this programme who have credit in PHYSICS 2G03 will lose this credit and must replace it with PHYSICS 2K03 and 2L03. MATH 2Q03 does not have to be replaced with MATH 2C03, but MATH 2AB3 must be completed.
- A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Physics (Specialist Option) programme.

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 31 UNITS

9 units	MATH 2A03, 2AB3, 2C03
16 units	PHYSICS 2B06, 2H04, 2K03, 2L03
6 units	Electives, excluding Physics

LEVEL III: 31 UNITS

6 units	MATH 3C03, 3D03
6 units	from PHYSICS 3B06, 3BA3, 3BB3, 4D06, 4DA3, 4DB3 (See Notes 2 and 3 above.)
16 units	PHYSICS 3H04, 3K03, 3M03, 3MM3, 3N03
3 units	Electives

LEVEL IV: 32 UNITS

14 units	PHYSICS 4A03, 4B04, 4F03, 4J04
3 units	from PHYSICS 3A03, 3C03, 4E03, 4G03, 4K03, ASTRON 3X03, 3Y03
6 units	from Level III, IV Science
9 units	Electives (See Notes 2 and 3 above.)

Honours Astrophysics**{2444}****ADMISSION**

Completion of Level II Honours Physics (Specialist Option), including ASTRON 1F03, with a Cumulative Average of at least 6.0.

NOTES

- ASTRON 3X03 and 3Y03 must be completed but are offered in alternate years. These courses should be taken when they are offered.
- Students are required to take six units from PHYSICS 3B06, 3BA3, 3BB3, 4D06, 4DA3, 4DB3. This requirement is listed in Level III but may be completed in Level IV. It is recommended

that any courses selected from PHYSICS 3B06, 3BA3, 3BB3 are taken in Level III and any courses selected from PHYSICS 4D06, 4DA3, 4DB3 are taken in Level IV.

- A minor in Mathematics or Mathematics and Statistics or Physics is not permitted in the Honours Astrophysics programme.

REQUIREMENTS

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

LEVEL I

30 units from the Science I requirements

LEVEL II

31 units from the Honours Physics (Specialist Option) Level II requirements, including ASTRON 1F03

LEVEL III: 31 UNITS

3 units	from ASTRON 3X03, 3Y03
6 units	from PHYSICS 3B06, 3BA3, 3BB3, 4D06, 4DA3, 4DB3 (See Note 2 above.)
16 units	PHYSICS 3H04, 3K03, 3M03, 3MM3, 3N03
6 units	MATH 3C03, 3D03

LEVEL IV: 31 UNITS

13 units	PHYSICS 4A03, 4B04, 4F03, 4G03
3 units	from ASTRON 3X03, 3Y03
6 units	from PHYSICS 3A03, 3C03, 4E03, 4K03
3 units	from Level III, IV Science
6 units	Electives

Honours Medical and Health Physics {2443}**ADMISSION**

Completion of the Science I requirements, including:

6 units	MATH 1A03, 1AA3
3 units	BIOLOGY 1A03
6 units	CHEM 1A03, 1AA3
3 units	PHYSICS 1B03
3 units	MATH 1B03
3 units	from BIOLOGY 1AA3, PHYSICS 1BA3 (or 1BB3)
6 units	from Level I Course Lists 2, 3
1 course	SCIENCE 1A00

BIOLOGY 1AA3 and PHYSICS 1BA3 (or 1BB3) must be completed by the end of Level II and are recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0, an average of 6.0 in MATH 1A03, 1AA3, 1B03 and a grade of C+ in PHYSICS 1B03.

NOTE

A minor in Astronomy or Mathematics or Mathematics and Statistics is not permitted in the Honours Medical and Health Physics programme.

REQUIREMENTS

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

LEVEL I:

30 units (See Admission above.)

LEVEL II: 31 UNITS

3 units	BIOCHEM 2EE3
3-6 units	from either CHEM 2E03, or both 2OA3 and 2OB3
6 units	MATH 2A03, 2E03
3 units	MATH 2C03
13 units	PHYSICS 2B06, 2K03, 2H04
0-3 units	Electives. BIOLOGY 2C03 is recommended.

If not completed: BIOLOGY 1AA3, PHYSICS 1BA3 (or 1BB3)

LEVEL III: 31 UNITS

9 units	BIOLOGY 2B03; MATH 3C03, 3D03
19 units	PHYSICS 3H04, 3M03, 3MM3, 3N03, 3R03, 3T03
3 units	Electives. BIOCHEM 3G03 is recommended.

LEVEL IV: 30 UNITS

3 units	BIOLOGY 4U03
3 units	from ENG PHYS 3X03, PHYSICS 3XX3
12 units	PHYSICS 4A03, 4D06, 4E03
12 units	PHYSICS 4K03, 4R06, 4T03

Honours Medical and Health Physics Co-op {2330}

ADMISSION:

Enrolment in this programme is limited to a maximum of 10 students per year. Selection is based on academic and other achievements (see below) but requires, as a minimum, completion of Level II Honours Medical and Health Physics with a Cumulative Average of at least 6.0.

Information about the programme and the selection procedure may be obtained from the Chair of the Committee of Instruction and will be explained in the month of February in an Information Session.

NOTES

1. This is a five-year co-op programme which includes two eight-month work terms which must be spent in Medical or Health Physics related placements.
2. Students must be registered full-time and take a full academic programme.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. At least one of ENG PHYS 3X03 or PHYSICS 3XX3 must be completed and the requirement is listed in Year 4, Term 1, but may be taken in Term 2 of either Year 4 or Year 5.
5. No minors or Theme Schools are permitted in the Honours Medical and Health Physics (Co-op) programme.

REQUIREMENTS

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

LEVEL I

30 units from the Science I requirements

LEVEL II

31 units from Honours Medical and Health Physics

Year 3

17 units from Academic Level III, Term 1, plus Work Orientation course, and completion of the first work term of eight months duration, Term 2 and Summer term.

TERM 1

- 3 units MATH 3C03
 - 11 units PHYSICS 3HA2, 3N03, 3M03, 3T03
 - 3 units Electives. BIOCHEM 3G03 is recommended.
- Work Orientation Course

TERM 2 AND SUMMER

Work Term

Year 4

31 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer term.

TERMS 1 AND 2

- 6 units BIOLOGY 2B03, 4U03
- 3 units from ENG PHYS 3X03, PHYSICS 3XX3
- 3 units MATH 3D03
- 7 units PHYSICS 3I01, 3MM3, 3R03
- 12 units PHYSICS 4D06, 4R06

SUMMER

Work Term

Year 5

12 units from Academic Level IV, Term 2, plus completion of second eight-month work term, Term 1.

TERM 1

Work Term

TERM 2

- 6 units PHYSICS 3HB2, 4I01, 4K03
- 6 units PHYSICS 4E03, 4T03

	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
	Term 1				Term 2				Summer Term			
YEAR 3	17 units from Academic Level III + Work Orientation Course				Work Term							
	Term 1				Term 2				Summer Term			
YEAR 4	13 units from Academic Level IV				18 units from Academic Level III				Work Term			
	Term 1				Term 2				Summer Term			
YEAR 5	Work Term				12 units from Academic Level IV							

B.Sc. Three-Level Degree

A three-level programme with a Physics orientation is available through the **B.Sc. in Physical Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Astronomy

- 3 units from ASTRON 1F03, 2E03
- 6 units from MATH 2A03 and one of MATH 2C03, 2O03
- 1 course from PHYSICS 2A03, 2B06
- 3-6 units from either one of PHYSICS 2H03, 2H04, CHEM 2P06, or both CHEM 2PA3 and 2PB3
- 3 units from PHYSICS 2D03, 2G03, 2K03
- 6 units ASTRON 3X03, 3Y03
- 3 units from PHYSICS 3M03, 3O03, CHEM 3BA3

Minor in Physics

NOTE

- MATH 2A03 is the minimum mathematics required in order to complete a Minor in Physics. However, more flexibility is possible if one of MATH 2C03, 2O03 is also completed.
- 6 units from PHYSICS 1A06, 1B06, 1C06, 1B03 (or 1C03), 1BA3 (or 1BB3)
- 18 units from Levels II, III, IV Physics, GEO 3ZZ3 including at least six units from Level III, IV Physics

DEPARTMENT OF PSYCHOLOGY

WEB ADDRESS:

<http://www.science.mcmaster.ca/psychology/psych.html>

Honours Psychology (B.A.) and B.A. in Psychology

(See Faculty of Social Sciences, Department of Psychology)

Honours Biology and Psychology

(B.Sc.; See Department of Biology)

Honours Arts & Science and Psychology

(B.Arts Sc.; See Arts & Science programme)

Honours Psychology (B.Sc.) {2462} (Complementary Studies Option)

ADMISSION

Completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 3 units BIOLOGY 1A03
- 3 units CHEM 1A03
- 3 units PHYSICS 1B03
- 6 units PSYCH 1A03, 1AA3
- 3 units from Level I Course Lists 2
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

102 FACULTY OF SCIENCE

Students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3. However, STATS 1CC3 is strongly recommended and must be completed by the end of term 1 in Level II.

MATH 1B03 is strongly recommended for students intending to pursue graduate work in Psychology.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in PSYCH 1A03, 1AA3.

NOTES

1. In Level III or IV a student must complete at least one laboratory course in Psychology (see the Course List). Enrolment is limited in the laboratory courses.
2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These should be considered when choosing your Level II (and III) courses.

COURSE LIST

PSYCH 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4QQ3

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 3 units PSYCH 2RR3
- 9 units from PSYCH 2E03, 2F03, 2H03, 2T03
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies
- 3 units Electives, excluding Psychology
- 6 units Electives

LEVEL III: 30 UNITS

- 3 units from PSYCH 2E03, 2F03, 2H03, 2T03, or Level III Psychology
- 12 units from Level III Psychology, including one course from the Course List (See Note 1 above.)
- 6 units from the Faculties of Business, Humanities, Social Sciences
- 6 units Electives, excluding Psychology
- 3 units Electives

LEVEL IV: 30 UNITS

- 6 units from the Science Inquiry Course List (PSYCH 4D06 may be substituted if space is available)
- 15 units from Level III, IV Psychology
- 6 units from Level III, IV courses, excluding Psychology
- 3 units Electives

If not completed: One course from the Course List (See Note 1 above.)

Honours Psychology (B.Sc.) {2461} (Specialist Option)

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 3 units BIOLOGY 1A03
- 3 units CHEM 1A03
- 3 units PHYSICS 1B03
- 6 units PSYCH 1A03, 1AA3
- 3 units from Level I Course Lists 2
- 6 units from Level I Course Lists 2, 3
- 1 course SCIENCE 1A00

Students will also be considered for admission if they have completed MATH 1AA3 instead of STATS 1CC3. However, STATS 1CC3 is strongly recommended and must be completed by the end of Term 1 in Level II.

MATH 1B03 is strongly recommended for students intending to pursue graduate work in Psychology.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and an average of 6.0 in PSYCH 1A03, 1AA3.

NOTES

1. In Level III or IV a student must complete at least one laboratory course in Psychology (see the Course List). Enrolment is limited in the laboratory courses.
2. Completion of MATH 1AA3, CHEM 1AA3 and PHYSICS 1BA3 (or 1BB3) by the end of Level II is recommended.

COURSE LIST

PSYCH 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4QQ3

REQUIREMENTS

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

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 3 units PSYCH 2RR3
- 9 units from PSYCH 2E03, 2F03, 2H03, 2T03
- 9 units from Levels I and II Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics, Physics
- 6 units from the Faculties of Business, Humanities, Social Sciences
- 3 units Electives

LEVEL III: 30 UNITS

- 3 units from PSYCH 2E03, 2F03, 2H03, 2T03, or Level III Psychology
- 15 units from Level III Psychology, including one course from the Course List (See Note 1 above.)
- 6 units from Level III, IV Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics, Physics
- 6 units Electives

LEVEL IV: 30 UNITS

- 6 units PSYCH 4D06
 - 12 units from Levels III, IV Psychology
 - 6 units Electives, excluding Psychology
 - 6 units Electives
- If not completed: one course from the Course List (See Note 1 above.)

B.Sc. Three-Level Degree

A three-level programme with a Psychology orientation is available through the **B.Sc. in Life Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

Minor in Psychology

NOTES:

1. It is possible for a student to complete this Minor through evening and summer study.
2. When choosing Level II courses students should consider the prerequisite requirements for the various Level III courses.

- 6 units from PSYCH 1A06, 1A03, 1AA3
- 18 units from Level II, III Psychology courses, including at least six units from Level III Psychology courses

SCIENCE

**Honours Science
(Complementary Studies Option)**

STREAM A	GEOSCIENCE	{2513}
STREAM B	LIFE SCIENCE	{2514}
STREAM C	MATHEMATICAL SCIENCE	{2515}
STREAM D	PHYSICAL SCIENCE	{2516}

ADMISSION

Completion of Science I, including:
 3 units MATH 1A03
 3 units from MATH 1AA3, STATS 1CC3 (See Note 3 below)
 12 units from Level I Science Core Course List 1 (See below for courses required for each stream.)
 6 units from Level I Course List 2
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00
 One of GEO 1A03, 1B03, 1G03 must be completed by the end of Level II.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 5.0 and one of:
 for Stream A: a grade of C+ in (each of) two of GEO 1A03, 1B03, 1G03
 for Stream B: a grade of C+ in one of BIOLOGY 1AA3, PSYCH 1AA3
 for Stream C: a grade of C+ in (each of) two of COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03
 for Stream D: a grade of C+ in one of CHEM 1AA3, PHYSICS 1BA3 (or 1BB3)

NOTES

- There are Level II (and III) prerequisites for many Level III (and IV) courses. These should be considered when choosing your Level II courses.
- Minors within the Faculty of Science are not permitted in the Honours Science (Complementary Studies Option) programmes.
- Students who choose Stream A or B must take STATS 1CC3. Students who choose Stream C or D must take MATH 1AA3.

COURSE LIST A

All Level II, III and IV Geo courses except non-science Geo courses*. Non-science Geo courses contain the letter *H* in the course code.

COURSE LIST B

BIOCHEM 2EE3, 3B03, 3BB3, 3C03, 3G03, 3H03, 3N03, 4C03, 4D03, 4E03, 4I03, 4M03, 4Q03; MOL BIOL 4F03, 4H03; PHARMAC 4B03
 All Level II, III and IV Biology courses

All Level II, III, and IV Psychology courses, except PSYCH 2AA3, 2B03, 2C03, 2V03, 3D03, 3DD3, 3Z03, 3ZZ3, 4D06, 4V03, 4VV3

COURSE LIST C

All Level II, III and IV Computer Science, Mathematics and Statistics courses

COURSE LIST D

All Level II, III and IV Astronomy, Chemistry and Physics courses

REQUIREMENTS

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

LEVEL I:

30 units (See Admission above.)

LEVEL II: 30 UNITS

12 units from Level II courses in the selected stream Course List (courses may be chosen from one Course List only)
 6 units from Level II courses in any Course List, excluding courses from the selected stream Course List
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 6 units Electives, excluding courses from the selected stream Course List

If not completed for all streams: one of GEO 1A03, 1B03, 1G03
 If not completed for:

Stream A: GEO 1A03, 1B03, 1G03
 Stream B: BIOLOGY 1A03 and 1AA3, PSYCH 1A03 and 1AA3
 Stream C: 9 units from COMP SCI 1MC3, 1MD3, MATH 1AA3, 1B03
 Stream D: CHEM 1A03 and 1AA3, MATH 1B03, PHYSICS 1B03 and 1BA3 (or 1BB3)

LEVEL III: 30 UNITS

12 units from Level III courses in the selected stream Course List
 3 units from Level III courses in any Course List, excluding courses from the selected stream Course List
 3 units HUMAN 2C03
 6 units from the Faculties of Business, Humanities, Social Sciences
 6 units Electives, excluding courses from the selected stream Course List

LEVEL IV: 30 UNITS

6 units from the Science Inquiry Course List
 12 units from Level III, IV courses in the selected stream Course List
 6 units from Level III, IV courses in any Course List, excluding courses from the selected stream Course List
 6 units Electives, excluding courses from the selected stream Course List

THREE-LEVEL B.SC. PROGRAMMES

B.Sc. in Geoscience

{1149}

ADMISSION

Completion of the Science I requirements, including:
 6 units MATH 1A03, STATS 1CC3
 6 units from GEO 1A03, 1B03, 1G03
 9 units from Level I Science Core Course List 1
 3 units from Level I Course List 2
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 3.5 and a grade C- in one of GEO 1A03, 1B03, 1G03.

NOTES

- There are Level II prerequisites for many Level III courses: these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the required specialist stream courses in the Honours Environmental Science or the Honours Geology programme.
- In addition, students should seek academic counselling from the School of Geography and Geology to ensure that their choices are appropriate.

COURSE LIST 1

GEO 2B03, 2C03, 2E03, 2G03, 2GG3, 2I03, 2K03, 2KK3, 2P03, 2S03, 2W03, 2WW3

COURSE LIST 2

GEO 3A03, 3B03, 3C03, 3E03, 3FE3, 3FG3, 3G03, 3I03, 3K03, 3P03, 3Q03, 3R03, 3S03, 3U03, 3W03, 3Z03, 3ZZ3

REQUIREMENTS

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

15 units from Course List 1 (see above)
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 3 units HUMAN 2C03
 3 units Electives, excluding courses from Course List 1
 3 units Electives

LEVEL III: 30 UNITS

- 12 units from Course List 2 (see above)
 3-6 units from Course Lists 1 and 2 (see above)
 6 units from the Faculties of Business, Humanities, Social Sciences
 6 units Electives, excluding courses in Course Lists 1 and 2
 0-3 units Electives, excluding Biology

B.Sc. in Life Science {1312}**ADMISSION**

Completion of the Science I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
 3 units BIOLOGY 1A03
 3 units CHEM 1A03
 3 units PSYCH 1A03
 6 units from BIOLOGY 1AA3, CHEM 1AA3, PSYCH 1AA3
 3 units from Level I Science Core Course List 1
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 3.5 and an average of 4.0 in 6 units from BIOLOGY 1AA3, CHEM 1AA3, PSYCH 1AA3.

NOTES

- There are Level II prerequisites for many Level III courses: these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.
- In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Biology or Psychology. Students without an area of particular emphasis should obtain counselling from the Department of Biology.
- Enrolment in most Psychology laboratory courses is limited. PSYCH 3L03, 3LL3, 3QQ3, 3S03, 3V03 are laboratory courses.

COURSE LIST 1

BIOCHEM 2EE3; BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03; PSYCH 2E03, 2H03, 2O03 (or 2F03), 2T03

COURSE LIST 2

CHEM 2E03 or 2OA3, 2OB3; STATS 2MA3, or PSYCH 2RR3

COURSE LIST 3

BIOCHEM 3B03, 3BB3, 3C03, 3G03; PSYCH 2O03; all Level III Biology and Level III Psychology courses

REQUIREMENTS

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 18 units from Course Lists 1 and 2. No more than six units from Biology may be taken
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 6 units Electives, excluding Level II, III, IV Biochemistry, Biology, Psychology

LEVEL III: 30 UNITS

- 12 units from Course List 3. No more than six units from Biology may be taken
 3 units HUMAN 2C03
 6 units from the Faculties of Business, Humanities, Social Sciences
 3 units Electives, excluding Biochemistry, Biology, Psychology
 6 units Electives, excluding Biology

B.Sc. in Mathematical Science {1325}**ADMISSION**

Completion of any Level I programme, including:

- 6 units MATH 1A03, 1AA3
 3 units from COMP SCI 1MC3, MATH 1B03
 21 units Level I courses to complete a Level I programme
 MATH 1B03 must be completed by the end of Level II.

Students wishing Level II Computer Science courses must take both COMP SCI 1MC3 and 1MD3.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 3.5 and a grade of C- in each of three courses from COMP SCI 1MC3, 1MD3, MATH 1A03, 1AA3, 1B03.

NOTES

- There are Level II prerequisites for many Level III courses: these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.
- In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Mathematics and Statistics or Computing and Software. Students without an area of particular emphasis should obtain counselling from the Department of Mathematics and Statistics.

COURSE LIST 1

COMP SCI 2MD3, 2ME3, 2MF3, 2MJ3, 2SB3, 2SC3; MATH 2A03, 2AB3, 2C03, 2E03, 2K03, 2R03, 2S03, 2T03; STATS 2D03, 2MB3

COURSE LIST 2

All Level III and IV Computer Science, Mathematics and Statistics courses

REQUIREMENTS

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

- 3 units HUMAN 2C03
 15 units from Course List 1 (see above)
 6 units from the Faculty of Humanities and/or the Department of Religious Studies
 3 units Electives, excluding Computer Science, Mathematics, Statistics
 3 units Electives
 If not completed: MATH 1B03, SCIENCE 1A00

LEVEL III: 30 UNITS

- 12 units from Course List 2 (see above)
 1 course from Course Lists 1 and 2 (see above)
 6 units from the Faculties of Business, Humanities and Social Sciences
 6 units Electives, excluding Computer Science, Mathematics, Statistics
 0-3 units Electives, excluding Biology

B.Sc. in Physical Science {1435}**ADMISSION**

Completion of the Science I requirements, including:

- 6 units MATH 1A03, 1AA3
 3 units CHEM 1A03
 3 units PHYSICS 1B03
 3 units from CHEM 1AA3, PHYSICS 1BA3 (or 1BB3)
 6 units from Level I Course List 1
 3 units from Level I Course List 2
 6 units from Level I Course Lists 2, 3
 1 course SCIENCE 1A00

MATH 1B03, CHEM 1AA3, PHYSICS 1BA3 (or 1BB3) must be taken by the end of Level II and are strongly recommended in Level I.

MINIMUM AVERAGES/GRADES:

A Cumulative Average of 3.5 and a grade of C- in one of CHEM 1AA3, PHYSICS 1BA3 (or 1BB3).

NOTES

1. There are Level II prerequisites for many Level III courses: these should be considered when choosing your Level II courses. As an aid to choosing a coherent set of courses in a single discipline, students should consult the list of courses required in the Honours (Complementary Studies Option) programme in that discipline.
2. In addition, students should seek academic counselling to ensure that their choices are appropriate. For counselling, students should approach the department corresponding to their area of emphasis, either Chemistry or Physics. Students without an area of particular emphasis should obtain counselling from the Department of Physics.
3. Students proceeding in Physics must include PHYSICS 2B06 and MATH 2A03 and MATH 2C03 in Level II.

COURSE LIST 1

CHEM 2A03, 2BA3, 2BB3, 2E03, 2I03, 2L03, 2OA3, 2OB3, 2PA3, 2PB3, 2R03; MATH 2A03, 2C03; PHYSICS 2A03, 2B06, 2H04, 2K03

COURSE LIST 2

All Level III Astronomy, Chemistry, and Physics courses

REQUIREMENTS

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

LEVEL I

30 units (See Admission above.)

LEVEL II: 30 UNITS

18 units from Course List 1 (see above)

6 units from the Faculty of Humanities and/or the Department of Religious Studies

6 units Electives, excluding Level II, III, IV Astronomy, Chemistry, and Physics

If not completed: MATH 1B03, CHEM 1AA3, PHYSICS 1BA3 (or 1BB3)

LEVEL III: 30 UNITS

12 units from Course List 2 (see above)

3 units HUMAN 2C03

6 units from the Faculties of Business, Humanities, Social Sciences

6 units Electives, excluding Astronomy, Chemistry, and Physics

3 units Electives, excluding Biology

FACULTY OF SOCIAL SCIENCES

WEB ADDRESS: <http://www.socsci.mcmaster.ca/~adeans>

E-MAIL ADDRESS: sacsfac@mcmaster.ca

Dean of Social Sciences

Alan Harrison/B.A., M.A., Ph.D.

Associate Dean (Studies)

Stefania Szlek Miller/M.A., Ph.D.

Academic Assistant to the Dean

Eleanor Frank/M.A.

Cooperative Internship Coordinator/Student Advisor

Joanne Crossley/B.A.

Student Advisors

Anne Dillon/B.A.

Elizabeth Moore

The social sciences are concerned with the systematic study of activities and human relationships in societies which range from the pre-industrial to the post-industrial. Social Scientists examine social, economic and political problems as well as the interaction between people and their natural and artificial environments. Developments in theory and refinements of method have, in recent years, given great impetus to social science studies and research.

The Faculty of Social Sciences offers degrees in the following: Anthropology, Economics, Geography, Gerontology, Kinesiology, Labour Studies, Political Science, Psychology, Religious Studies, Social Work, Sociology.

The Faculty offers Honours Bachelor of Arts, Honours Bachelor of Kinesiology, Bachelor of Kinesiology, Bachelor of Social Work and Bachelor of Arts Degrees.

Students are strongly advised to take advantage of the extensive advisory services provided by the Faculty. New students in particular should plan a programme of study that will allow them a number of options for Level II.

PROGRAMMES AND DEGREES

A. Level I Programmes

SOCIAL SCIENCES I

{0720}

PROGRAMME NOTES

1. Students registered in Honours B.A. or B.A. programmes in the Faculty of Social Sciences are required to complete six units of courses chosen from the Faculty of Humanities and/or the Department of Religious Studies. Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities. It is recommended that this requirement be completed in Level I.
2. Normally, a student will take only six units of Level I work in any one discipline. In special circumstances a student may be permitted to take up to 12 Level I units in one discipline.
3. Many programmes in the Faculty of Social Sciences require Mathematics. The Centre for Continuing Education offers three levels of non-degree math skills courses to help students upgrade their competence in mathematics in preparation for university study (CCE 101, CCE 102 and CCE 108). For students in Social Sciences, completion of CCE 108 will be recognized as satisfying the prerequisites for MATH 1K03 and STATS 1L03. For more information, please contact the Centre for Continuing Education.

REQUIREMENTS: 30 UNITS

12 units from ANTHROP 1A03, 1B03, 1Z03; ECON 1A06; GEO 1HS3, 1HU3; GERONTOL 1A06; INQUIRY 1SS3; LABR ST 1A03, 1Z03; POL SCI 1G06; PSYCH 1A03, 1AA3; RELIG ST 1B06, 1D06, 1E06, 1H03, 1I03; SOC SCI 1H03; SOC WORK 1A06; SOCIOL 1A06

18 units Electives, which may include Social Sciences courses (See Note 1 above.)

KINESIOLOGY I

{0308}

Enrolment in this Programme is limited.

PROGRAMME NOTES:

1. Application is made to the Kinesiology I Programme.
2. Students who intend to transfer to Level II of the Honours B.Sc. programme in Kinesiology (first offered September 2000) must successfully complete the following courses as part of their elective:
 - MATH 1A03
 - STATS 1CC3
 - a minimum of six units from the courses designated Level I Science Core. (See *Faculty of Science, Programmes and Degrees, Level I Programme* section of this Calendar.)
3. Students are encouraged to complete INQUIRY 1SS3, *Inquiry in the Social Sciences*, as part of their electives.

REQUIREMENTS: 30 UNITS

12 units KINESIOL 1A06, 1D03, 1E03

1 course KINESIOL 1FL0

18 units Electives (See Notes 2 and 3 above.)

B. Degree Programmes

HONOURS PROGRAMMES (HONOURS BACHELOR OF ARTS AND HONOURS BACHELOR OF KINESIOLOGY)

Honours Bachelor of Arts programmes and the Honours Bachelor of Kinesiology degree programme consist of a total of 120 units of work normally completed over four years. Honours programmes provide a concentration in the particular field, as well as an extended time of study, and are normally a requirement for those who contemplate proceeding to graduate studies.

Students enrolled in an Honours programme in the Faculty of Social Sciences, in addition to meeting the University requirements for an Honours degree (see the *General Academic Regulations* section in this Calendar) must also fulfill the following breadth and skills requirements prescribed by the Faculty: six units from the Faculty of Humanities and/or the Department of Religious Studies. (Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities); research methods/statistics as prescribed by the Department(s) and a course in critical thinking (HUMAN 2C03).

Internship Options: The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. Cooperative Internships that can last 8, 12 or 16 months provide intense employment opportunities for students. One-semester Internships (4 months), while still providing valuable workplace experience, may, in some situations, not extend the degree beyond four years. Both types of internships allow students to explore career goals, assist in the development of their employability skills and make important contacts for their employment after graduation.

Students who have successfully completed all Level II requirements may apply for non-credit internship options. Students who qualify compete for work opportunities with participating employers through an application process. The number of students accepted into the option is small in any year and depends on available work opportunities. Internships must be undertaken before the student has completed all requirements for the degree. An administrative fee will be assessed following the start of the internship. At the conclusion of an internship, a job report from the student and a letter of evaluation from the employer must be submitted. If both are satisfactory, a brief notation describing the internship is placed on the student's transcript. Any interested students should consult the details of his/her programme to determine whether this option is available. Further details of cooperative internship options may be obtained from:

Office of the Associate Dean of Studies,
Kenneth Taylor Hall, Room 120
(905) 525-9140, extension 27059
email: socscoop@mcmaster.ca

Honours Bachelor of Arts (Specialist Option): Economics, Labour Studies and Psychology offer an Honours (Specialist Option) programme which involves greater concentration of work in the particular discipline.

Combined Honours Bachelor of Arts Programmes: Subject to possible timetable restrictions, and provided that the student meets the requirements for entry into each of the relevant Honours pro-

grammes, a student may combine work in any two departments and be graduated with a Combined Honours degree. These combinations are available within the Faculty, with programmes in the Faculty of Humanities, with the Arts and Science programme and with the Women's Studies programme. The Honours Gerontology degree is offered only in combination with another subject. All Combined Honours programmes must be approved by both Departments concerned as well as by the Office of the Associate Dean(s) (Studies). Students will normally complete approximately 36 units of work beyond Level I in each component of the programme (normally 12 units per level in each subject). 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 programme. A minor normally consists of at least 18 units of Level II, III, or IV courses beyond the designated Level I course(s) that meet the requirements set out in the programme description of that minor. If applicable, courses taken to satisfy programme requirements may also be used toward the requirements of a minor. Students are responsible for ensuring that the courses taken meet these requirements. Students who have the necessary requirements may apply for recognition of that minor when they graduate. If granted, this recognition will be recorded on the student's transcript.

Combined B.A./B.S.W.: The School of Social Work offers a Combined B.A./B.S.W. programme of studies leading to a B.A. and a B.S.W. degree. (See the programme description in this section.)

The B.S.W. degree may be attained separately as a subsequent degree by those students who have already received one or more undergraduate degrees.

Bachelor of Kinesiology: The Department of Kinesiology offers a programme of studies leading to the B.Kin. degree. (See the programme description in this section.) The B.Kin. Programme consists of a total of 120 units of work, normally completed over four years.

Bachelor of Arts programmes: B.A. programmes consist of a total of 90 units of work, normally completed over three years.

The only three-level Combined Bachelor's degree programme is in Gerontology and Another Subject. The other subject may be from the Faculty of Social Sciences or the Faculty of Humanities. This programme may also be combined with the B.S.W. as a four-level programme.

Part-time Studies

Subject to limitations of course offerings, a student may pursue on a part-time basis any programme in the Faculty of Social Sciences, except for the Kinesiology programmes.

ACADEMIC REGULATIONS

Students enrolled in a programme in the Faculty of Social Sciences, in addition to meeting the Academic Regulations of the University, shall be subject to the following regulations of the Faculty of Social Sciences.

ADMISSION AND REINSTATEMENT

Students from other Faculties are able to transfer to degree programmes offered by the Faculty of Social Sciences provided they have obtained a Cumulative Average of at least 3.5 and have completed the necessary programme admission requirements.

Students who do not meet these requirements must consult with the Office of the Associate Dean (Studies). Requests for transfer will be considered at the same time as applications for reinstatement (see below).

A student who may not continue at the University may apply for reinstatement. Application for reinstatement must be made to the Office of the Registrar using the *Returning Student Application* form by the deadline for the session. See *Sessional Dates* section of this Calendar. Reinstatement applications will be carefully reviewed and the evidence considered will include the student's academic performance before and after admission to McMaster, letter of explanation supported by two Letters of Reference and other appropriate documentation.

Reinstatement is not automatic or guaranteed and decisions are normally made after 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.

DEADLINES

The Faculty of Social Sciences will not consider applications for admission, admission to a second degree or continuing studies, registration, or dropping and adding of courses after the deadlines stated in this Calendar under *Sessional Dates* and *Application Procedures*, unless written documentation is provided showing good cause, as determined by the Faculty Admissions, Study and Reviewing Committee.

HUMANITIES/RELIGIOUS STUDIES REQUIREMENT

Students registered in the Faculty of Social Sciences except for those in B.Kin. and those completing a B.A. with a B.S.W., are required to complete six units of courses chosen from the Faculty of Humanities and/or the Department of Religious Studies.

Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities.

Students in Psychology programmes should note the additional Business, Humanities or Science requirements.

COURSES IN KINESIOLOGY OR SOCIAL WORK AVAILABLE FOR UNDERGRADUATE CREDIT

Both KINESIOL 1A06 (subject to enrolment restriction) and SOC WORK 1A06 are available to all students as undergraduate credit. In addition, the following Kinesiology and Social Work courses may be taken as elective credit by undergraduates in Level III or above of other programmes. These courses are subject to enrolment restrictions and registrations are processed on a first come basis.

KINESIOL 3DD3, 3F03, 3JJ3, 3L03, 3M03, 3P03, 3Q03, 3SS3, 4JJ3, 4M03, 4T03, and 4Y03
SOC WORK 3C03, 3O03, 4B03, 4C03, 4F03, 4G03, 4J03, 4K03, 4L03, 4M03, 4R03 and 4W03

All other Kinesiology and Social Work courses are open only to students registered in those programmes.

COURSE SELECTION AND CHANGES

A student must ensure that the selection of courses meets the degree requirements for the programme in which the student is registered, that any prerequisites have been met, and that the appropriate written permission has been obtained if required.

All registrations, programme changes and course changes must be approved by the Office of the Associate Dean (Studies) and are subject to the deadline dates established by the University as published in this Calendar under the *Sessional Dates* section.

Qualified students are permitted to transfer between B.A. and Honours programmes with the approval of the Office of the Associate Dean (Studies). Transfers are subject to the deadline dates established by the University.

ACADEMIC ADVISING

The aim of academic advising is to help students tailor a programme of studies to fit their interests. Advising also involves reviewing these interests from time to time to accommodate changing plans and needs and academic performance.

Advising is available throughout the year from the Office of the Associate Dean of Social Sciences (Studies) and the departments or academic units in the Faculty of Social Sciences. It is highly recommended that students consult with a Departmental Undergraduate Advisor during March in conjunction with the distribution of the new Undergraduate Calendar.

AWARDS

Full-time students must maintain a full academic load as defined by their programme during the Fall/Winter session to be eligible for full-time, in-course awards. For conditions and terms of awards for full-time and part-time students, please refer to the *Undergraduate Academic Awards* section of this Calendar.

OVERLOAD

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

WITHDRAWAL

Students who wish to withdraw from the University are required to advise the Office of the Associate Dean (Studies) in writing. Students must surrender their McMaster Identification Cards to the Office of the Associate Dean (Studies) to ensure the process-

ing of any fee refunds. Students who fail to withdraw formally from any course(s) by the stated deadlines will remain registered whether or not they attend classes and will be assigned a grade.

LETTER OF PERMISSION

Students in good academic standing who wish to attend another university to take courses for credit toward a McMaster degree, must first request a Letter of Permission from the Office of the Associate Dean (Studies) and pay the appropriate fee. Students should take note of any conditions on the Letter of Permission that might apply, including the requirement of a grade of at least C- for transfer credit. Courses taken at another university cannot be used to satisfy the university's minimum residence requirements, will not be included in the calculation of the McMaster average, and therefore cannot be used to raise standing. The transcript designations will read *COM*, indicating *complete*, when a grade of C- or better is attained.

STUDENT EXCHANGE PROGRAMMES

There are a number of official exchange programmes offered to undergraduate students registered in the Faculty of Social Sciences, including Province of Ontario Exchange Programmes in Germany and France, and McMaster University-wide Exchange Programmes in China, Denmark, El Salvador, Germany and the United Kingdom. Official exchange programmes offer students the most inexpensive means of studying abroad as students participating in these exchanges avoid the foreign student fees by paying fees to McMaster. You may, however, arrange to study elsewhere for a year independent of the official exchange programmes.

All students must have completed at least one year of continuous study and be in good standing to be eligible to participate in an exchange. In most cases, students who participate in exchange programmes go abroad for the third Level of an Honours programme.

Students interested in any exchange programme **must discuss their plans with their department and with the Office of the Associate Dean (Studies) if they intend to transfer credit to their McMaster degree programme.** Such discussions should begin about one year before they plan to enrol elsewhere.

For further information please see *International Study* in the *General Academic Regulations* section in this Calendar. Information concerning *Group of Ten Student Exchange Programme (GOTSEP)* can be found in the *Academic Facilities, Student Services and Organizations* section of this Calendar under the heading *Student Exchanges*.

Acceptance to the Ontario and University-wide Exchange Programmes is by recommendation. Application forms can be obtained from:

STUDENT EXCHANGES
HAMILTON HALL, ROOM 405
TELEPHONE: (905) 525-9140, EXTENSION 24748

DEPARTMENT OF ANTHROPOLOGY

WEB ADDRESS: <http://www.socsci.mcmaster.ca/~anthro>

ANTHROPOLOGY SUBFIELDS

(Applicable to all Anthropology programmes)

Anthropology includes the four major subfields of Social/Cultural Anthropology, Physical/Biological Anthropology, Archaeology, and Linguistics. Students may specialize in any one of these subfields though it is not necessary to do so. It should be noted, however, that each subfield has its own sequence of courses and prerequisites. (See the *Course Listings* section in this Calendar.)

CULTURAL/SOCIAL ANTHROPOLOGY

ANTHROP 2B03, 2F03, 2H03, 2P03, 2Q03, 2R03, 2S03, 2X03, 2XX3, 2Z03, 3B03, 3CN3, 3F03, 3G03, 3L03, 3P03, 3Q03, 3RR3, 3SY3, 3T03, 3Y03, 3Z03, 3ZZ3, 4AE3, 4D03, 4I03, 4N03, 4P03, 4Q03, 4Y03

PHYSICAL/BIOLOGICAL ANTHROPOLOGY

ANTHROP 2AN3, 2DD3, 2E03, 2FF3, 2JJ3, 2U03, 3C03, 3H03, 3N03, 3PP3, 3Z03, 3ZZ3, 4J03, 4R03, 4S03 (Relevant courses are also offered by Biology and Kinesiology.)

ARCHAEOLOGY

ANTHROP 2O03, 2PA3, 2V03, 3AS3, 3CC6, 3DD3, 3E03, 3EE3, 3K03, 4F03, 4H03, 4HF3, 4PI3, 4U03 (Relevant courses are also offered by History and Classics.)

LINGUISTICS

ANTHROP 2LC3, 2L03, 2LP3, 2M03, 4LA3, 4T03

OTHER COURSES

Courses not distinguished by subfield include the reading courses ANTHROP 3W03**, 3WW3**, 4G03, 4GG3, as well as the seminar courses ANTHROP 4B03 and 4BB3.

In planning a programme, it is important for students to take note of the prerequisites of certain upper-level courses.

Honours Arts & Science and Anthropology

(B.Arts.Sc.; See Arts & Science programme)

COOPERATIVE INTERNSHIP OPTIONS

FOR HONOURS ANTHROPOLOGY STUDENTS

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

Honours Anthropology

(2010)

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from ANTHROP 1A03, 1B03, 1Z03.

NOTE

Students who have completed ANTHROP 2I03 are not required to take ANTHROP 3L03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units	from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)
12 units	ANTHROP 2E03, 2F03, 2PA3, 3L03 (See <i>Note</i> above.)
3 units	from ANTHROP 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03
3 units	from ANTHROP 2B03, 2P03, 2S03, 2V03, 3A03, 3B03, 3D03, 3F03
3 units	ANTHROP 4I03
9 units	Level IV Anthropology
21 units	Level II, III or IV Anthropology
3 units	from SOC SCI 2J03 or STATS 1CC3* (or an equivalent Research Methods/Statistics course as prescribed by other Social Sciences Programmes.)
3 units	HUMAN 2C03
33 units	Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

Combined Honours in Anthropology and Another Subject

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from ANTHROP 1A03, 1B03, 1Z03. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

NOTE

Students who have completed ANTHROP 2I03 are not required to take ANTHROP 3L03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units	from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)
12 units	ANTHROP 2E03, 2F03, 2PA3, 3L03 (See <i>Note</i> above.)
3 units	from ANTHROP 2DD3, 2FF3, 2Z03, 3H03, 3K03, 3P03
3 units	from ANTHROP 2B03, 2P03, 2S03, 2V03, 3A03, 3B03, 3D03, 3F03
3 units	ANTHROP 4I03
3 units	Level IV Anthropology

12 units Level 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 programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject.

3 units HUMAN 2C03. Students combining Honours Arts and Science with Anthropology are exempt from this requirement.

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 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 programme 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 may be Level I

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

6 units from ANTHROP 2E03, 2F03, 2PA3

18 units Level 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

6 units from ANTHROP 1A03, 1B03, 1Z03

3 units from ANTHROP 2E03, 2F03, 2PA3

15 units Level II, III or IV Anthropology

DEPARTMENT OF ECONOMICS

WEB ADDRESS: <http://www.socsci.mcmaster.ca/~econ>

Honours Arts & Science and Economics

(B. Arts Sc.; See Arts & Science programme)

COOPERATIVE INTERNSHIP OPTIONS FOR HONOURS ECONOMICS STUDENTS

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

Honours Economics (Specialist Option) {2151}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of B- in ECON 1A06. Credit in OAC Calculus or MATH 1K03 or equivalent.

NOTES

1. Students who completed COMMERCE 2FA3 in the 1997-98 academic year may use this course as three units of Economics.
2. In 1999-2000, ECON 3A03 will not be offered and ECON 3AA3 will be offered. In 2000-2001, ECON 3A03 will be offered and ECON 3AA3 will not be offered. In subsequent years each of these courses will be offered every other year.
3. ECON 2L03 may not be used to satisfy economics unit requirements, but may be used as an elective.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 may be Level I

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

30 units ECON 2G03, 2GG3, 2H03, 2HH3, 3A03, 3AA3, 3F03, 3G03, 3LL3, 4A03 (See Note 2 above.)

3 units from ECON 2K03, 3I03

18 units Level II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03 (See Notes 1 and 3 above.)

6 units ECON 2B03 and 3U03

3 units* from MATH 1A03 or 1M03

3 units** from STATS 1L03, 2D03 (or OAC Finite Math)

3 units HUMAN 2C03

24 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of 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 OACs, these units will be taken as electives.

Honours Economics {2150}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of B- in ECON 1A06. Credit in OAC Calculus, or MATH 1K03, or equivalent.

NOTES

1. Students who completed COMMERCE 2FA3 in the 1997-98 academic year may use this course as three units of Economics.
2. ECON 2L03 may not be used to satisfy economics unit requirements, but may be used as an elective.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3, 4A03

3 units from ECON 2K03, 3I03

18 units Level 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.)

6 units ECON 2B03 and 3U03

3 units* from MATH 1A03 or 1M03

3 units** from STATS 1L03, 2D03 (or OAC Finite Math)

3 units HUMAN 2C03

33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. The 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 OACs, these units will be taken as electives.

Combined Honours in Economics and Another Subject

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of B- in ECON 1A06. Credit in OAC Calculus or MATH 1K03 or equivalent. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

NOTES

1. One of OAC Finite Math, STATS 1L03, or STATS 2D03 is a prerequisite for the research methods course offered by the Department of Economics (ECON 2B03).
2. Students registered in Combined Honours programmes within the Faculty of Social Sciences who wish to satisfy the Inquiry and Honours Seminar requirements specified by the other department may replace ECON 3F03 and 4A03 with another six units Economics.
3. Students who completed COMMERCE 2FA3 in the 1997-98 academic year may use this course as three units of Economics.
4. ECON 2L03 may not be used to satisfy economics unit requirements, but may be used as an elective.

110 FACULTY OF SOCIAL SCIENCES

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3, 4A03 (See *Note 2* above.)
- 3 units from ECON 2K03, 3I03
- 9 units Level II, III, IV Economics with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03 (See *Notes 3 and 4* above.)
- 36 units courses specified for the other subject
- 6 units ECON 2B03 and 3U03 or, in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject. (See *Note 1* above.)
- 3 units* from MATH 1A03 or 1M03
- 3 units** from STATS 1L03, 2D03 (or OAC Finite Math)
- 3 units HUMAN 2C03. Students combining Honours Arts & Science with Economics are exempt from this requirement
- 6 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of 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 OAC's, these units will be taken as electives.

Honours Economics and Computer Science [2150145]

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including COMP SCI 1MC3 and 1MD3 (or 1MA3 and 1MB3), and including a grade of at least B- in ECON 1A06, and a weighted average of at least 7.0 in ECON 1A06, COMP SCI 1MC3, 1MD3 (or 1MB3), MATH 1A03, 1AA3 and 1B03. MATH 1B03 may be postponed until Level II.

NOTES

1. Students who completed COMMERCE 2FA3 in the 1997-98 academic year may use this course as three units of Economics.
2. ECON 2L03 may not be used to satisfy economics requirements, but may be used as an elective.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3, 4A03
- 3 units from ECON 2K03, 3I03
- 12 units Level 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.)
- 18 units COMP SCI 2MD3, 2MF3, 2SC3, 3MG3, 4MP6
- 6 units from COMP SCI 3CA3, 3EA3, 3MH3, 3MI3
- 6 units Level II, III or IV Computer Science. (COMP SCI 3EA3 is strongly recommended. COMP SCI 2ME3, 4EB3, 4EC3 are recommended as preparation for Business Data Processing.)
- 6-9 units STATS 2D03; one of STATS 2MB3 or 3D06, or ECON 2B03 and 3U03
- 3 units HUMAN 2C03
- 12-15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the department of Religious Studies.

Honours Economics and Mathematics [2150320]

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in each of ECON 1A06, MATH 1A03, 1AA3 and 1B03.

NOTES

1. Students who completed COMMERCE 2FA3 in the 1997-98 academic year may use this course as three units of Economics.
2. ECON 2L03 may not be used to satisfy economics unit requirements, but may be used as an elective.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3, 4A03
- 3 units from ECON 2K03, 3I03
- 12 units Level 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.)
- 18 units MATH 2A03, 2AB3, 2C03, 2R03, 3A03, 3AA3
- 3 units from MATH 2S03, 2T03
- 15 units from Level III, IV Mathematics, Statistics
- 6-9 units STATS 2D03; one of STATS 2MB3 or 3D06, or ECON 2B03 and 3U03
- 3 units HUMAN 2C03
- 6-9 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A. in Economics [1150]

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 3.5 and a grade of at least C- in ECON 1A06. Credit in OAC Calculus or MATH 1K03 or equivalent.

NOTES

1. Students who completed COMMERCE 2FA3 in the 1997-98 academic year may use this course as three units of Economics.
2. ECON 2L03 may not be used to satisfy economics requirements, but may be used as an elective.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 9 units ECON 2B03, 2G03, 2H03
- 3 units from ECON 2K03, 3I03
- 12 units Level 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.)
- 3 units* from MATH 1A03 or 1M03
- 3 units** from STATS 1L03, 2D03 (or OAC Finite Math)
- 30 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. The number of units of Economics courses above Level I (excluding ECON 2B03 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 OACs, 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. ECON 2L03 may not be used to satisfy economics unit requirements.

REQUIREMENTS

- 6 units ECON 1A06
- 18 units Level II, III, IV Economics or COMMERCE 2FA3 with no more than six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2I03, 2J03, 2N03, 2P03, 2T03. (See *Notes* above.)

SCHOOL OF GEOGRAPHY AND GEOLOGY

WEB ADDRESS: <http://www.science.mcmaster.ca/geo/geomain.html>

**Honours Geography (B.Sc.), and
Honours Geography and
Environmental Science (B.Sc.), and
Honours Geology (B.Sc.)**

(See Faculty of Science, School of Geography and Geology.)

Honours Arts & Science and Geography

(B. Arts Sc.; See Arts & Science programme)

**COOPERATIVE INTERNSHIP OPTIONS
FOR HONOURS GEOGRAPHY STUDENTS**

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

**PROGRAMMES FOR STUDENTS ENTERING IN
SEPTEMBER 1999**

Honours Geography {2240}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a minimum grade of C+ in GEO 1HB6 or an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03. (See Note 2 below.)

NOTES

1. Beginning in 2000-2001, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03, 1HS3, 1HU3 (or a grade of at least C+ in GEO 1HB6 if previously completed).
2. One of MATH 1A03 or 1M03 must be completed by the end of Level II. Inclusion in Level I is strongly recommended.
3. One of SOC SCI 2J03 or STATS 1CC3 must be completed by the end of Level II and is a prerequisite for GEO 2S03.

COURSE LIST 1

GEO 4A03, 4B03, 4C03, 4CC3, 4D03, 4FE3, 4G03, 4HH3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4I03, 4R06, 4S03, 4W03

COURSE LIST 2

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03

COURSE LIST 3

GEO 2B03, 2C03, 2G03, 2HA3, 2HB3, 2HD3, 2HR3, 2HY3, 2W03

REQUIREMENTS

120 units total (Levels I to IV) of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme
- 6 units GEO 2I03, 3R03
- 3 units from GEO 3FE3, 3HF3
- 12 units from Course List 1, including one of GEO 4CC3 or 4R06
- 12 units from Course List 2
- 12 units from Course List 3
- 6 units one of SOC SCI 2J03 or STATS 1CC3*; GEO 2S03
- 3 units* from MATH 1A03 or 1M03, which must be completed by the end of 60 units
- 3 units HUMAN 2C03
- 33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

Honours Geography {2246}
(Geographic Information Systems Specialist Option)

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a minimum grade of C+ in GEO 1HB6 or an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03. (See Notes 2 and 3 below.)

NOTES

1. Beginning in 2000-2001, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03, 1HS3, 1HU3 (or a grade of at least C+ in GEO 1HB6 if previously completed).
2. Progression to Level III of this programme is conditional upon eligibility to continue in an Honours programme and a grade of at least C+ in GEO 2I03. Students who do not meet the minimum requirements must transfer to another programme for which they qualify.
3. One of MATH 1A03 or 1M03 must be completed by the end of Level II. Inclusion in Level I is strongly recommended.
4. One of SOC SCI 2J03 or STATS 1CC3 must be completed by the end of Level II and is a prerequisite for GEO 2S03.

COURSE LIST 1

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03

COURSE LIST 2

GEO 2B03, 2C03, 2G03, 2HA3, 2HB3, 2HD3, 2HR3, 2HY3, 2W03

REQUIREMENTS

120 units total (Levels I to IV) of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 24 units GEO 2I03, 3I03, 3R03, 3Y03, 4I03, 4R06, 4S03
- 3 units from GEO 3FE3, 3HF3
- 6 units from Course List 1
- 12 units from Course List 2
- 6 units one of SOC SCI 2J03 or STATS 1CC3*; GEO 2S03
- 3 units* from MATH 1A03 or 1M03, which must be completed by the end of 60 units
- 3 units* HUMAN 2C03
- 33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

**Honours Geography and
Environmental Studies {2243}**

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a minimum grade of C+ in GEO 1HB6 or an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03. (See Note 2 below.)

NOTES

1. Beginning in 2000-2001, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in GEO 1HS3 and 1HU3 (or a grade of at least C+ in GEO 1HB6 if previously completed) and successful completion of at least one of GEO 1A03, 1B03, 1G03.
2. One of MATH 1A03 or 1M03 must be completed by the end of Level II. Inclusion in Level I is strongly recommended.
3. One of SOC SCI 2J03 or STATS 1CC3 must be completed by the end of Level II and is a prerequisite for GEO 2S03.

COURSE LIST 1

GEO 4CC3, 4D03, 4HH3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4I03, 4S03, 4R06

COURSE LIST 2

ANTHROP 2AN3, 2E03, 2F03, 2H03, 2PA3, 2U03, 3C03, 3F03, 3Z03, 4AE3, 4P03

BIOLOGY 2D03, 2E03, 3SS3, 3TT3, 4Y03

112 FACULTY OF SOCIAL SCIENCES

ECON	2G03, 3B03, 3C03, 3W03, 3Z03
GEO	2B03, 2C03, 2G03, 2GG3, 2W03, 2WW3, 3B03, 3C03, 3G03, 3W03, 4B03, 4C03, 4G03, 4W03
PHILOS	2G03, 2N03
POL SCI	2E06, 3S03, 3Z03, 3ZZ3, 4D06, 4G06, 4K06, 4O06
SOCIOL	3G03, 3HH3

REQUIREMENTS

120 units total (Levels I to IV) of which 48 units may be Level I

30 units	from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)
21 units	GEO 2HA3, 2HR3, 2I03, 3A03, 3HF3, 3R03, 4A03
3 units	from GEO 2HB3, 2HD3, 2HY3
6 units	from GEO 3HD3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3
9 units	from Course List 1, including one of GEO 4CC3 or 4R06
15 units	from Course List 2, where no more than six units may be chosen from GEO courses
3 units	ECON 2J03
3 units*	from MATH 1A03 or 1M03, which must be completed by the end of 60 units
6 units	one of SOC SCI 2J03 or STATS 1CC3*; GEO 2S03
6 units*	ECON 1A06 which must be completed by the end of 60 units
3 units	HUMAN 2C03
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.

Honours Geography and Environmental Studies {2247}

(Geographic Information Systems Specialist Option)

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a minimum grade of C+ in GEO 1HB6 or an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03. (See *Notes 2 and 3* below.)

NOTES

- Beginning in 2000-2001, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in GEO 1HS3 and 1HU3 (or a grade of at least C+ in GEO 1HB6 if previously completed) and successful completion of at least one of GEO 1A03, 1B03, 1G03.
- Progression to Level III of this programme is conditional upon eligibility to continue in an Honours programme and a grade of at least C+ in GEO 2I03. Students who do not meet the minimum requirements must transfer to another programme for which they qualify.
- One of MATH 1A03 or 1M03 must be completed by the end of Level II. Inclusion in Level I is strongly recommended.
- One of SOC SCI 2J03 or STATS 1CC3 must be completed by the end of Level II and is a prerequisite for GEO 2S03.

COURSE LIST 1

ANTHROP	2AN3, 2E03, 2F03, 2H03, 2PA3, 2U03, 3C03, 3F03, 3Z03, 4AE3, 4P03
BIOLOGY	2D03, 2E03, 3SS3, 3TT3, 4Y03
ECON	2G03, 3B03, 3C03, 3W03, 3Z03
GEO	2B03, 2C03, 2G03, 2GG3, 2W03, 2WW3, 3B03, 3C03, 3G03, 3W03, 4B03, 4C03, 4G03, 4W03
PHILOS	2G03, 2N03
POL SCI	2E06, 3S03, 3Z03, 3ZZ3, 4D06, 4G06, 4K06, 4O06
SOCIOL	3G03, 3HH3

REQUIREMENTS

120 units total (Levels I to IV) of which 48 units may be Level I

30 units	from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)
24 units	GEO 2I03, 3I03, 3R03, 3Y03, 4I03, 4R06, 4S03
15 units	GEO 2HA3, 2HR3, 3A03, 3HF3, 4A03
3 units	from GEO 2HB3, 2HD3, 2HY3
3 units	ECON 2J03

15 units	from Course List 1, where no more than six units may be chosen from GEO courses
3 units*	from MATH 1A03 or 1M03, which must be completed by the end of 60 units
6 units	one of SOC SCI 2J03 or STATS 1CC3*; GEO 2S03
6 units*	ECON 1A06 which must be completed by the end of 60 units
3 units	HUMAN 2C03
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.

Combined Honours B.A. in Geography and Another Subject

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a minimum grade of C+ in GEO 1HB6 or an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03. (See *Note 2* below.) Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

NOTES

- Beginning in 2000-2001, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 6.0 in six units from GEO 1A03, 1B03, 1G03, 1HS3, 1HU3 (or a grade of at least C+ in GEO 1HB6 if previously completed) and satisfaction of admission requirements for the Honours programme in the other B.A. subject.
- One of MATH 1A03 or 1M03 must be completed by the end of Level II. Inclusion in Level I is strongly recommended.

COURSE LIST 1

GEO	4A03, 4B03, 4C03, 4CC3, 4D03, 4FE3, 4G03, 4HH3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4I03, 4R06, 4S03, 4W03
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COURSE LIST 2

GEO	3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03
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COURSE LIST 3

GEO	2B03, 2C03, 2G03, 2HA3, 2HB3, 2HD3, 2HR3, 2HY3, 2W03
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REQUIREMENTS

120 units total (Levels I to IV) of which 48 units may be Level I

30 units	from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)
6 units	GEO 2I03, 3R03
3 units	from GEO 3FE3, 3HF3
6 units	from Course List 2
9 units	from Course List 2, 3
12 units	from Course List 1, including one of GEO 4CC3 or 4R06 or
12-15 units	nine units from Course List 1 and the Thesis or Honours Seminar specified by the department for the other subject
36 units	courses specified for the other subject
6 units	one of SOC SCI 2J03 or STATS 1CC3*; GEO 2S03 or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject.
3 units*	from MATH 1A03 or 1M03, which must be completed by the end of 60 units
3 units	HUMAN 2C03. Students combining Honours Arts & Science with Geography are exempt from this requirement
3-6 units	Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Geography and 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 Geography {1240}**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 3.5 including a minimum grade of at least C- in GEO 1HB6 or an average of at least 4.0 in six units from GEO 1A03, 1C03, 1G03.

NOTE:

1. Beginning in 2000-2001, admission to the programme will require completion of any Level I programme with a Cumulative Average of at least 3.5 including an average of at least 4.0 in six units from GEO 1A03, 1B03, 1G03, 1HS3, 1HU3 (or a grade of at least C- in GEO 1HB6 if previously completed).

COURSE LIST 1

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HJ3, 3HR3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03

COURSE LIST 2

GEO 2B03, 2C03, 2G03, 2GG3, 2HA3, 2HB3, 2HC3, 2HD3, 2HR3, 2HU3, 2HY3, 2I03, 2S03, 2W03, 2WW3

REQUIREMENTS

- 90 units total (Levels I to III), of which 42 units may be Level I
 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
 12 units from Course List 2 with no more than six units from GEO 2GG3, 2HC3, 2HU3, 2WW3
 12 units from Course List 1
 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**COURSE LIST 1**

GEO 4B03, 4C03, 4D03, 4G03, 4HH3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4S03, 4W03

COURSE LIST 2

GEO 3B03, 3C03, 3G03, 3HD3, 3HG3, 3HH3, 3HJ3, 3HR3, 3HT3, 3HX3, 3HZ3, 3S03, 3W03

COURSE LIST 3

GEO 2B03, 2C03, 2G03, 2GG3, 2HA3, 2HB3, 2HC3, 2HD3, 2HR3, 2HU3, 2HY3, 2W03, 2WW3

REQUIREMENTS

- 6 units from GEO 1A03, 1B03, 1G03, 1HB6, 1HS3, 1HU3
 6 units from Course Lists 1, 2
 12 units from Course Lists 1, 2, 3 with no more than six units from GEO 2GG3, 2HC3, 2HU3, 2WW3, 3HJ3, 3HR3

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1999**Honours Geography {2245} (B.A., Specialist Option)**

The Honours Geography (Specialist Option) programme is being phased out. Registration in Level II will be last available in September 1999. Level I students who had intended to register in this programme or students who registered in the programme prior to 1999 should see a Student Advisor in the Office of the Associate Dean (Studies) of the Faculty of Social Sciences.

Honours Geography {2240} (Available only to those students who entered this programme prior to September 1999.)

All Geography (except GEOG 4B09), Geology and Level I Environmental Science courses have been renumbered and renamed **Geo**. To determine the former Geography, Geology and Environmental Science designations of the new Geo courses, please see *Geography and Geology* in the *Course Listings* section of this Calendar. To determine the Geo designation of a former Geography, Geology or Environmental Science course, please see the listings for *Environmental Science, Geography and Geology* respectively, in the *Course Listings* section of this Calendar.

NOTES

- Students who entered the programme prior to September 1998 are encouraged, but not required, to complete one of GEO 3FE3 or 3HF3. Students who choose not to complete either of these courses will replace this with three units from Course Lists 1 or 2. See the *1997-1998 Undergraduate Calendar* for programme requirements.
- One of SOC SCI 2J03 or STATS 1CC3 and one of MATH 1A03 or 1M03; must be completed by the end of Level II.

COURSE LIST 1

GEO 4A03, 4B03, 4C03, 4CC3, 4D03, 4FE3, 4G03, 4HH3, 4HS3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4I03, 4R06, 4S03, 4W03

COURSE LIST 2

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03

COURSE LIST 3

GEO 2B03, 2C03, 2G03, 2HA3, 2HB3, 2HD3, 2HR3, 2HY3, 2I03, 2S03, 2W03

REQUIREMENTS

- 120 units total (Levels I to IV), of which 48 units may be Level I
 30 units from the Level I programme completed prior to admission to the programme
 3 units GEO 3R03
 3 units from GEO 3FE3, 3HF3 (See *Note 1* above.)
 12 units from Course List 1 including one of GEO 4CC3 or 4R06
 24 units from Course Lists 1, 2, 3
 6 units one of SOC SCI 2J03 or STATS 1CC3*; GEO 2S03
 3 units* from MATH 1M03 or 1A03, which must be completed by the end of 60 units.
 3 units HUMAN 2C03
 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 B.A. in Geography and Another Subject

(Available only to those students who entered the programme prior to September 1999.)

All Geography (except GEOG 4B09), Geology and Level I Environmental Science courses have been renumbered and renamed **Geo**. To determine the former Geography, Geology and Environmental Science designations of the new Geo courses, please see *Geography and Geology* in the *Course Listings* section of this Calendar. To determine the Geo designation of a former Geography, Geology or Environmental Science course, please see the listings for *Environmental Science, Geography and Geology* respectively, in the *Course Listings* section of this Calendar.

NOTES

- Students who entered the programme prior to September 1998 are encouraged, but not required, to complete one of GEO 3FE3 or 3HF3. Students who choose not to complete either of these courses will replace this with three units from Course Lists 1 or 2. See the *1997-1998 Undergraduate Calendar* for programme requirements.
- One of SOC SCI 2J03 or STATS 1CC3 and one of MATH 1M03 or 1A03; must be completed by the end of Level II.

COURSE LIST 1

GEO 4A03, 4B03, 4C03, 4CC3, 4D03, 4FE3, 4G03, 4HH3, 4HS3, 4HT3, 4HU3, 4HX3, 4HY3, 4HZ3, 4I03, 4R06, 4S03, 4W03

COURSE LIST 2

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03

COURSE LIST 3

GEO 2B03, 2C03, 2G03, 2HA3, 2HB3, 2HD3, 2HR3, 2HY3, 2I03, 2S03, 2W03

114 FACULTY OF SOCIAL SCIENCES

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)

3 units GEO 3R03

3 units from GEO 3FE3, 3HF3 (See *Note 1* above.)

18 units from Course Lists 1, 2, 3

12 units from Course List 1 including one of GEO 4CC3 or 4R06 or

12-15 units nine units from Course List 1 and the Thesis or Honours Seminar specified by the Department for the other subject

36 units courses specified for the other subject

6 units one of SOC SCI 2J03 or STATS 1CC3*, GEO 2S03 or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject

3 units* from MATH 1A03 or 1M03, which must be completed by the end of 60 units.

3 units HUMAN 2C03. Students combining Honours Arts & Science with Geography are exempt from this requirement

3-6 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Geography and 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.

Honours Geography and Environmental Studies (B.A.) {2243}

(Available only to those students who entered the programme prior to September 1999.)

All Geography (except GEOG 4B09), Geology and Level I Environmental Science courses have been renumbered and renamed Geo. To determine the former Geography, Geology and Environmental Science designations of the new Geo courses, please see *Geography and Geology* in the *Course Listings* section of this Calendar. To determine the Geo designation of a former Geography, Geology or Environmental Science course, please see the listings for *Environmental Science, Geography and Geology* respectively, in the *Course Listings* section of this Calendar.

NOTES

1. Students who entered the programme prior to September 1998 are encouraged, but not required, to complete GEO 3HF3. Students who choose not to complete GEO 3HF3 will be replace this with three units from Course Lists 1 or 2. See the *1997-1998 Undergraduate Calendar* for programme requirements.

2. Students who entered the programme prior to September 1998 and who did not complete:

• GEOG 3J03 must replace this with ECON 3W03;

• GEOG 3U03 must replace this with GEO 3A03;

• GEOG 3UU3 must replace this with GEO 4A03

3. One of SOC SCI 2J03 or STATS 1CC3 and one of MATH 1M03 or 1A03, must be completed by the end of Level II.

COURSE LIST 1

GEO 2B03, 2C03, 2G03, 2HR3, 2I03, 2W03, 3B03, 3C03, 3G03, 3HG3, 3HH3, 3I03, 3S03, 3W03, 3Y03, 4B03, 4C03, 4FE3, 4G03, 4HH3, 4HS3, 4HT3, 4I03, 4S03, 4W03

COURSE LIST 2

ANTHROP 2AN3, 2E03, 2F03, 2H03, 2PA3, 2U03, 3C03, 3F03, 3V03, 3Z03, 4AE3, 4P03

BIOLOGY 2D03, 2E03, 3SS3, 3TT3, 4Y03

ECON 2G03, 2J03, 3B03, 3C03, 3Z03.

PHILOS 2G03, 2N03

POL SCI 2E06, 2G06, 3S03, 3Z03, 3Z06, 3ZZ3, 4D03, 4D06, 4G06, 4K06, 4O06

SOCIOL 3G03, 3HH3, 3JJ3

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

30 units from the Level I programme completed prior to admission to the programme

27 units BIOLOGY 2F03, ECON 3W03, GEO 3A03, 3FE3, 3HF3, 3R03, 4A03, 4R06 (See *Notes 1* and *2* above.)

36 units from Course Lists 1 and 2:

- at least 12 units must be Level III or IV courses;
- at least 18 units must be from Course List 2;
- at least 3 units must be from Course List 1

3 units* from MATH 1M03 or 1A03 which must be completed by the end of 60 units.

6 units one of SOC SCI 2J03 or STATS 1CC3*, GEO 2S03

3 units HUMAN 2C03

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, the units will be taken as electives.

Honours Geography and Geology (B.A.) {2240250}

Level I students who intended to register in this programme or students who registered prior to 1998 should see the Academic Advisor in the School of Geography and Geology for programme requirements and individual counselling.

B.A. in Geography {1240}

(Available only to those students who entered the programme prior to September 1999.)

All Geography (except GEOG 4B09), Geology and Level I Environmental Science courses have been renumbered and renamed Geo. To determine the former Geography, Geology and Environmental Science designations of the new Geo courses, please see *Geography and Geology* in the *Course Listings* section of this Calendar. To determine the Geo designation of a former Geography, Geology or Environmental Science course, please see the listings for *Environmental Science, Geography and Geology* respectively, in the *Course Listings* section of this Calendar.

COURSE LIST 1

GEO 3A03, 3B03, 3C03, 3FE3, 3G03, 3HD3, 3HF3, 3HG3, 3HH3, 3HJ3, 3HR3, 3HT3, 3HX3, 3HZ3, 3I03, 3S03, 3W03, 3Y03

COURSE LIST 2

GEO 2B03, 2C03, 2G03, 2GG3, 2HA3, 2HB3, 2HC3, 2HD3, 2HR3, 2HU3, 2HY3, 2I03, 2S03, 2W03, 2WW3

REQUIREMENTS

90 units total (Levels I to III), of which 42 may be Level I

30 units from the Level I programme completed prior to admission to the programme

12 units from Course List 2 with no more than six units from GEO 2GG3, 2HC3, 2HU3, 2WW3

12 units from Course List 1

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.

GERONTOLOGICAL STUDIES

WEB ADDRESS: <http://www.socsci.mcmaster.ca/~geros>

COOPERATIVE INTERNSHIP OPTIONS FOR HONOURS GERONTOLOGY STUDENTS

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

Combined Honours in Gerontology and Another Subject

ADMISSION

Enrolment in this programme is limited. Admission is by selection but requires, as a minimum, completion of any Level I programme with a minimum Cumulative Average of 6.0 including a grade of at least B- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the Honours B.A. programme in the other subject.

NOTES

1. Application for admission, including a statement explaining the applicant's interest in the programme, must be made to the Chair of the Committee of Instruction, **prior to April 1**. The Admissions Committee may wish to interview the applicant.
2. Students who have not taken GERONTOL 1A06 in Level I may be considered for admission to the programme if they have an equivalent introductory gerontology course. Such students must consult the Chair of the Committee of Instruction regarding GERONTOL 1A06 equivalency **prior to applying**.
3. Courses other than those listed in Course List 1 may be substituted with the **prior** permission of the Chair of the Committee of Instruction.
4. GERONTOL 2C03 and 3G03 (or another approved three or six unit statistics course) must be completed by the end of Level III.
5. Students who complete the Thesis in the other subject must replace GERONTOL 4A06 with six units of Level II, III or IV Gerontology or courses from Course List 1.

COURSE LIST 1

ANTHROP	3Z03
ECON	3D03, 3Q03, 3Z03
GEO	3HH3
HTH SCI	3B03
KINESIOL	3F03
PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03
SOCIOL	3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 3 above.)

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 6 units GERONTOL 2B03, 2D03
- 6 units GERONTOL 3B03, 3D03
- 6 units GERONTOL 4A06 or if available, a Thesis in the other subject (See Note 5 above.)
- 3 units Level IV Gerontology
- 12 units Level II, III or IV Gerontology or courses from Course List 1
- 36 units Courses as specified for the other subject
- 3 units GERONTOL 2C03
- 3-6 units from GERONTOL 3G03, STATS 1CC3*, or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject.
- 3 units HUMAN 2C03. Students combining Arts and Science with Gerontology are exempt from this requirement.
- 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 and Another Subject

ADMISSION

Enrolment in this programme is limited. Admission is by selection but requires, as a minimum, completion of any Level I programme with a minimum Cumulative Average of 3.5 including a grade of at least C- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the B.A. in the other subject.

NOTES

1. Application for admission, including a statement explaining the applicant's interest in the programme, must be made to the Chair of the Committee of Instruction, **prior to April 1**. The Admissions Committee may wish to interview the applicant.
2. Students who have not taken GERONTOL 1A06 in Level I may be considered for admission to the programme if they have an equivalent introductory gerontology course. Such students must consult the Chair of the Committee of Instruction regarding GERONTOL 1A06 equivalency **prior to applying**.
3. Courses other than those listed in Course List 1 may be substituted, with the **prior** permission of the Chair of the Committee of Instruction.

4. No more than six units of work in the other subject of the combined programme which are also in Course List 1 may be used to fulfill the requirements of both programme components.
5. Students in the B.A. in Gerontology and Another Subject/Bachelor of Social Work programme should consult with the Chair of the Committee of Instruction regarding GERONTOL 3B03 (the Gerontology Field Observation requirement) and SOC WORK 3DD6.

COURSE LIST 1

ANTHROP	3Z03
ECON	3D03, 3Q03, 3Z03
GEO	3HH3
HTH SCI	3B03
KINESIOL	3F03
PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03
SOCIOL	3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 3 above.)

REQUIREMENTS

(For the B.A. in Gerontology and Sociology programme requirements see below.)

90 units total (Levels I to III), of which 42 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme (See Admission above.)
- 6 units GERONTOL 2B03, 2D03
- 3 units GERONTOL 2C03
- 6 units GERONTOL 3B03, 3D03
- 9 units Level II, III or IV Gerontology or courses from Course List 1
- 24 units courses specified for the other subject (See Note 4 above.)
- 12 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A Gerontology and Sociology {1265520}

(Programme requirements only)

For admission information and programme notes, see B.A. in Gerontology and Another Subject (above).

COURSE LIST 1

ANTHROP	3Z03
ECON	3D03, 3Q03, 3Z03
GEO	3HH3
HTH SCI	3B03
KINESIOL	3F03
PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03

or other designated and approved courses. (See Note 3 above.)

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission, B.A. in Gerontology and Another Subject above.)
- 6 units GERONTOL 2B03, 2D03
- 6 units GERONTOL 3B03, 3D03
- 9 units Level II, III or IV Gerontology or courses from Course List 1
- 3 units GERONTOL 2C03 or SOCIOL 2Z03
- 6 units SOCIOL 2S06
- 15 units Level II or III Sociology
- 15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A. in Gerontology as a Second Degree {1265}

ADMISSION

Enrolment in this programme is limited. Admission is by selection but requires, as a minimum, completion of an undergraduate degree from a recognized university normally with a minimum Cumulative Average of 4.0 (or its equivalent), a grade of at least

C- in GERONTOL 1A06 (or its equivalent), and evidence of a personal interest in Gerontological Studies, which may be evaluated by one, or a combination of a written statement and an interview.

An applicant is normally required to complete the prerequisite undergraduate degree work by April of the year in which application is made.

As Second Degree candidates, applicants must first apply for admission to the University, through the Office of the Registrar (Admissions) indicating they wish to apply for Gerontology as a Second Degree. This application step must be completed **prior to April 1**. A supplementary application for admission to the Gerontology programme will then be sent to the applicant from the Office of the Registrar (Admissions).

The supplementary application, including a statement explaining the applicant's interest in the programme, must be addressed to the Chair of the Committee of Instruction and sent to the Office of the Registrar (Admissions) **prior to May 15**.

Students who have not included GERONTOL 1A06 in their first degree programme may be considered for admission to the programme if they have an equivalent introductory gerontology course. Such students must consult the Chair of the Committee of Instruction regarding GERONTOL 1A06 equivalency **prior to applying**.

NOTES

1. Students who wish to enter a graduate or professional programme after completion of their second degree in Gerontology are advised to choose courses required for entry to these programmes. These may include research methods courses, advanced seminar in gerontology, a directed research course for second degree students and other courses at Level IV. Students should consult the requirements for their post-graduate or professional programme of choice.
2. Students are required to complete a total of 30 units for the second degree, all of which must be completed at McMaster. Students may apply for permission to the Chair of the Committee of Instruction for credit in equivalent Gerontology courses or courses from Course List 1 as part of their first degree. If the requirement is waived, additional courses must be taken at McMaster to total 30 units.
3. Courses other than those listed below in Course List 1 may be substituted with the **prior** permission of the Chair of the Committee of Instruction.
4. Students who have completed the methods requirement in their first degree should consult the Chair of the Gerontology Committee of Instruction.

COURSE LIST 1

ANTHROP	3Z03
ECON	3D03, 3Q03, 3Z03
GEO	3HH3
HTH SCI	3B03
KINESIOL	3F03
PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03
SOCIOL	3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 3 above.)

REQUIREMENTS (MINIMUM)

30 units total

6 units	GERONTOL 2B03, 2D03
6 units	GERONTOL 3B03, 3D03
3 units	GERONTOL 2C03 (See Note 4 above.)
9 units	Level II, III or IV Gerontology or courses from Course List 1
6 units	Electives

Combined Honours in Gerontology and Another Subject as a Second Degree

ADMISSION

Enrolment in this programme is limited. Admission is by selection and only former McMaster students who have completed a three-level B.A. degree in Combined Gerontology and Another Subject may apply to the Combined Honours in Gerontology and Another Subject as a Second Degree if they have a minimum Cumulative Average of 6.0. The other subject must be the same as in the first degree and students must be accepted for Honours both by Gerontology and by the other department.

Applicants must first apply for admission to the University through the Office of the Registrar (Admissions) indicating they wish to apply for Honours Gerontology and Another Subject as a Second Degree. This application step must be completed **prior to April 1**. A supplementary application for admission to the Gerontology programme will then be sent to the applicant from the Office of the Registrar (Admissions).

The supplementary application, including a statement explaining the applicant's interest in the programme, must be addressed to the Chair of the Committee of Instruction and sent to the Office of the Registrar (Admissions) **prior to May 15**.

NOTES

1. Students are required to take courses to total at least 30 units, including all outstanding Honours requirements for both subjects. All units for the second degree must be completed at McMaster.
2. Courses other than those listed below in Course List 1 may be substituted with the **prior** permission of the Chair of the Committee of Instruction.
3. Students who have completed the methods requirement in their first degree should consult the Chair of the Gerontology Committee of Instruction.

COURSE LIST 1

ANTHROP	3Z03
ECON	3D03, 3Q03, 3Z03
GEO	3HH3
HTH SCI	3B03
KINESIOL	3F03
PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03
SOCIOL	3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 2 above.)

REQUIREMENTS (MINIMUM)

30 units total

Gerontology courses or courses from Course List 1 to complete the Honours requirements including six units of research methods/statistics, if not already completed.

Courses specified for the other subject.

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1998

Combined Honours in Gerontology and Another Subject

(Available only to students who entered this programme prior to September 1998.)

NOTES

1. Courses other than those listed in Course List 1 may be substituted with the **prior** permission of the Chair of the Committee of Instruction.
2. Students are encouraged to take both GERONTOL 2B03 and 3D03.
3. GERONTOL 2C03 (or 3C03) and 3G03 (or another approved three or six unit statistics course) must be completed by the end of Level III.
4. Students who complete the Thesis in the other subject must replace GERONTOL 4A06 with six units of Level II, III or IV Gerontology or courses from Course List 1.

COURSE LIST 1

ANTHROP	3Z03
ECON	3D03, 3Q03, 3YY3**, 3Z03
GEO	3HH3, 4HS3
HTH SCI	3B03
KINESIOL	3F03
PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03
SOCIOL	3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 1 above.)

(** if the topic was *Economics of Aging*)

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme
- 3 units from GERONTOL 2A03, 2AA3, 2D03
- 3 units from GERONTOL 2B03, 3D03 (See Note 2 above.)
- 3 units GERONTOL 3B03
- 6 units GERONTOL 4A06 or if available, a Thesis in the other subject (See Note 4 above.)
- 3 units Level IV Gerontology
- 15 units Level II, III or IV Gerontology or courses from Course List 1
- 36 units Courses as specified for the other subject
- 3 units GERONTOL 2C03 (or 3C03)
- 3-6 units from GERONTOL 3G03, STATS 1CC3* or, in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics requirement specified for the other subject
- 3 units HUMAN 2C03. Students combining Arts and Science with Gerontology are exempt from this requirement.
- 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 and Another Subject

(Available only to students who entered this programme prior to September 1998.)

NOTES

1. Courses other than those listed in Course List 1 may be substituted, with the prior permission of the Chair of the Committee of Instruction.
2. No more than six units of work in the other subject of the combined programme which are also in Course List 1 may be used to fulfill the requirements of both programme components.
3. Students are encouraged to take both GERONTOL 2B03 and 3D03.
4. Students in the B.A. in Gerontology and Another Subject/Bachelor of Social Work should consult with the Chair of the Committee of Instruction regarding GERONTOL 3B03 (the Gerontology Field Observation requirement) and SOC WORK 3DD6.

COURSE LIST 1

- ANTHROP 3Z03
- ECON 3D03, 3Q03, 3YY3**, 3Z03
- GEO 3HH3, 4HS3
- HTH SCI 3B03
- KINESIOL 3F03
- PHILOS 3C03
- PSYCH 3X03
- RELIG ST 2M03, 2N03, 2WW3
- SOC WORK 3C03, 4L03, 4R03
- SOCIOL 3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 1 above.) (** if the topic was *Economics of Aging*)

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme
- 3 units from GERONTOL 2A03, 2AA3, 2D03
- 6 units from GERONTOL 2C03 (or 3C03) and 3B03
- 3 units from GERONTOL 2B03, 3D03 (See Note 3 above.)
- 12 units Level II, III or IV Gerontology or courses from Course List 1
- 24 units courses specified for the other subject (See Note 2 above.)
- 12 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

B.A. in Gerontology as a Second Degree {1265}

(Available only to students who entered this programme prior to September 1998.)

NOTES

1. Students who wish to enter a graduate or professional programme after completion of their second degree in Gerontology are advised to choose courses required for entry to these programmes. These may include research methods courses, advanced seminar in gerontology, a directed research course for second degree students and other courses at level four. Students should consult the requirements for their post-graduate or professional programme of choice
2. Students are required to complete a total of 30 units for the second degree, all of which must be completed at McMaster. Students may apply for permission to the Chair of the Committee of Instruction for credit in equivalent Gerontology courses or courses from Course List 1 as part of their first degree. If the requirement is waived, additional courses must be taken at McMaster to total 30 units.
3. Courses other than those listed below in Course List 1 may be substituted with the prior permission of the Chair of the Committee of Instruction.
4. GERONTOL 2B03 and 3D03 both may be counted toward the required units in Gerontology. Students are encouraged to take both GERONTOL 2B03 and 3D03.
5. Students who have completed the methods requirement in their first degree should consult the Chair of the Committee of Instruction.

COURSE LIST 1

- ANTHROP 3Z03
 - ECON 3D03, 3Q03, 3YY3**, 3Z03
 - GEO 3HH3, 4HS3
 - HTH SCI 3B03
 - KINESIOL 3F03
 - PHILOS 3C03
 - PSYCH 3X03
 - RELIG ST 2M03, 2N03, 2WW3
 - SOC WORK 3C03, 4L03, 4R03
 - SOCIOL 3CC3, 3G03, 3HH3
- or other designated and approved courses. (See Note 3 above.) (** if the topic was *Economics of Aging*)

REQUIREMENTS (MINIMUM)

30 units total

- 3 units from GERONTOL 2A03, 2AA3, 2D03
- 3 units GERONTOL 3B03
- 3 units from GERONTOL 2B03, 3D03 (See Note 4 above.)
- 3 units from GERONTOL 2C03, 3C03 or 4E03
- 12 units Level II, III or IV Gerontology or courses from Course List 1
- 6 units Electives

Combined Honours in Gerontology and Another Subject as a Second Degree

(Available only to students who entered this programme prior to September 1998.)

NOTES

1. Students are required to take courses to total at least 30 units, including all outstanding Honours requirements for both subjects. All units for the second degree must be completed at McMaster.
2. Courses other than those listed below in Course List 1 may be substituted with the prior permission of the Chair of the Committee of Instruction.
3. Students are encouraged to take both GERONTOL 2B03 and 3D03.
4. Students who have completed the methods requirement in their first degree should consult the Chair of the Committee of Instruction.

COURSE LIST 1

- ANTHROP 3Z03
- ECON 3D03, 3Q03, 3YY3**, 3Z03
- GEO 3HH3, 4HS3
- HTH SCI 3B03
- KINESIOL 3F03

118 FACULTY OF SOCIAL SCIENCES

PHILOS	3C03
PSYCH	3X03
RELIG ST	2M03, 2N03, 2WW3
SOC WORK	3C03, 4L03, 4R03
SOCIOL	3CC3, 3G03, 3HH3

or other designated and approved courses. (See Note 2 above.)
(* if the topic was *Economics of Aging*)

REQUIREMENTS (MINIMUM)

30 units total

Gerontology courses or courses from Course List 1 to complete the Honours requirements including six units of research methods, if not completed.

Courses specified for the other subject.

DEPARTMENT OF KINESIOLOGY

WEB ADDRESS: <http://kinlabserver.mcmaster.ca>

Subject to approval by the Ministry of Education and Training, beginning in the 2000-2001 academic year, the Department of Kinesiology intends to offer an Honours Bachelor of Science, and beginning in 1999-2000 an Honours Bachelor of Kinesiology. For more information contact the Undergraduate Programme Office, Department of Kinesiology.

Reinstatement: Kinesiology will not consider students for reinstatement until a minimum of 24 units of work in a non-Kinesiology programme has been completed 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 March 31 for September entry. **Reinstatement is not guaranteed.**

Transferring to the B.Kin. Programme: A maximum of 40 transfer students are admitted each year. To be considered, applicants must have an average of at least 7.0 (B-) on a minimum of 24 units of university work taken on a full-time basis. McMaster students interested in transferring should contact the Undergraduate Administrative Assistant (Kinesiology), or the Office of the Associate Dean (Studies), Social Sciences for a Transfer and Supplementary form by March 31 of the year in which the transfer is desired. Students transferring from another university should see the *Admission Requirements and Application Procedures* sections of this Calendar.

Honours Kinesiology (B.Sc.)

(See B.Sc. Programmes in Kinesiology, Faculty of Science, Department of Kinesiology)

COOPERATIVE INTERNSHIP OPTIONS FOR HONOURS KINESIOLOGY STUDENTS

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

Honours Bachelor of Kinesiology {2303}

ADMISSION

Completion of Kinesiology I with a Cumulative Average of at least 6.0 including an average of at least 6.0 in KINESIOL 1A06, 1D03 and 1E03.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I.

LEVEL I: 30 UNITS

30 units from Kinesiology I completed prior to admission to the programme. (See *Admission* above.)

LEVEL II: 30 UNITS

15 units KINESIOL 2A03, 2B03, 2C06, 2G03
3 units HUMAN 2C03
3 units one of SOC SCI 2J03 or STATS 1CC3*
9 units Electives

LEVELS III AND IV: 60 UNITS

30 units Level III or IV Kinesiology (maximum allowed)
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.

* If requirement completed in Level I these units may be taken as electives.

Bachelor of Kinesiology {2308}

ADMISSION

Completion of Kinesiology I with a Cumulative Average of at least 4.0.

NOTES

1. Kinesiology students who entered Kinesiology prior to September 1999, may be eligible to transfer to the Honours B.Kin. programme (as of September 1999) or the Honours B.Sc. programme in Kinesiology (as of September 2000) subject to having met the admission criteria and programme requirements. For information about the Honours B.Kin. programme, see above. For information about the Hons. B.Sc. programme, see the *Faculty of Science, Department of Kinesiology* section of this Calendar or contact the Undergraduate Coordinator, Department of Kinesiology.
2. Students transferring into the Kinesiology programme with credit in STATS 1CC3 are exempt from KINESIOL 1B03.
3. As of September 2000, for students registering in Level II of the B.Kin. programme their Levels III and IV requirements will be: 18 units Level III or IV Kinesiology and 42 units elective.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I.

LEVEL I: 30 UNITS

30 units from Kinesiology I completed prior to admission to the programme. (See *Admission* above.)

LEVEL II: 30 UNITS

15 units KINESIOL 2A03, 2B03, 2C06, 2G03
3 units one of SOC SCI 2J03 or STATS 1CC3*
12 units Electives

LEVELS III AND IV: 60 UNITS

30 units Level III or IV Kinesiology (maximum allowed) (See Note 3 above.)

30 units Electives

* If requirement was completed in Level I, these units may be taken as electives.

Bachelor of Kinesiology {2309} and Honours Bachelor of Kinesiology {2304} as a Second Degree

(Available only to students who enter this programme in September 1999.)

Enrolment in this programme is limited.

ADMISSION

Completion of any undergraduate degree from a recognized university with a minimum average of 7.0 (B-). Eligibility for transfer to the Honours B.Kin. as a Second Degree programme is determined upon completion of 30 units of work. See Note 2 below.

NOTES:

1. McMaster graduates (or potential graduates) must apply using the *McMaster Returning Student Application form*, which can be obtained from the Office of the Registrar, Gilmour Hall, Room 108. Graduates (or potential graduates) from other universities must use the 105(D) application form which can be obtained from the Admissions Office of any Ontario university. Completed applications must be returned to the appropriate office (either the Office of the registrar, McMaster University or the Ontario Universities' Application Centre) with the appropriate fee by May 15. Students are strongly urged to apply well before the deadline.
2. Students who successfully complete Level I of the B.Kin. as a Second Degree programme with a minimum C.A. of 6.0 including an average of at least 6.0 in KINESIOL 1A06, 1D03, 1E03 may transfer to the Honours B. Kin. as a Second degree programme (see programme requirements below.)

- With permission of the Undergraduate Coordinator, Department of Kinesiology, students may defer KINESIOL 2C06 until Level II and replace it with six units from Course List 1 in Level I.
- Students who intend to transfer to Hons. B.Kin. must also complete HUMAN 2C03, if not completed as part of their first degree.
- The degree must be completed on a full-time basis and typically requires two years.

COURSE LIST 1

KINESIOL 3A03, 3B03, 3D03, 3DD3, 3F03, 3JJ3, 3L03, 3M03, 3P03, 3Q03, 3SS3, 4D03, 4G03, 4H03, 4JJ3, 4M03, 4N03, 4S03, 4SS3, 4T03, 4U03, 4V03, 4Z03

REQUIREMENTS

60-63 units total (Levels I and IV) of which 15 units may be Level I

LEVEL I: 30 UNITS

12 units KINESIOL 1A06, 1D03, 1E03
 15 units KINESIOL 2A03, 2B03, 2C06, 2G03 (See Note 3 above.)
 1 course KINESIOL 1FLO
 3 units Electives, which must include one of SOC SCI 2J03 or STATS 1CC3, if not completed as part of the first degree. (See Note 4 above.)

LEVEL II (HONS. B.KIN.): 30-33 UNITS (See Note 2 above.)

30 units Level III or IV Kinesiology
 0-3 units Electives, which must include HUMAN 2C03, if not already completed or completed as part of the first degree.

LEVEL II (B.KIN.): 30 UNITS

18 units Level III or IV Kinesiology (maximum allowed)
 12 units Electives

Bachelor of Kinesiology {2309} as a Second Degree

(Available only to students who entered this programme prior to September 1999.)

NOTES

- The degree must be completed on a full-time basis and typically requires two years.
- KINESIOL 1CA0 (Standard First Aid/CPR) and KINESIOL 2FLO (Aspects of Fitness, Life Style Management and Recreation) are non-credit requirements. To qualify for an exemption from KINESIOL 1CA0 (Standard First Aid/CPR), a student must have completed Standard First Aid from either the Red Cross or St. John's and two person rescuer (C qualification) or hold a current NLS (National Life Saving) certification.
- Students registering in this programme with prior credit in STATS 1CC3 are exempt from taking KINESIOL 1B03.

REQUIREMENTS

60 units total

27 units KINESIOL 1A06, 1B03, 1D03, 1E03, 2A03, 2B03, 2C06
 2 courses KINESIOL 1CA0, 2FLO (See Note 2 above.)
 30 units Level III or IV Kinesiology (maximum allowed)
 3 units Electives (may be KINESIOL 2G03)

LABOUR STUDIES

WEB ADDRESS: <http://www.socsci.mcmaster.ca/~labrst>

COOPERATIVE INTERNSHIP OPTIONS FOR HONOURS LABOUR STUDIES STUDENTS

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

Honours Labour Studies {2641} (Specialist Option)

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1Z03 (or 1AA3). Applicants must have

completed at least six units from ECON 1A06, HISTORY 1A06 or 1C06, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOL 1A06.

NOTES

- Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1.
- Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
- Students may not transfer to another Labour Studies programme except by the normal application process.
- Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.

COURSE LIST 1

COMMERCE 3BC3
 ECON 2C03, 2E03, 2F03, 2K03, 2N03
 GERONTOL 3J03
 HISTORY 3N03
 POL SCI 3D03, 3E03, 3EE3, 3F03
 SOCIOL 2E06, 2R03, 2RR3, 2Q06, 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 programme completed prior to admission to the programme. (See Admission above.)
 30 units LABR ST 2A03, 2C03, 2D03, 3G03, 4A09, 4C03, 4D03, COMMERCE 4BC3
 6 units Level II Labour Studies; COMMERCE 2BA3
 9 units Level III Labour Studies; COMMERCE 4BD3
 6 units from Course List 1
 3 units from SOC SCI 2J03 or STATS 1CC3* or an equivalent Research Methods/Statistics course as prescribed by other Social Sciences Programmes. (See Note 4 above.)
 3 units HUMAN 2C03
 12 units* SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units
 21 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

Honours Labour Studies {2640}

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1Z03 (or 1AA3). Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C06, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOL 1A06.

NOTES

- Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to April 1.
- Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
- Students may not transfer to another Labour Studies programme except by the normal application process.
- Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.

COURSE LIST 1

COMMERCE 3BC3
 ECON 2C03, 2E03, 2F03, 2K03, 2N03
 GERONTOL 3J03
 HISTORY 3N03
 POL SCI 3D03, 3E03, 3EE3, 3F03
 SOCIOL 2E06, 2R03, 2RR3, 2Q06, 2V06, 3F06, 3LL3

120 FACULTY OF SOCIAL SCIENCES

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I)

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units LABR ST 2A03, 2C03, 2D03, 3G03, 4A09
- 6 units Level II Labour Studies; COMMERCE 2BA3
- 9 units Level III Labour Studies; COMMERCE 4BC3, 4BD3
- 3 units from LABR ST 4C03, 4D03
- 3-6 units from Course List I
- 3 units from SOC SCI 2J03 or STATS 1CC3* or an equivalent Research Methods/Statistics course as prescribed by the other Social Sciences Programmes. (See *Note 4* above.)
- 3 units HUMAN 2C03
- 12 units* SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units
- 27-30 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.

*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 programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in LABR ST 1A03 and 1Z03 (or 1AA3). Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C06, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOL 1A06. Satisfaction of admission requirements for the Honours B.A. programme in the other subject.

NOTES

1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to **April 1**.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer to another Labour Studies programme except by the normal application process.
4. Students who complete a six unit Research Methods/Statistics course will reduce their elective component by three units.
5. **Electives:** SOCIOL 1A06, ECON 1A06 and six units from the Faculty of Humanities and/or the Department of Religious Studies should be included in the Level I programme to provide some electives in this programme.
6. Students combining Labour Studies with a Humanities subject or with Religious Studies must complete LABR ST 4A09 and SOC SCI 2J03 or STATS 1CC3. Students in other Combined Honours Programmes may complete the Honours Seminar requirement as specified by the other Department and replace LABR ST 4A09 with six units Level III Labour Studies courses.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I)

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units LABR ST 2A03, 2C03, 2D03, 3G03, 4A09 (See *Note 6* above.)
- 3 units Level II Labour Studies; COMMERCE 2BA3
- 9 units Level III Labour Studies; COMMERCE 4BC3, 4BD3
- 3 units from LABR ST 4C03, 4D03
- 36 units courses specified for the other subject
- 3 units from SOC SCI 2J03 or STATS 1CC3* or an equivalent Research Methods/Statistics course specified by the other subject. (See *Note 4* above.)
- 3 units HUMAN 2C03 Students combining Honours Arts & Science with Labour Studies are exempt from this requirement.
- 12 units* SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units

0-15 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Labour Studies with Arts & Science, or with a Humanities subject are exempt from this requirement.

*If requirement completed in Level I, these units will be taken as electives.

B.A. in Labour Studies

{1640}

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement and a supplementary letter but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 3.5 including an average of at least 4.0 in LABR ST 1A03 and 1Z03 (or 1AA3). Applicants must have completed at least six units from ECON 1A06, HISTORY 1A06 or 1C06, MATH 1K03 or STATS 1L03, POL SCI 1A06 or 1G06, PSYCH 1A06 or 1A03 and 1AA3, SOCIOL 1A06.

NOTES

1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to **April 1**. Students applying for the Honours programme will automatically be considered for the B.A. programme.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer to another Labour Studies programme except by the normal application process.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I)

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 15 units LABR ST 2A03, 2C03, 2D03, 3G03, COMMERCE 4BC3
- 6 units Level II Labour Studies; COMMERCE 2BA3
- 9 units Level III Labour Studies; COMMERCE 4BD3
- 12* units SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units.
- 18 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies.

*If requirement completed in Level I, these units will be taken as electives.

Minor in Labour Studies

Enrolment is limited.

Labour Studies will admit a maximum of 10 students to the Minor each year.

NOTES

1. Application for admission (forms available from Labour Studies Office), including a statement explaining the applicant's interest in the programme, should be made to the Chair, Committee of Instruction, prior to **April 1**.
2. Students working towards a Minor in Labour Studies may take no more than three units of Level IV Labour Studies courses.
3. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
4. Students may not transfer from the Minor in Labour Studies to another Labour Studies programme except by the normal application process.
5. Students who have completed LABR ST 2A06 may take nine units Level II, III, IV Labour Studies instead of 12 units.

REQUIREMENTS

- 6 units LABR ST 1A03 and 1Z03 (or 1AA3)
- 6 units LABR ST 2A03 (See *Note 5* above.), 2C03
- 12 units Level II, III or IV Labour Studies (See *Note 2* above.)
- 12 units ECON 1A06 and SOCIOL 1A06

PHYSICAL EDUCATION (B.P.E.)

(See Department of Kinesiology)

DEPARTMENT OF POLITICAL SCIENCE

WEB ADDRESS: <http://www.socsci.mcmaster.ca/polisci>

Honours Arts & Science and Political Science
(B. Arts Sc.; See Arts & Science programme)

**COOPERATIVE INTERNSHIP OPTIONS
FOR HONOURS POLITICAL SCIENCE STUDENTS**

The Faculty of Social Sciences offers two types of full-time, paid work opportunities for students registered in Honours programmes. For further information see *Degree Programmes, Internship Options*, in the *Faculty of Social Sciences* section of this Calendar.

Honours Political Science {2450}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1G06 or 1A06.

NOTES

1. Students should be alerted to those Level II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POL SCI 3N06 (previously 2F06) and 2O06 are required for students enrolled in Honours Political Science programmes and they are recommended for students in the B.A. programme.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 6 units POL SCI 2O06
- 24 units Level II, III or IV Political Science of which a maximum of 12 units may be Level II
- 12 units Level IV Political Science
- 6 units POL SCI 3N06 (previously 2F06)
- 3 units HUMAN 2C03
- 39 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. (The maximum Political Science courses to be taken is 60 units.)

**Combined Honours in
Political Science and Another Subject**

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in POL SCI 1G06 or 1A06. Satisfaction of the admission requirements for the Honours programme in the other subject.

NOTES

1. Students should be alerted to those Level II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POL SCI 3N06 (previously 2F06) and 2O06 are required for students enrolled in Honours Political Science programmes and they are recommended for students in the B.A. programme.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 6 units POL SCI 2O06
- 9 units Level III Political Science
- 9 units Level II, III or IV Political Science
- 6 units Level IV Political Science
- 36 units courses specified for the other subject
- 6 units POL SCI 3N06 (previously 2F06) or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject.
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Political Science are exempt from this requirement.

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 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 programme, with a Cumulative Average of at least 3.5 including a grade of at least C- in POL SCI 1G06 or 1A06.

NOTES

1. Students should be alerted to those Level II and III courses that are required to qualify for a number of Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POL SCI 3N06 (previously 2F06) and 2O06 are required for students enrolled in Honours Political Science programmes and they are recommended for students in B.A. programmes.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 12 units Level II Political Science
- 12 units Level III Political Science
- 36 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. (The maximum Political Science courses to be taken is 36 units.)

Minor in Political Science

NOTE

Level IV courses have limited enrolment with preference given to Honours Political Science students. Students must apply by ballot through the Department.

REQUIREMENTS

- 6 units Level I Political Science
- 18 units Level II, III or IV Political Science of which up to 12 units may be Level II courses

DEPARTMENT OF PSYCHOLOGY

WEB ADDRESS: <http://www.science.mcmaster.ca/psychology/psych.html>

Honours Psychology (B.Sc.)

(See B.Sc. programmes in Psychology, Faculty of Science, Department of Psychology)

Honours Psychology (B.Sc.) (Complementary Studies Option)

(See B.Sc. programmes in Psychology, Faculty of Science, Department of Psychology)

Honours Biology and Psychology (B.Sc.)

(See B.Sc. programmes in Biology, Faculty of Science, Department of Biology)

Honours Arts & Science and Psychology

(B. Arts Sc.; See Arts & Science programme)

Honours Psychology {2459}
(B.A., Specialist Option)

ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0, an average of at least 7.0 in PSYCH 1A03 and 1A06 or a grade of at least B- in PSYCH 1A06 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

NOTES

- Applications for all Levels may be picked up at the Office of the Associate Dean (Studies), Faculty of Social Sciences, Kenneth Taylor Hall, Room 120. The applications are available **March 1st** and must be submitted by **March 31st**.
- Credit in MATH 1A03 or MATH 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.
- STATS 1CC3 (or PSYCH 2R03) and PSYCH 2RR3 must be completed before entrance into Level III of the programme.
- At some time during the programme, the student:
 - must meet a laboratory requirement by completing one of PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3. Enrolment in Psychology Laboratory courses is limited.
 - must complete six units from the Faculty of Humanities and/ or the Department of Religious Studies;
 - must complete HUMAN 2C03.
- BIOLOGY 1A03 or 1A06 is a prerequisite for PSYCH 2F03.
- Students intending to pursue graduate work in Psychology or to take Mathematics beyond Level I are strongly recommended to include MATH 1B03 in their undergraduate programme.

COURSE LIST 1

PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

LEVEL II: 30 UNITS

- 6 units STATS 1CC3* (or PSYCH 2R03), PSYCH 2RR3
 9 units from PSYCH 2E03, 2F03, 2H03, 2T03
 3 units* from the Faculty of Science, excluding Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A03 is highly recommended.
- 6 units Electives, excluding Psychology. (See Note 4 (b) and (c) above.)
- 6 units Electives

*If requirement completed in Level I, these units will be taken as electives.

LEVEL III: 30 UNITS

- 18 units Level III Psychology; or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and 15 units of Level III Psychology. (See Note 4 (a) above.)
- 6 units Electives, excluding Psychology. (See Note 4 (b) and (c) above.)
- 6 units Electives

LEVEL IV: 30 UNITS

- 6 units PSYCH 4D06
- 12 units Level III or IV Psychology including one course from Course List 1, if not already completed. (See Note 4 (a) above.)
- 12 units Electives (See Note 4 (b) and (c) above.)

Honours Psychology (B.A.)**{2460}****ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0, an average of at least 7.0 in PSYCH 1A03 and 1AA3 or a grade of at least B- in PSYCH 1A06 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03.

NOTES

- Credit in MATH 1A03 or 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.
- STATS 1CC3 (or PSYCH 2R03) and PSYCH 2RR3 must be completed before entrance into Level III of the programme.
- At some time during the programme, the student:
 - must meet a laboratory requirement by completing one of PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, or 4QQ3. Enrolment in Psychology Laboratory courses is limited.
 - must complete six units from the Faculty of Humanities and/ or the Department of Religious Studies;
 - must complete HUMAN 2C03.
- BIOLOGY 1A03 or 1A06 is a prerequisite for PSYCH 2F03.

COURSE LIST 1

PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

LEVEL II: 30 UNITS

- 6 units STATS 1CC3* (or PSYCH 2R03), PSYCH 2RR3
 9 units from PSYCH 2E03, 2F03, 2H03, 2T03
 3 units* from the Faculty of Science, excluding the Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A03 is recommended.
- 9 units Electives, excluding Psychology. (See Notes 3(b) and (c) above.)
- 3 units Electives
- *If requirement completed in Level I, these units will be taken as electives.

LEVEL III: 30 UNITS

- 15 units Level III Psychology; or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and 12 units of Level III Psychology. (See Note 3 (a) above.)
- 12 units Electives, excluding Psychology (See Notes 3 (b) and (c) above.)
- 3 units Electives

LEVEL IV: 30 UNITS

- 15 units Level III or IV Psychology including one course from Course List I, if not already completed. (See Note 3 (a) above.)
- 9 units Electives excluding Psychology. (See Notes 3 (b) and (c) above.)
- 6 units Electives

Combined Honours in Psychology and Another Subject (B.A.)**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0, an average of at least 7.0 in PSYCH 1A03 and 1AA3 or a grade of at least B- in PSYCH 1A06 and credit in MATH 1A03 or a grade of at least C- in MATH 1M03. Satisfaction of the admission requirements for the Honours programme in the other subject.

NOTES

- Credit in MATH 1A03 or 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.
- STATS 1CC3 (or PSYCH 2R03) and PSYCH 2RR3 must be completed before entrance into Level III of the programme.
- At some time during the programme, the student:
 - must meet a laboratory requirement by completing one of 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3. Enrolment in Psychology Laboratory courses is limited.
 - must complete six units from the Faculty of Humanities and/ or the Department of Religious Studies;
 - must complete HUMAN 2C03.
- BIOLOGY 1A03 or 1A06 is a prerequisite for PSYCH 2F03.

COURSE LIST 1

PSYCH 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

LEVEL II: 30 UNITS

- 6 units STATS 1CC3* (or PSYCH 2R03), PSYCH 2RR3
 6 units from PSYCH 2E03, 2F03, 2H03, 2T03
 3 units* from the Faculty of Science, excluding the Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A03 is recommended.
- 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

- 12 units Level III Psychology, or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and nine units of Level III Psychology. (See Note 3 (a) above.)
- 12 units Courses as specified for the other subject.
- 6 units Electives (See Note 3 (b) and (c) above.)

LEVEL IV: 30 UNITS

- 12 units Level III or IV Psychology including one course from Course List I, if not already completed. (See Note 3 (a) above.)
- 12 units Courses as specified for the other subject.
- 6 units Electives (See Note 3 (b) and (c) above.)

B.A. in Psychology {1460}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 3.5 and an average of at least 4.0 in PSYCH 1A03 and 1AA3 or a grade of at least C- in PSYCH 1A06.

NOTES

1. Completion of one of MATH 1A03, 1K03 or 1M03 is required in Level II. Completion in Level I is highly recommended.
2. PSYCH 2G03 or STATS 1CC3 (or PSYCH 2R03) must be completed before entrance into Level III of the programme.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

LEVEL II: 30 UNITS

- 3 units from PSYCH 2G03, STATS 1CC3* (or PSYCH 2R03) (See Note 2 above.)
- 6 units from PSYCH 2E03, 2F03, 2H03, 2T03
- 3 units Level II Psychology
- 3 units* from MATH 1A03, 1K03 or 1M03 (See Note 1 above.)
- 6 units from Business, Humanities or Science, excluding Psychology
- 6 units Electives, excluding Psychology
- 3 units Electives

*If requirement completed in Level I, these units will be taken as electives.

LEVEL III: 30 UNITS

- 12 units Level III Psychology, or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and nine units from Level III Psychology
- 6 units from Business, Humanities or Science, excluding Psychology
- 6 units Electives, excluding Psychology
- 6 units Electives

Minor in Psychology

REQUIREMENTS

- 6 units PSYCH 1A03 and 1AA3 or 1A06
- 12 units Level II or III Psychology
- 6 units Level III Psychology

DEPARTMENT OF RELIGIOUS STUDIES

WEB ADDRESS: <http://socserv2.socsci.mcmaster.ca/~relstud/>

Honours Arts & Science and Religious Studies

(B. Arts Sc.; See Arts & Science programme)

FIELDS OF STUDY

The Department offers courses in four fields of study. Students are encouraged to specialize in any one of these fields. Level II, III and IV courses are allocated to the fields as follows:

I. ASIAN RELIGIONS

- RELIG ST 2E03, 2J06, 2L03, 2P06, 2RR3, 2T03, 3AA3, 3E03, 3H03, 3I03, 3L03, 3S03, 3U03, 3UU3
- SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES

- RELIG ST 2B03, 2DD3, 2EE3, 2GG3, 2HH3, 2VV3, 2YY3, 2Z03, 3DD3, 3M03, 3N03, 3R03, 3T03
- HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT

- RELIG ST 2C03, 2CC3, 2H03, 2I13, 2JJ3, 2KK3, 2U03, 2UU3, 2Y03, 2ZZ3, 3D03, 3I13, 3KK3, 3LL3, 3MM3, 3NN3, 3W03, 3Z03, 3ZZ3

IV. CONTEMPORARY AND COMPARATIVE RELIGIONS

- RELIG ST 2AA3, 2BB3, 2EA3, 2EB3, 2M03, 2N03, 2Q03, 2QQ3, 2SS3, 2V03, 2W03, 2WW3

NOTE

Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit or Japanese or both early in their programme (see the calendar offerings listed under these headings in the *Course Listings* section of this Calendar). Students wishing to specialize in Biblical Studies should consider work in Greek (see offerings under *Classics, Greek* in the *Course Listings* section of this Calendar) or Hebrew or both.

Honours Religious Studies {2475}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Religious Studies courses, preferably including one Level I Religious Studies course.

NOTES

1. All honours students are strongly urged to consult a departmental undergraduate advisor in the selection of their Level III and IV courses.
2. Part-time students should note that RELIG ST 3F03 and 4A06 are regularly offered in the evening. Other courses required for completion of the degree are offered in the evening whenever possible. Students who anticipate difficulty in fulfilling programme requirements should consult a departmental undergraduate advisor as early as possible in their programme.
3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (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
- 15 units RELIG ST 3F03, 4A06, 4J06
- 18 units Level II, III or IV Religious Studies of which at least six 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 six units of Level III.
- 6 units* from Linguistics, a language other than English or Statistics
- 3 units HUMAN 2C03
- 33 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities.

*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 programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Religious Studies courses, preferably including one Level I Religious Studies course. Satisfaction of the admission requirements for the honours programme in the other subject.

NOTES

1. All honours students are required to consult a departmental undergraduate advisor in the selection of their Level three and four courses.
2. Part-time students should note that RELIG ST 3F03 and 4A06 are regularly offered in the evening. Other courses required for completion of the degree are offered in the evening whenever possible. Students who anticipate difficulty in fulfilling programme requirements should consult a departmental undergraduate advisor as early as possible in their programme.
3. With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.
4. Students must consult both departments to determine the manner in which the Research Methods/Statistics requirement is to be satisfied.

5. Students required to write a thesis in a subject other than Religious Studies may propose 12 units of Levels III-IV Religious Studies courses as substitutes for RELIG ST 4A06 and 4J06. This substitution must be approved in writing by a departmental undergraduate advisor.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 3 units from Asian Religions
- 6 units three units each from two of Biblical Studies, Western Religious Thought and Contemporary and Comparative Religions
- 15 units RELIG ST 3F03, 4A06, 4J06 (See *Note 5* above.)
- 12 units Level II, III or IV Religious Studies of which at least six units must be Level III. Level III courses which have been taken to satisfy the above fields of study requirements may be subtracted from these six units of Level III.
- 36 units courses specified for the other subject
- 6 units* from Linguistics, a language other than English, Statistics or in combined programmes within the Faculty of Social Sciences, the Research Methods/Statistics course specified for the other subject. (See *Note 4* above.)
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Religious Studies are exempt from this requirement.
- 9 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities. Students combining Religious Studies with Arts & Science, or with a Humanities subject are exempt from this requirement.

*If requirement completed in Level I, these units will be taken as electives.

B.A. in Religious Studies**{1475}****ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 3.5 and an average of at least 4.0 in six units of Religious Studies courses, preferably including one Level I Religious Studies course.

NOTES

- All students should consult the Departmental Handbook and are strongly urged to consult a departmental undergraduate advisor at least once each year.
- 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 programme requirements should consult a departmental undergraduate advisor as early as possible in their programme.
- With the written approval of a departmental undergraduate advisor, courses from other departments may be substituted for Religious Studies.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 3 units from Asian Religions
- 6 units three units each from two of Biblical Studies, Western Religious Thought and Contemporary and Comparative Religions
- 3 units RELIG ST 3F03
- 12 units Level II, III or IV Religious Studies of which at least six units must be Level III. Level III courses which have been taken to satisfy the above fields of study requirements may be subtracted from these six units of Level III.
- 36 units Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities. (The maximum Religious Studies courses to be taken is 48 units.)

Minor in Religious Studies**REQUIREMENTS**

- 24 units Religious Studies courses with no more than six units from Level I

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**

Completion of any Level I programme, including two of PSYCH 1A03 and 1AA3 (or 1A06), SOCIOL 1A06, SOC WORK 1A06, normally with a CA of at least 6.0 and evidence of personal suitability, which may be evaluated by one or a combination of written statements, tests, or interviews.

An applicant must complete Level I (30 units) by April of the year in which application is made.

In choosing Level I courses, the student should take care to include those courses that will allow entry to the B.A. programme. Students should consult the relevant sections of the Calendar and/or the Office of the Associate Dean (Studies).

Enrolment in the Combined B.A./B.S.W. programme is limited.

Students who intend to apply for the combined B.A. and B.S.W. programme must consult the School of Social Work prior to application.

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. First Nations students 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 are required to meet the introductory Psychology and Sociology prerequisites.

Students admitted to the Combined programme who have completed B.A. work beyond Level I normally will require three years after admission to complete the programme.

TWO-TIER APPLICATIONS

If you are transferring from a university other than McMaster, or a college, you must complete two application forms as follows:

1. General Application (December 1)

If you wish to study *full-time*, obtain a 105D application form from the Admissions Office of any Ontario university. Complete the form showing *both* your interest in the B.A./B.S.W. programme, and the subject you wish to take for the B.A. component. The form should be returned to OUAC, with the appropriate fee.

If you wish to study *part-time*, complete a *McMaster University Application* form which can be obtained from OUAC or directly from McMaster, at the Office of the Registrar, Gilmour Hall, Room 108. Return this form to OUAC with the appropriate fee.

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)

After the General Application has been received at McMaster, the School of Social Work will mail you a *Supplementary Application* form, which must be completed and returned directly to the School of Social Work by **March 1**. **To avoid delay, you should request this form personally through direct contact with the School of Social Work.** This form is used to decide when applicants are able to write an admissions test, which is scheduled for two dates in March of each year, both on site and at alternative testing centres outside Hamilton.

Adequate time is needed to make these arrangements and to complete the admissions process. Therefore, it is **impossible** to consider applicants whose Supplementary Application arrives after the March 1 deadline.

NOTES

- Course Groupings:** There are two groups of courses in the Social Work programme:

- Foundation for 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 programme. 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 FOR 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, 4F03, 4G03, 4J03, 4L03, 4M03, 4R03, 4W03

- 2. Progression Within Programme:** 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 (eg. 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. programme.
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 programme completed prior to admission to the programme. (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 Note 4 above.)
- 3 units Social Sciences Research Methods. (These units will be taken as electives for the B.A. (See Note 3 above.)
- 24 units courses specified for the B.A. (This may vary according to the B.A. programme.)
- 21 units Electives. (Other requirements may be specified by the B.A. programme.)

Bachelor of Social Work (B.S.W.) [1620]

ADMISSION

Completion of an undergraduate degree from a recognized university, including two of *introductory* Psychology, Sociology or Social Work (equivalent to the McMaster courses PSYCH 1A03 and 1A06 (or 1A06), SOCIOL 1A06, SOC WORK 1A06) normally with an average of at least 6.0 or its equivalent, and evidence of personal suitability which may be evaluated by one or a combination of written statements, interviews, or tests.

First Nations students may select an alternate application process. Those who wish to do so should consult the School of Social Work for details.

An applicant is required to complete the prerequisite undergraduate degree work by April of the year in which application is made.

Enrolment in the B.S.W. programme is limited. Students who intend to apply to the B.S.W. programme must consult the School of Social Work prior to application.

All applications for admission to the School of Social Work are considered annually and must be made **directly to the School well before March 1** for the Fall/Winter term. Applicants must also apply to the University.

TWO-TIER APPLICATIONS

Individuals interested in the B.S.W. programme must complete **two** application forms as follows:

1. General Application (December 1)

If you wish to study *full-time*, you must obtain either a 105D application form from the Admissions Office of any Ontario university or, if you are a McMaster graduate, obtain the *McMaster Returning Student Application* form from the Office of the Registrar, Gilmour Hall, Room 108. You must return the completed form to the appropriate office (either the Ontario Universities' Application Centre (OUAC) or to the Office of the Registrar, McMaster University) with the appropriate fee.

If you wish to study *part-time*, you must obtain either a *McMaster University Part-time Application* form or, if you are a McMaster graduate, a *McMaster Returning Student Application* form from the Office of the Registrar, Gilmour Hall, Room 108. You must return the completed form to the appropriate office (either the Ontario Universities' Application Centre or the Office of the Registrar, McMaster University) with the appropriate fee.

In order to allow adequate time for the processing of the General Application, applicants are advised to submit their applications **by December 1**.

2. Supplementary Application (March 1)

After the General Application has been received at McMaster, the School of Social Work will mail you a *Supplementary Application* form, which must be completed and returned directly to the School of Social Work by **March 1**. **To avoid delay, you are advised to request this form personally through direct contact with the School of Social Work.** This form is used to decide when applicants are able to write an admissions test, which is scheduled for two dates in March of each year, both on site and at alternative testing centres outside Hamilton.

Adequate time is needed to make these arrangements and to complete the admissions process. Therefore, it is *impossible* to consider applicants whose Supplementary Application arrives after the March 1 deadline.

NOTES

1. Course Groupings: There are two groups of courses in the Social Work programme:

- 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 programme. 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, 4F03, 4G03, 4J03, 4L03, 4M03, 4R03, 4W03

2. Progression Within Programme: 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. programme, 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.)

PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1998

Combined Bachelor of Arts/ Bachelor of Social Work (B.A./ B.S.W.)

(Available only to those students who entered the programme prior to September 1998.)

NOTES:

1. Students who have not completed SOC WORK 2B06 must take SOC WORK 2B03 and 2BB3. This requirement must be completed prior to enrolling in SOC WORK 3D06 and 3DD6.
2. Students who have not completed SOC WORK 2C03 and 2D03 must take SOC WORK 2A06. Students who have completed one of SOC WORK 2C03 or 2D03 must take SOC WORK 2A06 and reduce their elective requirements by three units. This requirement must be completed prior to enrolling in SOC WORK 3D06 and 3DD6.
3. It is strongly recommended that students who have not completed PSYCH 2A03 replace it with SOC WORK 2E03 even though these courses are not exact equivalents. This requirement must be completed prior to enrolling in SOC WORK 3D06 and 3DD6.
4. **Progression Within Programme:** Students must achieve a minimum grade of C+ in each of SOC WORK 2B06 (or 2B03 and 2BB3), 2C03, 2D03, (or 2A06), 3D06 and 4D06, a Pass in SOC WORK 3DD6 and 4DD6, and a CA of at least 6.0.
5. SOC WORK 4J03 is highly recommended for students who have not already completed 18 units from Course List 1.
6. Students must complete at least 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.
7. **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 from Course List 1 as elective for the B.A. programme. The B.S.W. degree component will be granted only if the student has achieved a grade of at least C+ in each of SOC WORK 2B06 (or 2B03 and 2BB3), 2C03, 2D03, (or 2A06), 3D06 and 4D06, a Pass in SOC WORK 3DD6 and 4DD6, and a CA of at least 6.0.
8. Students are expected to assume the cost of travelling to and from field practice agencies.
9. Students who have questions regarding their requirements should consult the School of Social Work.

COURSE LIST 1

SOC WORK 3A03, 3C03, 3G03*, 3H03, 3N03*, 3O03, 3P03*, 3R03*, 4A03*, 4B03, 4C03, 4E03*, 4F03, 4G03, 4J03, 4K03*, 4L03, 4M03, 4O03, 4P03*, 4R03, 4T03*, 4V03*, 4W03, 4X03, 4Y03*, 4Z03*

*course no longer offered

REQUIREMENTS

138 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from Level I programme completed prior to admission to the programme
- 6 units SOC WORK 2B06 (or 2B03 and 2BB3) (See *Note 1* above.)
- 6 units SOC WORK 2C03, 2D03 (or 2A06) (See *Note 2* above.)
- 3 units PSYCH 2A03 or SOC WORK 2E03 (See *Note 3* above.)
- 3 units from SOC WORK 3A03, 3N03, 3R03
- 12 units SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)

- 3 units from SOC WORK 4O03, 4X03, 4Y03
- 12 units SOC WORK 4D06, 4DD6
- 18 units Course List 1 (See *Note 5* above.)
- 3 units Social Science Research Methods. (If completed as part of the B.A., these units will be taken as electives. See *Note 6* above.)
- 24 units courses specified for the B.A. (This may vary according to the B.A. programme.)
- 18 units Elective. (Other requirements may be specified by the B.A. programme.)

Bachelor of Social Work (B.S.W.) {1620}

(Available only to those students who entered the programme prior to September 1998.)

NOTES:

1. Students who have not completed SOC WORK 2B06 must take SOC WORK 2B03 and 2BB3. This requirement must be completed prior to enrolling in SOC WORK 3D06 and 3DD6.
2. Students who have not completed SOC WORK 2C03 and 2D03 must take SOC WORK 2A06. Students who have completed one of SOC WORK 2C03 or 2D03 must take SOC WORK 2A06 and reduce their selection from Course List 1 by three units. This requirement must be completed prior to enrolling in SOC WORK 3D06 and 3DD6.
3. It is strongly recommended that students who have not completed PSYCH 2A03 replace it with SOC WORK 2E03 even though these courses are not exact equivalents. This requirement must be completed prior to enrolling in SOC WORK 3D06 and 3DD6.
4. **Progression Within Programme:** Students must achieve a minimum grade of C+ in each of SOC WORK 2B06 (or 2B03 and 2BB3), 2C03, 2D03, (or 2A06), 3D06 and 4D06, a Pass in SOC WORK 3DD6 and 4DD6, and a CA of at least 6.0.
5. SOC WORK 4J03 is highly recommended for students who have not already completed 12 units from Course List 1.
6. Students must complete at least 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.
7. **Graduation:** To qualify for the B.S.W., students must complete a total of at least 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 2B06 (or 2B03 and 2BB3), 2C03, 2D03, (or 2A06), 3D06 and 4D06, a Pass in SOC WORK 3DD6 and 4DD6, and a CA of at least 6.0.
8. Students are expected to assume the cost of travelling to and from field practice agencies.
9. Students who have questions regarding their requirements should consult the School of Social Work.

COURSE LIST 1

SOC WORK 3A03, 3C03, 3G03*, 3H03, 3N03*, 3O03, 3P03*, 3R03*, 4A03*, 4B03, 4C03, 4E03*, 4F03, 4G03, 4J03, 4K03*, 4L03, 4M03, 4O03, 4P03*, 4R03, 4T03*, 4V03*, 4W03, 4X03, 4Y03*, 4Z03*

*course no longer offered

REQUIREMENTS

60 units total

- 6 units SOC WORK 2B06 (or 2B03 and 2BB3) (See *Note 1* above.)
- 6 units SOC WORK 2C03, 2D03 (or 2A06) (See *Note 2* above.)
- 3 units PSYCH 2A03 or SOC WORK 2E03 (See *Note 3* above.)
- 3 units from SOC WORK 3A03, 3N03, 3R03
- 12 units SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6.)
- 3 units from SOC WORK 4O03, 4X03, 4Y03
- 12 units SOC WORK 4D06, 4DD6
- 12 units Course List 1 (See *Note 5* above.)
- 3 units Social Science Research Methods. (If requirement was completed prior to admission, these units will be selected from Course List 1. See *Note 6* above.)

DEPARTMENT OF SOCIOLOGY

WEB ADDRESS: <http://www.mcmaster.ca/socscidocs/sochome.htm>

Honours Arts & Science and Sociology

(B.Arts Sci.; See Arts & Science programmes)

Honours Sociology (Specialist Option) {2522}

NOTES

1. The Honours Sociology (Specialist Option) programme is being phased out. Registration in Level III will be last available in September 1999.
2. Students may take a maximum of six units of Level IV independent research (SOCIOLOG 4M03, 4MM6 or 4N03).
3. Students may take a maximum of nine combined units of SOCIOLOG 3GG3 and 4GG3.
4. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- | | |
|----------|---|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.) |
| 6 units | SOCIOLOG 2S06 |
| 3 units | from SOCIOLOG 3A03, 3P03, 3PP3 |
| 3 units | from SOCIOLOG 3I03, 3O03, 3W03 |
| 12 units | Level IV Sociology |
| 24 units | Level II, III or IV Sociology |
| 9 units | SOCIOLOG 2Z03 which must be completed by the end of 60 units, and SOCIOLOG 3H06 |
| 3 units | HUMAN 2C03 |
| 30 units | Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. |

Honours Sociology {2520}

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOLOG 1A06.

NOTES

1. Students may take a maximum of six units of Level IV independent research (SOCIOLOG 4M03, 4MM6 or 4N03).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.
3. Students may take a maximum of nine combined units of SOCIOLOG 3GG3 and 4GG3.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- | | |
|----------|---|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.) |
| 6 units | SOCIOLOG 2S06 |
| 3 units | from SOCIOLOG 3A03, 3P03, 3PP3 |
| 3 units | from SOCIOLOG 3I03, 3O03, 3W03 |
| 12 units | Level IV Sociology |
| 18 units | Level II, III or IV Sociology |
| 9 units | SOCIOLOG 2Z03 which must be completed by the end of 60 units, and SOCIOLOG 3H06 |
| 3 units | HUMAN 2C03 |
| 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. |

Combined Honours in Sociology and Another Subject

ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOLOG 1A06. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

NOTES

1. Students may take a maximum of six units of Level IV independent research (SOCIOLOG 4M03, 4MM6 or 4N03).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.
3. Students may take a maximum of nine combined units of SOCIOLOG 3GG3 and 4GG3.

REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I

- | | |
|-----------|---|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.) |
| 6 units | SOCIOLOG 2S06 |
| 3 units | from SOCIOLOG 3A03, 3P03, 3PP3 |
| 3 units | from SOCIOLOG 3I03, 3O03, 3W03 |
| 12 units | Level IV Sociology |
| 12 units | Level II, III or IV Sociology |
| 36 units | courses specified for the other subject |
| 6-9 units | SOCIOLOG 2Z03 which must be completed by the end of 60 units, and SOCIOLOG 3H06 or, in combined programmes within the Faculty of Social Sciences, the six units Research Methods/Statistics course specified for the other subject. |
| 3 units | HUMAN 2C03. Students combining Honours Arts and Science with Sociology are exempt from this requirement. |
| 6-9 units | Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. 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 programme, with a Cumulative Average of at least 3.5 including a grade of at least C- in SOCIOLOG 1A06.

NOTES

1. Students enrolled in the B.A. Gerontology and Sociology programme should refer to *Gerontological Studies* in this section of this Calendar for programme requirements.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I

- | | |
|----------|---|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.) |
| 6 units | SOCIOLOG 2S06 |
| 3 units | SOCIOLOG 2Z03 |
| 15 units | Level II or III Sociology |
| 36 units | Electives. If not completed in Level I, a minimum of six units must be from the Faculty of Humanities and/or the Department of Religious Studies. |

Minor in Sociology

NOTES

1. Students who have already completed SOCIOLOG 2O06 or 2S06 may use these units towards this requirement of the minor.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

REQUIREMENTS

- | | |
|----------|--|
| 6 units | SOCIOLOG 1A06 |
| 6 units | from SOCIOLOG 2C06, 2D06, 2R03 and 2RR3, 2V06 (See <i>Note 1</i> above.) |
| 12 units | Level II or III Sociology |

THEME SCHOOLS

The concept of a Theme School was outlined in a key series of recommendations in the University's Strategic Plan. A Theme School is a centre of interdisciplinary learning in which a group of faculty members identifies a set of intellectual problems arising out of their research, establishes a programme of study focused on these problems, and gathers a group of students interested in learning about these problems. Students and faculty will form an intellectual community that will explore these problems through self-directed learning and independent study.

Theme Schools will be taken as a minor in conjunction with any four- or five-level programme. (See *Minors* in the *General Academic Regulations* section of this Calendar.)

It is anticipated that Theme Schools' life cycles will normally be five years. They will accept approximately 80 students a year for three years.

The subject area of Theme Schools will vary over time, depending on the interests of faculty and students.

Currently, two schools are in operation. Both the Theme School on Globalization, Social Change and the Human Experience and the Theme School in Science, Technology, and Public Policy will be admitting new students in September 1999.

SCHEDULING OF COURSES

Students participating in Theme Schools should be aware that many Theme School courses will be held on Thursday evenings. This is necessary to make Theme School courses available to students from a wide variety of programmes. The Theme Schools will arrange classes that meet the scheduling needs of their students; however, it may be necessary for students to change their optional courses to have conflict-free schedules.

ACADEMIC REGULATIONS

Theme School Minor programmes are governed by the General Academic Regulations of the University and the regulations described in each Theme School.

Normally, students will enter a Theme School in Level II and will complete a four- or five-year degree with a Theme School Minor. Continuation in the Theme School normally requires students to maintain standing in their programme.

THEME SCHOOL ON GLOBALIZATION, SOCIAL CHANGE AND THE HUMAN EXPERIENCE

WEB ADDRESS: <http://www.humanities.mcmaster.ca/~global/global.htm>

Director

William D. Coleman/B.A., A.M., Ph.D.
Kenneth Taylor Hall, Room 529, ext. 27556

The term *globalization* is a rather new one in social, political, economic and cultural discourse. It speaks, in part, to a new intense phase of compression of space and time that has transformed, in turn, aspects of human contact, identity, and culture in societies around the world. Citizens and migrants in all states and territories have reacted, assimilated, accommodated or challenged these transformations in a myriad of ways. As a part of public discourse, the concept often lends itself to hyperbole and provides an umbrella under which shelter a rather diverse set of ideologies, social movements, and cultural and artistic creations. This theme school proposes to examine critically the phenomenon of globalization from a diverse number of disciplinary perspectives.

ADMISSION

Enrolment in the Theme School Minor is limited.

The Theme School on Globalization, Social Change and the Human Experience will admit a maximum of 80 students to the minor in 1999-2000.

Admission to the theme school will be gained through registration in GSCHE 2A06. Normally, students must be registered in a four- or five-level programme to be eligible for a theme school.

REQUIREMENTS

Students are required to take 24 units in order to obtain the Theme School Minor. In Level II, all students must take GSCHE 2A06, the introductory course. In Levels III and IV, students take an additional 18 units of theme school courses to obtain their minor.

See specific courses and their descriptions listed under *Theme Schools* in the *Course Listings* section in this Calendar.

THEME SCHOOL ON SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

WEB ADDRESS: <http://www.cas.mcmaster.ca/stpp/>

Director

Robert Hudspith/B.Eng., M.Eng., P.Eng.
John Hodgins Engineering Bldg., Room 142, ext. 22019

This Theme School is a response to the reality that the formation of public policy in our society requires not only scientific and technological knowledge, but also an awareness of the social and ethical implications of scientific and technological developments. The foundational course in Level II aims to develop a basic understanding of the nature of science, technology and technological change, and of the interaction between science and technology on the one hand, and larger societal values and public policy on the other.

Some of the elective courses are interdisciplinary, in which instructors and students apply the perspectives of a variety of fields to the relationship between science, technology and our social life. Other elective courses bring the perspectives of a single discipline to these dynamic relations.

One of the key aims of the Theme School is to prepare students to participate in the formation of public policy as citizens and/or professionals with a particular sensitivity to the ethical dimension of the social and political debate concerning many current science/technology projects.

ADMISSION

Enrolment in the Theme School Minor is limited.

The Theme School on Science, Technology, and Public Policy will admit a maximum of 80 students to the minor in 1999-2000. Admission to the theme school will be gained through registration in STPP 2A06. Normally, students must be registered in a four- or five- level programme to be eligible for the theme school.

REQUIREMENTS

Students are required to complete 24 units in order to obtain the Theme School minor; this includes six units of Level I work acceptable to the Director. In Level II all students must take STPP 2A06, the introductory course. In Levels III and IV students may complete their minor by taking an additional 12 units of Theme School courses.

See specific courses and their descriptions listed under *Theme Schools* in the *Course Listings* section in this Calendar.

INTERDISCIPLINARY MINORS AND THEMATIC AREAS

INTERDISCIPLINARY MINORS

The following four listings constitute University-sanctioned Minors in Health and Society, Indigenous Studies, Jewish Studies, and Peace Studies.

No degree is granted for these programmes of study, but students registered in four- or five-level programmes can receive a Minor designation on their transcripts following graduation if their chosen Minor programme is successfully completed. Please see the *Minor* subsection in the *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.

Health and Society

Health issues are a major public concern and increasing attention is being devoted to the social bases of health and illness. Concepts of health and illness are shifting away from clinical definitions to a strong emphasis on well-being and lay concerns. In confronting decisions about their health people are faced with profound moral dilemmas about life and death, while governments are faced with issues of cost-effectiveness and the introduction of policies which promote health. These issues transcend traditional medical treatment. Indeed, medicine as a particular system of thought and practice is subject to analysis in the same way as other social phenomena, alternative disease models and systems of healing. These themes are the focus of courses in Health and Society.

The requirements for a minor are 24 units chosen from the courses listed below. For more information on specific courses, please consult the *Course Listings* section in this Calendar.

Students wishing to pursue a Minor in Health and Society may obtain more information from Dr. Ann Herring, Chester New Hall, Room 527, ext. 23920.

COURSES DEALING WITH HEALTH AND SOCIETY ISSUES

ANTHROP 2U03	Plagues and People
ANTHROP 3SY3	Cultural Psychology
ANTHROP 3Y03	Aboriginal Community Health and Well-being
ANTHROP 3Z03	Medical Anthropology: The Biomedical Approach
ANTHROP 3ZZ3	Medical Anthropology: Symbolic Healing
ECON 3Z03	Health Economics
GEO 3HH3	Geography of Health and Health Care
HTH SCI 3B03	Health, Science and Society
KINESIOL 3SS3	Body, Mind, Spirit
LABR ST 3D03	Occupational Health and Safety
PHILOS 2D03	Moral Issues
PHILOS 3C03	Advanced Bioethics
PSYCH 3B03	Special Populations
PSYCH 3N03	Abnormal Psychology I (Fundamentals)
PSYCH 3NN3	Abnormal Psychology II (Major Disorders)
RELIG ST 2M03	Death and Dying: Comparative Views
RELIG ST 2N03	Death and Dying: The Western Experience
RELIG ST 2WW3	Health, Healing and Religion
SCIENCE 2G03	The Right to Food
SOC SCI 1H03	Health Studies
SOC WORK 3C03	Social Aspects of Health and Illness
SOCIOL 3G03	Sociology of Health Care
SOCIOL 3HH3	Sociology of Health
SOCIOL 4G03	The Social Production of Illness
SOCIOL 4U03*	Special Topics in the Sociology of Women

*If on a health-related topic.

Please see the Course Listings section for a detailed description of the above courses.

Indigenous Studies

Director

D.J. Martin-Hill/B.A., M.A., Ph.D. (McMaster)

Aboriginal Student Counsellor

B. Freeman

The Minor in Indigenous Studies was developed as a direct response to the wishes of representatives of Indigenous groups in Ontario, of students, and of educators, for greater accessibility to a university education for native students. The structure of the programme was developed by the President's Committee on Indigenous Issues. This Committee, comprising University and Aboriginal representatives, formulates policy on all issues affecting the Indigenous communities at large. The Committee serves as the primary resource on all subjects relating to the education and support needs of the University's Indigenous population, both in Indigenous-specific and general programming and services.

The Indigenous Studies Minor responds to a desire for a programme of study that examines Indigenous people's history, language, spirituality, and contemporary situation, with particular attention to the Indigenous people's own perspective. As such, the Minor will provide new perspectives on these subjects for non-native students and will enrich the University experience of native students.

The Minor concept has been developed by the President's Committee on Indigenous Issues with significant input from Indigenous representatives from the province. The idea of a Minor was chosen because it responded first to the need of native students to attain a degree in regular academic disciplines while enriching their knowledge of Indigenous societies and culture. Second, it will assist non-native students who wish to learn more about Indigenous peoples as a complement to their chosen programme of study.

ACADEMIC REGULATIONS

The Indigenous Studies Minor is governed by the general Academic Regulations of the University and the regulations described below.

In order to qualify for the Indigenous Studies Minor students in four- or five-level programmes must complete 24 units of work as follows:

6 units	INDIG ST 1A06
18 units*	from Course List (see below)

*No more than six of the 18 units may be Level I courses. At least 12 of the 18 units for the Minor must be Indigenous Studies or Indigenous language courses.

Students wishing to pursue a Minor in Indigenous Studies may obtain more information, from the Indigenous Studies office, Chester New Hall, Room 228, ext. 27426.

COURSE LIST

INDIG ST 2A06	Introduction to Indigenous People's Spirituality
INDIG ST 2C03	Introduction to Contemporary Indigenous Societies
INDIG ST 2D03	Traditional Indigenous Ecological Knowledge
INDIG ST 3A03	The Spiritual Teachings of Elders
INDIG ST 3B03	History of the Eastern Woodland People
INDIG ST 3BB3	History of Contemporary Indigenous Peoples
INDIG ST 3C03	Study of Iroquois First Nations in Contemporary Times
INDIG ST 3CC3	Contemporary Indigenous Societies: Selected Topics 1999-2000: <i>Aboriginal Peoples and Film</i>
INDIG ST 3D03	Contemporary Native Literature in Canada
INDIG ST 3E03	Contemporary Native Literature in the United States
INDIG ST 3F06	Indigenous Women's Issues
INDIG ST 3G03	Indigenous Creative Arts and Drama 1999-2000: <i>Native Approaches to Drama and Performance</i>
INDIG ST 3H03	Traditional Approaches to Healing and Wellness I (Philosophy)

INDIG ST 3HH3	Traditional Approaches to Healing and Wellness II (Practical)
CAYUGA 1Z06	Introduction to Cayuga Language and Culture
CAYUGA 2Z06	Intermediate Cayuga
CAYUGA 3Z06	Advanced Cayuga
MOHAWK 1Z06	Introduction to Mohawk Language and Culture
MOHAWK 2Z06	Intermediate Mohawk
MOHAWK 3Z06	Advanced Mohawk
OJIBWE 1Z06	Introduction to Ojibwe Language and Culture
OJIBWE 2Z06	Intermediate Ojibwe
OJIBWE 3Z06	Advanced Ojibwe
ANTHROP 2H03	Environment and Culture
ANTHROP 2V03	The Aztecs, Maya and Inka
ANTHROP 3F03	Contemporary Northern Peoples
POL SCI 3C03	Government and Politics of Indigenous Peoples

Please see the Course Listings section for a detailed description of the above courses.

Jewish Studies

Jewish Studies is an international, multidisciplinary field devoted to the study of Judaism, Jewish history, thought, culture and community. The Minor in Jewish Studies is open to all students registered in a four or five-level programme in any Faculty. Students will be required to complete a minimum of 24 units from the lists below. At least 12 of these units will be taken from List A, comprised of courses focusing directly on an area of Jewish Studies. Students are urged to take at least six units of Hebrew language as part of their List A requirements. A minimum of six units will be taken from List B, comprised of courses which provide crucial background for understanding important issues in Jewish Studies. Students taking List B courses as part of their minor are required to write assignments and research papers on topics directly related to Jewish Studies.

Students are also encouraged to engage in a year of study in Israel, normally done in the third year of a four-year programme. Details are available through the Department of Religious Studies, University Hall, Room 104, ext. 24567, or the Office of International Affairs, Kenneth Taylor Hall, Room 239.

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

HEBREW 2A03	Introduction to Biblical Hebrew I
HEBREW 2B03	Introduction to Biblical Hebrew II
HEBREW 3A03	Intermediate Hebrew I
HEBREW 3B03	Intermediate Hebrew II
RELIG ST 2B03	Women in the Biblical Tradition
RELIG ST 2DD3	The Five Books of Moses
RELIG ST 2EE3	The Prophets
RELIG ST 2VV3	Bible as Story
RELIG ST 2YY3	The Bible and Film
RELIG ST 3DD3	The Jewish World in New Testament Times
RELIG ST 3M03	Songs of David: Poetry in the Hebrew Bible
RELIG ST 3R03	Death and the Afterlife in Early Judaism and Christianity
RELIG ST 3Z03	Judaism, the Jewish People and the Birth of the Modern World
RELIG ST 3ZZ3	Judaism and the Jewish People in the Twentieth Century

LIST B

ANTHROP 3B03	Ethnology: Europe
ANTHROP 3G03	Comparative Mythology
ANTHROP 3H03	Anthropological Demography
HISTORY 2EA3	Islam and Mediterranean Society, 600-1300
HISTORY 2EB3	Islam in the World, 1300-1800
HISTORY 3AA3	The Modern Middle East
HISTORY 3I03	International Relations of the European Powers, 1914-45

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 4D06	Human Rights and International Politics
SOC SCI 2C03	Genocide and Ethnocide
SOC WORK 4C03	Racism and Social Marginalization in Canadian Society
SOC WORK 4J03	Social Change: Social Movements and Advocacy
SOC WORK 4M03	International and Comparative Social Welfare
SOCIOL 2E06	Racial and Ethnic Group Relations
SOCIOL 3Z03	Ethnic Relations

Please see the Course Listings section for a detailed description of the above courses.

Peace Studies

Peace Studies, which is concerned with war and peace - their nature, causes and relation to social life - is a growing international field. Students completing a Minor in Peace Studies should select 24 units of courses from those listed below.

The courses listed are offered by various departments and are relevant to the study of peace and conflict. They are drawn from a wide variety of disciplines within the Faculties of Humanities, Social Sciences and Science. The range of options available for the Minor ensures an interdisciplinary approach. The Minor should be of interest to students wishing to pursue a wide range of careers.

ANTHROP 2X03	Violence in Anthropological Perspective
ANTHROP 2XX3	Conflict, Culture and the Quest for Peace
ANTHROP 3T03	Power and Resistance
ECON 2F03	The Political Economy of Development
ECON 2L03	Peace, Human Security and Economic Development
HISTORY 3I03	The International Relations of The European Powers, 1914-1945
PHILOS 2G03	Social and Political Issues
PHILOS 3P03	Philosophies of War and Peace
POL SCI 2E06	Global Politics
POL SCI 3AA3	International Politics in the Postwar Period
POL SCI 3Q03	The Causes of War
POL SCI 3Y03	Democratization and Human Rights
POL SCI 4D06	Human Rights and International Politics
POL SCI 4M06	Issues in International Politics
RELIG ST 2E03	Engaged Buddhism
RELIG ST 2H03	Theory and Practice of Non-Violence
RELIG ST 2L03	Life, Work and Teachings of Mahatma Gandhi
SCIENCE 2G03	The Right to Food
SOC SCI 2C03	Genocide and Ethnocide
SOCIOL 3F06	Political Sociology

Please see the Course Listings section for a detailed description of the above courses.

THEMATIC AREAS

The following listing is designed to assist you in choosing courses in areas of study, in which there is currently no B.A. programme.

Asian Studies

While there is no B.A. programme in Asian Studies, students interested in concentrating in this area may choose from among the following courses offered by various departments. Those desiring further information on specific courses should consult the departmental listing in the Calendar. (Students interested in Japanese Studies should enquire about the Combined Honours programme in Japanese Studies and Another Subject.)

Students wishing to pursue Asian Studies may obtain further information from Dr. D. Barrett, Chester New Hall, Room 625, ext. 24130, or Dr. K. Shinohara, University Hall, Room 126, ext. 23393.

COURSES DEALING STRICTLY WITH ASIAN MATERIAL

- GEO 3HJ3 Geography of Japan
- HISTORY 2EA3 Islam and Mediterranean Society, 600-1300
- HISTORY 2EB3 Islam in the World, 1300-1800
- HISTORY 2GG3 China: Historical Foundations
- HISTORY 3A03 Imperial Islam: The Ottomans
- HISTORY 3AA3 The Modern Middle East
- HISTORY 3B03 Modern Japan
- HISTORY 3GG3 China: The Revolutionary Century, 1895-1995
- HISTORY 4BB6 Special Topics in the History of Modern Japan
- HISTORY 4G06 Special Topics in the History of Modern China
- HISTORY 4GG6 Topics in Middle Eastern and Islamic History
- RELIG ST 2E03 Engaged Buddhism
- RELIG ST 2J06 India: Its Culture, Social History, Religion and Philosophy
- RELIG ST 2L03 Life, Work and Teachings of Mahatma Gandhi
- RELIG ST 2P06 Japanese Civilization
- RELIG ST 2RR3 Introduction to Hindu Philosophy
- RELIG ST 2T03 Topics in Indian Philosophy
- RELIG ST 3AA3 Popular Religion in India
- RELIG ST 3E03 Japanese Religion
- RELIG ST 3H03 Story Telling in East Asian Religions
- RELIG ST 3I03 Storytelling in Indian Religion
- RELIG ST 3L03 Issues in Asian Religious Thought: India
- RELIG ST 3S03 Issues in Asian Religious Thought: East Asia
- RELIG ST 3U03 The Buddhist Tradition in India
- RELIG ST 3UU3 Ch'an and Zen Buddhism
- RELIG ST 4AA3 Advanced Reading: Asian Religions

COURSES WITH SIGNIFICANT ASIAN CONTENT

- ECON 2C03 Asian-Pacific Economies
- POL SCI 4MM6 International Relations of the Pacific Rim
- RELIG ST 1B06 World Religions
- RELIG ST 2BB3 Images of the Divine Feminine
- RELIG ST 2H03 Theory and Practice of Non-Violence
- RELIG ST 2QQ3 Cults in North America
- RELIG ST 2SS3 Women and Religion
- RELIG ST 2WW3 Health, Healing and Religion

LANGUAGE COURSES

- JAPANESE 1Z06 Beginner's Intensive Japanese
- JAPANESE 2Z06 Intermediate Intensive Japanese
- JAPANESE 3B03 Business Japanese
- JAPANESE 3ZZ6 Advanced Intensive Japanese
- JAPANESE 4L03 Japanese Literature
- JAPANESE 4Z03 Advanced Practice in Japanese
- JAPAN ST 4A06 Guided Reading in Japanese Studies
- JAPAN ST 4B03 Guided Reading in Japanese Studies
- SANSKRIT 3A06 Introduction to Sanskrit Grammar
- SANSKRIT 4B06 Readings in Sanskrit Texts

Please see the Course Listings section for a detailed description of the above courses.

Canadian Studies

There is no B.A. in Canadian Studies, but students interested in this area may choose from among the following courses, subject to meeting the prerequisites.

HUMANITIES

- ART HIST 3B03 Aspects of Canadian Art
- ENGLISH 2C03 Contemporary Canadian Fiction
- FRENCH 2E03 Literature of Quebec
- FRENCH 3AA3 The Modern French-Canadian Novel
- FRENCH 3BB3 Contemporary Quebec Theatre
- FRENCH 4U03 Topics in French-Canadian Literature
- HISTORY 2J06 The History of Canada

- HISTORY 3G03 Business History: The Canadian Experience in International Perspective
- HISTORY 3K03 Canadian Political Development Since 1840
- HISTORY 3N03 The History of the Canadian Working Class
- HISTORY 3P03 Religion and Society in Canada
- HISTORY 3U03 Aspects of French Canadian History
- MUSIC 3T03 Canadian Music

SOCIAL SCIENCES

- ANTHROP 3F03 Contemporary Northern Peoples
- ANTHROP 3Y03 Aboriginal Community Health and Well-Being
- ECON 2K03 Economic History of Canada, Canada
- GEO 2HC3 Geography of Planning
- GEO 3HT3 Selected Problems in Urban Planning
- GEO 4HU3 The Landscape of Urban Housing
- GEO 4HZ3 Politics and Government
- POL SCI 1G06 Participation and Elitist Politics in Canada
- POL SCI 3DD3 Canadian Foreign Policy
- POL SCI 3FF3 Federalism: Theoretical, Constitutional and Institutional Issues
- POL SCI 3GG3 Intergovernmental Policy Issues in Canada
- POL SCI 3HH3 Elections and Electoral Behaviour in Canada
- POL SCI 3II3 Provincial Politics in Canada
- POL SCI 3JJ3 Canadian Public Policy
- POL SCI 4O06 Canadian Political Theory
- POL SCI 4S06

Please see the Course Listings section for a detailed description of the above courses.

PART-TIME DEGREE STUDIES

The University offers a broad range of educational opportunities if you wish to take degree studies on a part-time basis. In addition to the daytime offerings in the Fall/Winter there is a wide selection of evening classes available in the Fall/Winter and Spring/Summer sessions. There is a limited number of daytime classes scheduled for the Spring/Summer session.

If you take degree courses, you will associate with one of the undergraduate Faculties (Business, Health Sciences, Humanities, Science or Social Sciences). By so doing, you will have the opportunity to consult with the academic counsellors of your Faculty, and with the departments whose courses are of interest to you. If your interests change, it is often possible to transfer to another department or Faculty.

The courses which you take in the early stages of your education will form the basis for choosing your programme of study. The Level I courses will give you the information you need for this purpose, as well as provide the prerequisites for more advanced courses and admission to programmes of study. The programmes of study which are available entirely through evening and summer courses are indicated on the *Degrees by Programme* chart, in the *Degrees and Programmes* section of this Calendar. You should also familiarize yourself with the requirements and information found in the following sections: *Admissions Requirements*, *General Academic Regulations* and *Sessional Dates*, as well as the programme descriptions found in the specific Faculty sections.

ADMISSION

Before you register for any degree course or programme, you must apply for admission.

- If you have already completed some university, community college, or other post-secondary education, you will be required to submit official transcripts of this work and a Transcript Assessment Fee, along with your application, in order to be considered for admission and possible credit towards your McMaster programme.
- If you satisfy the University's normal admission requirements for full-time study, you may choose to register for part-time study in most programmes.
- If you do not satisfy these requirements, you may be admissible as a **Mature Student** and given the opportunity to show that you can deal successfully with university work. Initially, you may take only one course at a time.

See the *Admission Requirements* section in this Calendar for details concerning all avenues of admission to degree study.

AVAILABILITY OF COURSES

Although both daytime and evening courses are open to all students, as a part-time student, you may have other responsibilities which restrict you to the courses offered in the evenings, winter and summer. If you can arrange to take day courses in the Fall/Winter session, the options are greatly enlarged.

Normally, publications for part-time students are made available in March for the Spring/Summer session and in June for the Fall/Winter session.

INFORMATION AND COUNSELLING

WEB ADDRESS: <http://www.mcmaster.ca/parttime/fall/>

Interested students may telephone (905) 525-4600 for counselling and to discuss preparation and plans for degree study. The Office is located in Gilmour Hall, Room 108, and is open Monday, Tuesday, Thursday and Friday until 4:00 p.m. and Wednesday until 6:30 p.m.

More detailed information concerning programmes and courses is provided by the Academic Counsellors within each Faculty as follows:

- Business: ext. 23941
- Humanities: ext. 24326
- Science: ext. 27590
- Social Sciences: ext. 24604

Information about application procedures and admission regulations is available through the Office of the Registrar, (Gilmour Hall, Room 108, 525-4600).

Information about non-degree courses and programmes, including courses for pre-university upgrading, is available through the Centre for Continuing Education (525-9140, ext. 24321).

MOHAWK/McMASTER EDUCATION INFORMATION CENTRE

The Mohawk/McMaster Education Information Centre in downtown Hamilton exists to provide information and maintain comprehensive collections of calendars and brochures concerning educational opportunities across Canada. The staff can help you to make contact with the appropriate persons at McMaster.

The Information Centre is at the Hamilton Public Library (Central Branch), 55 York Boulevard., Hamilton, just off Jackson Square, telephone (905) 522-3361.

MAPS

The McMaster Association of Part-time Students (MAPS) maintains an office and student lounge in Kenneth Taylor Hall, Room 102, telephone 525-9140, ext. 22021, and publishes a newsletter, *Link*, which is sent to all part-time students. The office and lounge are open from Monday to Thursday, day and evening, and Friday during the day.

MAPS Executive Director, Sheila Smith, is available during these hours to help students. All part-time students are invited to use these facilities and to assist their Association in its efforts to improve the quality and range of educational opportunities available to students who can only attend university on a part-time basis.

CERTIFICATE AND DIPLOMA PROGRAMMES

CENTRE FOR CONTINUING EDUCATION

Located in the Commons Building, Room 116, the Centre for Continuing Education offers Certificate and Diploma programmes, independently and in conjunction with several professional associations, as well as short courses and workshops for personal and professional development. For students who are not sure about degree studies, the Centre offers registration in degree courses as a *Listener*, as well as a variety of courses designed to prepare students for degree studies. For details, please contact the Centre for Continuing Education at extension 24321.

CERTIFICATE AND DIPLOMA PROGRAMMES APPROVED FOR ADVANCED CREDIT

For information with regard to the awarding of advanced credit, please see the *Graduates of McMaster Certificate Programmes* in the *Admission Requirements* section of this calendar

ACCOUNTING DIPLOMA PROGRAMME {8956}
This eleven-course programme is designed for individuals planning a career in managerial or financial accounting. All courses satisfy programme requirements for both the Society of Management Accountants of Ontario (SMA) and the Certified General Accountants Association (CGA).

Advanced Credit - 12 units

ADDICTIONS CAREWORKER DIPLOMA PROGRAMME {8951}
The diploma requirements consist of 300 hours of study organized in compulsory courses and skill and knowledge electives.

Advanced Credit - pending

ADDICTIONS STUDIES DIPLOMA PROGRAMME {8969}
This programme (150 hours) is designed to provide foundation studies in the field of addictions.

Advanced Credit - 9 units

CASE MANAGEMENT DIPLOMA PROGRAMME {8939}
This ten-course programme, offered jointly by McMaster University and the University of Toronto, 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.

Advanced Credit - 24 units

CERTIFICATE IN ADVANCED PROJECT MANAGEMENT {8948}
This 15-unit programme consisting of two required courses (five units) plus ten units of elective work is designed for managers with at least three years experience as a project manager or as a member of a project team.

Advanced Credit - 15 units

CERTIFICATE/DIPLOMA IN FAMILY MEDIATION {8938}
This five-course (Certificate)/eight-course (Diploma) programme offers a rewarding career opportunity for people in a variety of professions to either gain new or expand their skills and knowledge in the field of alternative dispute resolution.

**Advanced Credit - 15 units (Certificate)
- 24 units (Diploma)**

DIPLOMA IN VISUAL ART FOUNDATION STUDIES {8937}
This one year full-time programme is a joint partnership between McMaster University and the Dundas Valley School of Art. Offered fully on-site at DVSA, the programme provides a solid base for those seeking a foundation for further advanced study in the Visual Arts.

Advanced Credit - 24 units

EMPLOYEE ASSISTANCE PROGRAMME (EAP) CERTIFICATES {8944/8945}

The two EAP certificate programmes (160 hours each) are designed to introduce the core concepts and practices in the expanding field of occupational assistance.

Advanced Credit - 9 units

McMASTER HUMAN RESOURCES SPECIALIST CERTIFICATE {8958}

This ten-course programme covers concepts and practices basic to human resources management.

Advanced Credit - 12 units

INDUSTRIAL SUPERVISION {8984}

An eight-course programme emphasizing industrial supervision, quality management, organization and human relations.

Advanced Credit - 12 units

McMASTER BUSINESS MANAGEMENT DIPLOMA {8980}

This 12 module or six-course programme, offered in association with the Michael DeGroot School of Business at McMaster covers the fundamentals of modern business.

Advanced Credit - 24 units (pending)

MOHAWK-McMASTER GEOGRAPHIC INFORMATION SYSTEMS SPECIALIST CERTIFICATE {8947}

This collaborative six-course programme is designed for those who have some experience in the field of GIS and who have some computer background.

Advanced Credit - pending

McMASTER CERTIFICATE IN WRITING {8941}

This programme (200 hours) covers the fundamentals and advanced study of writing and publishing across many different genres. It has been developed in collaboration with the Faculty of Humanities and members of the local writing community.

Advanced Credit - pending

METALLURGY OF IRON AND STEEL CERTIFICATE {8991}

This six-course programme comprehensively covers metallurgical principles involved in the extraction, refining and manufacturing of ferrous products.

Advanced Credit - 6 units

MICROCOMPUTER SYSTEMS DIPLOMA PROGRAMME {8954}

This eight-course programme provides students with a thorough background in the fundamentals of computer science within the context of microcomputers.

Advanced Credit - 12 units

POLICE STUDIES CERTIFICATE PROGRAMME {8966}

This programme (370 hours) is designed to develop a capacity for critical inquiry at the university level, while augmenting the training received by police and security personnel.

Advanced Credit - 12 units

THE NATIONAL CERTIFICATE PROGRAMME IN VOLUNTARY & NON-PROFIT SECTOR MANAGEMENT {8959}

Offered in association with the Canadian Centre for Philanthropy, this eight-course programme is geared to senior-level staff, as well as volunteers with management experience in the non-profit sector.

Advanced Credit - 9 units

QUALIFIED ADMINISTRATIVE ASSISTANTS PROGRAMME (QAA) {8965}

A seven-course programme which provides a solid background in general business education.

Advanced Credit - 9 units

CANADIAN INSTITUTE OF CERTIFIED ADMINISTRATIVE MANAGERS (CAM) {8989}

This nine-course programme covers a mix of courses in the professional management field.

Advanced Credit - 9 units

CANADIAN PUBLIC PERSONNEL MANAGEMENT ASSOCIATION (CPPMA) {8955}

This seven-course programme is offered by CCE as a recognized academic component to obtain the professional designation Canadian Personnel Professional (CPP).

Advanced Credit - 9 units

CERTIFIED GENERAL ACCOUNTANTS ASSOCIATION OF ONTARIO CGA {8956}

Students may use courses under the Accounting Diploma Programme as equivalency credits towards the CGA programme.

134 CERTIFICATE AND DIPLOMA PROGRAMMES

CREDIT INSTITUTE OF CANADA FELLOWS PROGRAMME

{8942}

This six-course programme provides individuals with the skills and knowledge needed to succeed in the Credit and Collection profession.

Advanced Credit - pending

CREDIT UNION INSTITUTE OF CANADA (CUIC) {8983}

I. General Studies Programme (Nine courses)

This programme provides a general overview of credit union administration and management.

II. Management Studies Programme (12 courses)

This programme offers a mix of general and credit-union specific courses on credit union business management.

Advanced Credit - 12 units

HUMAN RESOURCES PROFESSIONALS ASSOCIATION OF ONTARIO {8974}

This eight-course programme is designed to provide human resources practitioners and those in general management positions with the core knowledge needed in their field.

Advanced Credit - 9 units

INSTITUTE OF CANADIAN BANKERS (ICB) {8988}

I. Business Program

This programme provides a solid foundation in general business education at the university level.

II. Specialized Studies Program

This programme consists of five courses in an area of concentration (Finance & Accounting, Human Resource Management).

Advanced Credit - 12 units

INSTITUTE OF RISK MANAGEMENT {8935}

A ten-course fellowship programme designed to recognize and enhance the stature of the risk management professional.

Advanced Credit - pending

THE INSURANCE INSTITUTE OF CANADA- INSURANCE FELLOWSHIP PROGRAMME (FIIC) {8996}

This ten-course programme is designed to encourage insurance professionals to broaden their general business education, while specializing in a selected major stream, such as risk management.

Advanced Credit - 12 units

PURCHASING MANAGEMENT ASSOCIATION OF CANADA {8961}

This eight-course programme, designed for those in or wishing to enter the materials management field, is comprised of business management courses.

Advanced Credit - 9 units

SOCIETY OF MANAGEMENT ACCOUNTANTS {8956}

Students may use courses under the Accounting Diploma Programme as course equivalencies towards the SMA's pre-professional programme.

For information concerning other Diploma programmes offered at the University, please see the *Post-Professional Health Sciences Education Programmes* in the *Faculty of Health Sciences* section as well as the *Diploma in Music Performance* in the *Faculty of Humanities* section of this calendar.

COURSE LISTINGS

The courses listed in this section include all courses approved for the undergraduate curriculum for the 1999-2000 academic year. Not all courses in the approved curriculum will be offered during the year. Students are advised to refer to the course timetables published annually in March, May and August to determine which specific courses will be offered in the upcoming sessions.

ANTHROPOLOGY

Faculty as of January 15, 1999

Chair

D. Ann Herring

Professors

John J. Colarusso/B.A. (Cornell), M.A. (Northwestern), Ph.D. (Harvard)
 Matthew Cooper/B.A. (Brooklyn College), M.Phil., Ph.D. (Yale)
 Harvey Feit/B.A. (Queens), M.A. Ph.D. (McGill)
 Edward V. Glanville/B.A., Ph.D. (Dublin)
 William L. Rodman/B.A. (Sydney), M.A., Ph.D. (Chicago)
 Shelley Saunders/B.A., M.A., Ph.D. (Toronto)

Adjunct Professors

Dorothy A. Counts/(Waterloo) B.A., M.A., Ph.D. (Southern Illinois)/part-time
 Regna Damell/(Western Ontario) B.A. (Bryn Mawr), M.A., Ph.D. (Pennsylvania)/part-time
 Michael Spence/(Western Ontario) B.A., M.A., (Toronto), Ph.D. (Southern Illinois)/part-time

Associate Professors

Ellen Badone/B.A., M.A. (Toronto), Ph.D. (California, Berkeley)
 Aubrey Cannon/B.A. (Simon Fraser), Ph.D. (Cambridge)
 Laura Finsten/B.A. (Western Ontario), M.A. (Calgary), Ph.D. (Purdue)
 D. Ann Herring/B.A., M.A., Ph.D. (Toronto)
 Trudy Nicks (Royal Ontario Museum)/B.A., M.A., Ph.D. (Alberta)/part-time
 Peter G. Ramsden/B.A. (Toronto), M.A. (Calgary), Ph.D. (Toronto)
 Wayne Warry/B.A., M.A. (McMaster), Ph.D. (ANU)
 Dennis Willms/B.A. (Waterloo), M.A. (McMaster), Ph.D. (British Columbia)

Adjunct Associate Professors

Christopher Ellis/(Western Ontario) B.A. (Waterloo), M.A. (McMaster), Ph.D. (Simon Fraser)/part-time
 Dan W. Jorgenson/(Western Ontario) B.A. (California State), Ph.D. (British Columbia)/part-time
 Susan Pfeiffer/(Guelph) B.A. (Iowa), M.A., Ph.D. (Toronto)/part-time

Assistant Professor

Petra Rethmann/B.A. (Vienna), M.A. (Munich), Ph.D. (McGill)

Associate Members

Henry Schwarcz/(Geography and Geology) B.A. (Chicago), M.S., Ph.D. (California Institute of Technology), F.R.S.C.

Professors Emeriti

David R. Counts/B.A. (Texas), Ph.D. (Southern Illinois)
 David J. Damas/A.B. (Toledo), A.M., Ph.D. (Chicago)
 Christopher Hallpike/B. Litt., M.A., D. Phil. D. Litt. (Oxford)
 William C. Noble/B.A. (Toronto), Ph.D. (Calgary)
 Richard J. Preston/M.A., Ph.D. (North Carolina)
 Richard Slobodin/B.A., M.S. (City College of New York), Ph.D. (Columbia)

Department Notes:

- Not all Anthropology courses listed in this Calendar are taught every year. Students are advised to consult the department's brochure and the timetable which is published annually by the Registrar's Office to determine whether a course is offered.
- 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.

- To identify Anthropology courses by subdiscipline, students should refer to the lists of courses under Anthropology Subfields in the section Faculty of Social Sciences, Department of Anthropology.

Courses If no prerequisite is listed, the course is open.

ANTHROP 1A03 INTRODUCTION TO ANTHROPOLOGY: CULTURE AND SOCIETY

A general introduction to the study of human culture and society in all of its aspects. Examples and illustrations will be drawn largely from non-Western societies.

Three hours (lectures and discussion); one term

ANTHROP 1B03 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.

Three hours (lectures and discussion); 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.

Three hours (lectures and discussion); one term

ANTHROP 2AN3 THE ANTHROPOLOGY OF 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

ANTHROP 2B03 INDIGENOUS PEOPLES OF NORTH AMERICA

A comparative study of selected cultures of this continent, dealing with traditional and modern situations.

Three hours (lectures and discussion); one term

ANTHROP 2DD3 PRIMATE BEHAVIOUR

A survey of current issues in primate behaviour, including taxonomy, demography, social structure, reproduction, play cognition and sociobiology. Students will conduct a zoo observation study.

Three hours (lecture and discussion); one term

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 Programme 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 Programme in Anthropology.

ANTHROP 2FF3 HUMAN OSTEOLOGY AND FORENSIC ANTHROPOLOGY

A study of human bones and teeth with a consideration of how to determine sex, age, stature and other individual characteristics from these remains alone.

Three hours (lectures and discussion); one term

Prerequisite: Registration in an Anthropology programme

Enrolment is limited.

ANTHROP 2H03 ENVIRONMENT AND CULTURE

Relationships between human societies and their environments are examined. A focus is how culture shapes our ideas of nature and the consequence of our actions. Case studies explore both environmental movements and aboriginal societies.

Three hours (lectures and discussion); one term

ANTHROP 2J33 HUMAN GROWTH AND CONSTITUTION

Variation in body form and composition examined in the context of normal growth and evolutionary development.

Three hours (lectures and discussion); one term

ANTHROP 2L03 PHONETICS

A study of the sounds of language and human articulatory capabilities.

Three hours (lectures); one term

Prerequisite: Registration in Level II and above

ANTHROP 2LC3 LINGUISTICS AND CULTURE A: STRUCTURALISM

A study of the application of linguistic models, particularly structuralism, to sociocultural anthropology and related disciplines.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level II and above

Antirequisite: ANTHROP 2Q03/LINGUIST 2Q03, ANTHROP 3LC3

ANTHROP 2LP3 LANGUAGE AND PREHISTORY

A survey of the language families of the world, emphasizing the historical implications of language distributions. Historical linguistic methods will be introduced and compared with archaeological findings for prehistoric Eurasia, Africa, Oceania and North America.

Three hours (lectures and discussion); one term

ANTHROP 2M03 PHONOLOGY

A study of the patterns of distinctive sounds in the world's languages.

Three hours (lectures); one term

Prerequisite: ANTHROP 2L03/LINGUIST 2L03

ANTHROP 2O03 NORTH AMERICAN PREHISTORY

An examination of the origins and development of the major indigenous cultural groups of prehistoric North America.

Three hours (lectures and discussion); one term

Prerequisite: Three units of Anthropology. One of ANTHROP 1B03 or 2PA3 is strongly recommended.

ANTHROP 2P03 PEOPLES OF THE PACIFIC

An introduction to the ways of life and thought in Pacific island societies. The course will emphasize the material culture, networks of social relations, and systems of belief, of the peoples of Melanesia, Polynesia, and Micronesia.

Three hours (lectures and discussion); one term

ANTHROP 2PA3 INTRODUCTION TO PREHISTORIC ARCHAEOLOGY

An introduction to the goals and methods of archaeological research with a focus on specific problems in human prehistory.

Three hours (lectures and discussion); one term

Prerequisite: Three units of Level I Anthropology

This course is required of all students registered in an Honours Programme in Anthropology.

ANTHROP 2R03 RELIGION, MAGIC, AND WITCHCRAFT

An introduction to the cross-cultural study of the relationship between the natural and supernatural, and between ideology and social action.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 1A03 or 2F03

ANTHROP 2S03 PEOPLES OF INNER EURASIA

This survey course will examine the ethnology, languages and histories of the people that fall or once fell within the lands that make up or adjoin the territory that was once the Soviet Union. Where possible, discussion of present conflicts or future tensions will be couched in terms of historical influences.

Three hours (lectures); one term

ANTHROP 2U03 PLAGUES AND PEOPLE

A consideration of the role played by infectious disease in human evolution. The social and biological outcomes of major epidemics and pandemics, past and present, will be explored.

Two hours (lecture), one hour (tutorial); one term

Enrolment is limited.

ANTHROP 2V03 AZTECS, MAYA AND INKA

A survey of these three great prehistoric New World civilizations, using archaeological, ethnohistoric and colonial information. Topics will include religion, social structure, political and economic organization, as well as the similarities and differences among the Aztecs, Maya and Inka.

Three hours (lectures); one term

ANTHROP 2X03 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 2XX3 CONFLICT, CULTURE AND THE QUEST FOR PEACE

An interdisciplinary introduction to everyday violence, ethnic conflict, non-violence, war and peace-building, from the perspectives of Anthropology and Peace Studies.

Three hours (lectures and discussion); one term

ANTHROP 2Z03 INTRODUCTION TO SOCIAL RESEARCH

This course is designed to develop those skills necessary to pursue and understand research. Several general methods of sociological research will be examined.

Three hours (lectures and discussion); one term

Prerequisite: Registration in an Anthropology programme

Cross-list: SOCIOL 2Z03

Antirequisite: GERONTOL 2C03 (or 3C03)

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 3B03 ETHNOLOGY: EUROPE

A comparative ethnological survey of selected societies in Europe.

Three hours (lectures and discussion); one term

Prerequisite: Six units of Social/Cultural Anthropology

ANTHROP 3C03 HEALTH AND ENVIRONMENT: ANTHROPOLOGICAL APPROACHES

Biocultural models of the ways in which humans cope with features of their physical environment, such as hot and cold climates, high altitude, photoperiodicity and solar radiation.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 is highly recommended.

ANTHROP 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.

Enrolment is limited.

ANTHROP 3CN3 CULTURE AND NATIONALISM

An examination of the interplay of culture and nationalism as found in today's wars. Current conflicts in the Balkans and Caucasus will serve as case studies.

Three hours (lectures and discussion); one term

ANTHROP 3DD3 ARCHAEOLOGY OF DEATH

Archaeological analysis and interpretation of burial practices and other death-ritual.

Three hours (lectures and discussion); one term

Not open to students with credit in either ANTHROP 3E03 SPECIAL TOPICS IN ARCHAEOLOGY I or ANTHROP 3EE3 SPECIAL TOPICS IN ARCHAEOLOGY II if the topic was the Archaeology of Death.

ANTHROP 3E03 SPECIAL TOPICS IN ARCHAEOLOGY I

The topic varies with each instructor (e.g. one class may examine *Ancient Mesoamerican Cities* and another focus on *The Archaeology of Hierarchy*).

1999-2000: Boundaries and Interaction in Prehistory.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2PA3

ANTHROP 3EE3 SPECIAL TOPICS IN ARCHAEOLOGY II

1999-2000: Gender in Archaeology

As per ANTHROP 3E03.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2PA3

ANTHROP 3F03 CONTEMPORARY NORTHERN PEOPLES

An examination of current issues in relation to aboriginal peoples in selected northern regions of the world.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 1A03 or registration in a Health Sciences programme

ANTHROP 3G03 COMPARATIVE MYTHOLOGY

The reconstruction of lost mythic traditions by means of comparative techniques drawn from historical linguistics. The Indo-European traditions of Eurasia will be examined.

Three hours (lectures and discussion); one term

ANTHROP 3H03 ANTHROPOLOGICAL DEMOGRAPHY
 This course offers an introduction to the study of population dynamics (birth, death, migration) and population structure. It focuses on issues particularly pertinent to anthropological studies of past and present populations. Three hours (lectures and discussion); one term
 Prerequisite: ANTHROP 2E03

ANTHROP 3K03 ARCHAEOLOGICAL INTERPRETATION
 Technique and methodology in the investigation of archaeological material. Three hours (lectures and discussion); one term
 Prerequisite: ANTHROP 2PA3
Enrolment is limited.

ANTHROP 3L03 HISTORY OF ANTHROPOLOGY
 Some of the major developments and personalities in the history of anthropology as a discipline, with emphasis upon the English-speaking world. Three hours (lectures and discussion); one term
 Prerequisite: Registration in Honours Anthropology
This course is required of all students registered in an Honours Programme in Anthropology.
 Antirequisite: ANTHROP 2I03

ANTHROP 3N03 PRIMATE EVOLUTION
 Comparative anatomy and evolutionary development of humans and our nearest living relatives, the other primates. Three hours (lectures and discussion); one term
 Prerequisite: ANTHROP 2E03
 Antirequisite: ANTHROP 3NN3

ANTHROP 3P03 RESEARCH METHODS IN CULTURAL ANTHROPOLOGY
 Methodologies and techniques of research, especially field study, in sociocultural anthropology. Three hours (lectures and discussion); one term
 Prerequisite: Registration in any programme in Anthropology

ANTHROP 3PP3 PALEOPATHOLOGY
 The origins and evolution of human diseases and methods of identifying disease in ancient human remains. Three hours (lectures and discussion); one term
 Prerequisite: ANTHROP 2FF3

ANTHROP 3Q03 ANTHROPOLOGICAL APPROACHES TO THE STUDY OF AGING
 An examination of the contribution of anthropology to the study of aging with an emphasis on cross-cultural comparisons, and including an assessment of the anthropological literature relating to the biological basis of aging in modern and prehistoric populations. Three hours (lectures and discussion); one term
 Prerequisite: Six units of Social/Cultural Anthropology, or registration in any programme in Gerontology
 Cross-list: GERONTOL 3Q03

ANTHROP 3RR3 THE ANTHROPOLOGY OF GENDER
 Selected topics relating to the construction and practice of gender in various cultural contexts. Three hours (lectures and discussion); one term
 Prerequisite: Registration in Level III or IV of an Anthropology programme.

ANTHROP 3SY3 CULTURAL PSYCHOLOGY
 An introduction to concepts and topics in the anthropology of affect and emotion. The course attends to wider issues of depression, violence, trance, and identity. Three hours (lectures and discussion); one term
 Prerequisite: ANTHROP 2F03

ANTHROP 3T03 POWER AND RESISTANCE
 A critical examination of power in post-colonial conflicts. Examines concepts and case studies of local resistance to economic globalization, the re-defining of nationalities, and the spread of universalizing cultures. Three hours (lectures and discussion); one term
 Prerequisite: Six units of Social/Cultural Anthropology

ANTHROP 3W03 SPECIAL TOPICS IN ANTHROPOLOGY II**
 Reading and discussion of selected topics in Anthropology. It is incumbent upon the student to secure arrangements with the supervising instructor prior to registration in this course; otherwise, no grade will be submitted. One term
 Prerequisite: Registration in any programme in Anthropology

ANTHROP 3WW3 SPECIAL TOPICS IN ANTHROPOLOGY II**
 1999-2000: Readings in Myth
 As per ANTHROP 3W03**
 One term
 Prerequisite: Registration in any programme in Anthropology

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

ANTHROP 3Z03 MEDICAL ANTHROPOLOGY: THE BIOMEDICAL APPROACH
 Patterns of stress and disease with emphasis on the modern biomedical approach. Disease in the evolutionary context with emphasis on disease as a failure of adaptation and response. Three hours (lectures and discussion); one term
 Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 or 2F03 is highly recommended.

ANTHROP 3ZZ3 MEDICAL ANTHROPOLOGY: SYMBOLIC HEALING
 An interdisciplinary approach to traditional systems of healing such as Greek humeral medicine, Chinese, Shamanic, etc. Emphasis will be on cultural and psychological parameters of healing. Three hours (lectures and discussion); one term
 Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 or 2F03 is highly recommended.

ANTHROP 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 programme, or permission of the instructor

ANTHROP 4B03 CURRENT PROBLEMS IN ANTHROPOLOGY I
 1999-2000: Visual Anthropology
 The topic varies with each instructor. Three hours (seminar); one term
 Prerequisite: Registration in Level IV Honours Anthropology or permission of the instructor

ANTHROP 4BB3 CURRENT PROBLEMS IN ANTHROPOLOGY II
 1999-2000: Archaeology and Other Histories
 As per ANTHROP 4B03. Three hours (seminar); one term
 Prerequisite: Registration in Level IV Honours Anthropology

ANTHROP 4D03 APPLIED ANTHROPOLOGY
 An examination of how anthropology is applied to solve human problems. Includes discussion of how students can use their anthropological training in non-academic occupations. Three hours (lectures and discussion); one term
 Prerequisite: Registration in Level IV Honours Anthropology

ANTHROP 4F03 ARCHAEOLOGICAL THEORY
 A seminar in current topics and issues in archaeological theory. Three hours (lectures and discussion); one term
 Prerequisite: ANTHROP 2PA3 and registration in any honours programme

ANTHROP 4G03 INDEPENDENT RESEARCH I**
 Independent study of a research problem through published materials and/or fieldwork. Study may include museum internship, participation in faculty research, or student-initiated practica or library research. Students will be required to write up the results of their inquiry in scholarly form. It is incumbent upon the student to secure arrangements with the supervising instructor prior to registration in this course; otherwise, no grade will be submitted. One term
 Prerequisite: Registration in any programme 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 4HF3 ARCHAEOLOGY OF HUNTERS AND FORAGERS
 Study of the prehistoric technologies and organizational strategies used in making a living from the natural environment, and examination of the cultural contexts of foraging economies. Three hours (seminar); one term
 Prerequisite: ANTHROP 2PA3

ANTHROP 4I03 CONTEMPORARY ANTHROPOLOGICAL THEORY
 Seminar on selected recent developments in anthropological theory. Three hours (seminar); one term
 Prerequisite: Registration in Level IV Honours Anthropology
Enrolment is limited. Access will be provided to all Level IV Honours Anthropology students.

**ANTHROP 4J03 ADVANCED TOPICS IN
PHYSICAL ANTHROPOLOGY**

Study at an advanced level of selected topics within the subdiscipline. Topics may change from year to year.

Three hours (seminar); one term

Prerequisite: ANTHROP 2E03

**ANTHROP 4LA3 ADVANCED TOPICS IN
LINGUISTIC ANTHROPOLOGY**

An advanced course which examines various topics including folklore, myth, etc. Students will conduct field and archival research on topics of their choosing.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 3G03

ANTHROP 4N03 ANTHROPOLOGY 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 an Honours programme in Social Sciences

ANTHROP 4P03 ANTHROPOLOGY OF SPACE AND PLACE

This course will consider recent research drawn from a number of disciplines concerned with the human environment as a social and cultural construction. Topics may include: experience and sense of place; the social construction of urban space; ideology and built form; spatial discourses.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Anthropology or permission of the instructor.

**ANTHROP 4Q03 ANTHROPOLOGICAL PERSPECTIVES
ON GLOBAL SYSTEMS**

The seminar seeks: 1) to discern the linkages between some of the main processes at work in *global systems*; 2) to discuss in what ways these processes are global and in what ways they are systematic; 3) to develop hypotheses for the framework of global scale social theory.

Three hours (seminar); one term

Prerequisite: Registration in an Honours programme in Social Sciences

**ANTHROP 4R03 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

Antirequisite: ANTHROP 3O06

**ANTHROP 4S03 THE ANTHROPOLOGY OF
INFECTIOUS DISEASE**

An advanced course in the evolution of infectious disease and changing relationships between homo sapiens and infectious diseases in the course of human history.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2E03 and registration in Level IV Honours Anthropology

Not open to students with credit in ANTHROP 4J03 (ADVANCED TOPICS IN PHYSICAL ANTHROPOLOGY) if the topic was Infectious Disease and Human Evolution.

**ANTHROP 4T03 LINGUISTICS AND CULTURE B:
GENERATIVE GRAMMAR**

An examination at an advanced level of Chomsky's generative grammar as a paradigm for the study of minds and cultures.

Three hours (seminar); one term

Prerequisite: ANTHROP 3LC3

ANTHROP 4U03 PREHISTORY OF THE BRITISH ISLES

A seminar course in the archaeology of Great Britain and Ireland from the Lower Paleolithic to the Bronze Age. Within these limits, chronology and topical emphasis may vary.

Three hours (seminar); one term

Prerequisite: ANTHROP 2PA3

ANTHROP 4Y03 DEVELOPING SOCIETIES

Topics may include, for example, the meaning of development, innovation and technological change, urbanization and protest movements.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level III or IV Honours Anthropology

ART

Courses and programmes in Art are administered within the School of Art, Drama, and Music of the Faculty of Humanities.

Note:

Art courses are open **only** to students registered in a programme in Honours Art.

Courses**ART 1F06 STUDIO PRACTICE**

An introduction to visual art fundamentals.

Six hours; two terms

Prerequisite: Permission of the School of Art, Drama and Music based on a required portfolio interview. If you intend to take ART 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the School for a portfolio interview in February/March. The portfolio should contain a variety of original work in different media including work derived from both first-hand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. *Applicants for this course should use the MHA OUAC code.*

ART 2A06 PAINTING I

A series of painting projects designed to provide a technical and conceptual foundation for individual creative production in the field of painting.

Four hours studio lab; two hours independent study; two terms

Prerequisite: ART 1F06

ART 2B06 SCULPTURE I

A series of three dimensional investigations designed to inform and expand the student's experience in producing sculptural works of art. Training in technical aspects of bronze casting, welding, fabrication and modelling are provided.

Four hours studio lab; two hours independent study; two terms

Prerequisite: ART 1F06

ART 2C06 DRAWING I

An exploration of a variety of approaches to drawing with an emphasis on the study of the figure and compositional concepts.

Four hours studio lab; two hours independent study; two terms.

Prerequisite: ART 1F06

Antirequisite: ART 2C03

ART 2F06 PRINTMAKING I

An introduction to printmaking techniques including monotypes, collotypes and editioned prints in intaglio, lithography and relief. Emphasis will be on developing personal images that relate to these techniques.

Four hours studio lab; two hours independent study; two terms

Prerequisite: ART 1F06

ART 3A03 ADVANCED PAINTING I

A series of prescribed assignments and independent projects focused on improving skills and fostering personal direction in the field of painting.

Three hours studio lab; two terms.

Prerequisite: ART 2A06

ART 3B03 ADVANCED SCULPTURE

A series of advanced workshops and projects designed to develop individual artistic direction in the field of sculpture.

Three hours studio lab; two terms

Prerequisite: ART 2B06

ART 3C03 DRAWING II

An exploration of drawing with an emphasis on refining skills and developing personal direction.

Three hours studio lab; two terms

Prerequisite: ART 2C03 or 2C06

ART 3D03 PRACTICAL ISSUES IN STUDIO ART I

This course integrates studio workshops and theme-based projects with required readings, discussion sessions, and lectures. It is designed to expose students to a wide range of art practices and issues involved in the field of art. This course is taught by a team of studio faculty.

Three hours; one term

Prerequisite: Registration in Level III Honours Art or Combined Programme with Honours Art

ART 3DD3 PRACTICAL ISSUES IN STUDIO ART II

This course integrates studio workshops and theme-based projects with required readings, discussion sessions, and lectures. It is designed to expose students to multimedia and interdisciplinary approaches to art making. This course is taught by a team of studio faculty.

Three hours; one term

Prerequisite: Registration in Level III Honours Art or Combined Programme with Honours Art

ART 3E06 STUDIO PRACTICE AND CRITICISM

This course combines supervised self-directed study in studio art with self-assessment exercises. It provides opportunities for students working in diverse media and approaches to come together for critical discussion sessions with a team of studio faculty, peers from studio art and art history and visiting artists and art historians.

76 hours scheduled activities: 52 hours critiques; 24 hours Visiting Artists' lectures

Prerequisite: Registration in Level III Honours Art or Combined Programme with Honours Art and a grade of at least B- in a minimum of six units of Level II Art

Antirequisite: ART 3G06

ART 3P03 ADVANCED PRINTMAKING

A series of projects designed to provide more advanced creative production in print-based media.

Three hours studio lab; two terms

Prerequisite: ART 2F06

ART 4C06 MINOR STUDIO PROJECT

This course combines advanced level studio production with self-assessment exercises. The course provides opportunities for students working in diverse media and approaches to come together for critical discussions. A team of faculty and visiting artists provide regular feedback on progress.

Prerequisite: ART 3E06 or 3G06 with a grade of at least B- and registration in Level IV of a Combined Honours Art and Another Subject programme

Antirequisite: ART 3F06 or credit or registration in ART 4B12 or 4E12

ART 4E12 ADVANCED STUDIO PRACTICE AND CRITICISM

This course combines advanced level studio production with self-assessment exercises. The course provides opportunities for students working in diverse media and with different approaches to come together for critical discussions. A team of faculty and visiting artists provide regular feedback on progress.

76 hours scheduled activities: 52 hours critiques; 24 hours Visiting Artists' lectures

Prerequisite: Registration in Level IV Honours Art and a grade of at least B- in ART 3E06 or 3G06

Antirequisite: ART 4B12

ART HISTORY

Courses and programmes in Art History are administered within the School of Art, Drama and Music of the Faculty of Humanities.

Courses**ART HIST 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

Antirequisite: ART HIST 1A06

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

Antirequisite: ART HIST 1A06

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 and above

ART HIST 2B03 GREEK ART

The architecture, sculpture, and painting of the Greek and Hellenistic worlds.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2B03

ART HIST 2C03 ROMAN ART

The architecture, sculpture, and painting of the Roman world.

Three lectures; one term

Prerequisite: ART HIST 2B03

Cross-list: CLASSICS 2C03

ART HIST 2D03 19TH- AND 20TH-CENTURY ART AND ARCHITECTURE

A study of the major movements and styles in painting and sculpture from c. 1780 to c. 1960.

Three lectures; one term

Prerequisite: Registration in Level II and above

ART HIST 2E03 APPROACHES TO ART HISTORY

A study of the various approaches which art historians of the last 100 years have taken in investigating the art of the past.

Three lectures; one term

Prerequisite: ART HIST 1A06 or 1A03 and 1AA3

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 and above. Prior completion of ART HIST 1A06 or 1A03 and 1AA3 is recommended.

Cross-list: MMEDIA 2F03

ART HIST 2H03 AESTHETICS

An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: PHILLOS 2H03

Offered in alternate years.

ART HIST 2I03 RENAISSANCE AND BAROQUE ART

An introduction to the history of European art in the period 1400 to 1750.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: ART HIST 2M03 and/or 2N03

ART HIST 3AA3 CONTEMPORARY ART

An examination of major developments in painting, sculpture, and other media from World War II to the present together with a review of related critical theory.

Three lectures; one term

Prerequisite: Registration in Level II and above. Prior completion of ART HIST 2D03 is recommended.

Offered in alternate years.

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 programme

Alternates with ART HIST 3N03

ART HIST 3D03 BAROQUE ART

An examination of European art emerging in the period 1580-1750 with a special emphasis on the continuing evolution of the classical tradition.

Three lectures; one term.

Prerequisite: Registration in Level II and above. Prior completion of ART HIST 2I03 is recommended.

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 or ART HIST 3G03

Cross-list: CLASSICS 3G03

Alternates with ART HIST 3H03.

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

Cross-list: CLASSICS 3H03

Alternates with ART HIST 3G03.

140 ART HISTORY

ART HIST 3103 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 and above. Prior completion of ART HIST 2103 is recommended.

Alternates with ART HIST 3S03

ART HIST 3M03 THE SENSE OF ORDER: DESIGN IN HISTORY

An introduction to the history of the decorative arts, with an emphasis on three-dimensional design as found in furniture, pottery and porcelain, silver, and architectural ornaments.

Three lectures; one term

Prerequisite: Registration in Level II and above. Prior completion of ART HIST 2A03 and/or ART HIST 2F03 is recommended.

ART HIST 3N03 NEOCLASSICISM AND ROMANTICISM

A historical and critical investigation of selected issues and artists of the Neoclassical and Romantic traditions.

Three lectures; one term

Prerequisite: Registration in Level II and above. Prior completion of ART HIST 2D03 is recommended.

Antirequisite: ART HIST 4N03

Alternates with ART HIST 3B03

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 or Multimedia programme

*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 and above. Prior completion of ART HIST 2103 is recommended.

Alternates with ART HIST 3103.

ART HIST 4AA3 SPECIAL STUDIES IN CONTEMPORARY ART

An in-depth examination of one or more significant movements in contemporary art, theory and criticism from c. 1970 to the present. Topics will include such movements as Minimal Art, Conceptual Art, Earthworks, Body Art, Photo-Realism, Pattern and Decoration, Neo-Expressionism, etc.

Seminar (two hours); one term

Prerequisite: ART HIST 3AA3

Alternates with ART HIST 4H03.

Enrolment is limited.

ART HIST 4BB3 SEMINAR IN ANCIENT ART

Consult the School of Art, Drama and Music concerning the topic to be offered.

Seminar (two hours); one term

Prerequisite: ART HIST 2B03 and ART 2C03, and registration in Level III or IV of an Honours programme in Art History

Cross-list: CLASSICS 4BB3

ART HIST 4BB3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

ART HIST 4C03 THE HIGH RENAISSANCE

A seminar devoted to consideration of selected themes relating to the High Renaissance in Italy.

Seminar (two hours); one term

Prerequisite: ART HIST 2M03 or 3103

Alternates with ART HIST 4E03.

Enrolment is limited.

ART HIST 4E03 TOPICS IN EUROPEAN ART (1300-1750)

A course of readings and discussions, under the guidance of a faculty member, concerning European art and artists from 1300 to 1750. Consult the School for the topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of an Art, Art History, or Multimedia programme

ART HIST 4E03 may be repeated, if on a different topic, to a total of six units.

Alternates with ART HIST 4C03.

Enrolment is limited.

ART HIST 4H03 TOPICS IN MODERN ART (1750-PRESENT)

A course of readings and discussions, under the guidance of a faculty member, concerning nineteenth- and twentieth-century art and artists. Consult the School for the topic to be offered.

Seminar (two hours); one term

Prerequisite: ART HIST 2D03 and 3AA3

Alternates with ART HIST 4AA3

ART HIST 4H03 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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 programme in Art History, and a grade of at least A- in a previous course in the chosen field, and permission of the School of Art, Drama and Music

ART HIST 4V03 THE STUDY, CRITICISM AND EVALUATION OF ART

A seminar to introduce students to the history, theory, and practice of connoisseurship. Its focus will be to develop skills in confronting the single work of art.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History or Multimedia

Alternates with ART HIST 4C03.

Enrolment is limited.

ART HIST 4X03 INTRODUCTION TO ART GALLERIES AND MUSEUMS

A study of the history and methods of institutions created for the purpose of collecting, preserving, displaying and interpreting art objects.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History Offered in alternate years.

Enrolment is limited.

ARTS AND SCIENCE

Director

Barbara M. Ferrier (Biochemistry) B.Sc., Ph.D. (Edinburgh)

Council of Instructors

John D. Browning (Modern Languages) B.A., M.Phil. (London), Ph.D. (Essex)

Sylvia Bowerbank (English and Arts & Science) B.A. (McMaster), B.Educ. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)

Phyllis Granoff (Religious Studies) B.A. (Radcliffe College), Ph.D. (Harvard)

William E. Harris (Physics and Astronomy) B.Sc. (Alberta), M.Sc., Ph.D. (Toronto)

Robert J. Henderson (Kinesiology) B.P.E. (McMaster), M.A. (Alberta)

Robert C. Hudspeth (Mechanical Engineering) B.Eng., M.Eng. (McMaster), P.Eng.

Graham K. Knight (Sociology) B.A. (Kent), M.A., Ph.D. (Carleton)

Cyril H. Levitt (Sociology) B.A., M.A. (Waterloo), Ph.D. (Freie Universitat, Berlin)

Miroslav Lovric (Mathematics and Statistics) B.S. (Zagreb), M.S., Ph.D. (Ohio State)

Alan Mendelson (Religious Studies) A.B. (Kenyon College), M.A. (Brandeis), Ph.D. (Chicago)

Sara H. Mendelson (Arts & Science) B.A. (Chicago), D.Phil. (Oxford)

P.K. Rangachari (Medicine) M.B.B.S. (All India Institute of Medical Sciences, New Delhi), Ph.D. (Alberta)

Koichi Shinohara (Religious Studies) B.L., M.L. (Tokyo), Ph.D. (Columbia)

Roman Viveros-Aguilera, B.A. (Veracruzana, Mexico), M.A. (National Polytechnic Inst., Mexico), Ph.D. (Waterloo)

Mark Vorobej B.A. (Carleton), M.A., Ph.D. (Toronto)

Gary A. Warner B.A. (London), L. ès L., D. de l'U. (Caen)

M. Jean Wilson (Modern Languages) B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto)

Department Notes:

- Prerequisites:** The prerequisite for all Level I, II, III and IV Arts & Science courses is registration in the Arts and Science Programme.
- Limited Enrolment:** Enrolment in Level I of the Arts and Science Programme is limited to approximately 60 students.

Courses**ARTS&SCI 1A06 WESTERN CIVILIZATION**

An examination of some of the central themes in Western social, religious and cultural history, from classical Greece to late eighteenth-century Europe. Students will analyze selected texts from the Bible and from the works of such writers as Thucydides, Plato, and Shakespeare. Topics will include theories of historical change; the influence of such factors as class, race and gender on the evolution of social systems; the relationship between political movements and the rise of experimental science.

ARTS&SCI 1B06 WRITING AND INFORMAL LOGIC

The primary aim of this course is to develop the student's critical and analytical skills in dealing with the written word. Students will examine the structure of selected texts, analyze various types of reasoning, and receive individual attention in expository writing.

ARTS&SCI 1C06 INQUIRY

Inquiry seminars are designed to develop skills basic to the systematic investigation of public issues. These skills include those involved in formulating questions, gathering and interpreting evidence from a variety of sources, evaluating arguments, and reaching well-considered conclusions. This inquiry course involves students in investigation of issues relevant to Third World Development.

ARTS&SCI 1D06 CALCULUS

This course aims to provide a thorough understanding of the principles and major applications of differential and integral calculus of functions of one variable, as well as an introduction to multivariate calculus and differential equations.

ARTS&SCI 1D06 serves as a prerequisite for all upper level Mathematics, Statistics, Computer Science and Physics courses, for which MATH 1A06 or MATH 1AA3 is a prerequisite.

ARTS&SCI 2A06 MODERN WESTERN CIVILIZATION

Development of political, economic, sociological and psychological thought in the writings of such major figures as Hobbes, Locke, Rousseau, Adam Smith, Burke, Tocqueville, Marx, Mill, Weber, von Hayek, Polanyi, Nietzsche, Schopenhauer, Freud and Skinner.

ARTS&SCI 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 and periods will be examined. The course will focus on the ways in which great writers have treated enduring human ethical concerns. It will attempt to show how literary creativity involves the matching of formal and stylistic mastery, on the one hand, with ethical awareness on the other.

ARTS&SCI 3B03 TECHNOLOGY AND SOCIETY I

The Culture of Technology. Current technological practices and approaches are studied as a cultural activity with its own beliefs, values, social structures and institutions.

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.

Prerequisite: ARTS&SCI 3B03

ARTS&SCI 3CB6 INQUIRY TOPIC: ENVIRONMENT

The so-called environmental crisis will be explored as a crisis of western culture's inability to live in a harmonious relationship with the earth. The central premise of this Inquiry is that far from solving environmental crisis, we have yet to grasp the nature of the problem.

ARTS&SCI 3CD6 INQUIRY TOPIC: DISCOVERY: THE CONTEXT OF BIOMEDICAL RESEARCH

Using a problem-based approach, the antecedents and consequences of biomedical discoveries will be explored. Issues discussed will include: organization of laboratories, funding, publications, priority disputes, rewards, frauds, academic-industry links, patents, experimental ethics.

ARTS&SCI 3CE6 INQUIRY TOPIC: MEDIA

This course consists of four sections dealing with theoretical and analytical perspectives, political economy of the media, news media and entertainment media and their cultural effects.

ARTS&SCI 3L03 EASTERN STUDIES I: INDIA

Readings of Indian texts in translation will centre around themes such as the nature of human nature, free will and determinism; personal identity and the quest for perfection; renunciation and social action; violence and non-violence; altruism and selfishness.

Two lectures, one tutorial; one term.

Prerequisite: Registration in Level III and above

Cross-list: RELIG ST 3L03

ARTS&SCI 3S03 EASTERN STUDIES II: EAST ASIA

Readings of East Asian texts in translation will centre around themes such as culture vs. nature, virtue vs. power, social responsibility vs. personal cultivation, bookish learning vs. meditation.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level III and above

Cross-list: RELIG ST 3S03, JAPAN ST 3S03

ARTS&SCI 4A06 INDIVIDUAL STUDY

This course consists of a library, laboratory, or field project under the supervision of a faculty member. Students intending to register must first consult the Director of the Arts & Science Programme and then prepare an outline for approval after consultation with the faculty supervisor. Plan of Study requires approval of the Programme Director by March 1 of the academic year prior to registration in the course.

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 a library, laboratory, or field project under the supervision of a faculty member. Students intending to register must first consult the Director of the Arts & Science Programme and then prepare an outline for approval after consultation with the faculty supervisor. Plan of Study requires approval of the Programme Director by March 1 of the academic year prior to registration in the course.

ARTS&SCI 4C12 THESIS

The same as ARTS&SCI 4C06 but based on more extensive research.

ASIAN STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

ASTRONOMY

(SEE PHYSICS AND ASTRONOMY)

BIOCHEMISTRY**Faculty as of January 15, 1999****Chair**

J.P. Capone

Professors

David W. Andrews/B.Sc. (Ottawa), Ph.D. (Toronto)

Vettai S. Ananthanarayanan/M.Sc., Ph.D. (Madras)

John P. Capone/B.Sc. (Western Ontario), Ph.D. (McMaster)

William W. Chan/M.A., Ph.D. (Cambridge)

Richard M. Epan/A.B. (Johns Hopkins), Ph.D. (Columbia)

Gerhard E. Gerber/B.Sc., Ph.D. (Toronto)

Hara P. Ghosh/M.Sc., D.Phil. (Calcutta)

Radhey S. Gupta/M.Sc. (New Delhi), Ph.D. (Bombay)

Richard J. Haslam/M.A., D.Phil. (Oxford), Professor of Pathology

John A. Hassell/B.Sc. (Brooklyn College), Ph.D. (Connecticut)

Evert Nieboer/M.Sc. (McMaster), Ph.D. (Waterloo)

Associate Professors

Douglas W. Bryant/B.Sc. (McGill), M.Sc., Ph.D. (York)/part-time
 Calvin B. Harley/B.Sc. (Waterloo), Ph.D. (McMaster)/part-time
 Gerard D. Wright/B.Sc., Ph.D. (Waterloo)
 Daniel S.C. Yang/B.Sc., M.Sc. (Alberta), Ph.D. (Pittsburgh)

Assistant Professors

Albert M. Berghuis/M.Sc. (Groningen), Ph.D. (British Columbia)
 Eric D. Brown/M.Sc., Ph.D. (Guelph)
 Justin R. Nodwell/B.Sc., Ph.D. (Toronto)

Associate Members

Stephanie A. Atkinson/(Pediatrics) B.A. (Western Ontario), Ph.D. (Toronto)
 Jack Gaudiel/(Pathology) B.Sc. (McMaster), Ph.D. (University College, London, UK)
 Brian F. Leber/(Medicine) B.Sc., M.D.C.M. (McGill), F.R.C.P.C.
 William J. Muller/(Pathology) B.Sc., Ph.D. (McGill)
 Michael A. Rudnicki/(Pathology) B.Sc., Ph.D. (Ottawa)
 Gurmit Singh/(Pathology) B.Sc., Ph.D. (Dalhousie)
 Thillainathan Sivakumaran/(Pathology) B.Sc. (Ceylon) M.Sc., Ph.D. (Queen's), F.R.S.C. (London)
 Bradley N. White/(Biology) B.Sc. (Nottingham), Ph.D. (McMaster)
 Peter F.M. Whyte/(Pathology) B.Sc., M.Sc., (British Columbia), Ph.D. (New York)

Professors Emeriti

Russell A. Bell/M.Sc. (Wellington), M.S. (Wisconsin), Ph.D. (Stanford), F.C.I.C., Professor of Chemistry
 Luis A. Branda/B.Sc., D.Sc. (Uruguay)
 Barbara M. Ferrier/B.Sc., Ph.D. (Edinburgh)
 Karl B. Freeman/B.A., Ph.D. (Toronto)
 Ross H. Hall/B.A. (British Columbia), M.A. (Toronto), Ph.D. (Cambridge)
 Dennis R. McCalla/B.Sc. (Alberta), M.Sc. (Saskatchewan), Ph.D. (California Inst. of Technology), F.C.I.C.

Courses *If no prerequisite is listed, the course is open.***BIOCHEM 2A06 PRINCIPLES OF BIOCHEMISTRY**

An overview of biochemical processes emphasizing the importance of structure, function, reactivity and energetics of molecules in biological systems. Three lectures or tutorial; two terms
 Prerequisite: Registration in an Honours Biochemistry or Honours Molecular Biology programme and credit or registration in CHEM 2OA3 and 2OB3, or CHEM 2BA3 and 2BB3, or one of CHEM 2B06, 2O06
 Antirequisite: BIOCHEM 2E03, 2EE3, 3G03, 3GG3

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 2D03, 2E03 or credit or registration in one of CHEM 2B06, 2BA3, 2O06, 2OA3
 Antirequisite: BIOCHEM 2A06, 2E03, 3GG3

BIOCHEM 3B03 NUCLEIC ACID STRUCTURE AND FUNCTION

Fundamental properties of DNA and RNA. Molecular mechanisms involved in the processing of genetic information. Related methods of investigation will be discussed.

Three lectures; first term
 Prerequisite: One of BIOCHEM 2A06, 3G03
 Antirequisite: BIOCHEM 3A03, 3H03

BIOCHEM 3BB3 PROTEIN STRUCTURE AND ENZYME MECHANISM

Fundamental aspects of protein structure including physical methods of investigation. Theoretical basis of enzyme catalysis and the experimental study of kinetics and mechanism.

Three lectures; second term
 Prerequisite: One of BIOCHEM 2A06, 3G03
 Antirequisite: BIOCHEM 3A03

BIOCHEM 3C03 CELLULAR BIOCHEMISTRY

Biochemical basis of complex cellular processes such as compartmentalization, vesicular traffic, movement and programmed cell death. Emphasis is placed on the principles of evaluation of current research literature.

Three lectures; first term
 Prerequisite: BIOCHEM 2A06, or both BIOCHEM 2EE3 and 3G03

BIOCHEM 3E03**ENVIRONMENTAL BIOCHEMISTRY LABORATORY**

Fundamental principles and techniques of experimental biochemistry relevant to environmental problems.

One lab (three hours), one tutorial (three hours); one term
 Prerequisite: BIOCHEM 2EE3 and registration in Level III of Honours Science (Environmental Science Option) or Honours Environmental Science
 Antirequisite: BIOCHEM 3L03
 Not offered in 1999-2000.

BIOCHEM 3G03**BIOCHEMISTRY OF MACROMOLECULES**

Chemical and conformational properties of proteins and relationships to their function including regulation of enzyme activity. Chemical and physical structure of DNA and RNA relevant to biological function.

Three lectures; first term
 Prerequisite: CHEM 2OA3 and 2OB3; or CHEM 2BA3 and 2BB3; or one of CHEM 2B06, 2O06; or a grade of at least B+ in CHEM 2D03 or 2E03
 Antirequisite: BIOCHEM 2A06, 2E03, 3A03, 3AA3

BIOCHEM 3H03**CLINICAL BIOCHEMISTRY**

An outline of clinical chemistry; its relation to disease and relevance to health care.

Three lectures; one term
 Prerequisite: BIOCHEM 2A06, or both BIOCHEM 2EE3 and 3G03, or a grade of at least C+ in BIOCHEM 2EE3

BIOCHEM 3L03**BIOCHEMISTRY LABORATORY**

Illustration of fundamental principles and techniques of experimental biochemistry and molecular biology.

One lab (three hours), one tutorial (three hours); first term
 Prerequisite: BIOCHEM 2A06, or both BIOCHEM 2EE3 and 3G03, and registration in Honours Biological Chemistry
 Antirequisite: BIOCHEM 3E03

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; one term
 Prerequisite: BIOCHEM 2A06, or both BIOCHEM 2EE3 and 3G03, or a grade of at least C+ in BIOCHEM 2EE3

BIOCHEM 3P03**BIOCHEMISTRY LABORATORY PROJECTS**

Research projects illustrating modern methods in biochemistry and molecular biology.

One lab (three hours), one tutorial (three hours); second term
 Prerequisite: BIOCHEM 3L03 and either registration in Honours Biochemistry (Specialist) or permission of the Department. Application for permission must be received by March 31st of the previous year.
 Antirequisite: BIOLOGY 3V03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOCHEM 4A03**PRESENTATIONS AND CRITICAL EVALUATION**

Topics representing recent advances in Biochemistry and Molecular Biology will be selected by students from the research literature. Consultation is available from various faculty members.

Three hours; one term
 Prerequisite: Registration in Level IV of an Honours Biochemistry or Molecular Biology Programme or in Year 4 or 5 of Honours Biochemistry Co-op. Permission of the Department is required by March 31.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOCHEM 4B06**SENIOR PROJECT IN BIOCHEMISTRY**

An extended research project using biochemical techniques and supervised by a member or associate member of the Department of Biochemistry. A formal report of the results will be required.

Three labs (three hours); two terms
 Prerequisite: BIOCHEM 3P03, and registration in Honours Biochemistry (Specialist Option). Students must have a CA of at least 8.0.
 Permission of the Department is required by March 31.
 Antirequisite: BIOCHEM 4BB6, 4F09, 4G03, 4L03, 4P03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOCHEM 4BB6**SENIOR PROJECT IN MOLECULAR BIOLOGY**

An extended research project using a molecular biology approach and supervised by a member or associate member of the Department of Biochemistry. A formal report of the results will be required.

Three labs (three hours); two terms

Prerequisite: BIOCHEM 3P03, and registration in Honours Biochemistry (Biotechnology and Genetic Engineering Option) or in the Honours Biochemistry and Molecular Biology programme. Students must have a CA of at least 8.0. Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4B06, 4F09, 4G03, 4L03, 4P03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

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; one term

Prerequisite: Registration in Level IV of Honours Biochemistry (Complementary Studies Option)

BIOCHEM 4D03 BIOTECHNOLOGY I

Theory, methods and applications in genetic engineering and biotechnology. Gene cloning and expression in microbial and eukaryotic systems, protein engineering, molecular diagnostics, genomics and gene therapy.

Three lectures; first term

Prerequisite: One of BIOCHEM 3A03, 3B03, BIOLOGY 3H03 and one of BIOCHEM 2A06, 3G03

BIOCHEM 4DD3 BIOTECHNOLOGY II

Use of plants and animals to produce novel commercial products, pharmaceuticals, vaccines etc. Engineered microorganisms for industry, bioremediation, and food processing. Industrial fermentation, downstream process recovery and bioinformatics.

Three lectures; second term

Prerequisite: BIOCHEM 4D03

BIOCHEM 4E03 GENE EXPRESSION I

Current concepts and strategies of molecular mechanisms of eukaryotic gene expression and regulation at the transcriptional, post-transcriptional, translational and post-translational levels.

Three lectures; first term

Prerequisite: One of BIOCHEM 3A03, 3B03, BIOLOGY 3H03 and one of BIOCHEM 2A06, 3G03

BIOCHEM 4EE3 GENE EXPRESSION II

Mechanism of gene expression and regulation with emphasis on integrative strategies in complex systems relating to physiological homeostasis in normal and disease states.

Three lectures; second term

Prerequisite: BIOCHEM 4E03

BIOCHEM 4F09 SENIOR THESIS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY

A thesis based on a major research project supervised by a member or associate member of the Department of Biochemistry. The results will also be presented to the department in a seminar or as part of a poster session. Lab (12-14 hours); two terms

Prerequisite: One of BIOCHEM 3P03 and registration in an Honours Biochemistry programme. Permission of the department is required by March 31 and students are expected to have a C.A. of at least 9.5

Antirequisite: BIOCHEM 4B06, 4BB6, 4G03, 4P03, 4L03

BIOCHEM 4G03 BIOTECHNOLOGY AND GENETIC ENGINEERING LABORATORY

This lab is complementary to BIOCHEM 4D03. Experiments may involve cloning, engineered mutagenesis, DNA sequencing, expression of cloned genes and fermentation.

Two labs (four hours); second term

Prerequisite: BIOCHEM 3P03, one of BIOCHEM 3A03, 3B03 and registration in an Honours Biochemistry programme.

Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4B06, 4BB6, 4F09, 4L03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOCHEM 4I03 STRUCTURAL AND MECHANISTIC ASPECTS OF MACROMOLECULES

Advanced treatment of protein and nucleic acid structure. Structure-function correlations. Mechanism of enzyme action. Interactions involving macromolecules.

Three lectures; second term

Prerequisite: BIOCHEM 3BB3, one of BIOCHEM 3B03 or 3G03

BIOCHEM 4J03 BIOCHEMICAL IMMUNOLOGY

This advanced course applies small-group-based learning to immunological problems. Topics concern development of immunoassays, resistance to infection and immunity in health and disease.

One session (two hours), one tutorial; one term

Prerequisite: One of BIOLOGY 3X03, 4I03 and one of BIOLOGY 3H03, BIOCHEM 3A03, 3B03, 3G03

Cross-list: MOL BIOL 4J03

BIOCHEM 4L03 ADVANCED BIOCHEMISTRY LABORATORY

Fundamental principles of experimental biochemistry with emphasis on modern methods in enzymology and molecular biology.

Two labs (four hours); first term

Prerequisite: BIOCHEM 3L03 and either BIOCHEM 3A03 or BIOCHEM 3BB3 and one of BIOCHEM 3B03, BIOLOGY 3H03

Antirequisite: BIOCHEM 4B06, 4BB6, 4F09, 4G03; MOL BIOL 4R09

BIOCHEM 4M03 MEMBRANE STRUCTURE AND FUNCTION

Chemical structure and molecular organization of membrane constituents. Molecular basis of the biological activity of membranes.

Three lectures; first term

Prerequisite: Registration in Level IV of an Honours Biochemistry or Honours Molecular Biology programme or Year 4 of the Honours Biochemistry Co-op programme or both BIOCHEM 2EE3 and 3G03

BIOCHEM 4P03 RESEARCH PROJECT

A project involving laboratory or library research will be supervised by a member or associate member of the Department of Biochemistry.

Three labs (three hours); may be taken first or second term

Prerequisite: One of BIOCHEM 3P03, BIOLOGY 3V03 and either BIOCHEM 3A03, or 3B03 and 3BB3, or 2EE3 and 3G03, and registration in an Honours Biochemistry or Molecular Biology programme.

Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4B06, 4BB6, 4F09; MOL BIOL 4R09

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOCHEM 4Q03 BIOCHEMICAL PHARMACOLOGY

Metabolism and biotransformation of drugs, drug-receptor interactions, chemical mutagenesis, mechanisms of action of antibacterial and anticancer drugs.

Three lectures; first term

Prerequisite: BIOCHEM 3BB3

BIOLOGY

Faculty as of January 15, 1999

Chair

A.J. Rainbow

Professors

Turlough Finan/B.Sc.; M.Sc. (*Galway, Ireland*), Ph.D. (*Guelph*)

G. Brian Golding/B.Sc. (*Dalhousie*), Ph.D. (*Alberta*)

Frank L. Graham/*(Pathology)* B.Sc. (*Manitoba*), M.A., Ph.D. (*Toronto*)

Delsworth G. Harnish/*(Pathology)* B.Sc., M.Sc. (*Queen's*), Ph.D. (*McMaster*)

John A. Hassell/*(Biochemistry, Pathology)* B.Sc. (*Brooklyn College*), Ph.D. (*Connecticut*)

Jurek Kolasa/M.Sc., Ph.D., (*Poznan*)

John N.A. Lott/B.Sc. (*British Columbia*), M.S., Ph.D. (*California, Davis*)

D. Gordon McDonald/B.Sc. (*Western Ontario*), M.Sc., Ph.D. (*Calgary*)

Colin A. Nurse/B.E.Sc. (*Western Ontario*), Ph.D. (*Harvard*)

Michael J. O'Donnell/B.Sc., Ph.D. (*Toronto*)

Andrew J. Rainbow/B.Sc. (*Manchester*), M.Sc. (*London*), Ph.D. (*McMaster*)

C. David Rollo/B.Sc., M.Sc. (*Guelph*), Ph.D. (*British Columbia*)

Rama S. Singh/B.Sc. (*Agra*), M.Sc. (*Kanpur*), Ph.D. (*California, Davis*)

George J. Sorger/B.Sc. (*McGill*), M.S., Ph.D. (*Yale*)

Bradley N. White/B.Sc. (*Nottingham*), Ph.D. (*McMaster*)/Undergraduate Advisor

Christopher M. Wood/B.Sc., M.Sc. (*British Columbia*), Ph.D. (*East Anglia*)

Associate Professors

Ana Campos/B.A., M.A. (*Rio de Janeiro*), Ph.D. (*Brandeis*)

Patricia Chow-Fraser/B.Sc., M.Sc. (*Waterloo*), Ph.D. (*Toronto*)

Allan D. Dingle/B.Sc. (*McMaster*), M.Sc. (*Illinois*), Ph.D. (*Brandeis*)/Part-time

H. Lisle Gibbs/B.Sc. (*Queen's*), M.S., Ph.D. (*Michigan*)

J. Roger Jacobs/B.Sc. (*Calgary*), M.Sc., Ph.D. (*Toronto*)

James S. Pringle/*(Royal Botanical Gardens)*, A.B. (*Dartmouth*),

M.S. (*New Hampshire*), Ph.D. (*Tennessee*)/part-time

Herbert E. Schellhorn/B.Sc., M.Sc. (*Guelph*), Ph.D. (*North Carolina*)

Elizabeth A. Weretilnyk/B.Sc., Ph.D. (*Alberta*)

Assistant Professors

Susan A. Dudley/B.Sc., M.Sc. (*McGill*), Ph.D. (*Chicago*)
 Suleiman A. Igdoura/B.Sc. (*Victoria*), M.Sc. (*Western*), Ph.D. (*McGill*)
 James S. Quinn/B.Sc. (*Queen's*), M.Sc. (*Brock*), Ph.D. (*Oklahoma*)

Instructional Assistants

Marvin Gunderman/B.Sc., M.Sc. (*McMaster*)
 Thelma Leech/B.Sc., M.Sc. (*Guelph*)
 Beryl Piccinin/B.Sc. (*Mount Allison*), M.Sc. (*McMaster*)
 Raymond Procwat/B.Sc. (*McMaster*), B.Ed. (*Toronto*)

Professors Emeriti

Stanley T. Bayley/B.Sc., Ph.D. (*London*)
 Douglas Davidson/B.Sc. (*Durham*), D.Phil. (*Oxford*)
 Douglas M. Davies/B.A., Ph.D. (*Toronto*), F.E.S.C.
 Kenneth A. Kershaw/B.Sc. (*Manchester*), Ph.D. (*N. Wales*), D.Sc. (*Wales*), F.R.S.C.
 Stanley Mak/M.Sc. (*Saskatchewan*), Ph.D. (*Toronto*)
 Richard A. Morton/M.S., Ph.D. (*Chicago*)
 B. Ann Oaks/B.A. (*Toronto*), M.A., Ph.D. (*Saskatchewan*), F.R.S.C.
 Ludvik A. Prevec/M.A., Ph.D. (*Toronto*)
 Iwao Takahashi/B.A. (*Hakodate*), M.S.A. (*Kyushu*), Ph.D. (*Montreal*)
 Stephen F.H. Threlkeld/M.Sc. (*Alberta*), Ph.D. (*Cambridge*)
 Jean E.M. Westermann/B.Sc. (*Western Ontario*), M.A. (*Mount Holyoke*), Ph.D. (*Toronto*)

Note:

No more than six units of Level II, III, IV Biology may be taken in any given Fall/Winter Session by students enrolled in a three year Baccalaureate degree programme.

Courses *If no prerequisite is listed, the course is open.***BIOLOGY 1A03. STRUCTURAL AND FUNCTIONAL RELATIONS IN LIVING SYSTEMS**

Structure, molecular composition and function in sub-cellular and cellular systems and in whole organisms.

Three lectures, one lab (three hours); one term

Prerequisite: OAC Biology. Registration in one of Science I, Arts & Science I, any programme above Level I; or a grade of at least 80% in OAC Biology. Registration in or completion of CHEM 1A03, 1AA3 (or 1A06) is strongly recommended. CHEM 1A03, 1AA3 (or 1A06) are prerequisites for many Biology courses in Level II, III, and IV.

Corequisite: SCIENCE 1A00

Antirequisite: BIOLOGY 1A06

BIOLOGY 1AA3. REPRODUCTION AND ADAPTATION IN LIVING SYSTEMS

Reproduction, cellular and whole organisms; an introduction to genetics and evolution, replication and function of DNA; adaptive strategies in ecological systems.

Three lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 1A03

Antirequisite: BIOLOGY 1A06

BIOLOGY 1J03. HUMAN PHYSIOLOGY

Principles of homeostasis; physiology of respiration, circulation, kidney function, metabolism and nutrition in the human body.

Three lectures, one tutorial; one term

Not open to students registered in Science I or in any Biology, Biochemistry or Molecular Biology programme

Antirequisite: Registration or credit in KINESIOL 1A06

Note:

No more than six units of Level II, III, IV Biology may be taken in any given Fall/Winter Session by students enrolled in a three year Baccalaureate degree programme.

BIOLOGY 2B03. CELL BIOLOGY

Basic treatment of cell structure and function, including transport and chemical signals; adaptation of structure and function in specialized cells.

Three lectures; two lectures, one lab (three hours); or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 1AA3 (or 1A06), CHEM 1AA3 (or 1A06)

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, or two lectures and one tutorial (three hours); one term

Prerequisite: BIOLOGY 1AA3 (or 1A06), CHEM 1AA3 (or 1A06)

BIOLOGY 2D03. THE PLANT KINGDOM

An introduction to the major groups of green plants: Growth and development of vegetative parts and mechanisms of reproduction will be emphasized.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 1AA3 (or 1A06) or one of GEO 1A03, 1B03, or 1G03

BIOLOGY 2E03. THE ANIMAL KINGDOM

Form and function of the major animal lineages, with emphasis on evolution and ecological adaptations.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 1AA3 (or 1A06) or one of GEO 1A03, 1B03, or 1G03

BIOLOGY 2F03. FUNDAMENTALS OF ECOLOGY

A broad overview of ecology at the level of organisms, populations and communities.

Three lectures, or two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 1AA3 (or 1A06) or one of GEO 1A03, 1B03, or 1G03

Note:

No more than six units of Level II, III, IV Biology may be taken in any given Fall/Winter Session by students enrolled in a three year Baccalaureate degree programme.

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; one term

Prerequisite: Credit or registration in one of BIOLOGY 3P03, 3U03, or 3UU3, and credit in one of BIOCHEM 2A06, 2EE3, 3A03 or 3G03.

Not open to students with 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 and 2D03

BIOLOGY 3BB3. ULTRASTRUCTURE, DEVELOPMENT AND FUNCTION OF PLANT CELLS

Cells and tissues will be studied. Students will take photomicrographs and electron micrographs.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 2B03 and 2D03

BIOLOGY 3C03. MICROBIAL PHYSIOLOGY AND REGULATION

Study of prokaryotic cellular functions including regulation of metabolism, basic energy-yielding pathways, morphogenesis and reproduction.

Three lectures, or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 3E03

BIOLOGY 3E03. INTRODUCTORY MICROBIOLOGY

Biology of the prokaryotic cell including structure-function relationships, antimicrobial agents and bacterial taxonomy. Use of microorganisms in biotechnology.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 2B03 and one of CHEM 2D03, 2E03, 2O03 or 2O06. BIOCHEM 3G03 is strongly recommended.

BIOLOGY 3F03. VERTEBRATE ANATOMY

An introduction to the development of structure and function in vertebrates.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 2E03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

BIOLOGY 3FF3. EVOLUTION

An introduction to macroevolution, with emphasis on speciation, biological diversity, rates of evolution and comparative methods (molecules vs. morphology).

Three lectures, or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 2C03. BIOLOGY 3J03 is highly recommended.

BIOLOGY 3H03 MOLECULAR BIOLOGY OF THE NUCLEUS
Structure of the nucleus and of chromatin; organization of DNA sequences; DNA replication, transcription; gene expression; some relevant techniques. Three lectures, or two lectures and one lab (three hours); one term
Prerequisite: BIOLOGY 2B03
Antirequisite: BIOCHEM 3B03

BIOLOGY 3HH3 ORGANIZATION OF THE CYTOPLASM
A detailed examination of the molecular organization and function of cytoplasmic structures in metazoans, with particular focus on the differentiation and specialization of the cell surface and the cytoskeleton. Three lectures, or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03

BIOLOGY 3I03 EUKARYOTIC GENETICS
The genetics of eukaryotic organisms. Experimental problems in gene transmission, interaction and polymorphism. Linkage, recombination and chromosome structure; sex determination. Two lectures, one tutorial; or two lectures one lab (three hours); one term
Prerequisite: BIOLOGY 2B03 and 2C03

BIOLOGY 3J03 POPULATION GENETICS
Conceptual foundations of evolutionary theory and principles of population genetics. Three lectures or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2C03

BIOLOGY 3K03 ANIMAL HISTOLOGY
The structure, function, and organization of cells, tissues, organs and organ systems. Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2E03

BIOLOGY 3L03 RADIOACTIVITY AND RADIATION INTERACTIONS
Radioactivity and radiation phenomenology: interactions of radiations with matter, dosimetry, tracer methods, radiation in medicine, biological effects, radiation levels and regulations, radiation protection. Three lectures, or two lectures and one tutorial; one term
Prerequisite: One of PHYSICS 1A06, 1B06, 1BA3, 1BB3, 1C06 or permission of the instructor
Cross-list: PHYSICS 3T03

BIOLOGY 3M03 FUNDAMENTAL CONCEPTS OF DEVELOPMENT
Recent advances using genetic and molecular approaches will be discussed in the context of classical experiments. Various model systems (mice, fruitflies, worms) will be examined. Two lectures, one tutorial or lab (three hours); one term
Prerequisite: BIOLOGY 2B03 and 2C03
Antirequisite: BIOLOGY 3N03

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 2E03

BIOLOGY 3NN3 MOLECULAR GENETIC MECHANISMS OF DEVELOPMENT
The molecular genetic mechanisms of determination of cell identity and pattern formation are examined with a focus upon primary research literature. Three lectures; or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03, 2C03. BIOLOGY 3M03 or 3N03 are strongly recommended.

BIOLOGY 3O03 MICROBIAL GENETICS
The genetics of bacteriophages, bacteria and fungi. Special emphasis will be placed on relationships between microbial genetics and general problems in genetics. Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2C03. BIOLOGY 3E03 and one course in Biochemistry are strongly recommended.

BIOLOGY 3P03 CELL PHYSIOLOGY
Analysis of cell function with an emphasis on electrical properties, ion transport proteins, signalling via second messengers, mechanisms of cell homeostasis, and epithelial transport. Two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2B03; credit or registration in BIOCHEM 3G03 or 2A06

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. Available modules are posted in January each year. Content and schedules vary annually. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: BIOLOGY 1AA3 (or 1A06) or one of GEO 1A03, 1B03, or 1G03 and permission of the module instructor and course coordinator. Permission must be obtained by March 31st.
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

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; or two lectures, one tutorial; one term
Prerequisite: BIOLOGY 2F03

BIOLOGY 3TT3 COMMUNITY ECOLOGY
Community structure; succession; patterns of diversity and their relevance to conservation; elements of biological control; energy flow; nutrient cycling and climatic influences. Two lectures, one lab (three hours); one term
Prerequisite: BIOLOGY 2F03. One of BIOLOGY 2D03 or 2E03 and STATS 1CC3 are recommended.

BIOLOGY 3U03 ANIMAL PHYSIOLOGY - HOMEOSTASIS
Respiration, circulation, acid-base balance and renal function. Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2B03 and permission of the instructor. Application for permission must be received by March 31st of the previous year. BIOCHEM 2EE3 and 3G03 are recommended.
Antirequisite: ENGINEER 4X03
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOLOGY 3UU3 ANIMAL PHYSIOLOGY - CONTROL SYSTEMS
Nervous function, endocrinology, muscle function, metabolism and gastrointestinal physiology. Two lectures, one lab/tutorial (three hours); one term
Prerequisite: BIOLOGY 2B03 and permission of the instructor. Application for permission must be received by March 31st of the previous year. BIOCHEM 2EE3 and 3G03 are recommended.
Antirequisite: ENGINEER 4X03
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

BIOLOGY 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
Antirequisite: BIOCHEM 3P03

BIOLOGY 3X03 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 (two hours); one term.
Prerequisite: BIOLOGY 2B03 and 2C03
Antirequisite: BIOLOGY 4I03

BIOLOGY 3Y03 PLANT RESPONSES TO THE ENVIRONMENT
Plants display many modifications in their development in response to their environment. This course will examine these phenotypic responses from metabolic, ecological and evolutionary perspectives. Three lectures; one term
Prerequisite: BIOLOGY 2B03, 2C03 and 2D03. BIOLOGY 3BB3 is recommended
Antirequisite: BIOLOGY 4H03

Note:

No more than six units of Level II, III, IV Biology may be taken in any given Fall/Winter Session by students enrolled in a three year Baccalaureate degree programme.

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 3J03, 3SS3 or 3TT3

BIOLOGY 4AA3 CONSERVATION BIOLOGY

Examination of how biological principles, mainly from population biology and genetics can be applied to conserving diversity in the natural world.

Two lectures, one tutorial (three hours); one term

Prerequisite: BIOLOGY 2C03 and one of BIOLOGY 3J03, 3SS3 or 3TT3.

Students with credit in BIOLOGY 4A03 must obtain permission of the instructor.

BIOLOGY 4B03 PLANT METABOLISM AND MOLECULAR BIOLOGY

Analysis of plant cell metabolism and the regulation of metabolism at the biochemical and molecular genetic level.

Three lectures; one term

Prerequisite: BIOCHEM 2A06 or 3G03. BIOLOGY 3B03 and 3H03 are recommended.

Offered in alternate years.

Offered in 1999-2000.

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 Faculty.

Prerequisite: Registration in Level IV of any Honours Biology programme and permission of the Chair. Arrangements to take BIOLOGY 4C09, including agreement of the supervisor and co-supervisor, should be made according to Departmental Guidelines before the end of March in Level III.

Antirequisite: 4F06, BIOLOGY 4FF3, MOL BIOL 4R09, PHARMAC 4F09, PSYCH 4D06

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

BIOLOGY 4DD3 MOLECULAR EVOLUTION

The study of how molecules change over time within and between species. The experimental data, techniques and theories will be examined.

Three lectures, or two lectures; one tutorial; one term

Prerequisite: BIOLOGY 3J03

Offered in alternate years.

Not offered in 1999-2000.

BIOLOGY 4EE3 GENETIC 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.

Two lectures and one tutorial; one term

Prerequisite: BIOLOGY 2C03 and one of BIOLOGY 3FF3, 3J03, ANTHROP 2E03

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 Faculty.

Prerequisite: Registration in a Level IV Biology or Molecular Biology programme and permission of the Chair.

Arrangements to take BIOLOGY 4F06, including the agreement of the supervisor and co-supervisor, should be made according to Departmental Guidelines before the end of March in Level III.

Antirequisite: BIOLOGY 4C09, 4FF3, MOL BIOL 4R09, PHARMAC 4F09 or PSYCH 4D06

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

BIOLOGY 4FF3 INQUIRY IN BIOLOGY

This course provides an opportunity to explore a specialized area of Biology in a small group setting. Several different modules are available in Terms I and II. Lectures, seminars and discussions (three hours); one term

Prerequisite: Registration in Level IV Honours Biology (Complementary Studies Option), Honours Biochemistry (Complementary Studies Option), or Honours Science (Complementary Studies Option) and permission of the course coordinator.

Antirequisite: BIOLOGY 4C09, 4F06

Enrolment is limited. Module topics are posted in the Life Sciences Building before the beginning of each term. Permission of the Course Coordinator should be obtained by the end of March in Level III.

See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

BIOLOGY 4G06 HUMAN ANATOMY

A study of the human body by dissection, self-teaching modules and videotapes.

Two labs (two and one half hours); two terms

Prerequisite: A grade of at least B+ in BIOLOGY 3F03 or 3K03, or at least B+ in BIOLOGY 2E03 and co-registration in BIOLOGY 3F03 or 3K03 and permission of the instructor. Application for permission must be received by March 31st of the previous year. These are minimum requirements, and final selection by the Chair of the Department of Biology will be based on academic merit

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

Offered in alternate years.

Not offered in 1999-2000.

BIOLOGY 4HH3 GENETIC ANALYSIS OF BEHAVIOUR

Selected topics in behaviour will be examined at the genetic and molecular level. Topics will include circadian rhythms, courtship behaviour, twin studies, learning and memory.

Two lectures, one tutorial; one term

Prerequisite: BIOLOGY 3I03 or both 2B03 and 2C03. PSYCH 2F03, 3R03, and BIOLOGY 3H03 are recommended.

Offered in alternate years.

Offered in 1999-2000.

BIOLOGY 4II3 ADVANCED TOPICS IN IMMUNOLOGY

This course will build on previous knowledge of the immune system and cover selected topics such as allergy, autoimmunity, tumor, reproductive and viral immunity, and AIDS.

Two lectures, one tutorial (two hours); one term

Prerequisite: BIOLOGY 3X03 or 4I03

BIOLOGY 4J03 FIELD BIOLOGY II

A second field module chosen from those offered by faculty from McMaster and other Ontario Universities' Biology Departments. This module must differ from any completed for credit in BIOLOGY 3R03. Available modules are posted in January of each year. Content and schedules vary annually. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: BIOLOGY 1AA3 (or 1A06) or one of GEO 1A03, 1B03, or 1G03 and permission of the module instructor and course coordinator. Permission must be obtained by March 31st.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

BIOLOGY 4M03 MOLECULAR ASPECTS OF CHROMOSOMES

Chromosome and chromatin structure, repeated DNA sequences, concerted evolution of gene families, telomeres, centromeres, gene transfer, transposable elements.

Three lectures or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 3O03 and either BIOCHEM 2A06 or both BIOCHEM 2EE3 and 3G03

BIOLOGY 4P03 MEDICAL MICROBIOLOGY

Bacterial diseases: identification, epidemiology and treatment.

Three lectures, or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 3E03

Offered in alternate years.

Offered in 1999-2000.

BIOLOGY 4PP3 ENVIRONMENTAL MICROBIOLOGY

Study of interaction of microorganisms with their environment with emphasis on topics of ecological significance including plant-microbe interactions, nutrient cycling and waste treatment.

Two lectures, one lab/tutorial (three hours); one term

Prerequisite: BIOLOGY 3E03

Offered in alternate years.

Not offered in 1999-2000.

BIOLOGY 4R03 HUMAN GENETICS

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 2B03, 2C03. BIOLOGY 3I03 is highly recommended.

BIOLOGY 4S03 TOXICOLOGY OF AQUATIC ENVIRONMENTS

Chemistry, mechanisms of toxicity, and ecotoxicology of environmental pollutants in aquatic environments.

Two lectures, one lab (three hours); one term

Prerequisite: Permission of the instructor. Application for permission must be received by March 31st of the previous year.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

Offered in alternate years.

Not offered in 1999-2000.

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 (or one) lecture(s), one (or two) tutorial(s); one term

Prerequisite: BIOLOGY 3P03; or permission of the instructor. One or more of BIOLOGY 3H03, 3HH3, 3UU3, PSYCH 2F03, 3FA3 are also recommended.
Offered in alternate years.
Not offered in 1999-2000.

BIOLOGY 4U03 RADIATION BIOLOGY AND RADIATION BIOPHYSICS

The effects of radiation on biological material at the molecular, cellular, tissue and whole organism level. Applications of radiation in medicine and toxicology.

Three lectures, or two lectures and one tutorial; one term

Prerequisite: BIOLOGY 2B03 or 2C03 and one of BIOLOGY 3L03 or PHYSICS 3T03; or registration in Level IV of Medical Health and Physics Co-op; or permission of the instructor

Antirequisite: BIOLOGY 3Q03

BIOLOGY 4V03 VIROLOGY

The viruses of animals, bacteria, and plants, with emphasis on the molecular biology of virus replication and the diversity of virus-cell interactions.

Two lectures, one tutorial (two hours); one term

Prerequisite: BIOCHEM 3B03 or 3G03 or BIOLOGY 3H03

BIOLOGY 4X03 ENVIRONMENTAL PHYSIOLOGY

Advanced physiology of animals with an emphasis on interactions with and adaptation to the environment.

Two lectures, one lab (three hours); one term

Prerequisite: One of BIOLOGY 3MM3, 3U03, 3UU3 and permission of the instructor. Application for permission must be received by March 31st of the previous year.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Sciences section of the Calendar.

Offered in alternate years.

Offered in 1999-2000.

BIOLOGY 4Y03 ECOLOGY OF INLAND WATERS

Physical, chemical and biological interrelationships of inland waters, including aspects of pollution.

Two lectures; one lab; one term

Prerequisite: BIOLOGY 2F03, one of BIOLOGY 2D03 or 2E03; and one of BIOLOGY 3SS3 or 3TT3

PHARMAC 4B03 DRUGS AND BEHAVIOUR

Behavioural measures to study drug action and the use of drugs to study the organization and physiochemical mechanisms in normal and abnormal behaviour.

One tutorial (three hours); one term

Prerequisite: PHARMAC 3A06 or BIOLOGY 3AA3 and permission of the instructor. Application for permission must be received by March 31st of the previous year.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Sciences section of the Calendar.

BUSINESS

(SEE COMMERCE)

CANADIAN STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

CAYUGA

(SEE INDIGENOUS STUDIES, CAYUGA)

CHEMICAL ENGINEERING

Faculty as of January 15, 1999

Chair

J.L. Brash

Professors

Malcolm H.I. Baird/B.Sc. (Glasgow), Ph.D. (Cambridge), F.C.I.C., P.Eng.

John L. Brash/B.Sc., Ph.D. (Glasgow), D.Hon.C. (Paris Nord)

James M. Dickson/B.A.Sc., M.A.Sc. (Waterloo), Ph.D. (Virginia Tech.)

Irwin A. Feuerstein/B.Chem.Eng. (City College of New York), M.S. (Newark College of Engineering), Ph.D. (Massachusetts)

Andrew N. Hrymak/B.Eng. (McMaster), Ph.D. (Carnegie Mellon)

John F. MacGregor/B.Eng. (McMaster), M.Sc., Ph.D. (Wisconsin), F.A.S.A., P.Eng.

Thomas E. Marlin/B.S. (SUNY), M.S. (Dayton), Ph.D. (Massachusetts)
NSERC Industrial Research Chair in Process Control

Robert H. Pelton/B.Sc., M.Sc. (Guelph), Ph.D. (Bristol)

Paul A. Taylor/B.Sc., Ph.D. (Univ. of Wales), P.Eng.

John Vlachopoulos/Dipl. Ch. Eng. (Nat. Tech. Univ. of Athens), M.S., D.Sc. (Washington, St. Louis), F.C.I.C., P.Eng.

Philip E. Wood/B.A.Sc. (Waterloo), Ph.D. (California Inst. Tech.), F.C.I.C., P.Eng.

Donald R. Woods/B.Sc. (Queen's), M.S., Ph.D. (Wisconsin), D.Sc. (Queen's), F.C.I.C., F.A.I.Ch.E., P.Eng.

Adjunct Professor

Joseph D. Wright/B.Sc. (Alberta), Ph.D. (Cambridge), P.Eng.

Associate Professors

Shiping (Stephen) Zhu/B.Eng. (Zhejiang), Ph.D. (McMaster), P.Eng.

Adjunct Associate Professor

Theodora Kourti/Dipl. Eng. (Chemical) (Aristotle), Ph.D. (McMaster)

Assistant Professor

Heather Sheardown/B.Eng. (McMaster), Ph.D. (Toronto), P.Eng.

Professors Emeriti

Cameron M. Crowe/B.Eng. (McGill), Ph.D. (Cambridge), F.C.I.C.

Alvin E. Hamielec/B.A.Sc., M.A.Sc., Ph.D. (Toronto), F.R.S.C., F.C.I.C., P.Eng.

Leslie W. Shemilt/O.C., B.A.Sc., Ph.D. (Toronto), M.Sc. (Manitoba), D.Hon.C. (AGH, Cracow), D.Sc. (McMaster), D.E.Eng. (Waterloo), F.R.S.C., F.C.A.E., F.C.I.C., F.A.I.Ch.E., F.E.I.C., P.Eng.

Department Note:

All Chemical Engineering courses are open to students registered in a Chemical Engineering programme, 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

Heat transfer in chemical engineering systems. Steady and unsteady state conduction, natural and forced convection, radiant heat transfer, condensation of vapour and boiling.

Three lectures, one tutorial (two hours); second term

Corequisite: CHEM ENG 2F04 or 2B03 or MATLS 2B06 or 2D03 and registration in a Chemical Engineering or Materials Engineering programme

CHEM ENG 2C02 TECHNICAL COMMUNICATIONS AND MEASUREMENTS

How to obtain, interpret, store, retrieve, manipulate and communicate information. T.V. taping to improve verbal communication, searching the literature, organization, laboratory measurements and treatment of data.

One lecture, first term; one lab (three hours), both terms, alternate weeks

Prerequisite: Registration in Level II Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society

CHEM ENG 2D04 CHEMICAL ENGINEERING PRINCIPLES I

Steady-state mass balances in chemical processes and the first law of thermodynamics. The behaviour of gases and liquids, and their physical equilibria. Recycle in steady state operation.

Three lectures, one tutorial (three hours); first term

Prerequisite: Registration in Level II Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society or Honours Applied Chemistry

CHEM ENG 2F04 CHEMICAL ENGINEERING PRINCIPLES II

Combined mass and energy balances in the steady and unsteady state. The second law of thermodynamics and physical chemical equilibria. Introduction of process simulation packages.

Three lectures, one tutorial (three hours); second term

Prerequisite: Registration or credit in CHEM ENG 2D04

CHEM ENG 2G02 PROBLEM SOLVING

Developing awareness, strategies, creativity, analysis and interpersonal skills in the context of solving homework problems and projects.

Two tutorials (two hours); first term
Corequisite: CHEM ENG 2C02, 2D04

CHEM ENG 3D03 CHEMICAL ENGINEERING THERMODYNAMICS

Review of the total energy balance, mechanical energy balance and thermodynamics of one component system. Chemical reaction and phase equilibria of multicomponent systems, with emphasis on non-ideality.

Two lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 2F04

CHEM ENG 3E04 PROCESS MODEL FORMULATION AND SOLUTION

Formulation of models for various chemical processing units in the steady and unsteady states. Techniques for numerical solution of model equations, including algebraic and ordinary differential equations, both linear and non-linear.

Three lectures; one tutorial (one hour), every week; first term
Prerequisite: CHEM ENG 2F04

CHEM ENG 3G03 SIMULATION, MODELLING AND PROBLEM SOLVING

Chemical process simulation including models for heat exchangers, separators and reactors. Group skills, decision-making and self-directed, problem-based learning.

One lecture, two tutorials (two hours); second term
Prerequisite: CHEM ENG 2G02 and registration or credit in CHEM ENG 2A04, 3D03, 3E04, 3K04, 3M04

CHEM ENG 3K04 INTRODUCTION TO REACTOR DESIGN

Stoichiometry of multiple reactions, kinetics of homogeneous reactions, interpretation of batch data, design of ideal and non-ideal CSTR and plug flow reactors.

Three lectures; one tutorial (two hours); second term
Prerequisite: Registration or credit in CHEM ENG 3D03 or registration in Level IV Honours Applied Chemistry

CHEM ENG 3L02 INTERMEDIATE LABORATORY SKILLS

Experiments and projects in heat transfer, thermodynamics, mass transfer and fluid mechanics with appropriate data analysis and report writing.

One lecture, one lab (three hours); second term
Prerequisite: CHEM ENG 2A04 and registration or credit in CHEM ENG 3D03, 3M04, 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 MATH 2P04 and 2Q04, any of which may be taken concurrently and registration in a Chemical Engineering or Materials Engineering programme.

CHEM ENG 3P03 PROCESS CONTROL

Transient behaviour of chemical processes. Theory and practice of automatic control. Introduction to computer process control.

Two lectures, one tutorial (two hours); second term
Prerequisite: MATH 2M06, and registration or credit in CHEM ENG 2A04, 3E04, 3K04, 3O04

CHEM ENG 3Q03 INTRODUCTION TO POLYMER SCIENCE

An overview of important synthetic and natural polymers with emphasis on polymer structure, the chemistry of polymer formation. An introduction to polymer characterization.

Three lectures; second term
Prerequisite: One of CHEM 2B06, 2D03, 2E03, 2O06, 2WW4

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 and 3Q03

CHEM ENG 4C03 STATISTICS FOR ENGINEERS

Linear regression analysis in matrix form, non-linear regression, multi-response estimation, design of experiments including factorial and optimal designs. Special emphasis on methods appropriate to engineering problems.

Three lectures; first term (1999-2000)
Prerequisite: STATS 3N03 or COMMERCE 2QA3

CHEM ENG 4E03 MODELLING AND CONTROL OF CHEMICAL PROCESSES

Modelling, simulation and control of complex process structures (series, parallel, recycle, staged and multivariable) with consideration to applying control, including model-based algorithms, via digital computation.

Three lectures; first term
Prerequisite: CHEM ENG 3E04, 3G03, 3K04, 3M04, 3P03

CHEM ENG 4K03 REACTOR DESIGN FOR HETEROGENOUS SYSTEMS

Catalytic kinetics, mass transfer limitations, packed and fluidized bed reactors, two phase reactors.

Three lectures; second term
Prerequisite: CHEM ENG 3K04

CHEM ENG 4L02 ADVANCED LABORATORY SKILLS

Experiments and projects in transport phenomena, reaction kinetics, reactor design and process control with appropriate data analysis and report writing.

One lab (three hours), one lecture; first term
Prerequisite: CHEM ENG 3L02, and registration in Level IV Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society

CHEM ENG 4M03 SEPARATIONS

Distillation column design; transport phenomena, laminar, turbulent and unsteady state mass transfer; analogies; absorption, extraction, adsorption, ion exchange, drying, humidification, crystallization.

Three lectures; first term
Prerequisite: CHEM ENG 2A04, 3O04, 3M04

CHEM ENG 4N04 ENGINEERING ECONOMICS AND PROBLEM SOLVING

Engineering economics, capital and operating cost estimation, selecting / sizing process equipment, optimization. Ethics, with problem solving components. Self assessment and self-directed learning.

Three lectures, one tutorial (two hours); first term
Prerequisite: CHEM ENG 3G03, 3M04, 3P03
Antirequisite: ENGINEER 2B03 or 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 (1999-2000 only)
Prerequisite: CHEM ENG 3O04 or MECH ENG 3O04 or ENG PHYS 3O03

CHEM ENG 4W04 CHEMICAL PLANT DESIGN AND SIMULATION

Projects, often in co-operation 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 Level IV Chemical Engineering or Level V Chemical Engineering and Management or Level V Chemical Engineering and Society

CHEM ENG 4X03 POLYMER PROCESSING

An introduction to the basic principles of polymer processing, stressing the development of models. Rheology of polymers, extrusion, molding, films, fibers, and mixing. Reactive processing.

Three lectures; second term (1999-2000 only)
Prerequisite: One of CHEM ENG 2A04 or MECH ENG 3R03 or MATLS 3E04, and one of CHEM ENG 3O04 or MECH ENG 3O04

CHEM ENG 4Y04 SENIOR INDEPENDENT PROJECT

A research and design project with students working independently under the direction of a Faculty member.

Two labs (three hours); both terms. The hours assigned can be freely scheduled to suit those involved in a particular project and may include computation classes, laboratory work, discussions, or individual study.

Prerequisite: Registration in Level IV Chemical Engineering or Level V Chemical Engineering and Management or Level V Chemical Engineering and Society, and a CA of at least 9.5

CHEM ENG 4Z03 COLLOIDS, SURFACE PHENOMENA AND UNIT OPERATIONS

The properties of colloids and surfaces and their use in the design of reactors and separators. Includes stability of colloids, double layer phenomena, wetting, flocculation coagulation, surface equations of change, particle size measurements.

Three lectures; second term

Prerequisite: Registration in final level of an Engineering programme

CHEMISTRY**Faculty as of January 15, 1999****Chair**

M.J. McGlinchey

Associate Chair

W.J. Leigh

Professors

Alexander D. Bain/B.Sc. (Toronto), M.Sc. (British Columbia), Ph.D. (Cambridge)

Michael A. Brook/B.Sc. (Toronto), Ph.D. (McGill)

Ronald F. Childs/B.Sc. (Bath University of Technology), Ph.D., D.Sc. (Nottingham)

Peter T. Dawson/B.Sc. (Birmingham), Ph.D. (Cambridge)

John E. Greedan/B.A. (Bucknell), Ph.D. (Tufts), F.C.I.C.

Adam P. Hitchcock/B.Sc. (McMaster), Ph.D. (British Columbia), F.C.I.C.

Joseph D. Laposz/B.Sc. (St. Louis), M.S. (Chicago), Ph.D. (Loyola)/Undergraduate Advisor

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.

Michael J. McGlinchey/B.Sc., Ph.D. (Manchester), F.C.I.C.

Gary J. Schrobilgen/B.Sc. (Loras College, Iowa), M.Sc. (Brock), Ph.D. (McMaster)

Johan K. Terfouw/B.Sc., M.Sc., Ph.D. (Utrecht)

Nick H. Werstiuik/B.Sc. (Alberta), M.A., Ph.D. (Johns Hopkins), F.C.I.C.

Adjunct Professor

John R. Thornback/B.Sc., Ph.D., (London)

Associate Professors

Jacques Barbier/M.Sc. (Toronto), Ph.D. (ANU)

Randall S. Dumont/B.Sc. (Western Ontario), Ph.D. (Toronto)

Harald D.H. Stover/B.Sc. (Darmstadt), Ph.D. (Ottawa)

Françoise M. Winnik/Dipl. d'Ing. Chimie (Mulhouse), M.Sc., Ph.D. (Toronto)

Assistant Professors

Pierre Brassard/B.Sc., M.Sc. (Concordia), Ph.D. (INRS)

John D. Brennan/B.Sc., M.Sc., Ph.D. (Toronto)

Paul H.M. Harrison/B.A. (Oxford), Ph.D. (Alberta)

Lijuan Li/B.Sc., M.Sc. (Jilin), Ph.D. (McMaster)

Associate Members

Raman Chirikal/(Radiology)/B.Sc. (Kerala, India), M.Sc. (Brock), Ph.D. (McMaster)

Richard M. Epani/(Biochemistry)/AB (Johns Hopkins), Ph.D. (Columbia)

Robert H. Pelton/(Chemical Engineering)/M.Sc. (Guelph), Ph.D. (Bristol)

Gerald D. Wright/(Biochemistry)/B.Sc., Ph.D. (Waterloo)

Daniel S.C. Yang/(Biochemistry)/B.Sc., M.Sc. (Alberta), Ph.D. (Pittsburgh)

Shiping (Stephen) Zhu/(Chemical Engineering/Materials Science)/B.Eng. (Zhejiang), Ph.D. (McMaster)

Professors Emeriti

Richard F.W. Bader/B.Sc., M.Sc. (McMaster), Ph.D. (M.I.T.), F.R.S.C., F.C.I.C.

Russell A. Bell/B.Sc. (Wellington), M.S. (Wisconsin), Ph.D. (Stanford), F.C.I.C.

Arthur N. Bourns/O.C., B.Sc., D.Sc. (Acadia), Ph.D. (McGill), D.Sc. (Acadia, McGill, University of New Brunswick, McMaster), LL.D. (Brock), F.R.S.C., F.C.I.C.

Donald R. Eaton/M.A., D.Phil. (Oxford)

Ronald J. Gillespie/B.Sc., Ph.D., D.Sc. (London), F.R.S., F.R.S.C., F.R.S.C. (U.K.), F.C.I.C.

Orville E. Hileman, Jr./B.S.Ed. (Bowling Green State), Ph.D. (Case Institute of Technology), F.C.I.C.

David A. Humphreys/B.Sc., M.Sc. (London), Ph.D. (McMaster), F.C.I.C.

Gerald W. King/B.Sc., Ph.D., D.Sc. (London), F.R.S.C., F.R.S.C. (U.K.), C.Chem. (U.K.), F.C.I.C.

David B. MacLean/B.Sc. (Acadia), Ph.D. (McGill), F.R.S.C., F.C.I.C.

David P. Santry/B.Sc., Ph.D. (London)

Ian D. Spenser/B.Sc. (Birmingham), Ph.D., D.Sc. (London), F.R.S.C., F.R.S.C. (U.K.), F.C.I.C.

Richard H. Tomlinson/B.Sc. (Bishops), Ph.D. (McGill), F.C.I.C.

John Warkentin/B.Sc., M.Sc. (Manitoba), Ph.D. (Iowa State), F.C.I.C.

Department Notes

1. Course codes ending with * indicate that course is not necessarily offered every session.
2. Students not in a Science programme should note that CHEM 1AA3 is a prerequisite for CHEM 2E03 and CHEM 2E03 is a prerequisite for BIO-CHEM 2EE3.

Courses *If no prerequisite is listed, the course is open.***CHEM 1A03 INTRODUCTORY CHEMISTRY I**

An introduction to inorganic chemistry, molecular structure and gaseous equilibrium.

Three lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: OAC Chemistry and either registration in one of Science I, Engineering I, Arts & Science I, any programme above Level I; or a grade of at least 80% in OAC Chemistry

Corequisite: SCIENCE 1A00

Antirequisite: CHEM 1A06, 1E03

CHEM 1AA3 INTRODUCTORY CHEMISTRY II

An introduction to equilibrium in solution, chemical kinetics and organic chemistry.

Three lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: CHEM 1A03 or 1E03

Antirequisite: CHEM 1A06, 1F03

CHEM 1E03 GENERAL CHEMISTRY FOR ENGINEERING I

An introductory course for Engineering students, emphasizing molecular structure and equilibria. A laboratory provides experience in experimental techniques and accurate measurement.

Three lectures, one tutorial (one hour), one lab (three hours) every other week; first term

Prerequisite: Registration in an Engineering programme

Antirequisite: CHEM 1A03, 1A06

CHEM 2A03 ANALYTICAL CHEMISTRY I

An introduction to the basic principles of analytical chemistry, with particular emphasis on solution equilibria and classical methods of analysis.

Two lectures, two labs (three hours); second term

Prerequisite: Credit or registration in CHEM 2P06 or 2R03 or 2PB3, or registration in a Chemical Engineering programme

Antirequisite: CHEM 2M05, 2N03

CHEM 2BA3 ORGANIC CHEMISTRY A

Bonding. Alkanes, alkyl halides, alkynes, alkenes, and alcohols. Stereochemistry. Reaction intermediates and reaction mechanisms.

Three lectures; first term

Prerequisite: CHEM 1AA3 (or 1A06); registration in an Honours Chemistry programme, B.Sc. Physical Science, or the Honours Science (Complementary Studies Option) Stream D programme

Antirequisite: CHEM 2B06, 2D03, 2E03, 2O06, 2OA3, 2WW4

CHEM 2BB3 ORGANIC CHEMISTRY B

Infra-red, ^1H and ^{13}C nuclear magnetic resonance, ultraviolet and mass-spectrometric methods. Aldehydes and ketones including enolates. Electrophilic aromatic substitution. Carboxylic acids and functional derivatives. Reaction intermediates and reaction mechanisms.

Three lectures; second term

Prerequisite: CHEM 2BA3

Antirequisite: CHEM 2B06, 2O06, 2OB3

CHEM 2E03 INTRODUCTORY ORGANIC CHEMISTRY

An introduction to the chemistry of monofunctional aliphatic and aromatic compounds.

Three lectures; first term

Prerequisite: CHEM 1AA3 (or 1A06)

Antirequisite: CHEM 2B06, 2BA3, 2D03, 2O06, 2OA3, 2WW4

CHEM 2E03 is not a prerequisite for further courses in Organic Chemistry.

**CHEM 2103 STRUCTURE AND REACTIONS OF
THE MAIN GROUP ELEMENTS**

Comparative chemistry of the non-transition elements; introduction to symmetry.

Three lectures; first term

Prerequisite: Registration in a Biochemistry, Chemistry, Honours Science (Complementary Studies) Stream D, B.Sc. Honours Materials Science or B.Sc. Physical Science programme, or permission of the instructor.

Antirequisite: CHEM 2C03, 2F03, 2W03, 2WW4

CHEM 2L03 CHEMISTRY LABORATORY

An introduction to experimental organic and inorganic chemistry.

Two labs (three hours) first term; one lab (three hours) second term

Prerequisite: Credit or registration in CHEM 2BA3, 2BB3, 2I03

Antirequisite: CHEM 2B06, 2C03

CHEM 2N03 ANALYTICAL CHEMISTRY

An introduction to the basic principles of analytical chemistry with application to selected classical and instrumental methods of analysis.

Two lectures, one lab (three hours); first term

Prerequisite: Registration or credit in CHEM 2P06, or 2PA3 and 2PB3, or 2R03; registration in an Honours Biochemistry programme or permission of the instructor

Antirequisite: CHEM 2A03, 2M05

CHEM 2O03 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; first term

Prerequisite: CHEM 1AA3 (or 1A06) with a grade of at least C-, or registration in Honours Biochemistry, Honours Biology and Psychology, Honours Science (Environmental Science Option), Honours Molecular Biology or Honours Molecular Biology and Biotechnology

Antirequisite: CHEM 2B06, 2BA3, 2D03, 2E03, 2O06, 2WW4

Students who receive special permission to register in this course after completing CHEM 2D03 (or 2E03) will not retain credit for CHEM 2D03 (or 2E03) on completion of this course.

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; second term

Prerequisite: CHEM 2O03

Antirequisite: CHEM 2B06, 2BB3, 2O06

CHEM 2PA3 THERMODYNAMICS AND PHASE EQUILIBRIA

An introduction to macroscopic and microscopic aspects of thermodynamics and their application to physical transformations.

Three lectures, one lab (three hours) or tutorial; first term

Prerequisite: CHEM 1AA3 (or 1A06) and MATH 1AA3

Antirequisite: CHEM 2P06, 2R03, PHYSICS 2H03, 2H04

**CHEM 2PB3 CHEMICAL THERMODYNAMICS
AND KINETICS**

Thermodynamics of equilibrium chemical and electrochemical systems, and macroscopic and microscopic aspects of kinetics.

Three lectures, one lab (three hours) or tutorial; second term

Prerequisite: CHEM 2PA3

Antirequisite: CHEM 2P06

CHEM 2R03 GENERAL PHYSICAL CHEMISTRY

A survey of thermodynamic and kinetic principles and their application to biological and environmental systems.

Three lectures; one term

Prerequisite: CHEM 1AA3 (or 1A06) and one of MATH 1A03, ARTS & SCI 1D06

Antirequisite: CHEM 2P06, 2PA3, PHYSICS 2H03, 2H04

**CHEM 2WW4 INTRODUCTORY ORGANIC AND
INORGANIC CHEMISTRY**

An introduction to the chemistry of monofunctional aliphatic and aromatic compounds, silicates, metals, their oxides and sulphides.

Two lectures; two terms

Prerequisite: CHEM 1AA3 (or 1A06) or registration in a Ceramic, Chemical, Materials or Metallurgical Engineering programme

Antirequisite: CHEM 2B06, 2BA3, 2C03, 2D03, 2E03, 2I03, 2O06, 2O03, 2W03, 3E06, 3Q03

CHEM 3A03 ANALYTICAL CHEMISTRY II

An introduction to modern instrumental methods of analysis.

Three lectures, one lab (three hours); first term

Prerequisite: CHEM 2A03, or both CHEM 2N03 and CHEM 2P06 or 2PB3 or 2R03

Antirequisite: ENVIR SC 3A03

**CHEM 3BA3 QUANTUM MECHANICS AND
SPECTROSCOPY I**

An introduction to quantum chemistry, group theory and symmetry, and vibrational and rotational spectroscopy.

Three lectures, one lab (three hours) or tutorial; first term

Prerequisite: CHEM 2P06 or 2PB3 (or 2R03 with a grade of at least B) and one of MATH 2A03, 2P04

Antirequisite: CHEM 3B03, 3B06, 3S03

**CHEM 3BB3 QUANTUM MECHANICS AND
SPECTROSCOPY II**

An introduction to the electronic structure and spectroscopy of atoms and molecules.

Three lectures, one lab (three hours) or tutorial; second term

Prerequisite: CHEM 3BA3

Antirequisite: CHEM 3B03, 3B06, 3S03

CHEM 3D03 ORGANIC CHEMISTRY

A mechanistically oriented discussion of mono- and polyfunctional organic compounds with emphasis on applications to synthesis.

Three lectures, one lab (three hours); second term

Prerequisite: CHEM 2L03 and one of CHEM 2B06, 2O06, 2OB3, 2BB3

Antirequisite: CHEM 3F03

CHEM 3F03 BIO-ORGANIC CHEMISTRY

Topics in bio-organic chemistry; a sequel to Chemistry 2O06 or 2OB3.

Two lectures, one lab (three hours); second term

Prerequisite: One of CHEM 2B06, 2BB3, 2O06, 2OB3; registration in an Honours Biochemistry programme, Honours Molecular Biology and Biotechnology programme, or Honours Arts & Science and Biochemistry, or permission of the instructor

Antirequisite: CHEM 3D03

CHEM 3I03 INDUSTRIAL CHEMISTRY

A survey of the chemical industry. Products obtained from petroleum, natural gas and soda ash. Petrochemicals, synthetic and natural polymers.

Three lectures; one term

Prerequisite: One of CHEM 2B06, 2BB3, 2D03, 2E03, 2O06, 2OB3 and one of CHEM 2C03, 2I03, 2W03, 2WW4, or registration in Level III or IV of a Chemical Engineering programme

CHEM 3P03 TRANSITION METAL CHEMISTRY

The chemistry of the heavier transition elements. An introduction to organometallic chemistry and bio-inorganic chemistry.

Two lectures, one lab (three hours); second term

Prerequisite: CHEM 3Q03

Antirequisite: CHEM 3E06

CHEM 3Q03 INORGANIC CHEMISTRY

The properties, structures and reactions of inorganic compounds with emphasis on transition metal chemistry.

Two lectures, one lab (three hours); first term

Prerequisite: Both CHEM 2I03 and 2L03; or CHEM 2C03

Antirequisite: CHEM 3E06

**CHEM 3Z03* DIRECTED READING IN
PHYSICAL CHEMISTRY**

The linkage of microscopic and macroscopic descriptions of physical and chemical phenomena. Applications to molecules, macromolecules and solids. Three lectures; one term.

Prerequisite: CHEM 2P06 or 2PB3 and registration or credit in CHEM 3B06 or 3BA3

Antirequisite: CHEM 3KK6

CHEM 4A03* ADVANCED ORGANIC CHEMISTRY

A discussion of the mechanisms of stepwise organic reactions, particularly concerted reactions, such as electrocyclic and sigmatropic processes, in ground and excited states of molecules.

Two lectures; one term

Prerequisite: CHEM 3D03 or 3F03

**CHEM 4B03 CHEMICAL APPLICATIONS
OF SPECTROSCOPY**

Aspects of molecular spectroscopies and their application to the solution of chemical problems.

Two lectures; one term

Prerequisite: CHEM 3B06 or 3BB3 or both CHEM 3B03 and 3S03

CHEM 4C03* SOLID STATE CHEMISTRY

Structure and properties of crystalline solids. Topics include crystal chemistry and crystal symmetry, introduction to space groups, defects in ionic crystals, non-stoichiometry, electronic structure and properties of semiconductors and metals.

Two lectures; one term

Prerequisite: CHEM 3E06 or 3Q03

CHEM 4D03 ORGANIC STRUCTURE AND SYNTHESIS

Application of spectroscopic methods to structure determination. Synthetic methodology in organic chemistry.

Two lectures; one term

Prerequisite: CHEM 3D03 or 3F03

CHEM 4DD3 MECHANISTIC BIOLOGICAL CHEMISTRY

Amino acid, nucleic acid, enzyme and coenzyme chemistry with emphasis on molecular reaction mechanisms.

Two lectures; one term

Prerequisite: CHEM 3D03 or 3F03

CHEM 4F03* SURFACE CHEMISTRY

Current topics in surface science; surface characterization, adsorption and heterogeneous catalysis.

Two lectures; one term

Prerequisite: CHEM 2P06 or 2PB3

CHEM 4G06 SENIOR THESIS

A thesis based on a project under the direction of a Chemistry Department faculty member.

Prerequisite: Students registered in Level IV of any Honours Chemistry programme (with the exception of Honours Chemistry (Complementary Studies Option)) with a CA of at least 6.0 do not need to apply for permission. Students who are registered in Level IV of Honours programmes in the Faculty of Science who have a CA of at least 6.0 must apply for permission of the Department and will be considered, subject to the availability of suitable projects. Application for permission must be received by March 31st of the previous year.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

CHEM 4I03 INQUIRY IN CHEMISTRY

Seminars and directed readings dealing with the impact of Chemistry on society.

Two lectures; one term

Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry and permission of the instructor. Students registered in Honours Chemistry (Complementary Studies Option) or Honours Chemistry (Co-op) will be given preference. Application for permission must be received by March 31st of the previous year.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

CHEM 4P03* ADVANCED ANALYTICAL CHEMISTRY

A course dealing with modern topics in analytical chemistry.

Two lectures; one term

Prerequisite: One of CHEM 2M05, 2N03, 3A03, and CHEM 2P06 or 2PB3 or 2R03

CHEM 4Q03* ADVANCED QUANTUM MECHANICS

Applications of quantum mechanics to problems of chemical interest.

Two lectures; one term

Prerequisite: CHEM 3B03 or 3B06 or 3BB3 or both PHYSICS 3M03 and 3MM3

CHEM 4R03* ADVANCED TRANSITION METAL CHEMISTRY

A selection from the following topics: mechanisms of reactions involving transition metal ions; homogeneous catalysis; applications of NMR and other physical methods; organometallic chemistry; ligand field theory.

Two lectures; one term

Prerequisite: CHEM 3E06 or 3Q03

CHEM 4S03* ADVANCED MAIN GROUP CHEMISTRY

A selection from the following topics: chemistry of selected main group elements, electron deficient compounds, Mossbauer spectroscopy, theory and application of nuclear and radiation chemistry

Two lectures; one term

Prerequisite: CHEM 3E06 or 3Q03

CHEM 4TA3 INSTRUMENTATION AND RADIOCHEMISTRY

Instrumentation, interfacing and measurement system theory. Radiochemistry.

Two lectures, one lab (four hours); first term

Prerequisite: CHEM 3A03 or registration in Level IV of Honours Applied Chemistry

CHEM 4Y03* STATISTICAL THERMODYNAMICS

Principles of statistical mechanics and their applications in chemistry.

Two lectures, one term

Prerequisite: One of CHEM 3B06, 3BB3, 3C03, 3KK6, 3S03

Antirequisite: PHYSICS 3K03, 3K04

CIVIL ENGINEERING**Faculty as of January 15, 1999****Chair**

D.F.E. Stolle

Professors

Brian Baetz/B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Duke), P.Eng.

Robert G. Drysdale/B.Sc. (Manitoba), M.A.Sc., Ph.D. (Toronto), F.C.S.C.E., P.Eng.

Ahmed Ghobarah/B.Sc. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.

Frederick L. Hall/B.A. (Amherst), M.Sc. (M.I.T.), Ph.D. (Chicago)

Stan Pietruszczak/B.Sc., M.Sc. (Warsaw), Ph.D. (Polish Acad. Sci.)

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 Univ., Thessaloniki), M.A.Sc., Ph.D. (Toronto), P.Eng.

Associate Professors

Brian L. Allen/B.Sc. (Alberta), M.S., Ph.D. (California, Berkeley), P.Eng.

Robert G. Horvath/B.A.Sc. (Windsor), M.E.Sc. (Western Ontario), Ph.D. (Toronto), P.Eng.

John C. Wilson/B.Eng., M.Eng. (McMaster), Ph.D. (Caltech.), P.Eng.

Adjunct Assistant Professor

Syed Moin/B.S. (Osmania), M.S. (Nevada), Ph.D. (McMaster)

Professors Emeriti

Arthur C. Heidebrecht/B.Sc. (Alberta), M.S., Ph.D. (Northwestern), F.C.S.C.E., P.Eng.

Robert M. Korol/B.A.Sc. (Toronto), M.A.Sc., Ph.D. (Waterloo), F.C.S.C.E., P.Eng.

Gunhard, AE. Oravas/B.Eng., M.S., Ph.D. (Michigan)

Wai K. Tso/B.Sc. (London), M.S., Ph.D. (Caltech.), P.Eng.

Department Note:

All civil engineering courses are open to students registered in a civil engineering programme, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other engineering departments and other faculties.

Courses**CIV ENG 2A02 SURVEYING AND MEASUREMENT**

Introduction to measurement and computational techniques of surveying, the theory of measurement and errors, adjustment of observations.

One lecture, one lab (three hours) or one tutorial (two hours); first term

CIV ENG 2C04 STRUCTURAL MECHANICS

Mechanics of materials; plastic deformations and residual stresses due to axial loading and bending; torsion of noncircular and thin-walled sections; unsymmetric bending and eccentric axial loading, shear stresses and unsymmetric loading of thin-walled members; transformation of stress and strain; yield and fracture criteria; energy methods; stability of columns.

Three lectures, one lab (three hours); second term

Prerequisite: Credit or registration in ENGINEER 2P04

CIV ENG 2E03 COMPUTER APPLICATIONS IN CIVIL ENGINEERING

Computers in analysis and design; computer languages, numerical techniques including error analysis, root finding and interpolation; matrix manipulation, eigenvalues and differential equations.

Two lectures, one tutorial (two hours); first term

Prerequisite: ENGINEER 1D04, and PHYSICS 1D03, and 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 programme involving site visits.

Two lectures, one lab or one tutorial; first term

CIV ENG 2J04 ECOLOGICAL AND GEOLOGICAL ASPECTS OF CIVIL ENGINEERING

The relationship between humans and their earth environment. Composition of "earth"; processes that operate on or beneath the surface. Global interactions of the atmosphere, hydrosphere, lithosphere and the biosphere. Principles of ecological systems. Man's perturbations on the biosphere. Three lectures, one tutorial or lab; second term

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 lab; second term

Prerequisite: Credit or registration in ENGINEER 2P04 and MATH 2M06

CIV ENG 3A03 GEOTECHNICAL ENGINEERING I

Composition of soils, soil identification and classification; compaction; seepage theory; effective stress concept; stresses and displacements using elastic solutions; consolidation theory; numerical solutions.

Two lectures, one lab (three hours) or one tutorial (two hours) every other week; first term

Prerequisite: CIV ENG 2O03

CIV ENG 3B03 GEOTECHNICAL ENGINEERING II

Shear strength characteristics and failure criteria for soils; direct shear, triaxial, plane strain and field tests; earth pressure theory; bearing capacity theory; slope stability and embankment analysis.

Two lectures, one lab (three hours) or one tutorial (two hours), every other week; second term

Prerequisite: Credit or registration in CIV ENG 3A03

CIV ENG 3C03 ENGINEERING SYSTEMS

Mathematical models and systems; economic comparison of projects; optimization; linear, nonlinear and dynamic programming; simulation modelling. Two lectures, one tutorial (two hours); second term

Prerequisite: CIV ENG 2E03 and credit or registration in MATH 3J04

Antirequisite: CIV ENG 4B03

CIV ENG 3G03 STRUCTURAL ANALYSIS

Structural analysis and modelling of linear elastic structures; stress resultants and deformations of statically determinate trusses, beams, and frames; force and displacement methods for analysis of indeterminate beams and frames; introduction to stiffness matrix method; analysis of cables and arches.

Two lectures, one lab (two hours); first term

Prerequisite: CIV ENG 2C04

CIV ENG 3J04 REINFORCED CONCRETE DESIGN

Introduction to concrete technology; design by limit states methods to ensure adequate capacities for bending moment, shear and diagonal 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 (three hours); second term

Prerequisite: Credit or registration in CIV ENG 3G03

CIV ENG 3K03 INTRODUCTION TO TRANSPORTATION ENGINEERING

A transportation impact study serves as the focus for group projects, and provides the context for application of material on traffic flow characteristics, capacity and control for signalized and unsignalized intersections, and travel demand forecasting. Safety; flow on freeways.

Two lectures, one tutorial (two hours); first term

CIV ENG 3M04 MUNICIPAL HYDRAULICS AND INTRODUCTION TO WATER QUALITY

Analysis/design of water distribution networks; analysis and design of wastewater collection systems; pumps; water quality standards; water quality modelling of physical systems.

Three lectures, one tutorial or lab; second term

Prerequisite: CIV ENG 2O03 and credit or registration in MATH 3J04

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 (two hours); second term

Prerequisite: Credit or registration in CIV ENG 3G03

CIV ENG 4A04 ENGINEERING HYDRAULICS AND HYDROLOGY

Hydrologic cycle; climate; hydrologic processes, precipitation; unit hydrograph; hydrologic statistical mathematical modelling of hydraulic systems; unsteady free surface flow; hydrologic routing; groundwater flow.

Three lectures, one tutorial (three hours); first term

Prerequisite: CIV ENG 3M04

CIV ENG 4B03 ENGINEERING SYSTEMS (1999-2000 ONLY)

Mathematical models and systems; economic comparison of projects; optimization; linear, non-linear and dynamic programming; simulation modelling.

Two lectures, one tutorial (two hours) or lab (three hours); first term

Prerequisite: CIV ENG 2E03 and registration in final level of a Civil Engineering programme

Antirequisite: CIV ENG 3C03

CIV ENG 4C03 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.

Two lectures, one tutorial (two hours); first term

CIV ENG 4D04 GEOMETRIC HIGHWAY DESIGN

Design of various types and classes of streets and highways. Theory and practice in design of intersections, interchanges, arterial highways, and freeways. Design concepts.

Three lectures, one lab (two hours); first term

Prerequisite: CIV ENG 3K03

CIV ENG 4G03 PAVEMENT MATERIALS AND HIGHWAY DESIGN

Components of highway pavements; ground water and drainage for highway facilities; soil compaction and stabilization; aggregates; bituminous and concrete materials, flexible pavement design; concrete pavement design; interlocking pavement structures.

Two lectures, one lab (three hours); first term

Prerequisite: CIV ENG 3B03

CIV ENG 4H03 LAND USE AND TRANSPORTATION

Methods for the analysis and prediction of transportation and land use patterns in cities, with application to urban planning and pollution problems. Three lectures; second term

Prerequisite: MATH 3J04

Cross-list: GEO 4D03 (formerly GEOG 4H03)

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.

Three lectures, one tutorial (two hours); second term

Prerequisite: CIV ENG 3G03 and MATH 3J04

CIV ENG 4L04 DESIGN OF WATER RESOURCES SYSTEMS

Investigation, planning, analysis and design of water resources systems. Frequency analysis, design storms, urban drainage and analysis, floodplain analysis and flood control.

Two lectures, one tutorial, one lab (three hours); second term

Prerequisite: CIV ENG 3M04

CIV ENG 4R04 STRUCTURAL SYNTHESIS

Structural design process, gravity and lateral loading requirements, structural performance criteria, choice of structural systems. Approximate analysis of different structural systems, such as frames and shear walls and slabs. Analysis of actual buildings.

Three lectures, one lab (three hours); second term

Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4S04 FOUNDATION ENGINEERING

Principles of foundation design; bearing capacity, settlement and location, footings, deep foundations, piles, pile groups and drilled piers; geotechnical techniques and case histories.

Three lectures, one tutorial (two hours); first term

Prerequisite: CIV ENG 3B03

CIV ENG 4W04 DESIGN OF LOW RISE BUILDINGS

Structural systems and load distribution, design of masonry, wood, cold-formed steel and braced and unbraced steel frames.

Three lectures, one tutorial (two hours); first term

Prerequisite: CIV ENG 3G03, 3J04, 3S03

CIV ENG 4Y04 BRIDGES AND OTHER STRUCTURAL SYSTEMS

Introduction to bridge engineering: Loads and analysis for load effects. Design of reinforced concrete solid-slab and T-beam type bridges. Steel-concrete composite floor system. Design of plate girders. Analysis for stresses, and ultimate strength, and design of pre-stressed concrete structures. Application to other civil structures. Fatigue Design.

Three lectures, one lab (three hours) or one tutorial (two hours); 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 may choose a project for study from a list of department approved projects, which will be circulated in February. The student may be required to present a seminar, and will submit a final written report on the project before April 1.

Two labs (three hours); both terms. The hours assigned can be freely 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 programme, and a SA of at least 9.5.

Enrolment is limited.

CLASSICS**Faculty as of January 15, 1999****Chair**

Howard Jones

Professors

Katherine M. D. Dunbabin/M.A., D. Phil. (Oxford)

Howard Jones/B.A. (London), M.A., Ph.D. (Indiana)

Paul Murgatroyd/B.A., M.A. (Cambridge), Ph.D. (London)

William J. Slater/M.A., Ph.D. (St. Andrews)

Associate Professors

Evan Haley/A.B. (Dartmouth), Ph.D. (Columbia)

Peter Kingston/B.A., Ph.D. (London)

Assistant Professors

Claude Eilers/B.A. (Sask.), M.A. (McMaster), D. Phil. (Oxford)

Michele G. George/B.A. (Toronto), M.A., Ph.D. (McMaster)

Gretchen Umholtz/A.B. (Bryn Mawr), M.A. (Buffalo), Ph.D. (Berkeley)

Associate Member

D. Geagan/(History) A.B. (Boston), Ph.D. (Johns Hopkins)

Professors Emeriti

Harold F. Gulte/B.A., M.A. (London)

Thomas F. Hoey/B.A. (Montréal), M.A. (Toronto), Ph.D. (Harvard)

Alexander G. McKay, O.C., K.St.J./B.A. (Toronto), M.A. (Yale), A.M., Ph.D. (Princeton), LL.D. (Manitoba, Brock, Queen's), D.Litt. (McMaster, Waterloo), F.R.S.C.

George M. Paul/M.A. (Oxford), Ph.D. (London)

Donald M. Shepherd/M.A. (Queen's), Ph.D. (Chicago)

Department Note:

The following courses are available as electives to qualified students in any programme:

- a) **Classical Archaeology and Art History**
CLASSICS 2A03, 2B03, 2C03, 3G03, 3H03, 3Q03, 3S03
- b) **Ancient History and Society**
CLASSICS 2K03, 2L03, 2LL3, 2Z03, 3C03, 3CC3, 3E03, 3EE3, 3LL3, 3T03
- c) **Ancient Philosophy**
CLASSICS 2P06, 4K03
- d) **Classical Literature in Translation**
CLASSICS 2D03, 2E03, 2H03, 3EE3, 3I03, 3II3, 3T03
- e) **Greek Language and Literature**
GREEK 1Z06, 2A03, 2AA3, 3A03, 3B03, 4B03, 4BB3, 4C03
- f) **Latin Language and Literature**
LATIN 1Z06, 2A03, 2AA3, 3A03, 3B03, 4A03, 4B03, 4BB3

CLASSICS ...

No language other than English is required for courses listed under Classics.

Courses *If no prerequisite is listed, the course is open.***CLASSICS 1B06 MYTHOLOGY AND LITERATURE OF GREECE AND ROME**

A study of ancient literature based on myth and legends such as the Trojan War, tales of heroes such as Hercules, and other aspects of life in the Classical World. Readings in English translation from a variety of Greek and Roman authors, with special attention to epic poetry and drama.

Two lectures, one tutorial; two terms

CLASSICS 1L06 HISTORY AND ARCHAEOLOGY OF THE ANCIENT WORLD

The history of the Ancient Near East, Greece, and Rome based on documentary sources and archaeological evidence.

Two lectures, one tutorial; two terms

Cross-list: HISTORY 1L06

CLASSICS 2A03 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 2B03 GREEK ART

The architecture, sculpture and painting of the Greek and Hellenistic world.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: ART HIST 2B03

CLASSICS 2C03 ROMAN ART

The architecture, sculpture, and painting of the Roman world.

Three lectures; one term

Prerequisite: CLASSICS 2B03

Cross-list: ART HIST 2C03

CLASSICS 2D03 GREEK AND ROMAN MYTHOLOGY

A study of the myths of Greek and Roman gods and heroes, their explanation according to theories on the nature of myths, and their use by Greek and Roman authors, particularly Homer and Vergil.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: 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 and above

CLASSICS 2H03 GREEK AND ROMAN DRAMA

Selected Greek and Roman Tragedies and Comedies will be read in translation. The course will concentrate on characterization and the philosophical and religious aspects of ancient drama.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: CLASSICS 2H06

Cross-list: COMP LIT 2H03

CLASSICS 2K03 THE SOCIETY OF GREECE AND ROME

A description and analysis of selected aspects of the social life of Greece and Rome. Attention will be given to subjects such as work and leisure, war and the warrior, slavery, marriage and family, and the role of women.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: HISTORY 2K03

CLASSICS 2L03 HISTORY OF CLASSICAL GREECE

Greece from the rise of the city-states to Alexander, with particular attention to political, social and cultural development in the light of literary and archaeological evidence (No Greek or Latin required).

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: HISTORY 2L03

CLASSICS 2LL3 HISTORY OF CLASSICAL ROME

Rome from the middle Republic through the Empire, with particular attention to the political, military and social developments in the light of literary and archaeological evidence. (No Greek or Latin required.)

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: HISTORY 2LL3

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: Registration in Level II and above

Cross-list: PHILOS 2A06

CLASSICS 2Z03 GREEK AND ROMAN RELIGION

A study of the role of religion in Greek and Roman public and private life.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: RELIG ST 2Z03

CLASSICS 3C03 THE LATE REPUBLIC

An examination and analysis of major themes in the political, social, and economic history of Rome from the mid-second century B.C. to the assassination of Caesar.

Three lectures; one term

Prerequisite: Six units of Classics, and registration in Level III and above
Not open to students with credit in CLASSICS 3MM3 if the topic was THE LATE REPUBLIC.

Cross-list: HISTORY 3C03

Alternates with CLASSICS 3CC3.

CLASSICS 3CC3 THE EARLY EMPIRE

An examination and analysis of major themes in the political, social, and administrative history of Rome under the early emperors.

Three lectures; one term

Prerequisite: Six units of Classics, and registration in Level III and above
Not open to students with credit in CLASSICS 3MM3 if the topic was THE LATE REPUBLIC.

Cross-list: HISTORY 3CC3

Alternates with CLASSICS 3C03.

CLASSICS 3E03 THE ROMAN FAMILY

The ancient Roman family, including social, economic and legal aspects.

Three lectures; one term

Prerequisite: One of CLASSICS 1L06, 2K03, 2LL3, 3C03, 3CC3 and registration in Level III and above

Alternates with CLASSICS 3EE3.

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: Registration in Level III and above

Cross-list: HISTORY 3EE3

Alternates with CLASSICS 3E03.

CLASSICS 3G03 LATE ANTIQUE AND EARLY CHRISTIAN ART

The art and architecture of the later Roman Empire, and the birth of Christian art (A.D. 200-600).

Three lectures; one term

Prerequisite: CLASSICS 2C03 or ART HIST 2G03

Cross-list: ART HIST 3G03

Alternates with CLASSICS 3H03.

CLASSICS 3H03 ARCHAIC GREEK ART

The formative period of Greek Art, from its rebirth after the Dark Ages to the Persian Wars (c. 1000-480 B.C.), and its relationship to the art of the Near East.

Three lectures; one term

Prerequisite: CLASSICS 2B03

Cross-list: ART HIST 3H03

Alternates with CLASSICS 3G03.

CLASSICS 3I03 TOPICS IN GREEK AND ROMAN LITERATURE I

Previous topics include: Greek and Roman 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

Cross-list: COMP LIT 3I03

Alternates with CLASSICS 3I13.

CLASSICS 3I03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3I13 TOPICS IN GREEK AND ROMAN LITERATURE II

Consult the Department concerning the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Classics

Cross-list: COMP LIT 3I13

Alternates with CLASSICS 3I03.

CLASSICS 3I13 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3LL3 THE HELLENISTIC AGE

The successors of Alexander, the world of the monarchies and their absorption into the Roman Empire. Political, cultural and social achievements in the light of modern historical research will be emphasized.

Three hours (lectures and discussion groups); one term

Prerequisite: CLASSICS 2L03 or six units of Classics

Cross-list: HISTORY 3LL3

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 2A03 or 2B03

Alternates with CLASSICS 3S03

CLASSICS 3S03 THE ARCHAEOLOGY OF THE CITY OF ROME AND ROMAN ITALY

The growth of the city of Rome, from its origins to the triumph of Christianity, and an examination of the archaeological remains of Pompeii, Ostia and other cities of Roman Italy.

Three lectures; one term

Prerequisite: CLASSICS 2A03 or 2C03

Alternates with CLASSICS 3Q03.

CLASSICS 3T03 THE THEATRE OF GREECE AND ROME

The history of theatres and theatrical production in Greece and Rome with consideration of the social significance of drama in antiquity. The course will also include archaeological material.

Three lectures; one term

Prerequisite: CLASSICS 2H03 or six units of Classics

Antirequisite: CLASSICS 2H06

Cross-list: COMP LIT 3T03

CLASSICS 4B03 SEMINAR IN CLASSICAL ARCHAEOLOGY

Consult the Department concerning the topic to be offered.

Seminar (two hours); one term

Prerequisite: Six units from CLASSICS 2A03, 3Q03, 3R03, 3S03, and registration in Level III or IV of an Honours programme in Classics (A)

Enrolment is limited.

CLASSICS 4B03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4BB3 SEMINAR IN ANCIENT ART

Consult the Department concerning the topic to be offered.

Seminar (two hours); one term

Prerequisite: CLASSICS 2B03 and 2C03, and registration in Level III or IV of an Honours programme in Classics (A)

Cross-list: ART HIST 4BB3

Enrolment is limited.

CLASSICS 4BB3 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4D06 SPECIAL TOPICS IN GREEK HISTORY

Investigations into Greek social history and its interpretation.

Seminar (two hours); two terms

Prerequisite: Six units from CLASSICS 2K03, 2L03, 3EE3, 3LL3, CLASSICS 3UU3, 3VV3, and registration in Level III or IV of any Honours programme in Classics

Cross-list: HISTORY 4D06

Enrolment is limited.

CLASSICS 4E03 SEMINAR IN GREEK AND ROMAN SOCIETY

Consult the Department for the topic to be offered.

Seminar (two hours); one term

Prerequisite: Six units from CLASSICS 2K03, 2L03, 2LL3, 3C03, 3CC3, 3E03, 3UU3, 3VV3, and registration in Level III or IV of an Honours programme in Classics (A)

Enrolment is limited.

CLASSICS 4E03 may be repeated, if on a different topic, to a total of six units.

CLASSICS 4K03 ANCIENT PHILOSOPHY

A critical study of one or more ancient Greek philosophers such as Parmenides, Plato, Aristotle.

Seminar (two hours); one term

Prerequisite: CLASSICS 2P06, and registration in Level III or IV of any programme

Antirequisite: CLASSICS 4C03, 4J03

Cross-list: PHILOS 4K03

Offered in alternate years.

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; one term

Prerequisite: Registration in Level IV of any Honours programme in Classics, and permission of the Department

GREEK ...**Notes:**

- Students should note that the Department has classified its Greek language courses under the following categories:
Introductory Level Language Course
 GREEK 1Z06
Intermediate Level Language Courses
 GREEK 2A03, 2AA3
- Students with OAC Ancient Greek should normally register in GREEK 2A03, but with special permission, may register in GREEK 1Z06.

Courses *If no prerequisite is listed, the course is open.***GREEK 1Z06 BEGINNER'S INTENSIVE GREEK**

A rapid introduction to the grammar of Classical Greek. Passages of simple Greek are read in the second term.

Five hours (lectures and tutorials); two terms

Prerequisite: Open except to graduates of OAC Ancient Greek, who must have special permission to register in the course

This course, with a grade of at least B-, is accepted as a prerequisite for admission to any Honours programme in Classics, or, with a grade of at least C-, for admission to the B.A. programme in Classics.

GREEK 2A03 INTERMEDIATE GREEK I

A study of selected passages from Greek authors designed to develop a student's proficiency in reading Greek. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: OAC Ancient Greek or GREEK 1Z06. Students using this course as a Humanities I requirement will register for GREEK 2A03 and 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.

Three lectures; one term

Prerequisite: GREEK 2A03

GREEK 3A03 GREEK HISTORIANS

Selected readings from Greek historical authors, such as Herodotus and Thucydides. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: Six units of Level II Greek

Alternates with GREEK 4C03.

GREEK 3B03 HOMER

Selected readings from Homer's *Iliad* or *Odyssey*.

Three lectures; one term

Prerequisite: Six units of Level II Greek

Alternates with GREEK 4B03.

GREEK 4B03 GREEK TRAGEDY

Selected readings from Sophocles, Euripides, or Aeschylus.

Three lectures; one term

Prerequisite: Six units of Level II Greek.

Alternates with GREEK 3B03.

GREEK 4BB3 TOPICS IN GREEK LITERATURE II

Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Level II Greek

Alternates with LATIN 4BB3.

GREEK 4BB3 may be repeated, if on a different topic, to a total of six units.

GREEK 4C03 PLATO

Selected readings from the dialogues of Plato. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: Six units of Level II Greek

Alternates with GREEK 3A03.

GREEK 4K03 GUIDED READING IN GREEK AUTHORS

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 programme in Classics, and permission of the Department

GREEK 4K03 may be repeated, if on a different topic, to a total of six units.

LATIN ...**Notes:**

- Students should note that the Department has classified its Latin language courses under the following categories:
Introductory Level Language Course
 LATIN 1Z06
Intermediate Level Language Courses
 LATIN 2A03, 2AA3
- Students with OAC Latin should normally register in LATIN 2A03, but with special permission, may register in LATIN 1Z06.

Courses *If no prerequisite is listed, the course is open.***LATIN 1Z06 BEGINNER'S INTENSIVE LATIN**

An introduction to the grammar of Classical Latin. Practice in reading simple Latin passages.

Five hours (lectures and tutorials); two terms

Prerequisite: Open except to graduates of OAC Latin who must have special permission to register in the course

This course, with a grade of at least B-, is accepted as a prerequisite for admission to any Honours programme in Classics, or, with a grade of at least C-, for admission to the B.A. programme in Classics.

LATIN 2A03 INTERMEDIATE LATIN I

A study of selected passages designed to develop the student's proficiency in reading Latin. The course will also include grammatical study.

Three lectures; one term

Prerequisite: OAC Latin or LATIN 1Z06. 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. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: LATIN 2A03 and 2AA3

Alternates with LATIN 4A03.

LATIN 3B03 VERGIL

Readings from Vergil's *Aeneid*, *Georgics* or *Eclogues*.

Three lectures; one term

Prerequisite: LATIN 2A03 and 2AA3

Alternates with LATIN 4B03.

LATIN 4A03 CICERO

Readings from the works of Cicero. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: LATIN 2A03 and 2AA3

Alternates with LATIN 3A03.

LATIN 4B03 LATIN LOVE POETRY

Readings in Latin Love Poetry.

Three lectures; one term

Prerequisite: LATIN 2A03 and 2AA3

Alternates with LATIN 3B03.

LATIN 4BB3 TOPICS IN LATIN LITERATURE II

Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Level II Latin

Alternates with GREEK 4BB3.

LATIN 4BB3 may be repeated, if on a different topic, to a total of six units.

LATIN 4K03 GUIDED READING IN LATIN AUTHORS

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 programme in Classics, and permission of the Department

LATIN 4K03 may be repeated, if on a different topic, to a total of six units.

COMMERCE

Faculty as of January 15, 1999

Chair, Marketing, Business Policy and International Business Area

D. Wayne Taylor

Chair, Finance and Business Economics Area

Dean Mountain

Chair, Accounting Area

Y.C. Lilian Chan

Chair, Human Resources and Management Area

Willi Wiesner

Chair, Management Science and Information Systems Area

Yufei Yuan

Professors

Prakash L. Abad/B.Tech. (*Indian Institute of Technology*), M.S., M.B.A., Ph.D. (*Cincinnati*)/(Management Science)
 Naresh C. Agarwal/B.A., M.A. (*Delhi*), Ph.D. (*Minnesota*)/(Human Resources)/Coordinator, Ph.D. Programme (Human Resources)
 Norman P. Archer/B.Sc. (*Alberta*), Ph.D. (*McMaster*), M.S. (*New York*)/(Management Science and Information Systems)
 Christopher K. Bart/B.A., M.B.A. (*York*), Ph.D. (*Western Ontario*), C.A./Business Policy/Director of the Management of Innovation and Technology Programme
 Min S. Basadur/B.A.Sc. (*Toronto*), M.B.A. (*Xavier*), Ph.D. (*Cincinnati*), P.Eng./Organizational Behaviour
 Trevor W. Chamberlain/B.Sc. (*California, Berkeley*), M.B.A. (*McGill*), Ph.D. (*Toronto*), C.A./Finance
 M.W. Luke Chan/B.Sc. (*Prince Edward Island*), M.A., Ph.D. (*McMaster*) (Finance and Business Economics)/Executive Director, Office of International Affairs
 C. Sherman Cheung/B.S. (*Louisiana State*), M.S., Ph.D. (*Illinois*)/(Finance and Business Economics)
 David W. Conrath/B.A. (*Stanford*), M.S. (*Carnegie-Mellon*), M.A., Ph.D. (*California, Berkeley*), P.Eng./Management Science and Information Systems/Dean
 Robert G. Cooper/B.Eng., M.Eng. (*McGill*), M.B.A., Ph.D. (*Western Ontario*)/(Marketing)
 Rick D. Hackett/B.Sc. (*Toronto*), M.A. (*Windsor*), Ph.D. (*Bowling Green State*)/(Human Resources)/Associate Dean (Academic)
 Harish C. Jain/B.Com. (*Delhi*), M.B.A. (*Indiana*), Ph.D. (*Wisconsin*)/(Human Resources and Labour Relations)
 Elko J. Kleinschmidt/Dip.Ing. (*Staatliche Ingenieurschule, Hannover*), M.B.A., Ph.D. (*McGill*)/(Marketing and International Business)/Director, Engineering and Management Programmes
 Itzhak Krinsky/B.A., M.A. (*Tel Aviv*), Ph.D. (*McMaster*)/(Finance and Business Economics)
 Clarence C.Y. Kwan/Ph.D. (*Ottawa*), M.B.A. (*McMaster*), Ph.D. (*Toronto*), P.Eng./Finance
 Robert F. Love/B.A.Sc. (*Toronto*), M.B.A. (*Western Ontario*), Ph.D. (*Stanford*), P.Eng./Management Science
 G. John Miltenburg/B.Eng.Mgt., M.B.A. (*McMaster*), M.Eng. (*Toronto*), Ph.D. (*Waterloo*), P.Eng./Production and Management Science
 Dean C. Mountain/B.A. (*McMaster*), M.A., Ph.D. (*Western Ontario*)/(Finance and Business Economics)/Chair, Finance and Business Economics Area
 Mahmut Parlar/B.Sc., M.Sc. (*Middle East Technical University*), Ph.D. (*Waterloo*)/(Management Science)/Coordinator, Ph.D. Programme (Management Science/Systems)
 Joseph B. Rose/B.B.A. (*Adelphi*), M.B.A. (*California*), Ph.D. (*State University of New York at Buffalo*)/(Industrial Relations)
 George Steiner/M.Sc. (*Budapest*), Ph.D. (*Waterloo*)/(Production and Management Science)
 George O. Wesolowsky/B.A.Sc. (*Toronto*), M.B.A. (*Western Ontario*), Ph.D. (*Wisconsin*)/(Management Science)
 Yufei Yuan/B.S. (*Fudan*), Ph.D. (*Michigan*)/(Information Systems)/Chair, Management Science and Information Systems Area
 F. Isik Zeytinoglu/B.A., M.A. (*Bogazici*), M.S., Ph.D. (*Pennsylvania*)/(Industrial Relations)

Associate Professors

Y.C. Lilian Chan/B.B.A. (*Chinese Univ. of Hong Kong*), Ph.D. (*Virginia Polytechnic Institute and State University*)/(Accounting)/Chair, Accounting Area
 Kenneth R. Deal/B.S., M.B.A., Ph.D. (*SUNY—Buffalo*)/(Marketing and Management Science)
 Richard W. Deaves/B.A., M.A., Ph.D. (*Toronto*)/(Finance and Business Economics)
 Scott J. Edgett/B.B.A. (*Prince Edward Island*), M.B.A. (*McMaster*), Ph.D. (*Bradford*)/(Marketing)
 Diwakar Gupta/B.Tech. (*Indian Institute of Technology*) M.A.Sc. (*Windsor*), Ph.D. (*Waterloo*)/(Production and Management Science)
 Bernadette E. Lynn/B.A. (*Carlow College*), M.A. (*Pittsburgh*), Ph.D., M.B.A. (*McMaster*), C.M.A./Accounting
 John W. Medcof/B.A. (*New Brunswick*), M.A., Ph.D. (*Toronto*)/(Organizational Behaviour)
 Ali R. Montazemi/H.N.D. (*Teesside Polytechnic*), M.Sc. (*Southampton*), Ph.D. (*Waterloo*)/(Information Systems)
 S.M. Khalid Nainar, B.A., M.A. (*Delhi*), Ph.D. (*Florida*)/(Accounting)
 Mohamed M. Shehata/B.Com. (*Tanta*), M.S. (*Ain-Shams*), M.B.A. (*North Texas State*), Ph.D. (*Florida*)/(Accounting)
 D. Wayne Taylor/B.A. (*Toronto*), M.P.A., Ph.D. (*York*)/(Business and Public Policy)/Chair, Marketing, International Business and Policy Area/Director, Health Services Management Programme
 Hugh A.L. Thomas/B.A. (*Alberta*), M.B.A. (*Hong Kong*), Ph.D. (*New York*)/(Finance)
 Willi Wiesner/ B.A. (*Wilfrid Laurier*), M.A.Sc., Ph.D. (*Waterloo*)/(Human Resources)/Chair, Human Resources and Management Area

Assistant Professors

Narat Charupatt/B.A. (*Thammasat*), M.B.A. (*Drexel*), Ph.D. (*York*)/(Finance)
 Tim DeGroot/B.S., M.B.A., Ph.D. (*Florida State*)/(Human Resources and Labour Relations)
 Milena Head/B.Math. (*Waterloo*), M.B.A., Ph.D. (*McMaster*)/(Management Science/Information Systems)
 Nick Bontis/B.A. (*Western Ontario*)
 Viswanath Trivedi/B.Sc. (*Andhra*), Ph.D. (*Arizona State*)/(Accounting)

Lecturers

Marilyn Adams/B.Sc. (*Carnegie-Mellon*), M.Ed. (*Pennsylvania State*), C.A./Accounting
 Caroiyn Davis/B.H.Sc. (*Guelph*), M.B.A. (*McMaster*), C.A./Accounting
 Teai McAteer-Early/B.Comm. (*Queens*), M.I.R., Ph.D. (*Toronto*)/(Marketing and Business Policy)
 Pam Pringle/B.A. (*Brock*), M.B.A. (*McMaster*)/(Human Resources and Labour Relations)
 Marvin G. Ryder/B.A., B.Sc. (*Carleton*), M.B.A. (*McMaster*)/(Marketing and Business Policy)/(Assistant Vice-President, Information Services and Technology)
 Tina Salisbury/B.Com., M.B.A. (*McMaster*)/(Management Science and Information Systems)
 Terry Seawright/ B.A.Sc. (*Toronto*), M.B.A. (*McMaster*)/(Marketing)
 Linda Stockton/M.B.A. (*McMaster*)/(Marketing)
 James H. Tiessen/B.Sc. (*Alberta*), M.Sc. (*Guelph*), Ph.D. (*York*)/(International Business)

Professors Emeriti

Roy J. Adams/B.A. (*Pennsylvania State*), M.A., Ph.D. (*Wisconsin*)/(Industrial Relations)
 Peter M. Banting/B.A., M.B.A. (*McMaster*), Ph.D. (*Michigan State*)/(Marketing)
 Robert C. Joyner/B.A., M.A., Ph.D. (*Toronto*)/(Organizational Behaviour)
 Winston H. Mahatoo/B.A. (*London*), B.Sc., M.Sc. (*McGill*), Ph.D. (*Montréal*)/(Marketing)
 William J. Schlatter/A.B., A.M., Ph.D. (*Illinois*), C.P.A./Accounting
 Andrew Z. Szendrovits/M.A., Ph.D. (*Kolozsvár*)/(Production and Management Science)
 George W. Torrance/B.A.Sc., M.B.A. (*Toronto*), Ph.D. (*SUNY—Buffalo*), P.Eng./Management Science
 William G. Truscott/B.S.E. (*Princeton*), M.B.A. (*McMaster*), D.B.A. (*Indiana*), P.Eng./Production and Management Science

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 programme. For these students, enrolment will be limited to 40 spaces per course on a first-come, first-served basis in the following courses: COMMERCE 2AA3,

2AB3, 2BA3, 2FA3, 2MA3, 2QA3, 2QB3, 3BC3, 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 programme (where applicable) will be guaranteed enrolment in these courses. See *Minor in Business* in the *Faculty of Business* section of this Calendar.

Effective September 1999, students taking COMMERCE 2AA3, 2FA3 and 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.

3. Graduates of McMaster's Commerce programmes or one of the Engineering and Management programmes may take, as part-time students, Level III and IV Commerce courses (not previously taken, to a maximum of 18 units), excluding COMMERCE 4AG3*, 4AH3*, 4AI3*, with the permission of the Academic Programmes Office. Such permission will be given only if normal prerequisites are satisfied and if space permits after meeting the requirements of in-course students. Registrations will be approved after classes start. (See the *Admission Requirements* section of this Calendar under the heading *Continuing Students*.)

*These courses are available as ACC 500, ACC 501, ACC 502, through the School of Business, subject to sufficient enrolments and availability of qualified instructors. For details concerning these courses, please see the McMaster University Spring/Summer Calendar.

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

4. Level II and Level III Commerce courses are generally scheduled for three one-hour lectures per week; one term. Level IV Commerce courses are scheduled for two lectures per week (a two-hour lecture and a one-hour lecture); one term.

Courses

COMMERCE 1S03 INTRODUCTION TO BUSINESS

Broad integrative course covering all functional areas of business; finance, human resources, management sciences and information systems, accounting and marketing. Relationships among business, government and society considered.

Prerequisite: Registration in Business I or Engineering 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 a Commerce or Engineering and Management programme; or ECON 1A06 or 1B03 with a grade of at least B- and registration in a four or five-level non-Commerce programme.

Enrolment is limited. (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 a Commerce or Engineering and Management programme or any four or five-level non-Commerce programme.

Enrolment is limited. (See Note 2 above.)

COMMERCE 2BA3 ORGANIZATIONAL BEHAVIOUR AND HUMAN RESOURCES

This course provides an overview of the field. Topics include: creativity, problem solving, decision-making, systems approaches, organizational effectiveness, motivation, work reorganization and organizational structures.

Prerequisite: Registration in a Commerce, Engineering and Management or Labour Studies programme or any four or five-level non-Commerce programme.

Antirequisite: KINESIOL 3L03

Enrolment is limited. (See Note 2 above.)

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 COMMERCE 2AA3 and registration in a Commerce or Engineering and Management programme; or registration in a four or five-level non-Commerce programme and completion of ECON 1A06 or 1B03 with a grade of at least B-, COMMERCE 2AA3 and one of MATH 1M03, 1A03, 1N03.

Enrolment is limited. (See Note 2 above.)

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 a Commerce or Engineering and Management programme; or ECON 1A06 or 1B03 with a grade of at least B- and registration in a four or five-level non-Commerce programme.

Enrolment is limited. (See Note 2 above.)

COMMERCE 2QA3 COMPUTER-AUGMENTED STATISTICAL ANALYSIS

An introduction to the application of statistical analysis in managerial decision-making. The concepts of statistical analysis are applied to a variety of topics, including decision-making, estimation by sampling, hypothesis testing, analysis of variance, simple linear and multiple regression and forecasting.

Prerequisite: OAC FINITE MATH or STATS 1L03 and registration in a Commerce or Engineering and Management programme or any four or five-level non-Commerce programme.

Antirequisite: STATS 1CC3

Enrolment is limited. (See Note 2 above.)

COMMERCE 2QB3 INFORMATION SYSTEMS IN MANAGEMENT

This course emphasizes the strategic role of information systems in modern business. Topics include: the technical foundations of information systems, the impact of information systems on business operations and decision-making, and the processes that are required for successful implementation of business information systems.

Prerequisite: One of COMP SCI 1BA3, 1SA3, 1ZA3 and registration in a Commerce or Engineering and Management programme or any four or five-level non-Commerce programme.

Antirequisite: COMMERCE 3QB3

Enrolment is limited. (See Note 2 above.)

COMMERCE 2S03 COMMUNICATION, THINKING AND GROUP SKILLS

Students will be introduced to the effective use of written and oral communication skills; thinking skills including convergent, divergent and creative thinking as well as logic and rhetoric; and group and interpersonal skills including leadership. Students practice these skills in exercises concerned with current business issues.

Prerequisite: Registration in a Commerce or Engineering and Management programme.

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 an Honours Commerce or Engineering and Management programme.

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 an Honours Commerce or Engineering and Management programme.

Antirequisite: COMMERCE 4AB3

COMMERCE 3BC3 HUMAN RESOURCE MANAGEMENT AND LABOUR RELATIONS

This course builds on COMMERCE 2BA3, focusing on human resource management and labour relations issues and practices from a general management education perspective.

Prerequisite: COMMERCE 2BA3 or KINESIOL 3L03 and registration in a Commerce, Labour Studies, or Engineering and Management programme or a four or five-level non-Commerce programme.

Antirequisite: COMMERCE 3BA3, 3BB3

Enrolment is limited. (See Note 2 above.)

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 and registration in a Commerce or Engineering and Management programme or any four or five-level non-Commerce programme.

Enrolment is limited. (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 and registration in Honours Commerce or an Engineering and Management programme.

Not open to students with credit or registration in ECON 2103.

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 Honours Commerce or an Engineering and Management programme.

COMMERCE 3IN0 COMMERCE INTERNSHIP PROGRAMME

Career development; job strategies; skills assessment; resume/application form preparation; interview/presentation skills; orientation to the workplace. Successful completion of an eight, twelve or sixteen month Internship, employer evaluation and work term report.

Lecture/Workshop (six sessions); first term or second term

Prerequisite: Successful completion of all required Level III Commerce courses before embarking on work place opportunity.

COMMERCE 3MA3 COMPETITIVE AND MARKET INTELLIGENCE

This course covers the effective obtaining, communicating and using of competitive and market intelligence. Students work in groups with a company or public organization and receive training and experience in making business presentations.

Prerequisite: COMMERCE 2MA3 and 2QA3 or STATS 3Y03 and registration in Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 a Commerce or Engineering and Management programme, or any four or five-level non-Commerce programme.

Enrolment is limited. (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 a Commerce or Engineering and Management programme.

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 a Commerce programme; or registration in an Engineering and Management programme
Antirequisite: COMMERCE 4QA3, MECH ENG 4C03

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme or graduation from a Commerce programme.

Available Summers 1999-2002 subject to sufficient enrolments and availability of qualified instructors.

Continuing Students see *Note 3* above.

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 Honours Commerce or an Engineering and Management programme or graduation from a Commerce programme.

Available Summers 1999-2002 subject to sufficient enrolments and availability of qualified instructors.

Continuing Students see *Note 3* above.

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 Honours Commerce or an Engineering and Management programme or graduation from a Commerce programme.

Available Summers 1999-2002 subject to sufficient enrolments and availability of qualified instructors.

Continuing Students see *Note 3* 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.

Prerequisite: Announced at the time of offering
COMMERCE 4AX3 may be repeated, if on a different topic, to a total of six units.

Not offered in 1999-2000.

COMMERCE 4BA3 BEHAVIOURAL ISSUES IN MANAGEMENT

Detailed analysis of employee motivation and reward systems; organizational structure; leadership and decision-making; group processes; and management of conflict and change.

Prerequisite: Registration in Honours Commerce or an Engineering and Management programme.

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 3BB3 or 3BC3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4BC3 COLLECTIVE BARGAINING

A survey of the nature, determinants, and impact of collective bargaining in Canada. Both the procedural and substantive aspects of collective bargaining will be studied.

Prerequisite: COMMERCE 3BA3 or 3BC3, or LABR ST 2A03 or 2A06; and registration in Honours Commerce or a programme in Engineering and Management or Labour Studies.

COMMERCE 4BD3 SETTLEMENT OF INDUSTRIAL DISPUTES

The nature and the role of industrial conflict as well as the techniques which have been developed to control the incidence of conflict in union-management situations.

Prerequisite: COMMERCE 3BA3 or 3BC3, or LABR ST 2A03 or 2A06; and registration in Honours Commerce or a programme in Engineering and Management or Labour Studies. COMMERCE 4BC3 is recommended.

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 3BB3 or 3BC3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4BF3 LABOUR LAW AND POLICY

An analysis of the concepts and fundamentals of Canadian labour law and an analysis of Canadian labour policy.

Prerequisite: COMMERCE 3BA3 or 3BC3, and registration in Honours Commerce or an Engineering and Management programme and subject to space availability. Cross-list: LABR ST 3C03

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 4BC3 and registration in Honours Commerce or an Engineering and Management programme and subject to space availability. Cross-list: LABR ST 4C03

COMMERCE 4BH3 COMPARATIVE INDUSTRIAL RELATIONS

A discussion of industrial relations policies and practices in several selected countries. Topics will include: the development, structure, objectives and strategies of labour and management organizations.

Prerequisite: COMMERCE 3BA3 or 3BC3 and registration in Honours Commerce or an Engineering and Management programme and subject to space availability. Cross-list: LABR ST 4D03

COMMERCE 4BI3 TRAINING AND DEVELOPMENT

This course provides a framework for establishing, revising and examining training programs in organizations. Topics include: needs assessment, development of training objectives, planning and delivery of instruction, learning principles and evaluation of training.

Prerequisite: COMMERCE 3BB3 or 3BC3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4BJ3 WOMEN IN BUSINESS

This course discusses the successes and challenges of women in business in an international context, across various professions and as entrepreneurs and business owners.

Prerequisite: Registration in Honours Commerce or an Engineering and Management programme. Cross-list: WOMEN ST 4BJ3

Not open to students with credit in COMMERCE 4SX3, SPECIAL TOPICS IN BUSINESS, if taken in January 1998.

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 Honours Commerce or an Engineering and Management programme.

Not open to students with credit in COMMERCE 4BX3, SPECIAL TOPICS IN HUMAN RESOURCES/LABOUR RELATIONS, if taken in January 1998 or 99.

COMMERCE 4BX3 SPECIAL TOPICS IN HUMAN RESOURCES/LABOUR RELATIONS

1999-2000: Nonstandard Work Relationships

Various topics in Human Resources/Labour Relations are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.

Prerequisite: COMMERCE 3BC3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4BX3 may be repeated, if on a different topic, to a total of six units.

COMMERCE 4FA3 CASES IN MANAGERIAL FINANCE

This course covers the application of basic financial theory and analysis, from a managerial point of view, to specific cases. Consideration is given to the strategic, marketing, operational and personal factors which interact with financial factors.

Prerequisite: COMMERCE 3FA3 and registration in Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

Antirequisite: COMMERCE 4FB3

COMMERCE 4FX3 SPECIAL TOPICS IN FINANCE

1999-2000: Financial Statement Analysis

Various topics in Finance are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor.

Prerequisite: COMMERCE 3AB3 and 3FA3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4FX3 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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

COMMERCE 4MX3 SPECIAL TOPICS IN MARKETING, POLICY AND INTERNATIONAL BUSINESS

1999-2000: Sales Management

Various topics in Marketing, Policy and International Business are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor.

Prerequisite: COMMERCE 2MA3 and 3MC3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4MX3 may be repeated, if on a different topic, to a total of six units.

**COMMERCE 4PA3 BUSINESS POLICY:
STRATEGIC MANAGEMENT**

As the capstone to the programme, this case course is designed to unify the student's learning experience by exploring the formulation and implementation of corporate strategy.

Prerequisite: Registration in Level IV of a Commerce programme or Level V of an Engineering and Management programme

**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. These topics may be selected from among: layout and location of facilities, scheduling, inventory control and materials handling.

Prerequisite: COMMERCE 3QC3 or 4QA3, or MECH ENG 4C03 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4QC3 OPTIMIZATION APPLICATIONS IN BUSINESS

An examination of the techniques of management science and their application to business problems. Topics include: linear programming, integer programming, and optimization problems on networks.

Prerequisite: Registration in an Honours Commerce programme and COMMERCE 3QA3, or registration in an Engineering and Management programme.

COMMERCE 4QD3 MANAGEMENT SUPPORT SYSTEMS

This course examines the database approach and model building, in supporting managerial decision making processes.

Prerequisite: COMMERCE 2QB3 or 3QB3 and registration in Honours Commerce or an Engineering and Management programme.

**COMMERCE 4QE3 TELECOMMUNICATION AND
ELECTRONIC COMMERCE**

The new trends and issues on telecommunication networks and their business applications including: wireless telecommunication, Web technology, Electronic commerce, Network security, Smart cards, Intelligent agents and the use of Intranet and Extranet.

Prerequisite: Registration in Honours Commerce and COMMERCE 2QB3, or registration in an Engineering and Management programme

Not open to students with credit in COMMERCE 4QX3, SPECIAL TOPICS IN MANAGEMENT SCIENCE/INFORMATION SYSTEMS if the topic was Specific Topics in Business Data Communication (if taken in September 1997).

COMMERCE 4QF3 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: Registration in Honours Commerce and COMMERCE 2BA3 and 3QA3 or registration in an Engineering and Management programme

COMMERCE 4QG3 TOTAL QUALITY MANAGEMENT

TQM topics include: strategic quality planning, quality in design and processes, tools for quality improvement and control, and standards such as ISO 9000.

Prerequisite: Registration in Honours Commerce and COMMERCE 2QA3 and 3QC3, or registration in an Engineering and Management programme

**COMMERCE 4QX3 SPECIAL TOPICS IN MANAGEMENT
SCIENCE/INFORMATION SYSTEMS**

1999-2000: Quality Design and Control

Various topics in Management Science/Information Systems are considered. They will vary depending upon the recent developments in the field and upon the research interests of the instructor.

Prerequisite: COMMERCE 2QA3 or STATS 3Y03 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4QX3 may be repeated, if on a different topic, to a total of six units.

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: Registration in Level IV of a Commerce programme or Level V of an Engineering and Management programme

Antirequisite: COMMERCE 4PE3

COMMERCE 4SB3 INTRODUCTION TO CANADIAN TAXATION

The principles of Canadian federal income taxation are examined in detail, emphasizing the application of both statute and common law to individuals' and businesses' situations.

Prerequisite: COMMERCE 3AB3 and 3FA3 and registration in Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 Honours Commerce or an Engineering and Management programme.

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 one of COMMERCE 3MA3, 3MC3 and registration in Honours Commerce or an Engineering and Management programme.

COMMERCE 4SX3 SPECIAL TOPICS IN BUSINESS

Various topics in business are considered. They will vary depending upon recent developments in the field and upon the interests of the instructor. The topics to be included are announced at the time of the course offering.

Prerequisites: Announced at the time of offering.
COMMERCE 4SX3 may be repeated, if on a different topic, to a total of six units. Not offered in 1999-2000.

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 Honours Commerce or an Engineering and Management programme. Project forms are available from MGD-245.

COMPARATIVE LITERATURE

(SEE MODERN LANGUAGES, COMPARATIVE LITERATURE)

COMPUTER ENGINEERING

(SEE ELECTRICAL AND COMPUTER ENGINEERING)

COMPUTER SCIENCE

(SEE COMPUTING AND SOFTWARE)

COMPUTING AND SOFTWARE

Faculty as of January 15, 1999

Chair

Paul A. Taylor

Professors

Frantisek Franek/M.Sc., RNDr (Charles, Prague), Ph.D. (Toronto)

Ryszard Janicki/M.Sc. (Warsaw), Ph.D., D.Hab. (Polish Acad. Sci.)

Tao Jiang/B.Sc. (Univ. of Sci. and Tech. of China, Hefei), Ph.D. (Minnesota)

Peter E. Lauer/B.A. (Alabama), M.A. (Emory), Ph.D. (Queen's, Belfast)

David L. Parnas/B.S., M.S., Ph.D. (Carnegie), Dr.h.c. (ETH Zürich), Dr.h.c.

(Louvain), F.R.S.C., F.A.C.M., NSERC/Bell Industrial Research Chair in

Software Engineering, P.Eng.

Patrick J. Ryan/ B.Sc. (Toronto), Ph.D. (Brown)

William F. Smyth/C. Eng., B.A. (Toronto), M.Sc. (Ottawa), Ph.D. (Curtin),

F.B.C.S., F.I.C.A.

Paul A. Taylor/B.Sc., Ph.D. (Univ. of Wales), P.Eng.

Associate Professors

Ivan Bruha/Dipl. Ing. (CVUT, Prague), RNDr (Charles, Prague), Ph.D. (CVUT, Prague)
 W.F. Skipper Pohlman/B.S. (Niagara), B.Sc. (Brock), M.Sc., Ph.D. (McMaster), P.Eng.
 Sanzheng Qiao/B.S., M.S. (Shanghai Teacher's College) M.S., Ph.D. (Cornell)
 Jeffery I. Zucker/B.Sc. (Witwatersrand), Ph.D. (Stanford)

Assistant Professors

David G. Jones/B.Sc. (Western Ontario), Ph.D. (Stanford)
 Barbara E. Ley/B.Sc. (Brock), M.Sc., Ph.D. (Toronto)/part-time
 Emil Sekerinski/Dipl.Inf., Dr.rer.nat. (Karlsruhe)
 Martin von Mohrenschildt/Dipl.Math., Dr.s.c.Math. (ETH-Zürich)
 Mark Lawford/B.Sc. (Queen's), M.A. Sc., Ph.D. (Toronto)

Professor Emeritus

Gerald L. Keech/ B.A.Sc. (Toronto), M.Sc., Ph.D. (McMaster)

Computer Science ...

Department Notes:

1. While the Faculty of Engineering is responsible for all Computer Science courses, Computer Science Programmes are administered by the Faculty of Science.
2. The following are suggested Computer Science options for students not in Computer Science programmes:
Science-oriented students: COMP SCI 1MC3 or 1SA3, 1MD3, 2MF3 and 2SB3, 2SC3, 3MG3, 3CB3, 3SD3, 3SE3
Business-oriented students: COMP SCI 1BA3, 1MC3, 1MD3, 2ME3, 2SC3, 3SE3, 4EC3
Social Sciences and Humanities students: COMP SCI 1SA3, 1TA3, 2SC3, 3SE3
3. Students wishing to pursue a Computer Science Minor are referred to the Department of Computing and Software in the Faculty of Science section of this Calendar.
4. MATH 1N03 and 1NN3 or ARTS & SCI 1D06 can serve as an equivalent prerequisite for upper level Computer Science courses in which MATH 1A03, 1C03 or 1AA3 is a prerequisite.
5. It is possible to take COMP SCI 1MD3 if COMP SCI 1SA3 was completed with a grade of B+ or better. In that case COMP SCI 1SA3 can be used as a substitute for COMP SCI 1MC3. Nevertheless, students interested in enrolling in a Computer Science programme are recommended to take COMP SCI 1MC3.

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 computer communications; introduction to operating systems; basics of word processing/desktop publishing and information exchange using the Internet; problem solving using electronic spreadsheets; elementary database concepts.

Three lectures, one tutorial; one term
 Prerequisite: Registration in the School of Business and one OAC Mathematics credit, or one of MATH 1K03, 1M03, STATS 1L03

COMP SCI 1MC3 COMPUTER SCIENCE I

Essentials of Computer Science: machine architecture, data structures, operating systems, problem solving and programming paradigms; programming language features; software design; artificial intelligence.

Three lectures, one tutorial; one term
 Antirequisite: COMP SCI 1MA3, ENGINEER 1D04

COMP SCI 1MD3 COMPUTER SCIENCE II

A second course in Computer Science; abstract data models and data structures; virtual memory and memory allocation; advanced programming paradigms: recursion, functional programming, communication protocols; logic, finite-state machines and complexity.

Three lectures, one tutorial; one term
 Prerequisite: Credit or registration in one of MATH 1A03, 1B03, 1H05, 1M03, 1N03, ARTS&SCI 1D06 and either COMP SCI 1MC3, ENGINEER 1D04, or a grade of at least B+ in COMP SCI 1SA3
 Antirequisite: COMP SCI 1MB3

COMP SCI 1SA3 COMPUTING FUNDAMENTALS

Overview of the computer as a tool for problem solving: organization of microcomputers (hardware and operating systems); introduction to programming concepts; communications and networks; the Internet and Web pages; application packages.

Three lectures, one tutorial; one term
 Prerequisite: Credit or registration in MATH 1A03.
 Not open to students with credit or registration in COMP SCI 1MC3 or 1ZA3 or 1BA3 or 1TA3 or ENGINEER 1D04.

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/desktop, the Internet and Web pages; problem solving using electronic spreadsheets and elementary database concepts.

Three lectures, one tutorial; one term
 Not open to students with credit or registration in COMP SCI 1MC3 or 1ZA3 or 1BA3 or 1SA3 or HUMAN 2E03 or ENGINEER 1D04.

COMP SCI 2MD3 ADVANCED DATA STRUCTURES AND ALGORITHMS

Commonly used abstract data types such as lists, stacks, queues, sets, and trees and their applications and efficient implementations; fast sorting, matching, and graph algorithms and complexity; emphasis on theoretical analysis.

Three lectures, one term
 Prerequisite: COMP SCI 1MD3

COMP SCI 2ME3 INTRODUCTION TO SOFTWARE DESIGN AND INFORMATION SYSTEMS

Introduction to structured system design, emphasizing the software development process: management systems; system analysis, design, implementation, and maintenance.

Three lectures; one term
 Prerequisite: COMP SCI 1MD3
 Antirequisite: SFWR ENG 2A04

COMP SCI 2MF3 INTRODUCTION TO COMPUTER ARCHITECTURE

Introduction to the structure of computer systems; organization of central processing units, memory subsystems and input/output devices; introduction to machine language, assembler programming and system software.

Two lectures, one lab (two hours); one term
 Prerequisite: Credit or registration in COMP SCI 1MD3

COMP SCI 2MJ3 DISCRETE STRUCTURES

Basic concepts of discrete mathematics needed in computer science. Propositional and predicate logic, sets and functions. Mathematical induction, recursive definitions. Counting: permutations, combinations, discrete probability. Equivalence relations. Basic graph theory.

Three lectures; one term
 Prerequisite: One of MATH 1B03, 1H05, STATS 1CC3

COMP SCI 2SB3 COMPUTATIONAL METHODS FOR SCIENCE AND ENGINEERING

Computer and IEEE floating point arithmetic. Numerical methods for linear and nonlinear systems, polynomial interpolation, differential equations, optimization. Monte Carlo methods. Features FORTRAN.

Three lectures; one term
 Prerequisite: One of COMP SCI 1MC3, 1SA3, ENGINEER 1D04 and either MATH 1H05 and 1N03 or MATH 1A03 and 1B03
 Not offered in 1999-2000.

COMP SCI 2SC3 DESIGN AND IMPLEMENTATION OF C PROGRAMS

Data types, arithmetic/logical expressions, iterative constructs, pointers and pointer arithmetic. Modularization. Linked data structures and their applications. Program development and testing, programming style.

Three lectures, one tutorial; one term
 Prerequisite: One of COMP SCI 1MC3, 1SA3, ENGINEER 1D04 and credit in one of MATH 1A03, 1B03, 1H05, 1M03, 1N03, or ARTS&SCI 1D06

COMP SCI 3CB3 SYSTEM ARCHITECTURE FOR INTERACTIVE APPLICATIONS

A second course in computer architecture with special emphasis on the implementation of virtual-machine language processors (e.g. Forth, Java) and their use for implementing server-client software architecture.

Three lectures; one term
 Prerequisite: COMP SCI 2MF3 and registration in Level III or above of a Computer Science programme or B.Sc. Mathematical Science

COMP SCI 3EA3 SOFTWARE DESIGN

Methodologies for the development and maintenance of large programs. Problem specification, program design, implementation, software reliability, testing and modularity.

Three lectures; one term
 Prerequisite: COMP SCI 2ME3 and 2MD3
 Antirequisite: COMP ENG 3VA3, SFWR ENG 2B04

COMP SCI 3GA3 INTRODUCTION TO COMPUTER GRAPHICS
Principles of computer graphics. Data structures and algorithms, hardware and software systems for graphics. Object modelling and display techniques: visual realism, perspective, visibility and shading.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 and either one of MATH 2M06, 2Q04 or MATH 2R03 and one of MATH 2S03, 2T03

COMP SCI 3IA3 SYMBOLIC PROCESSING AND LOGIC PROGRAMMING
Methodologies, data and control structures for symbolic processing: symbolic expressions, lists, list processing functions, backtracking, matching procedures; resolution principle.
Three lectures; one term
Prerequisite: COMP SCI 2MD3

COMP SCI 3MG3 COMPUTER SYSTEM ARCHITECTURE
Major components of a computer and their design issues; instruction set, data path, control, memory, and I/O. Principles of computer arithmetic, pipelining, memory hierarchy, and virtual memory.
Three lectures; one term
Prerequisite: COMP SCI 2MF3

COMP SCI 3MH3 PRINCIPLES OF OPERATING SYSTEMS
Concepts of operating systems; process coordination, memory management, file systems; introduction to distributed systems and computer networks. Involves group projects.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 and 3MG3 and registration in a Computer Science programme, B.Sc. Mathematical Science or permission of the instructor.

COMP SCI 3MI3 ORGANIZATION OF PROGRAMMING LANGUAGES
A comparative study of programming languages, emphasizing functional languages. Introduction to formal methods of language definition.
Three lectures; one term
Prerequisite: COMP SCI 2MD3

COMP SCI 3SD3 COMPUTER SIMULATION TECHNIQUES
Techniques for the application of computer simulation software to scientific and engineering problems, especially queuing and network problems.
Three lectures; one term
Prerequisite: One of COMP SCI 1MD3, 2SB3
Not offered in 1999-2000.

COMP SCI 3SE3 DESIGN OF VISUAL PROGRAMMING ENVIRONMENTS
A study of visual programming environments: events, procedures, objects and attributes; paradigms: event-driven, object-oriented; applications: graphical user interfaces, human factors, visualization techniques.
Three lectures; one term
Prerequisite: Credit or registration in COMP SCI 1MD3

COMP SCI 3TA3 INTRODUCTION TO AUTOMATA AND FORMAL LANGUAGE THEORY
Language, classification, definition and properties. Grammars and automata. Regular, context-free and context-sensitive languages. Parallel automata and Petri nets. Applications.
Three lectures; one term
Prerequisite: COMP SCI 2MD3

NEURCOMP 3W03 NEURAL COMPUTATION
An introduction to the use of neural network computational models for understanding the neural bases of psychological processes, and for solving real-world problems.
Three lectures; one term
Prerequisite: COMP SCI 1MC3 or COMP SCI 1SA3 with a grade of at least B+ and one of MATH 1A03, 1N03, ARTS&SCI 1D06. MATH 1B03 is strongly recommended.
Cross-list: PSYCH 3W03

COMP SCI 4CB3 SUPERCOMPUTING SYSTEM ARCHITECTURES
Traditional performance enhancement techniques: pipelining, RISC, VLIW, prefetch, cache; modern high performance systems: mini-, micro-, mainframe supercomputers, array processors; parallelization considerations and vectorization methods.
Two lectures, one lab; one term
Prerequisite: COMP SCI 3MG3 or credit or registration in PHYSICS 4D06 or 4DA3, 4DB3
Not offered in 1999-2000.

COMP SCI 4CC3 ADVANCED OPERATING SYSTEMS
Modern operating systems: large-scale distributed to small real-time operating systems; microcomputer/mainframe interconnections; message passing techniques; networks; distributed deadlocks and shared memory models; extended file systems and shared resources.
Two lectures; one lab; one term
Prerequisite: COMP SCI 3MH3 or COMP ENG 4WA3

COMP SCI 4CD3 DISTRIBUTED SYSTEM ARCHITECTURES
Distributed systems: real-time, agent-oriented, heterogeneous, multi-computer, multi-processor; coupling schemes: loose, tight; networking, ATM, frame relay, clustering, software protocols; communication strategies, client/server approaches.
Two lectures; one lab; one term
Prerequisite: COMP SCI 3MG3 or credit or registration in PHYSICS 4D06 or 4DA3, 4DB3

COMP SCI 4EB3 DATABASE MANAGEMENT SYSTEM DESIGN
Concepts and structures for the design of database management systems. Topics include: data models, data normalization, data-description languages, query facilities, file organization and security.
Three lectures; one term
Prerequisite: COMP SCI 2MD3

COMP SCI 4EC3 OBJECT-ORIENTED SOFTWARE DESIGN
Advanced software development in the business/industrial environment. Comparative analysis of alternatives to structured design, especially object-oriented techniques.
Three lectures; one term
Prerequisite: COMP SCI 2ME3, 3EA3 and registration in Level IV of a Computer Science programme

COMP SCI 4ED3 SOFTWARE DESIGN APPLICATIONS
Introduction to theory and computer based tools for producing trustworthy software development environments. Involves major group projects using these tools.
Three lectures; one term
Prerequisite: COMP SCI 3EA3
Not offered in 1999-2000.

COMP SCI 4EE3 FORMAL TECHNIQUES IN SOFTWARE DESIGN
Software design principles: rigour and formality, separation of concerns, modularity, abstraction. Software design, specification and verification.
Three lectures; one term
Prerequisite: COMP SCI 3EA3
Not offered in 1999-2000.

COMP SCI 4EG3 ORGANIZATION AND MANAGEMENT OF COMPUTING ACTIVITIES
Strategic planning of computing and data resources in an organization; system management, estimating techniques, productivity issues; project management, quality assurance, configuration management.
Four hours (lectures and tutorials); one term
Prerequisite: COMP SCI 2ME3 and 3EA3
Not offered 1999-2000.

COMP SCI 4GB3 COMPUTATIONAL GEOMETRY
Discrete geometry: from an algorithmic point of view. Searching, subdivision, proximity and intersection. Applications to problems in object modelling, computer graphics, and computer vision.
Three lectures; one term
Prerequisite: COMP SCI 2MD3 or a grade of at least B- in COMP SCI 1MD3 or 2SB3

COMP SCI 4GG3 HUMAN COMPUTER INTERACTION
Methods for user software design, interface representations, testing; evaluation and design of sample application systems; impacts of computer-based information systems on individuals and organizations; implementation and testing tools.
Four hours (lectures and tutorials); one term
Prerequisite: COMP SCI 3EA3 and 3MI3
Not offered in 1999-2000.

COMP SCI 4IB3 ARTIFICIAL INTELLIGENCE AND KNOWLEDGE-BASED SYSTEMS
AI disciplines: perception, pattern recognition, machine learning, neural nets, image processing, scene analysis, speech processing; problem solving, production systems, backtracking, graph search techniques, planners; PROLOG. Architectures and applications of expert systems.
Three lectures; one term
Prerequisite: COMP SCI 2MD3

COMP SCI 4MP6 PROJECT FOR COMBINED PROGRAMMES
Under the supervision of a faculty member, teams of two to three students implement, write up and defend a substantial project, in the area of the combined programme.

Occasional tutorials, no lectures; two terms
Prerequisite: Registration in Level IV of any combined Honours Computer Science programme. Completion of COMP SCI 3EA3 is strongly recommended.

Antirequisite: COMP SCI 4ZP6

COMP SCI 4TB3 COMPILER CONSTRUCTION
Lexical analysis; scanner construction; syntax analysis and syntax-directed translation; compiler compilers; intermediate code generation; code generation and optimization.

Two lectures, one lab or tutorial (three hours); second term
Prerequisite: Registration in Level IV of a Computer Science programme or Level IV or V Computer Engineering
Not offered in 1999-2000.

COMP SCI 4TC3 RECURSIVE FUNCTION THEORY AND COMPUTABILITY
Recursive and primitive recursive functions, decidability and undecidability with applications to formal language theory, logic and algebra.

Three lectures; one term
Prerequisite: COMP SCI 2MD3; and either COMP SCI 2MJ3 or one of MATH 2M06, 2Q04; or MATH 2R03 and one of MATH 2S03, 2T03
Antirequisite: MATH 4S03*
Not offered in 1999-2000.

COMP SCI 4TD3 DESIGN AND ANALYSIS OF ALGORITHMS
Techniques for the design and analysis of algorithms, especially divide-and-conquer, greedy, and dynamic programming algorithms. An introduction to computational complexity. Analysis of particular algorithms of practical or theoretical importance in computer science.

Three lectures; one term
Prerequisite: COMP SCI 2MD3, 2MJ3 and one of MATH 2Q04, 2R03

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 programme in Computer Science. Application for permission must be received by March 31st of the previous year.
Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

COMP SCI 4Z13 INQUIRY IN COMPUTER SCIENCE
Research and directed readings dealing with the impact of computers and computer networks on society.

Three hours; one term
Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry
Not offered in 1999-2000.

Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

COMP SCI 4ZP6 PROJECT
Under the supervision of a faculty member, teams of two to three students implement, write up and defend a substantial project in an area of computer science.

Occasional tutorials, no lectures; two terms
Prerequisite: Registration in Level IV of Honours Computer Science. Completion of COMP SCI 3EA3 is strongly recommended
Antirequisite: COMP SCI 4MP6

Software Engineering...

Note:

All software engineering courses are open to students registered in a software engineering programme, subject to prerequisite requirements. Prior permission of the Department is necessary for other students.

Courses

SFWR ENG 2A04 SOFTWARE DESIGN I
Software development with precise specifications. Implementation, inspection, integration, and testing of programs specified sequential modules and programs. Assembly of software from independent modules; incremental design.

Three lectures, one lab (three hours); first term
Prerequisite: Registration in Level II of a Software Engineering programme
Corequisite: SFWR ENG 2E03 or 2E04; 2F03 or 2F04

SFWR ENG 2B04 SOFTWARE DESIGN II
Software system design, documentation, implementation, inspection and testing. Requirements documentation. Designing large sequential programs including precise documentation. Modularisation, module interface design. Hierarchical structures; project organization.

Three lectures, one lab (three hours); second term
Prerequisite: SFWR ENG 2A04, 2E03 or 2E04; 2F03 or 2F04
Corequisite: SFWR ENG 2C04

SFWR ENG 2C04 COMPUTER ALGORITHMS AND DATA STRUCTURE
Data structures: queues, stacks, lists, heaps, trees, graphs; data abstraction; graph algorithms. Sorting, searching, parsing, pattern matching, resource utilization, finding and choosing algorithms.

Three lectures, one tutorial (two hours); second term
Prerequisite: SFWR ENG 2A04, 2E03 or 2E04
Corequisite: SFWR ENG 2B04

SFWR ENG 2D04 DIGITAL SYSTEM PRINCIPLES AND LOGIC DESIGN FOR SOFTWARE ENGINEERS
Systematic design procedures; combinatorial circuit design, design of sequential machines, error detection, correction; redundancy, number representations, organization of large logic circuits. Use of logic simulators.

Three lectures, one lab (three hours); second term
Prerequisite: SFWR ENG 2A04, 2F03 or 2F04

SFWR ENG 2E04 APPLICATIONS OF DISCRETE MATHEMATICS IN SOFTWARE ENGINEERING
Sets, functions, relations, trees, graphs, algebras. Combinatorial methods, permutations, combinations, partitions, representation of discrete functions. Applications using graph theory and other mathematics-based software packages.

Three lectures, one lab (three hours); first term
Prerequisite: ENGINEER 1D04
Corequisite: SFWR ENG 2A04, 2F03 or 2F04
Antirequisite: SFWR ENG 2E03

SFWR ENG 2F04 APPLICATIONS OF MATHEMATICAL LOGIC FOR SOFTWARE ENGINEERING
Foundations of propositional, predicate, higher-order, multiple-value logic; normal forms; deduction systems, models. Describing software states; verifying program properties; automated theorem-proving systems.

Three lectures, one lab (three hours); first term
Prerequisite: Registration in Level II of a Software Engineering programme
Corequisite: SFWR ENG 2A04, 2E03 or 2E04
Antirequisite: SFWR ENG 2F03

SFWR ENG 3B04 SOFTWARE DESIGN III
Design, specification, documentation, implementation, inspection and testing of multi-programming, multi-processing, and real-time systems. Resource management, process coordination. Evaluation of operating systems and real-time support software.

Three lectures, one lab (three hours); second term
Prerequisite: SFWR ENG 3F03, 3G03

SFWR ENG 3C03 DISCRETE OPTIMIZATION METHODS, GRAPH THEORETIC MODELS, SEARCH AND PRUNING TECHNIQUES

Linear and non-linear programming. Integer programming. Search techniques. Use of directed graphs in engineering problems, scheduling techniques, network optimization, route planning.
Three lectures, one tutorial (two hours) every other week; second term
Prerequisite: SFWR ENG 2C04, 2E03 or 2E04; 2F03 or 2F04

SFWR ENG 3E03 DESIGN AND SELECTION OF SEQUENTIAL PROGRAMMING LANGUAGES
Program construction tools, especially programming languages. Primitive programs and program constructors. Special purpose program generators. Selection criteria. Historical developments. Survey of current tools.

Two lectures, one lab (three hours); first term
Prerequisite: SFWR ENG 2B04, 2C04
Corequisite: SFWR ENG 3F03

SFWR ENG 3F03 MACHINE-LEVEL COMPUTER PROGRAMMING
Use of assembler language. I/O and storage devices. Hardware fault diagnosis. Highly optimized code. Low level representation of control and data structures. Documentation and inspection.

Two lectures, one lab (three hours); first term
Prerequisite: SFWR ENG 2B04, 2C04, 2D04
Corequisite: SFWR ENG 3G03

SFWR ENG 3G03 ARCHITECTURE OF COMPUTERS AND MULTI-PROCESSORS

Processor-memory-bus structure of computers and multi-processor systems, instruction sets, memory addressing, registers, I/O. Special purpose computers. Current and *historical* computers. Future trends.

Three lectures; first term

Prerequisite: SFWR ENG 2C04, 2D04

Corequisite: SFWR ENG 3F03

SFWR ENG 3H03 DATA MANAGEMENT TECHNIQUES

Computer systems with large amounts of data. Use of mass storage devices. File structures. Relational and other data base systems. Compression, information retrieval. Assorted applications.

Three lectures, one lab (three hours) every other week; second term

Prerequisite: SFWR ENG 3F03, 3G03

Corequisite: SFWR ENG 3B04

SFWR ENG 3I03 COMMUNICATION SKILLS- EXPLAINING SOFTWARE

Writing technical (reference) documentation and user (introductory) software documentation. Explaining software to expert and user audiences. Document structure. Writing precise software contracts. Oral presentations.

Two lectures, one seminar (two hours); first term

Prerequisite: Registration in Level III of a Software Engineering programme

SFWR ENG 3J03 SOFTWARE AND SOCIAL RESPONSIBILITY

Historical development of engineers' social responsibility and ethical codes. Societal control of technological change. Social effects of automation. Information security and privacy. Software in safety-critical applications and law enforcement.

Two lectures, one seminar (two hours); second term

Prerequisite: SFWR ENG 2B04, 3G03

Corequisite: SFWR ENG 3B04

SFWR ENG 3X03 SCIENTIFIC COMPUTATION AND CONTINUOUS OPTIMIZATION

Computer arithmetic, stability, sensitivity. Numerical methods for interpolation, integration, differentiation, solving linear and non-linear systems, differential equations, eigenvalue and singular value problems, nonlinear systems. Optimization. Statistical simulation methods.

Three lectures; one tutorial (one hour) every other week; second term

Prerequisite: SFWR ENG 2C04, 2F03 or 2F04

Corequisite: SFWR ENG 3C03

Note:

The following courses will be offered in 2000-2001 and are subject to change. The approved courses will appear in the 2000-2001 Calendar.

SFWR ENG 4A03 DESIGN OF REAL-TIME SYSTEMS AND COMPUTERIZED CONTROL SYSTEMS

Computerized implementation of conventional control. Discrete control theory. Modes, mode classes. Data acquisition, analog-digital conversion. User interfaces. Safety classification, safety analysis, fail-safe design.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4C03 COMPUTER NETWORKS AND COMPUTER SECURITY

Network structures, protocol design. Protection against data theft, data destruction and denial-of-service attacks. Access right control. Encryption. Weakest pre-condition analysis. Low data-rate attacks.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4D03 DESIGN OF HUMAN COMPUTER INTERFACES

Principles of user interface design. Input forms, graphical output, virtual reality. *Modes* and *mode awareness*. Occupational health issues, information overload. Graphics hardware, *GUI* tools.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4E03 PERFORMANCE ANALYSIS OF COMPUTER SYSTEMS

Use of queuing theory, simulation, and related methods to predict the performance of a computer system before it is built and to diagnose existing systems.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4F03 DESIGN OF PARALLEL/DISTRIBUTED COMPUTER SYSTEMS AND COMPUTATIONS

Design of multi-computer systems for computation-intensive applications and high-reliability applications. Array processing systems. Application of multiple-processor systems to finite element methods, simulators, optimization problems.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4G03 SENIOR THESIS I

A team software design experience. Students prepare a complete set of design and test documents for a project that tests their ability to design useful software.

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4H03 SENIOR THESIS II

Team software implementation experience. Students implement design from Senior Thesis I, updating documentation as needed. Demonstration of working system convincing test results.

Prerequisite: SFWR ENG 4G03 and completion of Level III of any Software Engineering programme

SFWR ENG 4I03 FUNDAMENTALS OF COMPUTATION

Models of computers. Computability, computational complexity. Network fundamentals. Language classifications and their relation to automata. Limitations of schemes such as neural networks or fuzzy logic.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

SFWR ENG 4J03 SOFTWARE IN COMMUNICATIONS SYSTEMS

Fundamental communications concepts: information, entropy, channel capacity, codes, data compression, adaptive channel equalizers, modulation/demodulation, tracking, Kalman filtering, specialized signal processors. Telephone switches.

Three lectures; one term

Prerequisite: Completion of Level III of any Software Engineering programme

DRAMA

Courses and programmes in Drama are administered within the School of Art, Drama and Music of the Faculty of Humanities.

Note:

Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.

Courses *If no prerequisite is listed, the course is open.***DRAMA 1A06 INTRODUCTION TO DRAMA**

An exploration of theatrical media. Emphasis will be placed on the study of plays from major periods of Western drama. The relationship of theatre to film, opera and other performing arts will be introduced.

Two lectures, one tutorial; two terms

DRAMA 2A06 THE ART OF ACTING

An exploration of the theories and methods that inform the actor's art, designed to expose the student to the range and complexity of performance styles used in the contemporary theatre. The class will be organized around the preparation of performances using Realist, Epic and Collective approaches.

Two studios; two terms

Prerequisite: DRAMA 1A06, with a grade of at least B-
Enrolment is limited. Priority is given to students enrolled in Drama programmes.

DRAMA 2D06 THE DRAMATIC TEXT

An examination of the different kinds of texts produced for dramatic purposes (both performance and reading) from the Greeks to the present, including plays, musical scores, texts for film and television, and other forms of production documents. Problems arising from the transmission of texts will be discussed, as well as how theatrical texts can be studied to yield maximum information.

Three hours (lectures and discussion groups); two terms

Prerequisite: DRAMA 1A06

DRAMA 2M06 HISTORY OF THEATRICAL PERFORMANCE IN THE WESTERN WORLD

A survey of the traditions of Western theatrical production from Classical Greece to the present, including architecture, design, stage machinery, the organization of production, the training and preparation of the actor, and the

expectation of the audience. Some emphasis will be placed on the social context of theatre, and on research methods and problems.

Two lectures, plus evening lab; two terms

Prerequisite: DRAMA 1A06

DRAMA 2X06 THE ART OF THE FILM

An introduction to film style and technique through a detailed critical analysis of major works from the silent period to the present day.

Two lectures, plus one weekly film screening; two terms

Prerequisite: Six units from the Faculty of Humanities and registration in Level II and above

DRAMA 3A03 TOPICS IN ACTING

An exploration of the theory and methods that inform the actor's art, focusing on a specific historical period or creative model, through the study and performance of dramatic texts. Previous topics include Collective Creation, and Greek and Medieval Texts.

Two studios; one term

Prerequisite: DRAMA 2A06

Enrolment is limited.

Drama 3A03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3AA3 ACTING SHAKESPEARE

The study and performance of scenes from the works of William Shakespeare. Extension of acting skills through specific voice, body and language techniques.

Two studios; one term

Prerequisite: DRAMA 2A06

Enrolment is limited. Priority is given to students enrolled in Drama programmes.

DRAMA 3B03 INDEPENDENT STUDY IN DRAMA I

Prerequisite: Registration in a programme in Drama and permission of the School of Art, Drama and Music.

DRAMA 3C03 MODERN EUROPEAN DRAMA FROM IBSEN TO PIRANDELLO

A study of representative plays by eight major dramatists, including Strindberg, Chekhov, Gorki, Wedekind and Kaiser.

One seminar (two hours), plus play readings; one term

Prerequisite: Six units of Level II Drama

Cross-list: COMP LIT 3E03

Offered in alternate years.

DRAMA 3CC3 MODERN EUROPEAN DRAMA FROM BRECHT TO THE PRESENT

A study of representative plays by ten major dramatists, including Garcia Lorca, Cocteau, Frisch, Sartre, Weiss, Genet, Dario Fo.

One seminar (two hours), plus play readings; one term

Prerequisite: Six units of Level II Drama

Cross-list: COMP LIT 3CC3

Offered in alternate years.

DRAMA 3D03 THEATRE PRODUCTIONS

A survey of the theory and practice of all the technical skills involved in a theatrical production: stage management, set design, set construction, lighting, sound, carpentry, properties, costumes. Technical assistance with Drama productions.

Two hours, first term; one hour (workshop), second term

Prerequisite: Registration in a programme in Drama

Students wishing to take this course must complete an application form in the School of Art, Drama and Music before March 31 to guarantee consideration.

Enrolment is limited.

DRAMA 3G03 PERFORMANCE HISTORY BEFORE 1800

An examination of issues in the study of Western theatrical tradition.

Three lectures; one term

Prerequisite: Six units of Level II Drama

Offered in alternate years.

DRAMA 3GG3 COMPARATIVE THEATRE

A comparison of two or more theatrical traditions.

Three lectures; one term

Prerequisite: Six units of Level II Drama

Offered in alternate years.

DRAMA 3H03 LITERATURE AND FILM

An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.

Three lectures, plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama or Literature or Art History. DRAMA 2X06 is recommended.

Cross-list: COMP LIT 3L03, ENGLISH 3CC3

Offered in alternate years.

DRAMA 3J03 TOPICS IN FILM

Previous topics include: Genre Studies, Film Comedy. Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

DRAMA 3J03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3L03 MODERN EUROPEAN THEATRE HISTORY

A study of the major influences that have shaped the growth of modern theatre movements in Europe from the late nineteenth century to the present.

One seminar (two hours); one term

Prerequisite: Six units of Level II Drama

Offered in alternate years.

DRAMA 3LL3 AMERICAN AND CANADIAN THEATRE HISTORY

A study of the development of theatrical performance in the United States and Canada.

Seminar (two hours); one term

Prerequisite: Six units of Level II Drama

Offered in alternate years.

DRAMA 3P06 PLAYS IN PERFORMANCE

This course is offered in conjunction with the McMaster Stratford Seminars. In addition to regular evening classes, students are required to spend five full-time days in Stratford participating in seminars, researching, and attending performance of the set plays.

Two lectures/seminars (two hours) weekly (Summer only)

Prerequisite: Registration in Level II and above

DRAMA 3P06 may be repeated, if on a different topic, to a total of 12 units.

DRAMA 3R03 THE AMERICAN CINEMA I

A survey of some of the predominant features of the American Cinema from its beginning to 1950. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06; or permission of the School of Art, Drama and Music

DRAMA 3RR3 THE AMERICAN CINEMA II

A survey of some of the predominant features of the American Cinema from 1950 to the present day. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06; or permission of the School of Art, Drama and Music

DRAMA 3T03 TOPICS IN NATIONAL CINEMAS I

Previous topics include: Soviet and East European Cinema. Consult School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

Cross-list: COMP LIT 3V03

DRAMA 3T03 may be repeated, if on a different topic, to a total of six units.

DRAMA 3TT3 TOPICS IN NATIONAL CINEMAS II

Previous topics include: Canadian Cinema, French Cinema and Japanese Cinema. Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

Cross-list: COMP LIT 3VV3

DRAMA 3TT3 may be repeated, if on a different topic, to a total of six units.

DRAMA 3Z03 INDEPENDENT STUDY IN PRACTICAL THEATRE

Prerequisite: Registration in a programme in Drama and permission of the School of Art, Drama and Music.

DRAMA 4A06 PRINCIPLES OF STAGE DIRECTING

Theory of directing a play; play analysis; rehearsal techniques; technical stagecraft. Direction of a play under the supervision of an instructor.

Two lectures and practical exercises, plus rehearsals; two terms

Prerequisite: Registration in Level IV of an Honours programme in Drama and DRAMA 2A06 or 2D06, and one of DRAMA 3A03, 3AA3, 3D03, and permission of the School of Art, Drama and Music

Antirequisite: DRAMA 4A03

Enrolment is limited. Admission to DRAMA 4A06 will be based primarily on academic standing. In addition, students must complete a written application on a form provided by the School of Art, Drama and Music, which must be submitted in March of the preceding year. Final selection will be made by a School committee.

DRAMA 4B03 INDEPENDENT STUDY IN DRAMA II

Prerequisite: Registration in a programme in Drama and permission of the School of Art, Drama and Music.

DRAMA 4C03 STUDIES IN THEATRE AND FILM

Senior seminar: A comparative examination of the performance, visual, and narrative techniques of theatre and film, including specific examples of adaptation.

Seminar (two hours), plus weekly film screening; one term

Prerequisite: Registration in Level IV of an Honours programme in Drama
Cross-list: ART HIST 4CC3

Offered in alternate years.

Enrolment is limited.

DRAMA 4CC3 STUDIES IN THE THEORY AND PRACTICE OF DRAMA

Senior seminar: A close examination of a selected text, or selected texts, from the textual, historical and theatrical points of view, leading to a workshop production of that play by members of the seminar.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Offered in alternate years.

Enrolment is limited.

DRAMA 4E03 STUDIES IN THE THEORY OF DRAMATIC PERFORMANCE

Senior seminar: 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 IV of an Honours programme in Drama

Offered in alternate years.

Enrolment is limited.

DRAMA 4EE3 STUDIES IN CONTEMPORARY DRAMA

Senior seminar: An examination of selected plays from western drama written since 1956.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Offered in alternate years.

Enrolment is limited.

DRAMA 4FF3 STUDIES IN FILM

Senior seminar: An examination of selected films.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama.

DRAMA 2X06/ART HISTORY 2X06 is recommended.

Offered in alternate years.

Enrolment is limited.

The following courses, offered by other departments, directly pertain to the study of Drama. These are recommended as electives. Up to nine units of courses from this list may be available as substitutes for Drama courses, and counted toward the fulfillment of a programme in Drama. Students are advised that there may be restrictions on enrolment in these courses.

CLASSICS 2E03	The Ancient World in Film
CLASSICS 2H03	Greek and Roman Drama
CLASSICS 3T03	The Theatre of Greece and Rome
COMP LIT 3B03	Drama Since 1800 (In English)
COMP LIT 3F03	Metamorphoses of Don Juan
COMP LIT 3G03	German Drama (In English)
ENGLISH 2B06	Development of English Drama
ENGLISH 3K06	Shakespeare
ENGLISH 3P03	Modern Drama In English
ENGLISH 3XX3	Topics in Drama
FRENCH 3BB3	Contemporary Quebec Theatre
FRENCH 3Q03	17th-Century French Literature I
KINESIOL 4JJ3	Dance in Contemporary Society
SADM 3A03	Music and the Other Arts
SADM 4A03	Interdisciplinary Study
WOMEN ST 3B03	Topics in Women and the Arts I: Theatre and Film

ECONOMICS**Faculty as of January 15, 1999****Choir**

Stuart Mestelman

Associate Chair

William M. Scarth

University Professor

Martin J. Browning/B.Sc., M.Sc. (London), Ph.D. (Tilburg)

Professors

Martin J. Browning/B.Sc., M.Sc. (London)

John B. Burbidge/B.A., Ph.D. (McGill)

Kenneth S. Chan/B.Sc. (Toronto), M.A., Ph.D. (Brown)

Martin Dooley/B.A. (Indiana), M.S., Ph.D. (Wisconsin-Madison)

Peter J. George/B.A., M.A., Ph.D. (Toronto), D.U. (Ottawa)

Alan Harrison/B.A., M.A., Ph.D. (Essex)

Stephen R.G. Jones/B.A. (Cambridge), Ph.D. (California-Berkeley)

Atif A. Kubursi/B.A., (American University, Beirut), M.S., Ph.D. (Purdue)

Peter J. Kuhn/B.A. (Carleton), Ph.D. (Harvard)

John E. Leach/B.A. (Alberta), M.A., Ph.D. (Queen's)

Wayne Lewchuk/M.A. (Toronto), Ph.D. (Cambridge)

Lonnie J. Magee/B. Math. (Waterloo), M.A., Ph.D. (Western Ontario)

Stuart Mestelman/B.A. (Pittsburgh), M.S., Ph.D. (Purdue)

R. Andrew Muller/B.A. (McGill), M.A., Ph.D. (Toronto)

Ernest H. Oksanen/A.M. (Michigan), B.A., Ph.D. (Queen's)

Martin J. Osborne/B.A. (Cambridge), Ph.D. (Stanford)

Yorgos Y. Papageorgiou/Dipl. Arch. Eng. (National Technical, Athens), M.C.P., Ph.D. (Ohio State), D.Sc. (Louvain)

A. Leslie Robb/B.A., M.A. (British Columbia), Ph.D. (Essex)

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.)

J. Douglas Welland/B.A. (McMaster), M.A., Ph.D. (Minnesota)

Associate Professors

David W. Butterfield/B.S., M.S. (Calif. Inst. of Tech.), A.B., M.A., Ph.D. (California-Berkeley)

Donald A. Dawson/A.M. (Chicago), Ph.D. (Western Ontario), N.D.C.

Assistant Professors

Alok Johri/B.A. (Delhi), M.A. (Delhi School of Economics), Ph.D. (Boston)

Peter J. McCabe/A.B. (Boston College), Ph.D. (Northwestern)

Associate Members

M. Luke Chan/(Business) B.Sc. (Prince Edward Island), M.A., Ph.D. (McMaster)

Paul Grootendorst/(Clinical Epidemiology and Biostatistics) B.A. (Victoria), M.A. (Queen's), Ph.D. (McMaster)

Jeremiah E. Hurley/(Clinical Epidemiology and Biostatistics) B.A. (John Carroll), M.A., Ph.D. (Wisconsin-Madison)

I. Krinsky/(Business) B.A., M.A. (Tel-Aviv), Ph.D. (McMaster)

D.C. Mountain/(Business) B.A. (McMaster), M.A., Ph.D. (Western Ontario)

Gregory L. Stoddart/(Clinical Epidemiology and Biostatistics) B.A. (Western Ontario), Ph.D. (British Columbia)

Professors Emeriti

Syed Ahmad/M.A., LL.B. (Aligarh), M.Sc. (Econ.), D.Sc. (Econ.) (London)

Frank T. Denton/B.A., M.A. (Toronto), F.R.S.C., F.S.S.

James A. Johnson/M.A., Ph.D. (Minnesota)

William R. Scammell/B.Comm.Sc. (Queen's, Belfast), Ph.D. (Wales)

Robert W. Thompson/B.A. (Toronto), M.A. (Queen's), Ph.D. (London)

James R. Williams/ M.A., Ph.D. (Minnesota)

David M. Winch/ B.Sc. (Econ.), Ph.D. (London), M.A. (Cambridge), F.R.S.C.

Department Notes:

- 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.
- Students with strong academic records, particularly those from other departments, may be permitted to enrol in courses for which they have not completed all prerequisites. In cases where prerequisites are incomplete, consultation with a departmental counsellor is required. If approval is granted, the counsellor will arrange for permission from the Department Chair.
- Students with credit in ECON 2X03 who transfer into Economics from other programmes may substitute ECON 2X03 for ECON 2G03.
- Students who transfer into Economics from other programmes may substitute ECON 1B03 and 1BB3 for ECON 1A06.

5. Students who complete ECON 2I03 are well placed to enroll 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).
6. ECON 2L03 may not be used to satisfy Economics unit requirements by students in Economics programmes or a minor in Economics, but may be used as an elective by students in Economics programmes.

Courses *If no prerequisite is listed, the course is open.*

ECON 1A06 INTRODUCTORY ECONOMICS

An introduction to the method and theory of economics, and their application to the analysis of contemporary economic problems.

Three lectures; two terms

Antirequisite: ECON 1B03 and 1BB3

ECON 1B03 INTRODUCTORY MICROECONOMICS

An introduction to the method and theory of microeconomics for Engineering, Kinesiology and Science students. The analysis will involve mathematics and will be applied to contemporary problems.

Three lectures; one term

Prerequisite: Registration in an Engineering, Kinesiology or Science programme

Antirequisite: ECON 1A06

ECON 1BB3 INTRODUCTORY MACROECONOMICS

An introduction to the method and theory of macroeconomics for Engineering, Kinesiology and Science students. The analysis will involve mathematics and will be applied to contemporary problems.

Three lectures; one term

Prerequisite: Registration in an Engineering, Kinesiology or Science programme

Antirequisite: ECON 1A06

ECON 2A03 ECONOMICS OF LABOUR-MARKET ISSUES

This course applies economic analysis to issues of importance in the labour market. Topics vary and may include: women in the Canadian labour market; discrimination in hiring and promotion; unemployment; job loss and workplace closing; work sharing.

Three lectures; one term

Prerequisite: ECON 1A06, or 1B03 and 1BB3

Cross-list: LABR ST 3A03

Enrolment is limited.

ECON 2B03 ANALYSIS OF ECONOMIC DATA I

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 1A06 or 1B03 and 1BB3 and MATH 1K03 (or OAC Calculus) and one of STATS 1L03 or 2D03 (or OAC Finite Math)

Not open to students with credit or registration in ECON 3O06, CHEM ENG 4C03, COMMERCE 2QA3, GEO 2S03, GEOG 2LL3, 2N03, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, 2RR3, SOC SCI 2J03, SOCIOL 2Y03, 3H06, STATS 1CC3, 2MA3, 2MB3, 2R06; or if COMMERCE 2QA3 is a programme requirement.

ECON 2C03 ASIAN-PACIFIC ECONOMIES

Economic conditions and factors influencing economic growth in selected countries in the Asian-Pacific region. Topics include government policies related to exchange rates and trade and development, as well as the Japanese style of management, the bonus system and job tenure.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03 and 1BB3

Cross-list: JAPAN ST 2C03

ECON 2D03 ECONOMIC ISSUES

Applications of economics to important public issues, from a general interest perspective. Since topics vary from year to year, interested students should consult the Economics Department for further details.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03 and 1BB3

Not offered in 1999-2000.

ECON 2E03 CANADA'S EXPERIENCE WITH MACROECONOMIC POLICY

Topics may include control of deficits and debt, the role and implementation of monetary policy, structural labour market policies, tax reform, and distribution of income.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03 and 1BB3

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 1A06 or 1B03 and 1BB3

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 1A06 or 1B03, and OAC Calculus or MATH 1K03 or equivalent. Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2G03.

Antirequisite: ECON 2L06 or 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

Antirequisite: ECON 2L06

ECON 2H03 INTERMEDIATE INCOME AND EMPLOYMENT THEORY I

National income accounting, determinants of national income, employment, the rate of interest and the price level; introduction to open economy.

Three lectures; one term

Prerequisite: ECON 1A06 or 1BB3 and OAC Calculus or MATH 1K03 or equivalent. Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2H03.

Antirequisite: ECON 2M06

ECON 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

Antirequisite: ECON 2M06

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 1A06 or 1B03 and 1BB3

Antirequisite: COMMERCE 3FB3

ECON 2J03 ENVIRONMENTAL ECONOMICS

A detailed examination of environmental regulation in Ontario and elsewhere with emphasis on potential economic instruments and with specific attention to various forms of air and water pollution.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03

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 1A06 or 1B03 and 1BB3

ECON 2L03 PEACE, HUMAN SECURITY AND ECONOMIC DEVELOPMENT

The methods and concepts of economic analysis applied to economic development, human security, human rights and peace and conflict resolution.

Three lectures; one term

Prerequisite: Registration in Level II or above

See Department *Note 6* above.

ECON 2N03 PUBLIC POLICY TOWARD BUSINESS

The economic effects of federal competition policy and the regulation of business by all levels of government. The impacts of government ownership and bailout activity on the Canadian business environment are also analyzed.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03 and 1BB3

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: ECON 1A06 or 1B03

ECON 2T03 ECONOMICS OF TRADE UNIONISM AND LABOUR

Topics include the economics of the labour market, of trade unionism, of work, the impact of trade unions on the labour market, economic theories of strikes and trade unions and the state.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03 and 1BB3

Cross-list: LABR ST 3B03

Enrolment is limited.

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 1A06 or 1B03 and OAC calculus or MATH 1K03 or equivalent. Students without credit in MATH 1M03 are strongly advised to take it concurrently with ECON 2X03

Antirequisite: ECON 2G03 or 2L06

Not open to students registered in Economics programmes.

ECON 3A03 ADVANCED ECONOMIC THEORY I

Mathematically oriented approaches to the analysis of the behaviour of individual consumers, workers and firms.

Three lectures; one term

Prerequisite: MATH 1M03 and an average of at least 7.0 in ECON 2G03 or 2X03, 2GG3 (or 2L06), 2H03, 2HH3 (or 2M06) and ECON 3G03

Offered in alternate years.

Not offered in 1999-2000.

ECON 3AA3 ADVANCED ECONOMIC THEORY II

Analysis of dynamic macroeconomic models, including models of endogenous growth and other selected topics.

Three lectures; one term

Prerequisite: MATH 1M03 and an average of at least 7.0 in ECON 2G03 or 2X03, 2GG3 (or 2L06), 2H03, 2HH3 (or 2M06) and ECON 3G03

Offered in alternate years.

Offered in 1999-2000.

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: One of ECON 2G03, 2X03, 2L06

Antirequisite: ECON 3C06

ECON 3C03 PUBLIC SECTOR ECONOMICS: TAXATION

Theory and practice of public finance: analysis and comparison of the efficiency, equity and distribution effects of the taxation of income, wealth and expenditure, analysis of social insurance, intergovernmental fiscal relations.

Three lectures; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

Antirequisite: ECON 3C06

ECON 3D03 LABOUR ECONOMICS

Introduction to the economics of the labour market; demand for labour by the firm and industry; supply of labour by the individual; investment in human capital.

Three lectures; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

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: Registration in Level III or Level IV of an Honours Economics programme

ECON 3G03 INTRODUCTION TO ADVANCED ECONOMIC THEORY

An introduction to the application of mathematics in economic theory.

Three lectures; one term

Prerequisite: One of OAC Finite Math, MATH 1B03, or STATS 1L03; MATH 1M03 or equivalent; and an average of at least 7.0 in ECON 2G03 or 2X03, 2GG3 (or 2L06), 2H03, 2HH3 (or 2M06)

ECON 3H03 INTERNATIONAL MONETARY ECONOMICS

Balance of payments and economic problems of an open economy with special reference to Canada; the international financial system and proposals for its reform.

Three hours (lectures and seminars); one term

Prerequisite: ECON 2H03 or 2M06

ECON 3HH3 INTERNATIONAL TRADE

Real theory of international trade; interregional and international specialization; effect of commercial and industrial policies.

Three lectures; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

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: One of ECON 2G03, 2X03, 2L06. ECON 2H03 or 2M06 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: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

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: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

ECON 3M03 INTRODUCTION TO GAME THEORY

An introduction to the theory of games, including strategic, extensive and coalitional games. Applications in economics, political science and evolutionary biology are discussed.

Three lectures; one term

Prerequisite: ECON 1A06 or 1B03 and MATH 1K03 (or equivalent)

Not open to students with credit in ECON 3Y03 SELECTED TOPICS I, if the topic was Introduction to Game Theory.

ECON 3P03 LINEAR ECONOMIC MODELS

Application and interpretation in economics of linear programming, game theory and inter-industry analysis.

Three lectures; one term

Prerequisite: One of OAC Finite Math, MATH 1B03 or 1L03, or STATS 1L03; at least C- in each of MATH 1M03, ECON 2G03 or 2X03 (or 2L06) and 2H03 (or 2M06). Credit in MATH 1A03, 1A06, 1AA6, 1C06 or 1N06 is accepted in place of C- in MATH 1M03.

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: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

ECON 3S03 INDUSTRIAL ORGANIZATION

A study of the structure, conduct and performance of industrial markets.

Three lectures; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

Antirequisite: ECON 3N06

ECON 3T03 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: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

Antirequisite: ECON 3J06

ECON 3U03 ANALYSIS OF ECONOMIC DATA II

Elaboration of regression techniques developed in ECON 2B03. Problems of inference and interpretation in the analysis of economic data. Introduction to forecasting in economics.

Three lectures; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06; and ECON 2B03 or one of CHEM ENG 4C03, COMMERCE 2QA3, GEO 2S03, GEOG 2LL3, 2N03, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, 2RR3, SOC SCI 2J03, SOCIOLOGY 2Y03, 3H06, STATS 1CC3, 2MA3, 2MB3, 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 or credit or registration in 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, 2L06 or permission of the instructor.

ECON 3X03 URBAN MODELS AND POLICY ANALYSIS I

A survey of modern literature on urban social structure. Topics include morphology, adjustments to change, and such phenomena as sudden urban growth and the decline of central cities.

Two lectures (one hour), one tutorial (two hours); one term

Prerequisite: One of ECON 2G03, 2X03, 2L06, or GEO 2HB3 (formerly GEOG 2B03)

Cross-list: GEO 3HX3 (formerly GEOG 3X03)

ECON 3Y03 SELECTED TOPICS I

Topics will vary from year to year depending on student interests and faculty availability. Students should consult the Department on topics to be offered.

Three hours; one term

Prerequisite: Permission of the Department

Not offered in 1999-2000.

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 2G03, 2X03, 2L06, 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, 3U03 or 3O06

ECON 4B03 SELECTED TOPICS II

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

Not offered in 1999-2000.

ECON 4G03 ECONOMETRICS I

Development of regression models appropriate to economics. Illustrations from applied micro- and macroeconomics.

Three lectures; one term

Prerequisite: ECON 2G03 or 2X03 (or 2L06), and ECON 2H03 (or 2M06), and at least C- in ECON 3O06 or 3U03 or STATS 2D03 and 2MB3 (or 2M03)

ECON 4M06 DIRECTED RESEARCH I

A reading and/or research programme supervised by a Department member. A major paper is required. Interested students should consult the Department concerning admission.

Prerequisite: Permission of the Department

ECON 4N03 DIRECTED RESEARCH II

As per ECON 4M06.

Prerequisite: Permission of the Department

ECON 4X03 URBAN MODELS AND POLICY ANALYSIS II

A survey of modern literature on urban issues. Topics include welfare criteria, externalities, public goods and fiscal policies.

Two lectures (one hour), one tutorial (two hours); one term

Prerequisite: ECON 3X03 or GEO 3HX3 (formerly GEOG 3X03)

Cross-list: GEO 4HX3 (formerly GEOG 4X03)

ELECTRICAL AND COMPUTER ENGINEERING**Faculty as of January 15, 1999****Chair**

David R. Conn

Associate Chair

David W. Capson

University Professor

Simon Haykin/B.Sc., Ph.D., D.Sc. (Birmingham), F.R.S.C., F.I.E.E.E.

Professors

Robert T.H. Alden/B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng.

John W. Bandler/B.Sc. (Eng.), Ph.D., D.Sc. (Eng.) (London), A.C.G.I., D.I.C. (Imperial College), C.Eng., F.R.S.C., F.I.E.E.E., F.I.E.E.E., P.Eng.

David W. Capson/B.Sc.Eng. (New Brunswick), M.Eng., Ph.D. (McMaster), P.Eng.

Charles R. Carter/B.A.Sc., M.A.Sc., (British Columbia), Ph.D. (McMaster), P.Eng.

David R. Conn/B.Sc., M.Sc., Ph.D. (Queen's), P.Eng.

Raymond D. Findlay/B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng. F.I.E.E.E.

Wei-Ping Huang/B.S. (Shandong), M.S. (Science and Technology of China), Ph.D. (M.I.T.)

John Litva/B.Sc. (British Columbia), M.Sc., Ph.D. (Western Ontario)

T.Z.-Q. Luo/B.Sc. (Peking), Ph.D. (M.I.T.)

James P. Reilly/B.A.Sc. (Waterloo), M.Eng., Ph.D. (McMaster), P.Eng.

Barna Szabados/Dipl.Eng. (Grenoble), M.Eng., Ph.D. (McMaster), P.Eng.

Terrence D. Todd/B.A.Sc., M.A.Sc., Ph.D. (Waterloo), P.Eng.

Kon Max Wong/B.Sc. (Eng.), Ph.D., D.Sc. (Eng.) (London), D.I.C. (Imperial College), P.Eng., C.Eng., F.I.E.E.E., F.Inst.P., F.S.S.

Adjunct Professors

Radek M. Biernacki/M.Sc., Ph.D. (Warsaw)

Mohamed A. El-Kady/B.Sc. (Eng.), M.Sc. (Eng.) (Cairo), Ph.D. (McMaster), S.M.I.E.E.E., P.Eng.

Michel Poloujadoff/D.Ing. (Ecole Supérieure d'Electricité, Paris), M.Sc. (Harvard), Ph.D. (Paris)

Associate Professors

Stephen H. Chisholm/B.A.Sc. (Toronto), Ph.D. (London)

Alex B. Gershman/M.Eng. Sc., Ph.D. (Nizhny Novgorod)

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.

Adjunct Associate Professors

Eloi Bosse/B.Sc.A., M.Sc. (Laval), Ph.D. (Carleton, Ottawa, Laval)

Chandra M. Kudsia/B.Sc. (Delhi), M.Eng. (McMaster), Ph.D. (Concordia), P.Eng.

Henry K.Y. Leung/B.Math. (Waterloo), M.Sc. (Toronto), M.Eng., Ph.D. (McMaster)

Ke-Li Wu/B.Sc., M.Sc. (East China Institute of Technology), Ph.D. (Laval)

Assistant Professors

Anthony Vaz/B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng.

Adjunct Assistant Professors

Youssef H. Dableh/B.Sc.Eng., M.Sc.Eng. (New Brunswick), Ph.D. (McMaster), P.Eng.

Robert D. Dony/B.A.Sc., M.A.Sc. (Waterloo), Ph.D. (McMaster)/part-time

Qu Jin/B.Eng., M.Eng. (Dalian Maritime), Ph.D. (McMaster)

Daniel C. McCrackin/B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.

Associate Members

D.T. Cassidy/(Engineering Physics), B.Eng. (McMaster), M.Sc. (Queen's), Ph.D. (McMaster)

J.S. Chang/(Engineering Physics), M.Eng., B.Eng., B.Edu.Eng. (Japan), Ph.D. (York)

Hubert deBruin/(Medicine), M.Eng., Ph.D. (McMaster), P.Eng. M.A. ElBestawi/(Mechanical Engineering), B.Sc. (Alexandria), M.Eng., Ph.D. (McMaster)

Jan Dirk Huizinga/(Biomedical Sciences), B.Sc., M.Sc., Ph.D. (Groningen)

Ryszard Janicki/(Computing and Software), M.Sc. (Warsaw), Ph.D., D.Hab. (Polish Acad. Sci.)

- Paul E. Jessop/(Engineering Physics), B.Sc. (Waterloo), M.A., Ph.D. (Harvard)
 Tao Jiang/(Computing and Software), B.Sc. (University of Science and Technology of China, Hefei), Ph.D. (Minnesota)
 Markad V. Kamath/(Medicine), M.S., Ph.D. (Indian Inst. of Tech., Madras), Ph.D. (McMaster)
 Peter E. Lauer/(Computing and Software), B.A. (Alabama), M.A. (Emory), Ph.D. (Queen's, Belfast)
 Ali-Reza Montazemi/(Business) H.N.D. (Teeside Polytechnic, U.K.), M.Sc. (Southampton), Ph.D. (Waterloo)
 Claude Nahmias/(Nuclear Medicine), B.Sc. (Cairo), Ph.D. (Surrey)
 David L. Parnas/(Computing and Software) B.S., M.S., Ph.D. (Carnegie), Dr.h.c. (ETH-Zürich), Dr.h.c. (Louvain), F.R.S.C., F.A.C.M., NSERC/Bell Industrial Research Chair in Software Engineering, P.Eng.
 Lionel David Pengelly/(Medicine), B.A.Sc. (Toronto), M.Sc., Ph.D. (McGill), P.Eng.
 Skipper Poehlman/(Computing and Software), B.S. (Niagara), B.Sc. (Brock), M.Sc., Ph.D. (McMaster), P.Eng.
 Sanzheng Qiao/(Computing and Software), B.S., M.S. (Shanghai Teacher's College), M.S., Ph.D. (Cornell)
 Emil Sekerinski/(Computing and Software) Dipl.Inf., Ph.D. (Karlsruhe)
 David A. Thompson/(Engineering Physics), B.Sc., Ph.D. (Reading)
 Roman Viveros-Aguilera/(Mathematics and Statistics), B.A. (Veracruzana, Mexico), M.A. (National Polytechnic Inst., Mexico), Ph.D. (Waterloo)
 Martin von Mohrenschildt/(Computing and Software) Dipl.Math., Dr.s.c.Math. (ETH-Zürich)
 Patrick C. Yip/(Mathematics and Statistics), B.Sc. (Memorial), Ph.D. (McMaster)
 Jeffery I. Zucker/(Computing and Software), B.Sc. (Witwatersrand), Ph.D. (Stanford)

Professors Emeriti

- Colin K. Campbell/B.Sc. (Eng.), Ph.D. (St. Andrews), D.Sc. (Dundee), S.M. (M.I.T.), F.R.S.C., F.R.S.A., F.E.I.C., F.I.E.E.E., P.Eng.
 Arthur S. Gladwin/D.Sc. (Glasgow), Ph.D. (London)
 Reuven Kitai/M.Sc., D.Sc. (Witwatersrand), F.I.E.E.E.
 Naresh K. Sinha/B.Sc. (Eng.) (Banaras), C.Eng., Ph.D. (Manchester), F.I.E.E., P.Eng.

COMPUTER ENGINEERING ...

Department Note:

All Electrical and Computer Engineering courses are open to students registered in an Electrical or Computer Engineering programme, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other Engineering departments or faculties.

Courses If no prerequisite is listed, the course is open.

COMP ENG 2DI4 INTRODUCTION TO COMPUTER ENGINEERING

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; second term

Prerequisite: Registration in a programme in Computer Engineering, Electrical Engineering, Engineering Physics or Physics

Antirequisite: COMP ENG 2HA3

COMP ENG 2SI4 DATA STRUCTURES, ALGORITHMS AND DISCRETE MATHEMATICS

Application of logic and finite state machines programming; data types; data abstraction and algorithms for sorting and searching; application of graph algorithms and combinatorics in programming; estimating program resource utilization.

Three lectures, one tutorial (two hours); first term

Prerequisite: ENGINEER 1D04

Antirequisite: COMP ENG 2YA3

COMP ENG 3DJ4 DIGITAL SYSTEMS DESIGN

CAD tools for digital circuits; hardware description language; programmable logic and applications; algorithmic state machine design; microprocessor-based system design including memory and peripheral interfaces; machine-level programming.

Three lectures, one tutorial, one lab every other week; first term

Prerequisite: COMP ENG 2DI4 or 2HA3

Antirequisite: COMP ENG 3HB3, 3HC3

COMP ENG 3SJ4 SOFTWARE DEVELOPMENT

Role of inspection and testing; foundations of specification and documentation; modular design and interface design; documentation design decisions; statistical, white-box and black-box testing; software documentation and inspection.

Three lectures, one lab (four hours) every other week; first term

Prerequisite: COMP ENG 2SI4 or 2YA3

Antirequisite: COMP ENG 3VA3

COMP ENG 3SK4 COMPUTER-AIDED ENGINEERING I

CAE; numerical analysis; linear and nonlinear systems; least squares and QR factorization; optimization; numerical integration and differentiation; sensitivity analysis; finite differences and finite elements; engineering applications.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: COMP ENG 2DI4 or 2HA3; ELEC ENG 2CJ4 or 2DA3; MATH 3K03

Antirequisite: COMP ENG 3KB3

COMP ENG 3SL4 DESIGN OF SOFTWARE SYSTEMS

Software hierarchies and object oriented methods for engineering systems; interface syntax; variables and relational specifications; evaluation and selection of languages; implementation of an object oriented design.

Two lectures, one tutorial, one lab (three hours); second term

Prerequisite: COMP ENG 3SJ4

Antirequisite: COMP ENG 3VA3

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 3DB3 or 3TJ4

Antirequisite: COMP ENG 4MA3

COMP ENG 4DL4 REAL-TIME AND DISTRIBUTED COMPUTING SYSTEMS

Computing systems design for real-time applications in control and communications; data acquisition, file management, memory management and multitasking in a real-time environment; distributed computing systems; synchronization, fault tolerance.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: COMP ENG 3DJ4, 3HB3 and 3HC3

Antirequisite: COMP ENG 4HE3

COMP ENG 4DM4 COMPUTER ARCHITECTURE

Overview of CISC/RISC microprocessors and their evolution; performance metrics; instruction set design; microprogramming and hardwired control; processor and memory acceleration techniques; memory hierarchies; multiprocessor structures and their performance.

Three lectures, one tutorial, one lab every other week; first term

Prerequisite: COMP ENG 3DJ4 or 3HB3 and 3HC3

Antirequisite: COMP ENG 4HD3

COMP ENG 4OI4 ENGINEERING DESIGN

The design process; establishing objectives; preliminary design; planning; scheduling; decision matrices; modeling tools; economic impact; optimization methods; reliability; safety; a term project composed of small teams of students.

One lecture, one capstone project; offered both terms

Prerequisite: Registration in Level IV or V of any Electrical or Computer Engineering programme

Antirequisite: ELEC ENG 4JA4, COMP ENG 4JA4

COMP ENG 4SN4 OPERATING SYSTEMS

Structure of computing systems; processes and threads; scheduling; synchronization; memory management; virtual memory; file systems interface and management; distributed systems; concurrency; protection and security.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: COMP ENG 3SL4 or 3VA3

Antirequisite: COMP ENG 3WA3, 4WA3, COMP SCI 3MH3

ELECTRICAL ENGINEERING ...

Courses

ELEC ENG 2CI4 INTRODUCTION TO ELECTRICAL ENGINEERING

Electric and magnetic fields; current, potential difference; Kirchhoff's laws; Ohm's Law; circuit elements; single time constant circuits; complex arithmetic; phasors, impedance and admittance; semiconductor devices; single-stage transistor amplifiers.

Three lectures, one tutorial, one lab every other week; first term

Prerequisite: Registration in a Computer Engineering or Electrical Engineering programme

Antirequisite: ELEC ENG 2BA3

ELEC ENG 2CJ4 CIRCUITS AND SYSTEMS

Mesh/nodal analysis of electrical circuits; Laplace transforms with applications; responses of linear systems; coupled circuits; power relationships; dependent sources; magnetic and nonlinear circuits.

Three lectures, one tutorial (two hours); second term

Prerequisite: ELEC ENG 2BA3 or 2CI4

Antirequisite: ELEC ENG 2DA3

ELEC ENG 2EI4 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 other week; second term

Prerequisites: ELEC ENG 2BA3 or 2CI4

Corequisite: ELEC ENG 2CJ4

Antirequisite: ELEC ENG 2FA3

ELEC ENG 3CK4 CONTROL SYSTEMS I

Control system design; modelling of physical systems; study of feedback and stability; performance specifications; design of control systems in the frequency domain using lead, lag compensators and PID control.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: ELEC ENG 2CJ4 or 2DA3, MATH 3K03

Antirequisite: ELEC ENG 3CA3

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; second term

Prerequisite: ELEC ENG 2CJ4 or 2DA3, 2EI4 or 2FA3

Antirequisite: ELEC ENG 3FB3, 3FC3

ELEC ENG 3FI4 ELECTROMAGNETIC FIELDS

Electrostatics, magnetostatics, ferromagnetics; Maxwell's equations; plane and spherical waves; wave and intrinsic impedance; phase and group velocity; energy; Poynting's theorem; propagation and reflection.

Three lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 2BA3 or 2CI4

Antirequisite: ELEC ENG 3BB3

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 2DA3

Antirequisite: ELEC ENG 3NA3, 3SA3

ELEC ENG 3TI4 COMMUNICATION SYSTEMS

Continuous-time systems; Laplace transforms; Fourier transforms; linear systems; impulse and frequency responses; distortion; AM, DSB, SSB, phase and frequency modulation; discretization of continuous signals; digital modulation.

Three lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 2CJ4 or 2DA3

Corequisite: MATH 3K03

Antirequisite: ELEC ENG 3AA3

**ELEC ENG 3TJ4 DISCRETE TIME SYSTEMS
AND RANDOM PROCESSES**

Discrete time systems; discretization; z-transform; transfer functions; probability theory, random variables, expectations; random processes, autocorrelation, power spectral densities; filtering; applications of random processes; noise in communication systems.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: ELEC ENG 3AA3 or 3TI4

Antirequisite: ELEC ENG 3DB3

ELEC ENG 4CL4 CONTROL SYSTEMS II

Multiple input multiple output (MIMO) systems; continuous time and digital techniques; dynamic models for MIMO systems, state variables, vector spaces; design of state feedback controllers, optimal linear-quadratic regulator.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: ELEC ENG 3CA3 or 3CK4

Antirequisite: ELEC ENG 4CB3

ELEC ENG 4EK3 MICROELECTRONICS

CMOS and MOSFET integrated circuit design; fabrication and layout; simulation; digital and analog circuit blocks; computer aided design and analysis; testing and verification.

Three lectures, one tutorial, one lab every other week; second term

Prerequisite: ELEC ENG 3EJ4 or 3FB3 and 3FC3

Antirequisite: ELEC ENG 4FD3

**ELEC ENG 4EL3 BIOMEDICAL ELECTRONIC
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.

Two lectures, one tutorial, one lab every other week; second term

Prerequisite: ELEC ENG 3EJ4 or 3FB3 and 3FC3 or ENGINEER 3N03 or PHYSICS 3B06

Antirequisite: ELEC ENG 4UA3

ELEC ENG 4FJ4 MICROWAVE ENGINEERING

Principles of transmission lines, impedance matching and Smith charts; scattering parameters; waveguides and resonant cavities; stripline and microstrip; antenna radiation; radio-wave propagation.

Three lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 3BB3 or 3FI4

Antirequisite: ELEC ENG 4RA3

ELEC ENG 4HI3 COMMUNICATION SKILLS

Organizational behaviour; conflict resolution; barriers to communications; oral communications; interpersonal, group and team skills; technical writing; public presentations.

Two lectures, one tutorial (three hours) per week; first term

Prerequisite: Registration in Level IV Electrical or Computer Engineering

Antirequisite: ELEC ENG 4QA3, registration in Engineering and Management, or Engineering and Society

ELEC ENG 4HJ1 HEALTH AND SAFETY, LAW AND ETHICS

The Engineering Act; principles of ethics and ethical dilemmas; health and safety in the workplace; safety hazards in the workplace; electrical shock hazards; safety in the software industry.

Eight seminars (one hour); first term

Prerequisite: Registration in Level IV or V of any Electrical or Computer Engineering programme

Antirequisite: ELEC ENG 4A01

ELEC ENG 4OI4 ENGINEERING DESIGN

The design process; establishing objectives; preliminary design; planning; scheduling; decision matrices; modeling tools; economic impact; optimization methods; reliability; safety; a term project composed of small teams of students.

One lecture, capstone project; offered both terms

Prerequisite: Registration in Level IV or V of any Electrical or Computer Engineering programme

ELEC ENG 4PJ3 ROTATING MACHINES

Design considerations for electric machines; polyphase stator windings; harmonics; slotting; saturation; losses; reactance; saliency; equivalent circuits; synchronous, asynchronous and permanent magnet machines.

Two lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 3NA3 and 3SA3 or 3PI4

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.

Two lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 3NA3 and 3SA3 or 3PI4, 3CA3 or 3CK4; 3EJ4 or 3FB3 and 3FC3

Antirequisite: ELEC ENG 4SB3

ELEC ENG 4PL4 ENERGY SYSTEMS AND MANAGEMENT

Elements of generation, transmission, and distribution systems; system-wide energy flow and control; modeling and simulation; economics and management; fault prediction and management.

Two lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 3PI4

Antirequisite: ELEC ENG 4NB3

ELEC ENG 4TK4 DIGITAL COMMUNICATIONS SYSTEMS

A/D conversion; digital modulation; frequency hopping; code-division multiplexing; matched filters; equalization; optimal receiver design; entropy; coding; data compression; capacity of band-limited Gaussian channel.

Two lectures, one tutorial, one lab every other week; second term

Prerequisite: ELEC ENG 3DB3 or 3TI4

Antirequisite: ELEC ENG 3AA3

ELEC ENG 4TL4 DIGITAL SIGNAL PROCESSING

Classical filter theory; DFT and FFT; FIR and IIR digital filters; effects of finite precision; implementation of DSP-based systems; adaptive filtering; signal compression.

Two lectures, one tutorial, one lab every other week; first term

Prerequisite: ELEC ENG 3DB3 or 3TJ4

Antirequisite: ELEC ENG 4EA3

ENGINEERING (GENERAL)**Department Note:**

Enrolment in these courses by students in programmes other than Engineering, Engineering and Society or Engineering and Management may be limited.

Courses *If no prerequisite is listed, the course is open.***ENGINEER 1A00 SAFETY TRAINING**

Introduction to safety guidelines at McMaster University, acceptable safety conduct and positive safety attitudes and practices in laboratories and Workplace Hazardous Materials Information System (WHMIS).

One hour, first week; first term

Prerequisite: Registration in an Engineering programme

This course must be passed before registering in Level II Engineering.

ENGINEER 1C04 ENGINEERING DESIGN AND COMMUNICATION

Graphical, written and oral communication in the context of engineering design. The engineer and society. Design projects by individuals and groups, design skills workshops.

Two lectures, one graphics lab (three hours), one design lab (two hours); first term

Prerequisite: Registration in an Engineering programme

ENGINEER 1D04 ENGINEERING COMPUTATION

Disciplined design of sequential programs for engineering applications. Development, analysis, testing, and documentation of trustworthy programs. Use of the state concept and abstraction in programming.

Three lectures, one tutorial (two hours); second term

Prerequisite: Registration in an Engineering programme

Antirequisite: COMP SCI 1MA3 or 1MC3 or 1SA3

ENGINEER 2B03 ENGINEERING ECONOMICS

Engineering criteria for decision-making. Money flow. Financial ventures. Personal financing. Total project investment. Production and operations costs. Economic analysis. Financial attractiveness.

Two lectures, one tutorial; second term

Prerequisite: Registration in a Computer Engineering or Electrical Engineering programme

Antirequisite: CHEM ENG 4N04, ENGINEER 4B03

Not open to students registered in an Engineering and Management programme.

ENGINEER 2C03 ELECTRICITY, THERMOPHYSICS AND ENERGY

An exposure of electrical and thermophysics fundamentals having civil engineering applications. Topics: electrostatics, electric currents, circuits and transients, electrical power engineering, energy efficiency, heat transfer mechanisms.

Two lectures, one tutorial (two hours); second term

Prerequisite: PHYSICS 1E03, and registration in MATH 2M06

ENGINEER 2E03 STRUCTURE AND PROPERTIES OF ENGINEERING MATERIALS

Bonding, crystal structure, defects and diffusion; mechanical and electrical properties; semiconductor device fabrication; optical magnetic and superconductor properties.

Three lectures, one tutorial; first term

Prerequisite: Completion of at least 12 units of Level I Chemistry, Mathematics or Physics

Antirequisites: ENGINEER 2O03, 2O04, 3P03, MATLS 1A03

ENGINEER 2MM3 ELECTRICAL CIRCUITS AND POWER

Fundamentals of electromechanical energy conversion. Motors and generators, transformers, single and polyphase power circuits, synchronous and induction machines, power measurements.

Two lectures and one lab or tutorial; first term or second term

Prerequisite: PHYSICS 1E03, and registration in MATH 2M06, or MATH 2P04 and 2Q04

Antirequisite: ENGINEER 3M03

ENGINEER 2O03 STRUCTURE AND PROPERTIES OF ENGINEERING MATERIALS

Structure of materials as the basis of mechanical, thermal, electrical, magnetic and chemical properties. Basic approaches to selection of materials in engineering design.

Two lectures and one tutorial; first term

Prerequisite: Completion of at least 12 units of Level I Chemistry, Mathematics or Physics

Antirequisites: ENGINEER 2E03, 2O04, 3P03, MATLS 1A03, 2A02

ENGINEER 2P04 ENGINEERING MECHANICS 'A'

Principles of statics as applied to deformable solid bodies. Stress and strain, elastic behaviour of simple members under axial force, bending and torsion. Principal stresses; deflection of beams; statical indeterminacy.

Three lectures, plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first term

Prerequisite: PHYSICS 1D03

ENGINEER 2Q04 ENGINEERING MECHANICS 'B'

Kinematics and dynamics of particles and rigid bodies. Motion with respect to a rotating frame of reference. Work, energy and momentum principles. Free, damped and forced vibrations of single degree of freedom systems.

Three lectures, plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first or second term

Prerequisite: Credit or registration in ENGINEER 2P04

ENGINEER 3D01 LEADERSHIP: PRINCIPLES AND PRACTICE I

Instruction and practice in basic skills of leadership through workshops and practicum in undergraduate engineering courses.

Three to four hours practicum; first or second term

Prerequisite: Registration in Level III or above of an engineering programme.

ENGINEER 3I00 CO-OPERATIVE INDUSTRIAL INTERNSHIP

Orientation to the workplace, career planning, job search skills, application and presentation skills. Successful completion of a minimum of 12-months internship, work term report and workplace evaluation.

Instructional/Clinic sessions one evening per week for six weeks; first term or second term

12-16 months internship

Prerequisite: Completion of Level II of a four-level programme or Level III of a five-level programme in Engineering or Computer Science with a result of session May Continue

ENGINEER 3K03 INTRODUCTION TO THERMODYNAMICS AND HEAT TRANSFER

Fundamentals of thermodynamics. Principles of conductive, radiant and convective heat transfer. Examples from chemical, mechanical and electrical systems.

Three lectures; one term

Prerequisite: Completion of Level II of any Software Engineering programme

ENGINEER 3L03 DYNAMICS AND CONTROL OF PHYSICAL SYSTEMS

Mathematical models of physical systems involving the principles of statics, kinematics, vibrational and stability analysis. Fundamentals of control theory.

Three lectures; one term

Prerequisite: Completion of Level II in any Software Engineering programme

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: ENGINEER 2M04 or 2MM3 or 3M03

ENGINEER 3P03 MECHANICAL BEHAVIOUR OF MATERIALS

Phenomenological treatment of elastic and plastic deformation, creep, fatigue and fracture mechanics of engineering materials particularly of interest in civil engineering. Physical processes in metals, ceramics, polymers, concrete, wood and composite materials. Application to mechanical design of structures, welded components and materials selection decisions. Properties of concrete.

Three lectures, two 3-hour lab periods for concrete project; first term

Prerequisite: MATH 2M06, or MATH 2P04 and 2Q04, and ENGINEER 2P04

Antirequisite: ENGINEER 2E03, 2O03, 2O04, 3R03, MATLS 3M03, 3P03

ENGINEER 4A03 ENGINEERING AND SOCIAL RESPONSIBILITY

The historical development of the engineering profession's concern for social responsibility. Engineering as a cultural activity. The scope and limitations of engineering ethics. The role of the engineering profession in the social control of technological change.

One lecture, one tutorial, one seminar; second term

Prerequisite: Registration in Level III or above in any Engineering programme except Engineering and Society

ENGINEER 4B03 ENGINEERING ECONOMICS

Engineering criteria for decision-making. Money flow. Financial ventures. Personal financing. Total project investment. Production and operations costs. Economic analysis. Financial attractiveness.

Two lectures, one tutorial; second term

Prerequisite: Registration in final level of an Engineering programme

Antirequisite: CHEM ENG 4N04, ENGINEER 2B03

Not open to students registered in an Engineering and Management programme.

ENGINEER 4H03 ENGINEERING: ITS HISTORY, PHILOSOPHY AND ITS WORKINGS

History and philosophy 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 programme except Engineering and Society

ENGINEER 4J03 MATERIALS FABRICATION

Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. Processing methods for a wide range of materials, including metals, ceramics and plastics. The analytical basis for understanding and optimizing materials processes. Exercises in mathematical modelling and the use of software packages to optimize processes.

Three lectures; first term

Prerequisite: MECH ENG 3A03 or MATLS 3M03 or 3P03

ENGINEER 4U03 UNIT OPERATIONS AND PROCESSES IN ENVIRONMENTAL ENGINEERING

The process capabilities, hardware and design equations, of the physical, chemical and biological processes used to improve water. Emphasis on processes such as bio-oxidation, clarification, coagulation, sludge dewaterings and disinfection.

Two lectures, one tutorial (two hours); second term

Prerequisite: CHEM ENG 3O04 or CIV ENG 3Q03 or 3Q04, or MECH ENG 3O04, and registration in Level IV or above of any Engineering programme

ENGINEER 4X03 CONCEPTS IN BIOMEDICAL ENGINEERING

Engineering and physical science approach to human physiological systems; cardiovascular system, with specific organ circulations, respiratory systems, overall integration and control.

Three lectures; first term

Prerequisite: Registration in Level III or above of an Engineering programme or any Honours programme in the Faculty of Science

Antirequisite: BIOLOGY 3U03

ENGINEERING AND MANAGEMENT

The Engineering and Management Programmes are described in the section Faculty of Engineering in this Calendar. These programmes are administered jointly by the School of Business and the Faculty of Engineering and lead to the B.Eng.Mgt. degree. An Industrial Advisory Council also participates in the education process.

Programme Director

E. Kleinschmidt

Administrator

S.D. Verhage

Courses *If no prerequisite is listed, the course is open.*

ENGN MGT 2AA2 COMMUNICATION SKILLS

Writing and speaking; interpersonal communications and skills, team-work, brainstorming, writing memoranda and business letters, organizational strategies, visual elements, formal reports, oral communications, technical talks. One lecture, One tutorial (two hours); first term

Prerequisite: Registration in an Engineering and Management programme

ENGN MGT 3AA1 ISSUES IN TECHNOLOGY MANAGEMENT

Introduction to the field of Technology Management; the skills of writing position papers, presenting to a small group, and facilitating seminars are developed.

One seminar/class; one term

Prerequisite: Registration in an Engineering and Management programme

ENGN MGT 4A01 ENGINEERING AND MANAGEMENT REPORT

A written report and oral presentation based on summer work experience and written assessments of communications are required. Guidelines and procedures must be obtained from the Programme Director before the end of Level III.

One seminar, alternate weeks; both terms

Prerequisite: Registration in Level IV of an Engineering and Management programme

ENGN MGT 5B03 ENGINEERING AND MANAGEMENT PROJECTS

Projects that integrate the engineering and business disciplines, employing case studies provided by the members of the Industrial Advisory Council, or by industry.

One lecture, two tutorials (two hours); first or second term

Prerequisite: Registration in the final year of an Engineering and Management programme

ENGINEERING AND SOCIETY

The Engineering and Society Programmes are described in the Faculty of Engineering section in this Calendar. These programmes lead to the B.Eng.Society degree.

Programme Director

R.C. Hudspith

Operating Committee, as of July 1, 1998:

- M. Shoukri (*Dean of Engineering*)
- P.E. Wood (*Associate Dean of Engineering*)
- B. Baetz (*Civil Engineering*)
- J. Chang (*Engineering Physics*)
- K. Coley (*Materials Science and Engineering*)
- K. Garay (*Women's Studies*)
- R.L. Judd (*Mechanical Engineering*)
- S.M. Kibria (*Chemical Engineering and Society, Student*)
- S.J. Krizan (*Chemical Engineering and Society, Student*)
- T.E. Marlin (*Chemical Engineering*)
- R. Murtaza (*Engineering Physics and Society, Student*)
- D.L. Parnas (*Computing and Software*)
- T.L. Traini (*Electrical Engineering and Society, Student*)
- A. Vaz (*Electrical and Computer Engineering*)
- L. Worsley (*Mechanical Engineering and Society, Student*)

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 1999-2000 is sustainability.

Three hours (lectures, discussion, group work); first term

Prerequisite: Registration in an Engineering and Society programme

Antirequisite: STPP 2A06

ENGSOCTY 2Y03 CASE STUDIES IN THE HISTORY OF TECHNOLOGY

History and philosophy of technology, from antiquity to modern times, with a special emphasis on the cultural aspects of technology, are addressed on a case study basis.

Three hours (lectures, discussion, group work); second term

Prerequisite: Registration in an Engineering and Society programme

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. The focus for 1999-2000 is engineering and health.

Three hours (lectures, discussion, group presentations); first term

Prerequisite: ENGSOCTY 2X03

ENGSOCTY 3Y03 THE CULTURE OF TECHNOLOGY

A study of the nature and structure of technology, the nature of culture, and the role and place of different groups, including engineers, in a culture dominated by technology.

Three hours (lectures, discussion, group work, seminars); first term

Prerequisite: ENGSOCTY 2Y03

Antirequisite: STPP 2A06

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); second term

Prerequisite: Registration in Level III or IV of an Engineering and Society programme or the Honours Environmental Science (B.Sc.) Programme

ENGSOCTY 4X03 INQUIRY IN AN ENGINEERING CONTEXT III

Under the supervision of a faculty member, students write an inquiry paper and present their findings orally. Topics for inquiry must bear on the relation of technology to society and have implications for the practising engineer.

Prerequisite: ENGSOCTY 3X03

ENGSOCTY 4Z03 THE SOCIAL CONTROL OF TECHNOLOGY

The dominant mechanisms of the social control of technology are studied, with a specific emphasis on the role of the engineering profession. Includes an examination of assessment methods and the role of ethics as one approach to social responsibility in engineering.

Three hours (lectures, discussion, group projects, seminars); first term

Prerequisite: Registration in Level V of an Engineering and Society programme

ENGINEERING PHYSICS**Faculty as of January 15, 1999****Chair**

P. Mascher

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.

Jen-Shih Chang/B.Edu.Eng., B.Eng., M.Eng. (*Musashi Inst. of Tech.*), Ph.D. (*York*)

William J. Garland/B.Eng., M.Eng., 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*)

Adrian H. Kitai/B.Eng. (*McMaster*), Ph.D. (*Cornell*), P.Eng.

David A. Thompson/B.Sc., Ph.D. (*Reading*) C.Eng.

Adjunct Professors

James S. Forster/B.Eng., Ph.D., (*Liverpool*)

Derek C. Houghton/B.Sc. (*Birmingham*), Ph.D. (*Cambridge*)

David P. Jackson/B.Sc., M.A., M.A.Sc., Ph.D. (*Toronto*)

Krish V.S. Krishnan/B.Tech. (*Madras*), M.S., Ph.D. (*Rochester*)

Toshihiko Makino/B.E., M.E., Ph.D. (*Kyoto*)

Associate Professors

Thomas E. Jackman/B.Sc., M.Sc., Ph.D. (*Guelph*)/part-time

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.

Adjunct Associate Professors

Sylvain Charbonneau/B.Sc., M.Sc., (*Ottawa*), Ph.D. (*Simon Fraser*)

Klaus F. Schoepf/Dipl. Phys., Ph.D. (*Innsbruck*)

Associate Members

David R. Conn/*(Electrical and Computer Engineering)*, B.Sc., M.Sc., Ph.D. (*Queen's*), P.Eng.

Jan Dirk Hulzinga/*(Biomedical Sciences)* B.Sc., M.Sc., Ph.D. (*Groningen*)

Skipper Poehlman/*(Computing and Software)*, B.S. (*Niagara*), B.Sc. (*Brock*), M.Sc., Ph.D. (*McMaster*), P.Eng.

William V. Prestwich/*(Physics and Astronomy)*, B.Sc., Ph.D. (*McMaster*)

George F. Round/*(Mechanical Engineering)*, B.Sc., Ph.D., D.Sc. (*Birmingham*), F.C.I.C., P.Eng.

Mamdouh Shoukri/*(Mechanical Engineering)*, B.Sc. (*Cairo*), M.Eng., Ph.D. (*McMaster*), P.Eng.

Peter M. Smith/*(Electrical and Computer Engineering)*, B.Eng.Mgt., M.Eng., Ph.D. (*McMaster*), P.Eng.

Professors Emeriti

Edward A. Ballik/B.Sc. (*Queen's*), D.Phil. (*Oxford*), P.Eng.

John A. Davies/B.A., M.A., Ph.D. (*Toronto*), F.R.S.C., F.D.R.S.

Archie A. Harms/B.Sc. (*British Columbia*), M.Sc.Eng., Ph.D. (*Washington*), P.Eng.

Terence J. Kennett/B.Sc., M.Sc., Ph.D. (*McMaster*)

John S. Kirkaldy/B.Sc., M.A.Sc., (*British Columbia*), Ph.D. (*McGill*), F.R.S.C., F.A.S.M., P.Eng.

L. David Pengelly/B.A.Sc. (*Toronto*), M.Sc., Ph.D. (*McGill*), P.Eng.

John G. Simmons/B.Sc. (*London*), M.Sc. (*Temple*), Ph.D., D.Sc. (*London*), BNR/NSERC Chair in Microelectronic and Optoelectronic Materials and Devices

Courses *If no prerequisite is listed, the course is open.***ENG PHYS 2A03 ELECTRICAL SCIENCE I**

An introduction to electricity and magnetism for Engineering Physics students. Two lectures, one tutorial, one lab (three hours), every other week; first term

Prerequisite: PHYSICS 1E03, and credit or registration in MATH 2P04

ENG PHYS 2E04 ELECTRICAL SCIENCE II

DC, AC, and transient analysis of electrical circuits. Topics include methods of circuit analysis, circuit theorems, power, controlled sources, frequency response, rectifier and filter, and transformers.

Three lectures, one lab (three hours); second term

Prerequisite: ENG PHYS 2A03

ENG PHYS 2H04 THERMODYNAMICS

An introduction to thermodynamics and its statistical basis at the microscopic level, with applications to problems originating in a modern laboratory or engineering environment.

Three lectures, one tutorial; one lab every other week; second term

Prerequisite: Registration in Level II Engineering Physics

Cross-list: PHYSICS 2H04

Antirequisite: ENGINEER 2V04

ENG PHYS 3D03 PRINCIPLES OF NUCLEAR ENGINEERING

Introduction to fission and fusion energy systems. Energetics of nuclear reactions, interactions of radiation with matter, radioactivity, design and operating principles of fission and fusion reactors.

Three lectures, (including demonstration experiments); first term

Prerequisite: Registration in Level III or above of any programme in Engineering or Physics

ENG PHYS 3E03 FUNDAMENTALS OF PHYSICAL OPTICS

Reflection and refraction; geometrical optics; interference and diffraction; optical constants of media; optical design software; introduction to design of optical systems.

Two lectures, one tutorial, one lab (three hours), every other week; first term

Prerequisite: ENG PHYS 2A03 and 2E04

ENG PHYS 3F03 FUNDAMENTALS OF SOLID STATE ELECTRONICS

Electrons in solids, with emphasis on semiconductors. Electron band model. Metals, dielectrics and semiconductors. Electron and hole behaviour in electric and magnetic fields. Optical properties of solids. Doped semiconductors.

Two lectures, one tutorial, one lab (three hours), every other week; second term

Prerequisite: ENG PHYS 2A03 and 2E04 or PHYSICS 1E03 and either MATH 2M06 or MATH 2P04 and 2Q04; or PHYSICS 2B06

ENG PHYS 3O03 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. Similarity, dimensional analysis, measuring devices, fluid machinery and electromagnetic flow. Conduction and convection heat transfer.

Two lectures, one tutorial, one lab (three hours), every other week; second term

Prerequisite: Credit or registration in MATH 2M06, or MATH 2P04 and 2Q04

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 programme

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 programme

Antirequisite: BIOLOGY 3U03, 3U06, 3UU3 or 4G06

ENG PHYS 4A04 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 final level of an Engineering Physics programme

ENG PHYS 4C03 INTEGRATIVE ENGINEERING

Aspects of engineering theory and practice, systems failure and catastrophe avoidance, population/resource dynamics and interactive dynamics of driven systems. The seminar/workshop part of the course will involve case studies of technology society issues. A term paper is required.

Three lectures; first term

Prerequisite: Registration in Level IV or above in any Engineering programme

ENG PHYS 4D03 NUCLEAR REACTOR ANALYSIS

Introduction to nuclear energy; nuclear physics and chain reactions; reactor statics and kinetics; multigroup analysis, core thermalhydraulics; reactor design.

Three lectures (including field trip); first term

Prerequisite: ENG PHYS 3D03

ENG PHYS 4E03 SOLID STATE DEVICES I

Electronic properties of semiconductors, contact phenomena; p-n junctions; Schottky diodes, photodiodes, bipolar transistors, field effect transistors.

Three lectures; first term

Prerequisite: ENG PHYS 3F03 or ENGINEER 3Q03

ENG PHYS 4F03 SOLID STATE DEVICES II

Physical principles underlying operation of selected devices, and their characteristics; optical devices, avalanche devices, Gunn Effect devices, Read diodes, charge coupled devices, Integrated circuits, Josephson junctions.

Three lectures; second term

Prerequisite: Credit or registration in ENG PHYS 4E03

ENG PHYS 4G03 OPTICAL INSTRUMENTATION

Design of optical equipment (including reflective and refractive optical systems, Interferometers and spectrometers). Optical sources and power measurements. Detectors (photographic, photoelectric, etc.), including use in the infrared and ultraviolet, and at low intensity levels.

Three lectures; first term

Prerequisite: PHYSICS 3N03 or ENG PHYS 3E03

ENG PHYS 4H04 SPECIAL STUDIES IN ENGINEERING PHYSICS

A special programme 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 programme and a CA of at least 9.5

ENG PHYS 4K03 OPTICAL COMMUNICATIONS SYSTEMS

Propagation of light in an optical fibre. Semiconductor lasers and detectors for optical communications. Analogue and digital coding. Signal to noise considerations. System design.

Three lectures; second term

Prerequisite: Registration in Level IV or V of any programme in Engineering or Physics

ENG PHYS 4L03 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, one lab; second term

Prerequisite: ENG PHYS 3O03 and 3W04

ENG PHYS 4N03 PRINCIPLES OF FUSION ENERGY

Fusion phenomena and the plasma state; reaction analysis; Coulomb scattering; field effect trajectories; magnetic field configurations; particle transport; energy viability; burn cycles; inertial confinement; muon catalyzed fusion.

Three lectures; second term

Prerequisite: ENG PHYS 3D03

ENG PHYS 4S04 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.

Two lectures; both terms

Prerequisite: PHYSICS 3N03 or ENG PHYS 3E03

ENG PHYS 4U04 MODERN AND APPLIED PHYSICS LABORATORY

Selected advanced experiments in two areas of applied physics, chosen from among: lasers and optical communications; microelectronic devices; computer systems; nuclear engineering.

Two labs (three hours); both terms

Prerequisite: ENG PHYS 3W04 and PHYSICS 3B06

ENGINEERING TECHNOLOGY (GENERAL)

Note:

Engineering Technology courses are open only to students registered in the Manufacturing Engineering Technology programme and are subject to prerequisite requirements.

Courses

ENG TECH 1MA3 MATHEMATICS I

Ordinary and partial differential equations; Laplace transforms; Fourier series; vector calculus; integral theorems, with engineering applications.

Lecture (1.5 hours) each week; two terms

ENG TECH 1ML3 STRENGTH OF MATERIALS

Stresses under combined loads, generalized Hooke's Law; two and three dimensional stresses, stress transformation, principal stresses, Mohr's circle; deflections by integration; energy methods, Castagliano's theorem; columns; yield criteria.

Three lectures, one term

Corequisite: ENG TECH 1MA3

ENG TECH 1PG3 PROGRAMMING

An overview of C, C++ programming; variables, constants and operators; program control statements; arrays and strings; pointers; classes; virtual functions; I/O system, preprocessor.

One lecture, one tutorial; one term

ENG TECH 2CT3 SYSTEM ANALYSIS AND CONTROLS

Mathematical foundation: differential equations, Laplace transforms, 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.

Three lectures, one term

Prerequisite: ENG TECH 1PG3

Corequisite: ENG TECH 1MA3

ENG TECH 2FE3 FINITE ELEMENT ANALYSIS

Matrix techniques; eigenvalue problem: 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 tutorial; one term

Prerequisite: ENG TECH 1MA3

Corequisite: ENG TECH 1ML3

ENG TECH 2MN3 MODELLING AND NUMERICAL SOLUTIONS

Number systems and errors; the solution of nonlinear equations; Interpolation by polynomial; matrices and systems of linear equations; differentiation and integration; the solution of differential equations; applications to mechanical systems.

Three lectures, one term

Prerequisite: ENG TECH 1MA3 and 1PG3

ENGLISH

Faculty as of January 15, 1999

Interim Chair

Brian John

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)

Maqbool Aziz/B.A., M.A. (Punjab), D.Phil. (Oxford)

Alan G. Bishop/B.A. (Rhodes, S. Africa), M.A., D. Phil. (Oxford)

David Blewett/B.A., M.A. (Manitoba), Ph.D. (Toronto)

Anthony S. Brennan/B.A. (Oxford), M.A., Ph.D. (McMaster)

John Fems/B.A., M.A. (Oxford), Dipl.Ed. (Nottingham), M.A., Ph.D. (Western Ontario)

Donald C. Goellnicht/B.A. (Queen's), M.A., Ph.D. (McMaster)

Brian John/B.A., M.A., Dipl.Ed., Ph.D. (Wales)

Lorraine M. York/B.A., M.A., Ph.D. (McMaster)

Associate Professors

Sylvia Bowerbank/B.A. (McMaster), B.Ed. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)

David L. Clark/B.A., M.A., Ph.D. (Western Ontario)

Jeffery Donaldson/B.A., M.A., Ph.D. (Toronto)

Ronald Granofsky/B.A. (Trent), M.A. (Canterbury), Ph.D. (Queen's)

Mary E. O'Connor/B.A. (McGill), M.A., Ph.D. (Toronto)

Helen M. Ostovich/B.A., M.A., Ph.D. (Toronto)

Anne Savage/B.A. (Calgary), Ph.D. (London)

Mary Silcox/B.A. (Western Ontario), M.A., Ph.D. (Queen's)

Peter Walmsley/B.A., M.A. (Toronto), Ph.D. (Cambridge)

Assistant Professors

Daniel Coleman/B.Ed., M.A. (Regina), Ph.D. (Alberta)

Nicholas Halmi/B.A. (Cornell), M.A., Ph.D. (Toronto)

Roger L. Hyman/B.A. (York), M.A., Ph.D. (Toronto)

Grace Kehier/B.A. (Regina), M.A., Ph.D. (Western Ontario)

Susie O'Brien/B.A. (Queen's), M.A. (Queensland), Ph.D. (Queen's)

Professors Emeriti

Carl P.A. Ballstadt/B.A., M.A. (Western Ontario), Ph.D. (London)

Alwyn Berland/M.A. (Chicago), M.Litt. (Cambridge)

Andrew W. Brink/B.A., M.A. (Toronto), Ph.D. (London)

Thomas H. Cain/B.A., M.A. (Toronto), Ph.D. (Wisconsin)

Joan Coldwell/B.A., M.A. (London), Ph.D. (Harvard)

Douglas J.M. Duncan/B.A. (Oxford), Ph.D. (Aberdeen)

Maureen P. Halsall/B.A. (McMaster), M.A. (Radcliffe), Ph.D. (Harvard)

Berners A.W. Jackson/B.A. (McMaster), D.Phil. (Oxford)

Alvin A. Lee/B.A., M.Div., M.A., Ph.D., D.Litt.S. (Toronto), D.Litt. (McMaster)

Laurel A. Means/B.A., M.A. (Arkansas), M.A., Ph.D. (Toronto)

Richard E. Morton/B.A. (Wales), B.Litt. (Oxford)

W.J.B. Owen/M.A. (New Zealand and Oxford), Ph.D. (Wales), D.Litt. (McMaster), F.R.S.C.

Graham Petrie/M.A. (St. Andrews), B.Litt. (Oxford)

W. Graham Roebuck/B.A. (Durham), M.A. (McMaster), Ph.D. (London)

Michael L. Ross/B.A. (Harvard College), M.A., Ph.D. (Harvard)

F. Norman Shrive/C.D., B.A. (McMaster), M.A. (Toronto), Ph.D. (Queen's)

Ronald W. Vince/B.A. (McMaster), M.A. (Rice), Ph.D. (Northwestern)

Chauncey D. Wood/A.B. (Union College), M.A., Ph.D. (Princeton)

ENGLISH 3P03

Modern Drama in English

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 3XX3

Topics in Drama

Please note that the Department is able to offer only a selection of elective courses each year.

2. Courses restricted to students registered in programmes in English may be available to qualified students in other programmes if space permits. Students interested in such courses should request permission from the departmental counsellor.
3. Level IV seminars are open only to Honours students registered in Level IV of an English programme. Enrolment will be limited to 15 students per seminar. A list of seminars to be offered will be available prior to registration.

Courses *If no prerequisite is listed, the course is open.*

ENGLISH 1D06

**ENGLISH LITERATURE:
FORMS AND APPROACHES**

A selection of various areas of literary study (such as periods, genres, contexts, and approaches) will be examined, using texts from a wide variety of periods and forms of English literature. In this course considerable emphasis is placed on the development of critical skills in reading and writing. Two lectures, one tutorial; two terms

ENGLISH 2B06

THE DEVELOPMENT OF ENGLISH DRAMA

English drama from the medieval period to the close of the 18th century (excluding Shakespeare).

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 2C03

CONTEMPORARY CANADIAN FICTION

A study of the themes and structure of the contemporary Canadian novel, usually with emphasis upon the relationship of Canada's cultural patterns and its literature.

Three lectures; one term

Prerequisite: Registration in Level II and above.

ENGLISH 2E03

TWENTIETH-CENTURY BRITISH LITERATURE

A study of selected works of twentieth-century British Literature with an emphasis on the historical, intellectual, ideological and aesthetic contexts. Three lectures; one term

Prerequisite: Registration in Level II and above.

Not 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 lectures; one term

Prerequisite: Registration in Level II and above

Not open to students with credit or registration in ENGLISH 2H06.

ENGLISH 2G06

CANADIAN LITERATURE

Major aspects of the development of Canadian literature from the late 18th century to the mid-20th century. French-Canadian work in translation will be used for comparative purposes.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 2H06

AMERICAN LITERATURE

A survey of significant American writers from the 17th century to the present, which emphasizes the interrelationship between the literature and its philosophical and historical background.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 2I06

MODERN BRITISH LITERATURE

A study of representative literature by British writers of the 20th century. Through criticism of poems, plays and fiction, an attempt is made to relate modern British literature to its social, intellectual and cultural context.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

Department Notes:

1. The following are courses open as electives to students registered in Level II and above of any university programme.

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 3B03	Psychoanalytic Approaches to Literary Texts
ENGLISH 3F03	Psychoanalysis and Creativity
ENGLISH 3HH3	Topics in Poetry
ENGLISH 3II3	Topics in Prose

ENGLISH 2J03 CONTEMPORARY POPULAR CULTURE

Drawing on models of analysis from the field of cultural studies, this course will introduce students to methods of critically analyzing selected forms of popular culture. Areas of investigation may include: television, magazines, advertising, computer culture, film, popular fiction.

Three lectures; one term

Prerequisite: Registration in Level II and above

ENGLISH 2K06 STUDIES IN WOMEN WRITERS

A closely focused course on women's writing in English. The topic for the course varies, sometimes concentrating on specific issues, sometimes on an historical period or national literature. Relevant feminist theory will be a component of the course.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

Cross-list: WOMEN ST 2K06

ENGLISH 2L03 SHAKESPEARE: SELECTED PLAYS

A study of a representative selection of plays.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: ENGLISH 3E03

Not open to students with credit or registration in ENGLISH 3K06.

ENGLISH 3B03 PSYCHOANALYTIC APPROACHES TO LITERARY TEXTS

The basic assumptions and methods of psychoanalytic criticism will be studied with reference to selected texts in drama, fiction, and poetry from Shakespeare to the present.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: SOCIOL 2X03

ENGLISH 3C06 CHAUCER AND HIS CONTEMPORARIES

A critical, mainly literary, course in the poetry of later 14th-century England. It will study the writings of Chaucer in some depth, before taking up examples of medieval romance, allegory and drama.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3CC3 LITERATURE AND FILM

An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays, and the films that have been based on them.

Three lectures, plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama or Literature or Art History. It is recommended that students should already have taken DRAMA 2X06.

Cross-list: COMP LIT 3L03 and DRAMA 3H03

ENGLISH 3F03 PSYCHOANALYSIS AND CREATIVITY

A study of unconscious fantasy as a source of creativity in selected literary texts. Psychoanalytic models will be applied to written and visual forms of aesthetic objects.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: SOCIOL 3S03

ENGLISH 3G06 ENGLISH LITERATURE (1660-1800)

A study of English literature during the period 1660-1800, with special attention to works by Dryden, Swift, Pope and Johnson.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3HH3 TOPICS IN POETRY

Previous topics include: Contemporary British Poetry, Women Poets of the 20th century, Lesbian Poetry. Consult the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Registration in Level II and above

ENGLISH 3HH3 may be repeated, if on a different topic, to a total of six units.

ENGLISH 3I06 STUDIES IN SIXTEENTH-CENTURY LITERATURE

A critical study of the literature of the 1500s in England, particularly the second half of the century. The influence of continental writers will also be examined, and special attention will be paid to Spenser.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

Antirequisite: ENGLISH 3I03 or 3T03

Cross-list: COMP LIT 3J06

ENGLISH 3I13 TOPICS IN PROSE

Previous topics include: Jane Austen, African American Fiction, Science Fiction. Consult the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Registration in Level II and above

ENGLISH 3I13 may be repeated, if on a different topic, to a total of six units.

ENGLISH 3J06 THE ENGLISH LANGUAGE

An analysis of the way the English language works, with particular reference to syntactic patterns. The following areas will be considered: English phonology, historical linguistics, morphology, transformational-generative grammar, vocabulary and word formation.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

Antirequisite: LINGUIST 1A06

ENGLISH 3K06 SHAKESPEARE

An extensive critical reading and discussion of selected plays.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3L06 OLD ENGLISH LANGUAGE AND LITERATURE

The course will focus on translation from the beginner's level to a level at which students can read Old English poetry with the help of a glossary only. The introduction to Old English grammar will be by means of paradigms, drills and the translation of simple prose. Grammar sessions will be complemented by classes on Anglo-Saxon cultural history and critical approaches.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3M03 ROMANTIC POETRY

A study of selected poems and, where appropriate, of the literary theory of the major Romantic poets. Special attention will be given to Blake, Wordsworth, Coleridge, Byron, Shelley, Keats.

Three lectures; one term

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3MM3 VICTORIAN POETRY

A study of selected poems and, where appropriate, of the literary theory of the major Victorian poets. Special attention will be given to Tennyson, Browning, Arnold, Hopkins.

Three lectures; one term

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3N06 THE BRITISH NOVEL

This course, in assessing and analyzing approximately 12 novels, will trace the history of English fiction to the 20th century. The course focuses on the varieties of narrative forms, while also exploring the intellectual, cultural and psychological contexts of fiction.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 3P03 MODERN DRAMA IN ENGLISH

A representative selection of plays by modern British, Irish and North American dramatists will be examined in order to study the relationship between drama and society in our age, as well as conventions and experiments in the contemporary theatre.

Three lectures; one term

Prerequisite: Registration in Level II and above

ENGLISH 3Q03 THE HISTORY AND THEORY OF CRITICISM

A survey of the main developments in the theory and practice of literary criticism from Plato to the early 20th century.

Three lectures; one term

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

Cross-list: COMP LIT 3Q03

ENGLISH 3QQ3 MODERN CRITICAL THEORY

The theory and practice of literary criticism from Eliot to the present.

Three lectures; one term

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor. English 3Q03 is recommended.

Cross-list: COMP LIT 3QQ3

ENGLISH 3R06 POSTCOLONIAL LITERATURES: THEORY AND PRACTICE

A study of postcolonial literary theory and practice. Texts written in English from a variety of formerly colonized regions will be studied; these may include Africa, the Caribbean, South and Southeast Asia, Australia and New Zealand. The focus will be on such topics as imperialism, race, gender, ethnicity, nation, language and representation.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

Cross-list: COMP LIT 3R06

ENGLISH 3V06 STUDIES IN 17TH-CENTURY LITERATURE

A detailed examination of poets and prose-writers of the period, with emphasis on the poetry of Donne, the "metaphysical school", Jonson and Milton.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Departmental Counsellor

ENGLISH 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: INDIG ST 1A06 or ENGLISH 1D06 or permission of the instructor

Cross-list: INDIG ST 3D03

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: INDIG ST 1A06 or ENGLISH 1D06 or permission of the instructor

Cross-list: INDIG ST 3E03

ENGLISH 3XX3 TOPICS IN DRAMA

Previous topics include: British Drama: 1950 to the Present, Modern Canadian Drama. Consult the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Registration in Level II and above

ENGLISH 3XX3 may be repeated, if on a different topic, to a total of six units.

ENGLISH 4X03 HONOURS ESSAY

In consultation with members of the English Department, students will prepare an essay on an approved topic. This course is normally substituted for three units of Level IV seminar work in the second term. Students who are interested in taking 4X03 should contact the faculty member chairing the 4X03 committee early in the first term.

Prerequisite: Registration in Level IV of an Honours programme in English; and permission of the Department. Departmental permission slip required.

Enrolment is limited.

Note:

Level IV seminars are open only to Honours students registered in Level IV of an English programme. Enrolment will be limited to 15 students per seminar. The Department is able to offer only a selection of the seminars listed below every year. A list of seminars to be offered will be available prior to registration.

ENGLISH 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 programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4AP3 STUDIES IN AMERICAN POETRY

An in-depth study of some major figures in the tradition, with attention paid to changes in voice, form and preoccupation from poet to poet.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 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 programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4AW3 ASIAN AMERICAN WRITING

An examination of selected prose texts by American writers of Asian origin. Issues of immigration, multiculturalism, race, and gender will be given close attention.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4BC3 MODERN BRITISH COMIC NOVELS

The course will deal with a number of representative comic novels within a broad theoretical context. It will investigate some of the ways in which humour is related to social attitudes toward such matters as class, ethnicity, gender and politics.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4BG3 THE BLOOMSBURY GROUP

An examination of the literary and cultural phenomenon known as Bloomsbury, focusing on the novels of Virginia Woolf and E.M. Forster.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4BL3 THE BIBLE AND LITERATURE

A critical discussion of the Bible's overall narrative structure, the typological correspondences between Old and New Testaments and the use made of the Bible by poets and other artists.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4BP3 CROSS-CURRENTS IN CONTEMPORARY BRITISH POETRY

Close readings of selected works by three contemporary British poets - Philip Larkin, Ted Hughes and Charles Tomlinson.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4CF3 CONTEMPORARY FICTION

A study of recent English and American fiction, with emphasis on metafiction as well as the relationship between contemporary literary theory and fiction.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4CM3 CHRISTOPHER MARLOWE

A consideration of Marlowe as poet, playwright, and as the subject of biography and literary mythology, with attention to the intellectual and political dimension of his life and work.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4DE3 STUDIES IN VICTORIAN FICTION: CHARLES DICKENS AND GEORGE ELIOT

A critical reading of selected novels by Dickens and Eliot, with consideration of their development, their contribution to the novel as genre, and their insights into Victorian society and the modern world.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4DH3 D.H. LAWRENCE

A study of selected works by D.H. Lawrence, focusing upon several novels with some attention to his shorter fiction, poetry and non-fictional prose.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English

Enrolment is limited. Departmental permission required.

ENGLISH 4EL3 ENVIRONMENTAL LITERATURE

A study of the ways in which literary texts mediate between culture and nature using traditional, scientific, environmentalist, eco-feminist, native American, and deep ecologist approaches.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4ER3 SEX AND SOCIETY IN ENGLISH RENAISSANCE LITERATURE

A study of the institutionalization of sexuality during the English Renaissance as presented in the literary discourse of the age.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4ES3 ENGLISH SATIRE

Close readings of the satiric writings of Dryden, Swift and Pope, with attention to the nature and function of satire and its development from classical literature.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4EW3 THE ART AND THOUGHT OF EVELYN WAUGH

An examination of the development of Waugh's fiction, with attention also given to his non-fictional prose in diaries and letters.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4FT3 THE FAIRY TALE

A study of the fairy tale from the structuralist, psychoanalytic, and sociological points of view, concentrating on the tales of the Brothers Grimm in translation and considering the importance of fairy tales in acculturation and their symbolic significance.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 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 programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4GH3 THE POETRY OF GEORGE HERBERT

Close readings of most of Herbert's English poems, with attention to the poetical and theological concerns of early 17th-century England.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4GM3 CANADIAN FICTIONS OF GENDER AND MIGRATION

A study of the interactions and displacements between discourses of gender and migration in contemporary Canadian multicultural fiction.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4JD3 JOHN DONNE'S ANATOMIE AND THE CRISES OF THE TIMES

The course explores Donne's witty, passionate contemplations on intellectual upheaval in the early modern world—the "Anatomie" and "Progres of the Soule"—and their contexts.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4LL3 THE LYRIC OF LOVE AND LOSS: SHAKESPEARE, DONNE, HARDY AND YEATS

Readings of sets of poems dealing with the experiences of human love and loss by two Renaissance and two Modern poets, with some study of the cultural backgrounds of such literature.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4ML3 MARGARET LAURENCE

The seminar will study the novels and short stories of Margaret Laurence. Also for comparative purposes, one work by each of Atwood and Munro will be studied.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4NH3 HAWTHORNE

This seminar will examine the works of Nathaniel Hawthorne, with special attention to structural and psychological aspects of his writings.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Antirequisite: ENGLISH 4HM3

Enrolment is limited. Departmental permission required.

ENGLISH 4NS3 WORDSWORTH AND SHELLEY AS POETS OF NATURE AND SOCIETY

An examination of selected poetry and prose by Wordsworth and Shelley, concentrating on their conceptions of nature, their responses to political events, and their definitions of the poet's role in society.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. 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 programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4PD3 THE PRIMA DONNA IN VICTORIAN FICTION

This course scrutinizes the ideological and practical work of the Victorian prima donna in society and on stage by considering her representation in a variety of media.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4QP3 19TH- AND 20TH-CENTURY POETRY OF QUEBEC IN TRANSLATION

An examination of the work of the major Québécois poets of the last two centuries, beginning with the poetry of the land and ending with "poets of the revolution".

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4RR3 THE ROMANCE OF ROMANCE

Pairs of medieval and modern romances will be studied in the light of critical theories of romance, gender and reading.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4TF3 TIMOTHY FINDLEY AND THE CONSTRUCTION OF MASCULINITIES

This seminar will allow for the intensive reading of Findley's seven novels (to date) and one of his (two) short story collections. The seminar will focus on Findley's study of the constructedness of masculinities in modern and contemporary Western societies.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4UT3 UTOPIAN LITERATURE

A study of the genre through English literature, from its roots in Plato's Republic, through the Middle Ages and the Renaissance to contemporary literature.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 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 programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4WL3 ISSUES IN CONTEMPORARY WORLD LITERATURE

A study of changing literary conceptions of the world through an exploration of contemporary works of fiction written in English from a variety of cultural and national contexts.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4WN3**WOMEN AND NATURE IN
CANADIAN LITERATURE**

A study of fiction and poetry by Canadian women, exploring some of the issues raised by the long tradition of identifying nature as female.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4WP3**WAR AND PEACE IN LITERATURE**

A close study of selected literary works in English that focus on the experience of war and the search for peace, especially in relation to the American Civil War, the First and Second World Wars and the Vietnam War.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4WS3**SHAKESPEARE: CHANGING STYLES OF
INTERPRETATION OF SELECTED PLAYS**

An examination of significant alterations in this century of critical attitudes to several Shakespeare plays and the wide variation in their representation and reception.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENGLISH 4WW3**WOMEN WRITERS OF
THE EIGHTEENTH CENTURY**

An exploration of poetry and fiction written by women in the 18th century, with particular attention to the social and philosophical concerns of these writers.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English
Enrolment is limited. Departmental permission required.

ENVIRONMENTAL SCIENCE

Former Geography, Geology and some Environmental Science courses are now listed as Geo courses. Students having credit in Geography and Geology courses may not take the corresponding course under the Geo designation. To determine the new Geo designation of a former Environmental Science course, please see below. To determine the former Environmental Science designation of a Geo course, please see *Geography and Geology* in the *Course Listings* section of this Calendar.

Former Course New Course Course Title

ENVIR SC 1B03	GEO 1B03	Biosphere
ENVIR SC 1G03	GEO 1G03	Geosphere
ENVIR SC 1H03	GEO 1A03	Atmosphere and Hydrosphere
ENVIR SC 4I03	GEO 4KK3	Inquiry: Minerals and Society

Courses *If no prerequisite is listed, the course is open.***GEO 1A03****ATMOSPHERE AND HYDROSPHERE**

Formerly: ENVIR SC 1H03

An introduction to the processes involved in weather, climate and surface waters with a focus on the human impacts on these processes. A Saturday field trip may be held.

Two lectures, one tutorial, one lab; one term

Antirequisite: ENVIR SC 1A06, 1H03, GEOG 1C03

GEO 1B03**BIOSPHERE**

Formerly: ENVIR SC 1B03

Characteristics of the biosphere and introduction to major environmental processes and issues. A Saturday field trip may be held.

Two lectures, one tutorial, one lab; one term

Antirequisite: ENVIR SC 1A06, 1B03

GEO 1G03**GEOSPHERE**

Formerly: ENVIR SC 1G03

An introduction to environmental geology and geomorphology through study of the processes that form the earth and its surface features. A mandatory Saturday field trip will be held.

Two lectures, one tutorial, one lab; one term

Antirequisite: ENVIR SC 1A06, 1G03, GEOG 1G03, GEOLOGY 1C03

ENVIR SC 3A03**ANALYTICAL ENVIRONMENTAL CHEMISTRY**

An introduction to the basic principles of sampling for analysis; of sample handling and separations for analysis; and, of selected methods for the detection and determination of analyte species.

Two lectures, one lab (three hours); one term

Prerequisite: CHEM 2A03 or 2N03 and one of CHEM 2PA3, 2R03 and registration in Honours Science (Environmental Science Option) or a programme in Chemical Engineering

Antirequisite: CHEM 2M05, 3A03

FRENCH**Faculty as of January 15, 1999****Chair**

Owen Morgan

Professors

Caroline Bayard/L. ès L., M. ès L. (Toulouse), M.A., Ph.D. (Toronto)

Madeleine Jeay/L. ès L. (Bordeaux), M.A., Ph.D. (Montréal)

Owen R. Morgan/B.A., M.A. (Nottingham)

Associate Professors

Marie-Madeleine Ahmed/L. ès L., M. ès L., D. de l'U (Paris-Sorbonne)

Suzanne Crosta/B.A., M.A. (McMaster), Ph.D. (Toronto)

William F. Hanley/B.A. (Toronto), M. ès L. (Paris-Sorbonne), D.Phil. (Oxford)

Michael Kliffer/B.A. (British Columbia), M.A. (Michigan), Ph.D. (Cornell)

Dominique Lepicq/L. ès L. (Caen), M.A. (Ottawa), Ph.D. (Toronto)

Gabriel Moya/B.A. (McGill), M.A., Ph.D. (Toronto)

Brian S. Pocknell/B.A., M.A. (Manchester), D. de l'U. (Paris-Sorbonne)

Anna St. Leger Lucas/B.A. (Nottingham), M.A. Ph.D. (British Columbia)

John C. Stout/B.A. (British Columbia), Ph.D. (Princeton)

Gary A. Warner/B.A. (London), L. ès L., D. de l'U. (Caen)

Assistant Professor

Jane A.C. Rush/B.A. (Toronto), M.A., Ph.D. (UCLA)

Programme Coordinator, Continuing Education

Hélène Gallier-Morgan, D.U.E.L., L. ès L., M. ès L., D.E.A. (Paris-Sorbonne)

Sessional Lecturers

Pauline Pocknell/B.A. (Manchester), B.Ed. (Toronto), M.A. (McMaster)/part-time

Simonne Venisse-Fam/L. ès L., D.E.S. (Paris-Sorbonne), Ph.D. (Montréal)/part-time

Professors Emeriti

Pierre M. Conlon/B.A., M.A. (Auckland), D. de l'U. (Paris), F.R.S.C.

W. Norman Jeeves/M.A. (Cambridge), L. ès L. (Bordeaux)

César Rouben/L. ès S. (Paris-Sorbonne), B.A. (Sir George Williams), M.A., Ph.D. (McGill)

G. Derek West/M.A. (Oxford), Ph.D. (London)

ENTRY INTO LEVEL I COURSES AND FRENCH PROGRAMMES

NO FRENCH OR NO OAC FRENCH	OAC FRENCH < 80%		OAC FRENCH ≥ 80%	
↓	Grade of →	↓	Grade of →	↓
1Z06	at least A-	1N06	C or less	1A06/2M06
↓		↙ ↘		↙ ↘
2Z06	Grade of at least C+ & CA of 3.5	Grade of at least B+ & CA of 6.0	Grade of at least C- & CA of 3.5	Grade of at least C- & CA of 6.0
↓		↓	↓	↓
2M06	B.A. French	Hons. French	B.A. French	Hons. French

Courses *If no prerequisite is listed, the course is open.***FRENCH 1A06****INTRODUCTION TO FRENCH STUDIES:
ADVANCED LEVEL**

Review of grammar, oral and written practice, and introduction to literary analysis by the reading of selected French and/or French-Canadian texts. Three lectures, one lab; two terms

Prerequisite: OAC French with a grade of at least 80 percent. The Department reserves the right to place students in the course most appropriate to their abilities.

Antirequisite: FRENCH 2M06

FRENCH 1N06 INTENSIVE FRENCH GRAMMAR

This course is intended to be a review of basic grammar and will include intensive computer-aided drilling, vocabulary building and composition.

Three tutorials; two terms

Prerequisite: OAC French with a grade of less than 80 percent or FRENCH 1Z06 with a grade of at least A-

The Department reserves the right to place students in the course most appropriate to their abilities.

FRENCH 1Z06 BEGINNER'S INTENSIVE FRENCH I

An intensive course for developing basic skills in both written and spoken French. The normal sequel to this course is FRENCH 2Z06.

Five hours (including lab practice); two terms

Antirequisite: OAC French. Not open to Francophones.

Enrolment is limited.

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.

Three lectures, one tutorial; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

Antirequisite: FRENCH 2C03

FRENCH 2BB3 FRENCH LANGUAGE PRACTICE II

Continuation of FRENCH 2B03.

Three lectures, one tutorial; one term.

Prerequisite: FRENCH 2B03 with a grade of at least C-

Antirequisite: FRENCH 2C03

FRENCH 2E03 LITERATURE OF QUEBEC

Selected novels, plays, and poems representative of the main currents of Quebec Literature.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2G03 FRENCH LANGUAGE PRACTICE: ELEMENTARY TRANSLATION

An introduction to translation techniques (French to English and English to French) and to the use of pertinent reference material.

Three lectures; one term

Prerequisite: A grade of at least B- in FRENCH 1A06 or 2M06 or B+ in 1N06 or 1NN6 and registration in a French programme

Enrolment is limited.

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 lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2J03 19TH-CENTURY FRENCH LITERATURE I

Selected novels, plays and poems representative of the main currents of 19th-century French literature.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2JJ3 19TH-CENTURY FRENCH LITERATURE II

Selected themes appearing in the works of the major French writers of the 19th century.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2M06 INTRODUCTION TO FRENCH STUDIES: ADVANCED LEVEL

Review of grammar, oral and written practice, and introduction to literary analysis by the reading of selected French and/or French-Canadian texts.

Three lectures, one lab; two terms

Prerequisite: FRENCH 1N06 or 1NN6 or 2Z06

Antirequisite: FRENCH 1A06

FRENCH 2N03 INTRODUCTION TO THE CIVILIZATION OF FRANCE

The study of contemporary France through a selection of texts and audio-visual materials.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2W03 20TH-CENTURY FRENCH LITERATURE I

Aspects of the development of 20th-century literature to the end of the Second World War.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2WW3 20TH-CENTURY FRENCH LITERATURE II

Aspects of the development of 20th-century literature since the Second World War.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 1N06 or 1NN6 or 2M06

FRENCH 2Z06 BEGINNER'S INTENSIVE FRENCH II

A sequel to FRENCH 1Z06. Review of grammatical structures. Expansion of vocabulary. Conversation practice. Study of texts with class discussions. The normal sequel to this course is FRENCH 2M06. This course cannot be applied toward a Minor in French.

Two tutorials, three computer labs; two terms

Prerequisite: FRENCH 1Z06

Enrolment is limited.

FRENCH 3A03 EVOLUTION OF THE FRENCH LANGUAGE

This course will be based on treatises of the French language dating from the Middle Ages to the present and will show how French has changed over the centuries. The subject matter is divided into four modules treating vocabulary, syntax, verb forms and spelling from a historical point of view.

Three lectures; one term

Prerequisite: FRENCH 2BB3

Alternates with FRENCH 3SS3.

FRENCH 3AA3 THE MODERN FRENCH-CANADIAN NOVEL

Representative novels by contemporary authors with emphasis upon the relationship between technique and meaning.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 3BB3 CONTEMPORARY QUEBEC THEATRE

Contemporary experimental theatre, and representative playwrights such as Marcel Dubé and Michel Tremblay.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 3C03 FRENCH LANGUAGE PRACTICE: WRITTEN

Advanced grammar and composition; introduction to stylistics.

Three lectures; one term

Prerequisite: FRENCH 2BB3 with a grade of at least C- Students may repeat FRENCH 3C03 to improve their grade.

FRENCH 3CC3 FRENCH LANGUAGE PRACTICE: INTERMEDIATE TRANSLATION

A course designed for the systematic translation of texts from English to French, including comparative stylistics, with special reference to problems in the translation of texts of a general nature.

Three lectures; one term

Prerequisite: FRENCH 2BB3 and 2G03

Enrolment is limited.

FRENCH 3F03 FRENCH LANGUAGE PRACTICE: FRENCH CIVILIZATION AND CULTURE

An introduction to contemporary French society through oral discussions and presentations.

Three tutorials; one term

Prerequisite: FRENCH 2BB3. Not available to Francophone students with native fluency.

Enrolment is limited.

FRENCH 3GG3 FRENCH LANGUAGE PRACTICE: TRANSLATION FROM FRENCH TO ENGLISH

The emphasis will be on inferring strategies and stylistic comparisons between the two languages. Translation materials will be drawn from contemporary magazines such as L'Express, Le Nouvel Observateur and L'Actualité.

Three lectures; one term

Prerequisite: FRENCH 2G03

Enrolment is limited.

FRENCH 3H03 INTRODUCTION TO FRENCH LINGUISTICS II

The study of word formation (morphology), sentence structure (syntax) and meaning (semantics). Contemporary French will be the primary data for all three components. Both functional and formal approaches will be examined.

Three lectures; one term

Prerequisite: FRENCH 2B03; FRENCH 2H03 and/or LINGUIST 1A06 are recommended.

FRENCH 3103 FRENCH SOCIOLINGUISTICS

The study of linguistic variations within French-speaking communities with special emphasis on sociolinguistic issues arising in multilingual societies (Africa, America, Europe...).

Three lectures; one term

Prerequisite: FRENCH 2H03

FRENCH 3K03 18TH-CENTURY FRENCH LITERATURE I

The early 18th century with emphasis on Montesquieu, Marivaux and Prévost, and on the early writings of Voltaire.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 3KK3 18TH-CENTURY FRENCH LITERATURE II

Texts representing the main aspects of Enlightenment thought and literature from the publication of the preliminary discourse of the Encyclopedia to the Revolution.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 3Q03 17TH-CENTURY FRENCH LITERATURE I

A study of selected plays by Corneille, Molière and Racine.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 3Q03 17TH-CENTURY FRENCH LITERATURE II

A consideration of selected themes as they appear in the works of major French writers of the 17th century.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 3SS3 STUDIES IN MEDIEVAL LANGUAGE AND CIVILIZATION

An exploration of the particular characteristics of Old French through a selection of Medieval texts representative of the civilization of the period (chivalry, courtly love, feasts and rituals).

Three lectures; one term

Prerequisite: FRENCH 2BB3

Alternates with FRENCH 3A03.

FRENCH 3Z03 AFRICAN AND CARIBBEAN FRENCH LITERATURES

An introduction to French African and Caribbean literatures.

Three lectures; one term

Prerequisite: Six units of French beyond Level I, excluding FRENCH 2M06 and 2Z06; or permission of the Department

FRENCH 4A03 FRENCH LANGUAGE PRACTICE

Advanced stylistics and composition.

Three lectures; one term

Prerequisite: A grade of at least B- in FRENCH 3C03 and registration in an Honours programme in French. Students must complete FRENCH 4A03 to graduate with an Honours or a Combined Honours B.A. in French.

FRENCH 4BB3 FRENCH LANGUAGE PRACTICE: ADVANCED TRANSLATION

Practice in the translation into French of texts of a specialized nature (e.g., administration, business, politics).

Three tutorials; one term

Prerequisite: FRENCH 3C03 and 3CC3

Enrolment is limited.

FRENCH 4E03 APPLIED LINGUISTICS AND SECOND-LANGUAGE LEARNING

An examination of various aspects of second language acquisition as applied to the teaching of French, with special emphasis on psycholinguistic factors.

Seminar (two hours); one term

Prerequisite: FRENCH 2H03

FRENCH 4F03 TOPICS IN 18TH-CENTURY FRENCH LITERATURE

Previous topics include: Voltaire, Theatre and Performance. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 4F03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4H03 TOPICS IN LINGUISTICS

Previous topics include: Lexicology, Pragmatics, Sociolinguistics. Consult the Department concerning topic to be offered.

Seminar (three hours); one term

Prerequisite: FRENCH 2H03

FRENCH 4H03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4I03 TOPICS IN FRENCH POETRY

Previous topics include: Twentieth-Century Poetry, Poets and Humour, Object Poetry. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06.

FRENCH 4I03 may be repeated, if on a different topic, to a total of six units.

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 lectures; one term

Prerequisite: 12 units of French beyond 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 beyond 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 THE 18TH-CENTURY FRENCH NOVEL

A study of the genesis and themes of representative 18th-century novels.

Seminar (two hours); one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 4N03 TOPICS IN THE FRENCH NOVEL

Previous topics include: Emile Zola, Balzac's Novels: History and Fiction. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 4N03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4O03 20TH-CENTURY FRENCH THEATRE

A study of the ideas and dramatic techniques of the playwrights of the modern period who have influenced the development of today's theatre in France.

Three lectures; one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 4Q03 TOPICS IN 17TH-CENTURY FRENCH LITERATURE

Previous topics include: Corneille, Racine, Molière. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: FRENCH 3Q03

FRENCH 4Q03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4S03 MEDIEVAL LITERATURE

A study of selected texts of Medieval French Literature: songs and poetry of the troubadours and trouvères, Arthurian romance, comic and satiric narratives. Modern French translations will be used.

Three tutorials; one term

Prerequisite: FRENCH 2BB3

FRENCH 4T03 INDEPENDENT STUDY

The student will prepare under the supervision of a faculty member a research paper involving independent research in an area of study in which the student has already demonstrated a high level of basic knowledge.

Prerequisite: Registration in Level IV of an Honours programme in French and permission of the FRENCH 4T03 Committee

FRENCH 4U03 TOPICS IN FRENCH-CANADIAN LITERATURE

Previous topics include: Fiction and Postmodern Cultural Theories, Women Writers of Quebec. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 4U03 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 beyond Level I, excluding FRENCH 2M06 and 2Z06

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 (three hours); one term

Prerequisite: 12 units of French beyond Level I, excluding FRENCH 2M06 and 2Z06

FRENCH 4Y03 may be repeated, if on a different topic, to a total of six units.

Note:

The following course, of interest to students of French, is offered by the School of Art, Drama and Music:

DRAMA 3TT3 Topics in National Cinemas II
(French Cinema will be a frequent topic of this course.)

GEOGRAPHY

Former Geography, Geology and some Environmental Science courses are now listed as Geo courses. Students having credit in Geography and Geology courses may not take the corresponding course under the Geo designation.

To determine the new Geo designation of a former Geography course, please see below. To determine the former Geography designation of a Geo course, please see *Geography and Geology* in the *Course Listings* section of this Calendar.

Former Course New Course Course Title

ENVIR SC 1B03	GEO 1B03	Biosphere
ENVIR SC 1G03	GEO 1G03	Geosphere
ENVIR SC 1H03	GEO 1A03	Atmosphere and Hydrosphere
GEOG 1B06	GEO 1HB6	Human Geography (98/99)
	GEO 1HS3	Social Geography
	GEO 1HU3	Urban/Economic Geography
GEOG 2A03	GEO 2HA3	Locational Analysis
GEOG 2B03	GEO 2HB3	Urban Economic Geography
GEOG 2D03	GEO 2HD3	Urban Historical Geography
GEOG 2E03	GEO 2HC3	Canada
GEOG 2F03	GEO 2C03	Surface Climate Processes and Environmental Interaction
GEOG 2N03	GEO 2S03	Practical Applications in Spatial Statistics
GEOG 2P03	GEO 2HU3	The United States of America
GEOG 2RR3	GEO 2HR3	Research Methods in Social Geography
GEOG 2T03	GEO 2G03	Fluvial Geomorphology
GEOG 2Y03	GEO 2HY3	Urban and Regional Development
GEOG 3D03	GEO 3HD3	Transportation Geography
GEOG 3E03	GEO 3FE3	Field Methods
GEOG 3EE3	GEO 3HF3	Field Study in Human Geography
GEOG 3F03	GEO 4C03	Advanced Physical Climatology
GEOG 3G03	GEO 3HG3	Population Growth and Distribution
GEOG 3JJ3	GEO 3HJ3	Geography of Japan
GEOG 3L03	GEO 3S03	Multivariate Analysis in Geography
GEOG 3M03	GEO 3G03	Glacial Sediments and Environments
GEOG 3N03	GEO 3I03	Applied GIS
GEOG 3O03	GEO 3R03	Research Methods and Communication
GEOG 3P03	GEO 3B03	Environmental Change and the Biosphere
GEOG 3R03	GEO 3HR3	Geography of a Selected World Region
GEOG 3W03	GEO 2W03	Physical Hydrology: Surface
GEOG 3T03	GEO 3HT3	Geography of Planning
GEOG 3UU3	GEO 4A03	Environmental Assessment
GEOG 3X03	GEO 3HX3	Urban Models and Policy Analysis I
GEOG 3Z03	GEO 3HZ3	Urban Social Geography
GEOG 4CC3	GEO 4CC3	Review Paper
GEOG 4C06	GEO 4R06	Senior Thesis
GEOG 4E03	GEO 4FE3	Field Course
GEOG 4F03	GEO 4HY3	Urban Development and Policy Issues

GEOG 4H03	GEO 4D03	Land Use and Transportation
GEOG 4NN3	GEO 4I03	Advanced GIS and Spatial Analysis
GEOG 4P03	GEO 4B03	Watershed Ecosystem Biogeochemistry
GEOG 4S03	GEO 4HS3	Geography of Health Care (98/99)
	GEO 3HH3	Geography of Health and Health Care
GEOG 4T03	GEO 4HT3	Regional Analysis and Planning
GEOG 4U03	GEO 4HU3	Selected Problems in Urban Planning
GEOG 4VV6	GEO 4R06	Senior Thesis
GEOG 4W03	GEO 4W03	Hydrologic Modelling
GEOG 4X03	GEO 4HX3	Urban Models and Policy Analysis II
GEOG 4Z03	GEO 4HZ3	The Landscape of Urban Housing

Course**GEOG 4B09 SENIOR THESIS FOR CO-OP STUDENTS**

A thesis based upon a research project carried out under the direction of a member of the School of Geography and Geology.

Prerequisite: Registration in the Honours Geography and Environmental Science Co-op Programme. Approval of the project must be obtained from the Director of the School at least six weeks prior to the beginning of the research project.

Antirequisite: GEO 4R06

GEOGRAPHY AND GEOLOGY**Faculty as of January 15, 1999****Director**

Fred L. Hall

Associate Director

W. Jack Rink

University Professor (Emeritus)

Henry P. Schwarcz/B.A. (Chicago), M.S., Ph.D. (California Institute of Technology), F.R.S.C.

Professors

Vera Chouinard/B.A. (Western Ontario), M.A. (Toronto), Ph.D. (McMaster)
 Alan P. Dickin/M.A. (Cambridge), D. Phil. (Oxford)
 John J. Drake/M.A. (Oxford), M.Sc., Ph.D. (McMaster)
 Carolyn H. Eyles/B.Sc. (East Anglia), M.Sc., Ph.D. (Toronto)
 John D. Eyles/B.A., M.Sc. (L.S.E.), Ph.D. (London)
 Frederick L. Hall/A.B. (Amherst), M.Sc. (M.I.T.), Ph.D. (Chicago)/Professor of Civil Engineering and Engineering Mechanics
 Richard S. Harris/B.A. (Cambridge), M.A. (Ohio), Ph.D. (Queen's)
 Pavlos S. Kanarogiou/B.Sc. (Athens), M.A., M.Sc., Ph.D. (McMaster)
 Kao-Lee Liaw/B.S. (National Taiwan), M.A. (Kansas State), Ph.D. (Clark)
 William A. Morris/B.Sc. (Leeds), Ph.D. (Open University)
 Yorgos Y. Papageorgiou/Dipl. Arch. Eng. (National Technical, Athens), M.C.P., Ph.D. (Ohio State), D.Sc. (Louvain)/Professor of Economics
 Michael J. Risk/B.Sc. (Toronto), M.Sc. (Western Ontario), Ph.D. (Southern California, L.A.)
 Wayne R. Rouse/B.Sc. (McMaster), M.Sc., Ph.D. (McGill)
 S. Martin Taylor/B.A. (Bristol), M.A., Ph.D. (British Columbia)/part-time
 Ming-ko Woo/M.A. (Hong Kong), Ph.D. (British Columbia)

Associate Professors

Susan J. Elliott/M.A. Ph.D. (McMaster)

Assistant Professors

Pierre Brassard/B.A., M.Sc. (Concordia), Ph.D. (INRS)
 W. Jack Rink/B.Sc., Ph.D. (Florida State)
 Michael Jerrett/B.Sc. (Trent), M.A., Ph.D. (Toronto)
 Eduard Reinhardt/B.A., Ph.D. (Ottawa)
 James Smith/B.Sc., M.Sc. (Guelph), Ph.D. (Waterloo)
 J. Michael Waddington/M.Sc., Ph.D. (York)

Associate Members

Jonathan Lomas/(Clinical Epidemiology and Biostatistics), B.A. (Oxford), M.A. (Western Ontario), MAP (Toronto)
 Vivienne Walters/(Labour Studies/Sociology), B.A., M.A. (Sheffield), Ph.D. (McGill)
 John C. Weaver/(History), B.A. (Queen's), M.A., Ph.D. (Duke)

Instructional Assistants

Walter Peace/M.A., Ph.D. (McMaster)
Susan Vajoczki/M.Sc. (McMaster)

Professors Emeriti

Brian J. Burley/B.Sc. (London), M.Sc. (British Columbia), Ph.D. (McGill)
Andrew F. Burghardt/A.B. (Harvard), M.A., Ph.D. (Wisconsin)
Brian T. Bunting/M.A. (Sheffield), Ph.D. (London)
Paul M. Clifford/B.Sc. (Southampton), Ph.D. (London)
James H. Crockett/B.Sc. (New Brunswick, Oxford), Ph.D. (M.I.T.)
John A. Davies/B.A. (Bristol), M.Sc. (McGill), Ph.D. (London)
Derek C. Ford/M.A., D.Phil. (Oxford), F.R.S.C.
H. Douglas Grundy/B.Sc., Ph.D. (Manchester)
Leslie J. King/M.A. (New Zealand), Ph.D. (Iowa), F.R.S.C.
James R. Kramer/B.Sc. (M.I.T.), M.Sc., Ph.D. (Michigan)
S. Brian McCann/B.Sc. (Wales), Ph.D. (Cambridge)
Gerard V. Middleton/B.Sc., A.R.C.S., Ph.D., D.I.C. (London), F.R.S.C.
R. Lloyd G. Reeds/M.A., Ph.D. (Toronto)
Denis M. Shaw/B.A., M.A. (Cambridge), Ph.D. (Chicago), F.R.S.C.
Roger G. Walker/B.A., D.Phil. (Oxford), F.R.S.C.
Gerd E.G. Westermann/B.Sc. (Braunschweig), Dipl. Geol., Dr. rer. nat. (Tubingen)

Notes:

1. The Honours Environmental Science (B.Sc.), Honours Geography (B.Sc.) and Honours Geology (B.Sc.) programmes offered by the School of Geography and Geology have the same Level I entrance requirements (see programme descriptions). Selection of specialist streams in each of these programmes takes place during March counselling in Level II. Students should seek academic advice from the School to ensure that their course choices are appropriate.
2. Former Geography, Geology and some Environmental Science courses are now listed as Geo courses. Students having credit in Geography and Geology courses may not take the corresponding course under the Geo designation. To determine the former Geography, Geology and Environmental Science designations of the new Geo courses see the course descriptions below. To determine the Geo designation of a former Geography, Geology or Environmental Science course please see the listings for *Environmental Science*, *Geography* and *Geology* respectively, in the *Course Listings* section of this calendar.
3. Course codes including the letter H indicate a non-science course.
4. Students are advised that not all courses will be offered in every year.

Courses *If no prerequisite is listed, the course is open.***GEO 1A03 ATMOSPHERE AND HYDROSPHERE**

Formerly: ENVIR SC 1H03

An introduction to the processes involved in weather, climate and surface waters with a focus on the human impacts on these processes. A Saturday field trip may be held.

Two lectures, one tutorial, one lab; one term

Antirequisite: ENVIR SC 1A06, 1H03, GEOG 1C03

GEO 1B03 BIOSPHERE

Formerly: ENVIR SC 1B03

Characteristics of the biosphere and introduction to major environmental processes and issues. A Saturday field trip may be held.

Two lectures, one tutorial, one lab; one term

Antirequisite: ENVIR SC 1A06, 1B03

GEO 1G03 GEOSPHERE

Formerly: ENVIR SC 1G03

An introduction to environmental geology and geomorphology through study of the processes that form the earth and its surface features. A mandatory Saturday field trip will be held.

Two lectures, one tutorial, one lab; one term

Antirequisite: ENVIR SC 1A06, 1G03, GEOG 1G03, GEOLOGY 1C03

GEO 1HS3 SOCIAL GEOGRAPHY

Formerly: GEO 1HB6, GEOG 1B06

Introduction to human-environment relations and spatial analysis with special emphasis on social processes.

Two lectures, one lab (two hours); one term

Antirequisite: GEO 1HB6, GEOG 1B06

GEO 1HU3 URBAN/ECONOMIC GEOGRAPHY

Formerly: GEO 1HB6, GEOG 1B06

Basic principles in spatial analysis and location theory applied to the changing patterns of economic development and urbanization at the local, national and international scale.

Two lectures, one lab (two hours); one term

Antirequisite: GEO 1HB6, GEOG 1B06

GEO 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 (two hours); one term

Prerequisite: One of ENVIR SC 1A06 or 1B03, GEO 1B03, GEOG 1G03

GEO 2C03 SURFACE CLIMATE PROCESSES AND ENVIRONMENTAL INTERACTION

Formerly: GEOG 2F03

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 1A06, 1B03, 1G03, 1H03, GEO 1A03, 1B03, 1G03, GEOG 1C03

Antirequisite: GEOG 2F03

GEO 2E03 EARTH HISTORY

Formerly: GEOLOGY 2C03

Geological evolution of the Earth, emphasizing North America, in the context of plate tectonics.

Two lectures, one lab (three hours) one term

Prerequisite: One of ENVIR SC 1A06, 1G03, GEO 1G03, GEOLOGY 1C03

Antirequisite: GEOLOGY 2C03

GEO 2G03 FLUVIAL GEOMORPHOLOGY

Formerly: GEOG 2T03

The effects of moving water on the earth's surface: principles of sediment entrainment and transport, fluvial flow, and analysis of the resulting landforms.

Two lectures, one lab (two hours); one term

Prerequisite: One of ENVIR SC 1A06, 1G03, GEO 1G03, GEOG 1G03, GEOLOGY 1C03

Antirequisite: GEOG 2T03

GEO 2GG3 THE SHIFTING EARTH

A study of the long and short term processes that change the face of the earth including landslides, river erosion and glaciation.

Three lectures; one term

Not open to students with credit or registration in GEO 2G03 or GEOG 2T03

GEO 2HA3 LOCATIONAL ANALYSIS

Formerly: GEOG 2A03

Spatial location theory and spatial analysis methods as related to the siting of resource, manufacturing, and service activities.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06

Antirequisite: GEOG 2A03

GEO 2HB3 URBAN ECONOMIC GEOGRAPHY

Formerly: GEOG 2B03

Economic-geographical analysis applied to urban problems at different scales of aggregation. Topics include urbanization, urban spatial structure, major urban externalities and urban size.

Three lectures; one term

Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06

Antirequisite: GEOG 2B03

GEO 2HC3 CANADA

Formerly: GEOG 2E03

The geography of Canada emphasizing the economic and social geography of regions and current development issues.

Three lectures; one term

Antirequisite: GEOG 2E03

GEO 2HD3 URBAN HISTORICAL GEOGRAPHY

Formerly: GEOG 2D03

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

Antirequisite: GEOG 2D03

GEO 2HR3 RESEARCH METHODS IN SOCIAL GEOGRAPHY*Formerly: GEOG 2RR3*

An introduction to research methods in social geography. Emphasis is placed on the application of various methods to understanding human spatial behaviour. Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06

Antirequisite: GEOG 2R03, 2RR3

GEO 2HU3 THE UNITED STATES OF AMERICA*Formerly: GEOG 2P03*

The physical and economic geography of the United States.

Three lectures; one term

Antirequisite: GEOG 2P03

GEO 2HY3 URBAN AND REGIONAL DEVELOPMENT*Formerly: GEOG 2Y03*

Contemporary trends in urban and regional development, emphasizing debates on the causes of change and the policies used to address development problems.

Two lectures, one tutorial (one hour); one term

Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06

Antirequisite: GEOG 2Y03

GEO 2I03 INTRODUCTORY GEOGRAPHIC INFORMATION SYSTEMS

Raster and vector GIS concepts are introduced through use of ArcView.

Prerequisite: Registration in a programme within the School of Geography and Geology and completion of STATS 1CC3 or SOC SCI 2J03.

GEO 2K03 CRYSTALLOGRAPHY AND ENVIRONMENTAL MINERALOGY*Formerly: GEOLOGY 2B06*

Introduction to crystallography and the use of the polarizing microscope, including an introduction to the physical properties of minerals important to environmental science.

Two lectures, one lab (two hours); one term

Prerequisite: One of ENVIR SC 1A06, 1G03, GEO 1G03, GEOG 1G03, GEOLOGY 1C03 and registration in a programme within the School of Geography and Geology or permission of the School of Geography and Geology.

Antirequisite: GEOLOGY 2B06

GEO 2KK3 OPTICAL MINERALOGY AND PETROLOGY*Formerly: GEOLOGY 2B06*

Use of the polarizing microscope to identify the common rock-forming minerals in thin-section. Optical properties, crystal chemistry and occurrence of these minerals in rocks.

Two lectures, one lab (two hours); one term

Prerequisite: GEO 2K03

Antirequisite: GEOLOGY 2B06

GEO 2M04 OPTICAL CRYSTALLOGRAPHY AND MINERALOGY*Formerly: GEOLOGY 2B04*

Elementary optical theory with applications to, and descriptive study of, the common rock-forming minerals. Introduction to crystal chemistry.

Two lectures, one lab (two hours); in parts of both terms

Prerequisite: Open only to students registered in Materials Engineering or Materials Science

Antirequisite: GEOLOGY 2B04

GEO 2P03 INTRODUCTORY PALEONTOLOGY*Formerly: GEOLOGY 2J03*

Uses of paleontology; importance in geological time and organic evolution; origin of life; adaptation and functional morphology; major groups of economically important fossils; stratigraphy.

Two lectures, one lab (three hours); one term

Prerequisite: One of ENVIR SC 1A06, 1G03, GEO 1G03, GEOG 1G03, GEOLOGY 1C03 or permission of the instructor

Antirequisite: GEOLOGY 2J03

GEO 2S03 PRACTICAL APPLICATIONS IN SPATIAL STATISTICS*Formerly: GEOG 2N03*

An introduction to the practical use of statistics to analyze spatial data.

Two lectures, one lab; one term

Prerequisite: One of STATS 1CC3, SOC SCI 2J03, and registration in a programme within the School of Geography and Geology

Antirequisite: GEOG 2N03

GEO 2W03 PHYSICAL HYDROLOGY: SURFACE*Formerly: GEOG 3W03*

Hydrological processes including precipitation, snowmelt, slope runoff, streamflow and hydrological data analysis.

Two lectures, one lab (two hours); one term

Prerequisite: STATS 1CC3 or SOC SCI 2J03 and one of ENVIR SC 1A06, 1B03, 1G03, 1H03, GEO 1A03, 1B03, 1G03, GEOG 1C03, 1G03, GEOLOGY 1C03

Antirequisite: GEOG 3W03

GEO 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

GEO 3A03 ENVIRONMENTAL POLICY AND PLANNING

An exploration of the issues of environmental policy and planning as well as the relationship between science and policy.

Two lectures, one lab (two hours); one term

Prerequisite: Registration in an Honours Geography, Environmental Science, Geology, Biology or Engineering and Society programme

GEO 3B03 ENVIRONMENTAL CHANGE AND THE BIOSPHERE*Formerly: GEOG 3P03*

Past, present and future natural and anthropogenic environmental change are examined in terms of the underlying global biogeochemical cycles.

Two lectures, one lab (two hours); one term

Prerequisite: GEO 2B03, or BIOLOGY 2F03 and registration in Level III or IV of a Biology programme

Antirequisite: GEOG 3P03

GEO 3C03 CLIMATE CHANGE AND ENVIRONMENTAL IMPACTS

Possible causes for climate change including both historical and pre-historical evidence. Impacts of climate change, focusing on the physics and chemistry of these impacts.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 2C03, GEOG 2F03

GEO 3E03 SEDIMENTARY FACIES AND ENVIRONMENTS*Formerly: GEOLOGY 3F03*

Sedimentary, stratigraphy and depositional environments of clastic and carbonate systems.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 2E03, GEOLOGY 2C03

Antirequisite: GEOLOGY 3F03

GEO 3FE3 FIELD METHODS*Formerly: GEOG 3E03*

Introduction to field methods and field equipment used in physical geography and environmental science. A portion of this course occurs outside the regular academic term, usually the week 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 GEO 2S03, GEOG 2N03

Antirequisite: GEOG 3E03

GEO 3FG3 FIELD CAMP*Formerly: GEOLOGY 2EE2*

A field camp of about two weeks duration held immediately after the April-May Examinations, normally taken at the end of Level II. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: GEO 2E03 and registration in a programme of the School of Geography and Geology

Antirequisite: GEOLOGY 2E01, 2EE2, 3E02

GEO 3G03 GLACIAL SEDIMENTS AND ENVIRONMENTS*Formerly: GEOG 3M03*

The development and movement of glaciers, glacial depositional processes and sedimentary successions in terrestrial, lacustrine and marine environments.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 2G03, GEOG 2T03

Antirequisite: GEOG 3M03

GEO 3HD3 TRANSPORTATION GEOGRAPHY*Formerly: GEOG 3D03*

Principles underlying the movement of goods and people in space with discussion of its economic, social and environmental impacts.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06 or ECON 1A06

Antirequisite: GEOG 3D03

- GEO 3HF3 FIELD STUDY IN HUMAN GEOGRAPHY**
Formerly: GEOG 3EE3
 Introduction to field research in Human Geography, usually in the Hamilton area.
 Prerequisite: One of GEO 2S03, GEOG 2N03 and one of GEO 2HR3, GEOG 2RR3
 Antirequisite: GEOG 3EE3
- GEO 3HG3 POPULATION GROWTH AND DISTRIBUTION**
Formerly: GEOG 3G03
 Facts, theories, and major issues about the growth and distribution of human population.
 Three lectures; one term
 Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06
 Antirequisite: GEOG 3G03
- GEO 3HH3 GEOGRAPHY OF HEALTH AND HEALTH CARE**
Formerly: GEOG 4S03, GEO 4HS3
 The determinants of health and the spatial dimensions of health care delivery.
 Two seminars; one term
 Prerequisite: Registration in an Honours programme within the School of Geography and Geology or an Honours Gerontology programme.
 Antirequisite: GEO 4HS3, GEOG 4S03
- GEO 3HJ3 GEOGRAPHY OF JAPAN**
Formerly: GEOG 3JJ3
 Human and physical geography of Japan with emphasis on historical, international, demographic and economic aspects.
 Three lectures; one term
 Prerequisite: One of GEO 1HB6, 1HS3, 1HU3, GEOG 1B06 or registration in a Japanese Studies programme
 Cross-list: JAPAN ST 3JJ3
 Antirequisite: GEOG 3JJ3
- GEO 3HR3 GEOGRAPHY OF A SELECTED WORLD REGION**
Formerly: GEOG 3R03
 The study of an area outside of North America which will include topics in physical and human geography.
 Three lectures; one term
GEO 3HR3 may be repeated, if on a different topic, with permission of the School of Geography and Geology during March Counselling.
- GEO 3HT3 GEOGRAPHY OF PLANNING**
Formerly: GEOG 3T03
 A review of historical and contemporary approaches to city and regional planning problems.
 Two lectures, one lab (two hours); one term
 Prerequisite: One of GEO 2HA3, 2HB3, 2HY3, GEOG 2A03, 2B03, 2Y03
 Antirequisite: GEOG 3T03
- GEO 3HX3 URBAN MODELS AND POLICY ANALYSIS I**
Formerly: GEOG 3X03
 A survey of modern literature on urban spatial structure. Topics include morphology, adjustments to change, and such phenomena as sudden urban growth and the decline of central cities.
 Two lectures; one lab (two hours); one term
 Prerequisite: One of ECON 2G03, 2L06, GEO 2HB3, GEOG 2B03
 Antirequisite: GEOG 3X03
 Cross-list: ECON 3X03
- GEO 3HZ3 URBAN SOCIAL GEOGRAPHY**
Formerly: GEOG 3Z03
 The social geography of North American cities. Topics include commuting, segregation, inner-city gentrification, suburban development.
 Lectures and seminars; one term
 Prerequisite: One of GEO 2HR3, GEOG 2RR3; GEO 2HY3 and 2HD3 or GEOG 2Y03 and 2D03 are recommended.
 Antirequisite: GEOG 3Z03
- GEO 3I03 APPLIED GIS**
Formerly: GEOG 3N03
 Building on GEO 2I03 this course will focus on issues surrounding GIS database creation and use. Topics will include spatial and aspatial query, map projections and coordinate conversion, and GIS data output.
 Two lectures, one lab (two hours); one term
 Prerequisite: GEO 2I03 with a minimum grade of C+
 Antirequisite: GEOG 3N03
- GEO 3K03 IGNEOUS AND METAMORPHIC PETROLOGY**
Formerly: GEOLOGY 3C03
 Petrography of igneous and metamorphic rocks and discussion of their origin. Laboratory studies on rock suites.
 Two lectures, one lab (two hours); one term
 Prerequisite: One of GEO 2K03, 2KK3, GEOLOGY 2B06
 Antirequisite: GEOLOGY 3CC6, 3C03

- GEO 3P03 PALEONTOLOGY**
Formerly: GEOLOGY 3J03
 Marine habitats and possible changes through geologic time. Groups of fossils important in stratigraphy including microfossils; economic paleontology.
 Two lectures, one lab (three hours); one term
 Prerequisite: One of GEO 2P03, GEOLOGY 2J03
 Antirequisite: GEOLOGY 3J03
- GEO 3Q03 GEOCHEMISTRY**
Formerly: GEOLOGY 3Q03
 Chemistry of the earth including cosmochemistry, global cycles, ocean chemistry, radiogenic and stable isotope systematics, geochronology and analytical techniques.
 Three lectures; one term
 Prerequisite: One of ENVIR SC 1G03, GEO 1G03, GEOG 1G03, GEOLOGY 1C03 and one of CHEM 2PA3, 2P06, 2R03 or permission of the instructor.
 Antirequisite: GEOLOGY 3Q03
- GEO 3R03 RESEARCH METHODS AND COMMUNICATION**
Formerly: GEOG 3O03
 Description of some of the changed and changing paradigms in the discipline; formulation of a research proposal; communication of research results.
 Two lectures, one lab (two hours); one term
 Prerequisite: One of GEO 2S03, GEOG 2N03
 Antirequisite: GEOG 3O03
- GEO 3S03 MULTIVARIATE ANALYSIS IN GEOGRAPHY**
Formerly: GEOG 3L03
 Management and analysis of multivariate data sets in human and physical geography, with an emphasis on multiple regression.
 Two lectures, one lab (two hours); one term
 Prerequisite: One of ECON 2B03, GEO 2S03, GEOG 2N03, SOCIOL 2Y03
 Antirequisite: GEOG 3L03
- GEO 3U03 ENVIRONMENTAL SYSTEMS**
Formerly: GEOLOGY 2K03
 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.
 Prerequisite: MATH 1A03, registration in B.Sc. Geoscience, or any Level III Honours programme in the Faculties of Science and Engineering
 Antirequisite: CIV ENG-2J03, GEOLOGY 2K03
- GEO 3W03 SUBSURFACE PHYSICAL HYDROLOGY**
 Mechanisms and processes of water movement in the subsurface including the saturated zone (groundwater) and the unsaturated zone (soil water).
 Two lectures; one lab (two hours); one term
 Prerequisite: GEO 2W03, 2B03
- GEO 3Y03 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 GEO 2S03, GEOG 2N03 and one of GEO 2I03, GEOG 2LL3 and registration in an Honours programme in the School of Geography and Geology
- GEO 3Z03 STRUCTURAL GEOLOGY**
Formerly: GEOLOGY 2D03
 A survey of the geometry of fractures and folds, their associated small-scale features, and their simple kinematic and dynamic analysis.
 Two lectures, one lab (three hours); one term
 Prerequisite: One of ENVIR SC 1A06, GEO 1G03, GEOG 1G03, GEOLOGY 1C03
 Antirequisite: GEOLOGY 2D03
- GEO 3ZZ3 GEODYNAMICS**
Formerly: GEOLOGY 2I03
 Application of physical methods to understanding large-scale processes in the Earth. Plate tectonics, structure of Earth's interior, rock magnetism, seismology, gravitation, natural radioactivity, heat flow.
 Two lectures, one tutorial; one term
 Prerequisite: One of PHYSICS 1A06, 1B03, 1B06, 1C06, 1C03
 Antirequisite: GEOLOGY 2I03, PHYSICS 2I03, 3ZZ3
- GEO 4A03 ENVIRONMENTAL ASSESSMENT**
Formerly: GEOG 3UU3
 Technical and policy issues involved in the production and the appraisal of environmental impact assessments.
 Two lectures, one lab; one term
 Prerequisite: Registration in an Honours Geography, Environmental Science, Geology, Biology or Engineering and Society programme.
 Antirequisite: GEOG 3UU3

GEO 4B03 WATERSHED ECOSYSTEM BIOGEOCHEMISTRY

A discussion of biogeochemical processes at the watershed level to examine the impact of natural and human disturbances on water quality in stream and wetland ecosystems.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 3B03, GEOG 3P03

GEO 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.

Two lectures; one lab (two hours) one term

Prerequisite: One of GEO 2C03, GEOG 2F03

GEO 4CC3 REVIEW PAPER

Formerly: GEOG 4CC3

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); first term

Prerequisite: One of GEO 3R03, GEOG 3O03 and registration in Level IV of an Honours programme in the School of Geography and Geology

Antirequisite: GEO 4R06, GEOG 4C06, 4VV6, GEOLOGY 4K06

GEO 4D03 LAND USE AND TRANSPORTATION

Formerly: GEOG 4H03

Methods for the analysis and prediction of transportation and land use patterns in cities, with applications to urban planning and pollution problems.

Three lectures; one term

Prerequisite: one of GEO 2S03, GEOG 2N03

Cross-list: CIV ENG 4H03

Antirequisite: GEOG 4H03

GEO 4E03 ADVANCED SEDIMENTOLOGY

Formerly: GEOLOGY 4M03

Aspects of modern and ancient depositional systems, formation and development of sedimentary basins. Large-scale processes, facies associations and sedimentary sequences will be emphasized.

Three lectures; one term

Prerequisite: One of GEO 3E03, GEOLOGY 3F03

Antirequisite: GEOLOGY 4M03

GEO 4FE3 FIELD COURSE

Formerly: GEOG 4E03, GEOLOGY 4A03

Detailed study of a particular aspect of physical geography, geology 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 Department, and the regular tuition fees.

Prerequisite: Registration in a Level III or IV Science programme in the School of Geography and Geology

Antirequisite: GEOG 4E03, GEOLOGY 4A03

GEO 4G03 URBAN ENVIRONMENTAL GEOSCIENCE

An examination of subsurface sediments in urban areas. Coastal erosion problems will be discussed and the impact of urbanization on groundwater resources. Field work in the Toronto-Hamilton region

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 3G03, GEOG 3M03

GEO 4HH3 GEOGRAPHY OF ENVIRONMENT AND HEALTH

Models and methods for research and policy on environment and health.

One lecture/seminar (three hours); one term

Prerequisite: GEO 3A03 or 3HH3 or permission of the instructor

GEO 4HT3 REGIONAL ANALYSIS AND PLANNING

Formerly: GEOG 4T03

Examination of processes and policies that influence urban form and the associated effects on natural environment.

Three lectures; one term

Prerequisite: One of GEO 2HB3 or GEOG 2B03 and one of GEO 3HT3 or GEOG 3T03

Antirequisite: GEOG 4T03

GEO 4HU3 SELECTED PROBLEMS IN URBAN PLANNING

Formerly: GEOG 4U03

An examination of planning as a public decision process, with emphasis on land use conflicts and their resolution in the Hamilton region.

Two seminars (two hours); one term

Prerequisite: One of GEO 3HT3, GEOG 3T03

Antirequisite: GEOG 4U03

GEO 4HX3 URBAN MODELS AND POLICY ANALYSIS II

Formerly: GEOG 4X03

A survey of modern literature on urban issues. Topics include welfare criteria, externalities, public goods and fiscal policies.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 3HX3, GEOG 3X03

Cross-list: ECON 4X03

Antirequisite: GEOG 4X03

GEO 4HY3 URBAN DEVELOPMENT AND POLICY ISSUES

Formerly: GEOG 4F03

Current debates on urban development and policy issues. Emphasis on the political economy of urban change.

Three lectures; one term

Prerequisite: One of GEO 2HY3, GEOG 2Y03, or permission of the instructor

Antirequisite: GEOG 4F03

GEO 4HZ3 THE LANDSCAPE OF URBAN HOUSING

Formerly: GEOG 4Z03

Historical-geographical patterns in the way housing landscapes are produced, occupied and used. The effects of planning and housing policy on the landscape.

Lectures and seminars; one term

Prerequisite: One of GEO 3HZ3, GEOG 3Z03; one of GEO 3HT3, GEOG 3T03 and one of GEO 3I03, GEOG 3N03 are recommended

Antirequisite: GEOG 4Z03

GEO 4I03 ADVANCED GIS AND SPATIAL ANALYSIS

Formerly: GEOG 4NN3

Advanced methods in GIS using ARC/INFO. Topics will include raster based analysis, working with linear features, surface modelling and AML programming.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 3I03, GEOG 3N03

Antirequisite: GEOG 4NN3

GEO 4K03 MINERALOGY

Formerly: GEOLOGY 4G03

Advanced topics in crystal chemistry and mineralogy, with emphasis on mineral spectroscopies.

Two lectures, one tutorial; one term

Prerequisite: One of GEO 2K03, 2KK3, GEOLOGY 2B06

Antirequisite: GEOLOGY 3G03, 4G03

Offered in alternate years.

Not offered in 1999-2000.

GEO 4KK3 INQUIRY: MINERALS AND SOCIETY

Formerly: ENVIR SC 4I03, GEOLOGY 4I03

Case studies of mineral structures and properties with implications of practical importance. Gem and other economic minerals; workplace and environmental hazards.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science

Antirequisite: ENVIR SC 4I03, GEOLOGY 4I03

Enrolment is limited. However, students enrolled in an Honours School of Geography and Geology programme will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

GEO 4P03 INQUIRY: CORAL REEFS

Formerly: GEOLOGY 4D03

A survey of recent and ancient reef systems in Canada and elsewhere. Emphasis is on the economic and environmental importance of reefs to Third World countries.

Two lectures, one seminar; one term

Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science.

Antirequisite: GEOLOGY 4D03

Enrolment is limited. However, students enrolled in an Honours School of Geography and Geology programme will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

GEO 4Q03 ENVIRONMENTAL GEOCHEMISTRY

Formerly: GEOLOGY 4QQ3

Geochemistry of the Earth's surface. Global cycles of important elements. Cycling of trace metals. Weathering and adsorption on mineral surfaces. Contaminant transport in the environment. Regulation of the chemical composition of water.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 3Q03, GEOLOGY 3Q03

Antirequisite: GEOLOGY 4QQ3

GEO 4R06 SENIOR THESIS*Formerly: GEOG 4C06, 4VV6, GEOLOGY 4K06*

Students will select research topics and prepare a thesis either individually or in teams. Students registered in a GIS specialist stream of an Honours Programme are required to include GIS work in their thesis.

One seminar (two hours); two terms

Prerequisite: A grade of at least B+ in GEO 3R03 (or GEOG 3O03), or GEO 3R03 and registration or credit in GEO 4I03

Antirequisite: GEO 4CC3, GEOG 4CC3, 4C06, 4VV6, GEOLOGY 4K06

GEO 4S03 SPATIAL AND GEOSTATISTICS

This course explores concepts and methods in visualisation, exploration and modelling of point pattern, spatially continuous data and area data.

Three hours; one term

Prerequisite: One of GEO 2S03, GEOG 2N03

GEO 4T03 PLATE TECTONICS AND ORE DEPOSITS*Formerly: GEOLOGY 4T03*

Synthesis of plate tectonics, with application to crustal evolution and genesis of ore deposits.

Three lectures; one term

Prerequisite: One of GEO 2E03, GEOLOGY 2C03; credit or registration in GEO 3K03 or GEOLOGY 3C03

Antirequisite: GEOLOGY 4T03

GEO 4W03 HYDROLOGIC MODELLING*Formerly: GEOG 4W03*

Principles of numerical modelling and examination of selected hydrologic models.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEO 2W03, 3W03 or GEOG 3W03

Antirequisite: GEOG 4W03

GEO 4WW3 SUBSURFACE CONTAMINANT HYDROLOGY

Physical and chemical aspects of the fate and transport of contaminants in soils and groundwater, including multiphase flow.

Two lectures, one lab (two hours); one term

Prerequisite: GEO 3W03

GEO 4X03 INQUIRY: CLIMATE CHANGE-A GEOLOGICAL PERSPECTIVE*Formerly: GEOLOGY 4C03*

Ancient and recent changes in the Earth's climate recorded in natural materials. Geological records of climatic catastrophism and cyclicity, natural causes of past change and human influences on climate.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science

Antirequisite: GEOLOGY 4C03

Enrolment is limited. However, students enrolled in an Honours School of Geography and Geology programme will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

GEO 4Z03 GEOPHYSICS - MINING EXPLORATION METHODS*Formerly: GEOLOGY 3A03*

Interpretation of geophysical survey data for regional geological mapping. Techniques covered are magnetics, gravity and radiometrics. Introduction to image processing and model interpretation.

Two lectures, one lab (two hours); one term

Prerequisite: GEO 2E03 or GEOLOGY 2C03, GEO 3I03 or GEOG 3N03, and GEO 3ZZ3 or GEOLOGY 2D03

Antirequisite: GEOLOGY 3A03

Alternates with GEO 4ZZ3.

Offered in 1999-2000.

GEO 4ZZ3 GEOPHYSICS - OIL EXPLORATION METHODS*Formerly: GEOLOGY 3B03*

Introduction to seismic reflection and refraction, ground probing radar, EM; electrical methods for mapping rocks and fluids in the subsurface. Introduction to digital signal processing.

Two lectures, one lab (two hours); one term

Prerequisite: GEO 2E03 or GEOLOGY 2C03, GEO 3I03 or GEOG 3N03, and GEO 3ZZ3 or GEOLOGY 2D03,

Antirequisite: GEOLOGY 3B03

Alternates with GEO 4Z03.

Not offered in 1999-2000.

GEOLOGY

Former Geography, Geology and some Environmental Science courses are now listed as Geo courses. Students having credit in Geography and Geology courses may not take the corresponding course under the Geo designation.

To determine the new Geo designation of a former Geology course, please see below. To determine the former Geology designation of a Geo course, please see *Geography and Geology* in the *Course Listings* section of this Calendar.

Former Course New Course Course Title

ENVIR SC 1G03	GEO 1G03	Geosphere
GEOLOGY 2B04	GEO 2M04	Optical Crystallography and Mineralogy
GEOLOGY 2B06	GEO 2K03	Crystallography and Environmental Mineralogy
	GEO 2KK3	Optical Mineralogy and Petrology
GEOLOGY 2C03	GEO 2E03	Earth History
GEOLOGY 2D03	GEO 3Z03	Structural Geology
GEOLOGY 2EE2	GEO 3FG3	Field Camp
GEOLOGY 2I03	GEO 3ZZ3	Geodynamics
GEOLOGY 2J03	GEO 2P03	Introductory Paleontology
GEOLOGY 2K03	GEO 3U03	Environmental Systems
GEOLOGY 3A03	GEO 4Z03	Geophysics-Mining Exploration Methods
GEOLOGY 3B03	GEO 4ZZ3	Geophysics - Oil Exploration Methods
GEOLOGY 3C03	GEO 3K03	Igneous and Metamorphic Petrology
GEOLOGY 3F03	GEO 3E03	Sedimentary Facies and Environments
GEOLOGY 3J03	GEO 3P03	Paleontology
GEOLOGY 3Q03	GEO 3Q03	Geochemistry
GEOLOGY 4A03	GEO 4FE3	Field Course
GEOLOGY 4C03	GEO 4X03	Inquiry: Climate Change-A Geological Perspective
	GEO 4P03	Inquiry: Coral Reefs
GEOLOGY 4D03	GEO 4K03	Mineralogy
GEOLOGY 4G03	GEO 4KK3	Inquiry: Minerals and Society
GEOLOGY 4I03	GEO 4R06	Senior Thesis
GEOLOGY 4K06	GEO 4E03	Advanced Sedimentology
GEOLOGY 4M03	GEO 4Q03	Environmental Geochemistry
GEOLOGY 4Q03	GEO 4T03	Plate Tectonics and Ore Deposits
EQLOGY 4T03		

GERMAN**(SEE MODERN LANGUAGES, GERMAN)****GERONTOLOGY****Faculty as of January 15, 1999****Director**

C.J. Rosenthal

Professors

Michael J. MacLean/(*Gerontology/Social Work*) B.A. (St. Thomas), M.A. (Sussex), Ph.D. (London)/part-time

Carolyn J. Rosenthal/(*Gerontology/Sociology*) B.A. (Toronto), M.A., Ph.D. (McMaster)

Eileen B. Ryan/(*Psychiatry/Gerontology*) B.A., M.A. (Brown), Ph.D. (Michigan)

Associate Professors

Margaret Denton/(*Gerontology/Sociology*) B.A., M.A., Ph.D. (McMaster)

John Hirdes/(*Health Studies & Gerontology*) B.Sc., M.A., Ph.D. (Waterloo)/part-time

Assistant Professors

Lori Campbell/(*Gerontology*) B.A., M.A. (Western Ontario), Ph.D. (Guelph)

Anju Joshi/(*Gerontology*) B.A., M.A. (Dalhousie)

Christopher Justice/(*Gerontology*) B.A. (Simon Fraser), M.A., Ph.D. (McMaster)

Associate Members

Larry W. Chambers/(*Clinical Epidemiology and Biostatistics*) B.A., MSc. (McMaster), Ph.D. (Memorial)

James W. Gladstone/(*Social Work*) B.A. (McGill), M.S.W. (British Columbia), Ph.D. (Toronto)

Alexander S. Macpherson/(*Psychiatry*) M.Sc. (McMaster), M.D. (Toronto)

Byron G. Spencer/(*Economics*) B.A. (Queen's), Ph.D. (Rice)

Notes:

1. Programmes at McMaster University are administered by the Faculty of Social Sciences through the Office of Gerontological Studies, and are coordinated and supervised by an interdisciplinary Committee of Instruction.
2. Not all gerontology courses may be offered every year. Students are advised to contact the Office of Gerontological Studies after May 1 to determine which courses will be offered in the following academic year.

Committee of Instruction:**Chair**

- C. Rosenthal (*Gerontology/Sociology*)
 J. Aronson (*Social Work*)
 E. Badone (*Religious Studies*)
 M. Denton (*Gerontology/Sociology*)
 A. Hicks (*Kinesiology*)
 A. Harrison (*Dean*) Ex-officio
 B. Spencer (*Economics*)
 J. Syngé (*Sociology*)
 I. Turple (*Medicine and Geriatric Medicine*)
 (Student Representative)

Courses *If no prerequisite is listed, the course is open.***GERONTOL 1A06 INTRODUCTION TO GERONTOLOGY**

An introduction to gerontology as a multidisciplinary study of aging, focusing on the philosophical, historical, biological, physiological, psychological, economic, social and health care aspects, as well as social policies in respect to an aging population.

Three hours (lectures and tutorials and 15 hours experiential learning component); two terms

GERONTOL 2B03 BIOLOGICAL DIMENSIONS OF HUMAN AGING

An examination of age-related changes in biology and physiology of organisms with a special emphasis on human aging. Attention will be given to the gradual deterioration of function and homeostatic controls and the maintenance of optimal operation for various organs.

Three hours (lectures); one term

Prerequisite: GERONTOL 1A06

Not open to students with credit or registration in KINESIOL 4SS3.

GERONTOL 2C03 RESEARCH METHODS IN SOCIAL GERONTOLOGY I

An introduction to quantitative and qualitative research methods in social gerontology. Topics covered include research design, measurement, techniques of data collection and data analysis. Special attention will be given to how research methods may be applied in the study of aging.

Three hours (lectures and practice); one term

Prerequisite: Registration in any Gerontology programme

Antirequisite: GERONTOL 3C03, SOCIOL 2Z03

GERONTOL 2D03 SOCIAL ASPECTS OF AGING

This course will examine the social aspects of aging. Topics may include the social construction of aging and health, models of health care and the informal and formal systems of care.

Three hours (lectures and discussions); one term

Prerequisite: Registration in any Gerontology programme

Antirequisite: GERONTOL 2A03, 2AA3

Not open to students with credit in SOCIOL 3X03.

GERONTOL 3A03 INTERNATIONAL ASPECTS OF GERONTOLOGY

Issues in gerontology in selected developed and developing countries. The course focuses on demographic changes, social, political and economic implications of population change, attitudes toward the aged, health care and social policies.

Three hours (lectures and discussions); one term

Prerequisite: GERONTOL 1A06 and registration in any programme in Gerontology, Social Work or Health Sciences

GERONTOL 3B03 GERONTOLOGY FIELD OBSERVATION

Directed observation of 36 hours in an approved field setting and a weekly seminar focusing on integration of theoretical knowledge and observation.

Three hours field observation per week, and two hours weekly seminar; one term

Prerequisite: Registration in any Gerontology Second Degree programme; or Level III or IV of any Gerontology programme

GERONTOL 3D03 PSYCHOLOGICAL ASPECTS OF AGING

An examination of psychological aspects of aging: sensation, perception, attention, memory, intelligence, communication, personality, attitudes and mental health.

Three hours (lectures and discussion); one term

Prerequisite: GERONTOL 1A06 and registration in any Gerontology programme

Not open to students with credit in PSYCH 3DD3

GERONTOL 3E03 INDEPENDENT STUDY IN GERONTOLOGY FOR FIRST DEGREE STUDENTS

The student will select a topic in gerontology for an in-depth investigation under the supervision of a faculty member and write a paper. This investigation could take several forms such as library research, field study, or a supervised experience in an applied setting.

The study will normally extend over two terms.

Prerequisite: Permission of the Course Coordinator or Programme Chair; and registration in Level III or IV of any Gerontology first degree programme
GERONTOL 3E03 may be repeated, if on a different topic, to a total of six units.

GERONTOL 3F03 GERONTOLOGICAL PRACTICE

Principles and methods of gerontological practice. The students will take part in the McMaster Summer Institute of Gerontology as partial fulfilment of course requirements, when offered in Term 1 of the Spring/Summer Session.

One term

Prerequisite: GERONTOL 3B03; and registration in any Gerontology Second Degree programme or Level III or IV of any Gerontology programme

GERONTOL 3G03 RESEARCH METHODS IN SOCIAL GERONTOLOGY II

The focus of this course will be on data analysis and statistics in social gerontology. Students will be introduced to techniques of analyzing data using a statistical software package on a computer.

Three hours (lectures and labs); one term

Prerequisite: GERONTOL 2C03 or 3C03; and registration in any Gerontology Second Degree programme or Level III or IV of any Gerontology programme

GERONTOL 3H03 DIVERSITY AND AGING

This course will examine issues in gerontology related to the diversity of contemporary western societies. Topics may include ethnic and racial issues, aging with a disability, aboriginal issues, gender issues, sexual orientation, urban/rural issues and social class issues.

Three hours (lectures); one term

Prerequisite: GERONTOL 1A06 or its equivalent; and enrolment in any programme in Gerontology, Social Work or Health Sciences

GERONTOL 3I03 SPECIAL TOPICS IN GERONTOLOGY

Topics may vary from year to year. Students should consult the Chair of the Committee of Instruction prior to registration concerning topics to be examined.

Three hours (lectures and discussion); one term

Prerequisite: Registration in any Gerontology programme

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 discussions); one term

Prerequisite: Registration in any Gerontology Second Degree programme, Level III or IV of any Gerontology programme; or with permission of the instructor, registration in a Labour Studies programme.

GERONTOL 3Q03 ANTHROPOLOGICAL APPROACHES TO THE STUDY OF AGING

An examination of the contribution of anthropology to the study of aging with an emphasis on cross-cultural comparisons, and including an assessment of the anthropological literature relating to the biological basis of aging in modern and prehistoric populations.

Three hours (lectures and discussion); one term

Prerequisite: Six units of Social/Cultural Anthropology or registration in any programme in Gerontology

Cross-list: ANTHROP 3Q03

GERONTOL 4A06 GERONTOLOGY THESIS

Research projects with individual faculty members.

Prerequisite: GERONTOL 2C03 or 3C03 and GERONTOL 3G03 or another approved three unit statistics course; and registration in Level IV of a Combined Honours Programme in Gerontology and Another Subject

GERONTOL 4B03 COMMUNICATION AND COUNSELLING WITH OLDER ADULTS

This course introduces the student to issues in communication and counselling with older adults. Appropriate theories will be explored through lectures, discussions and practice.

Three hours (lectures and discussion); one term

Prerequisite: Registration in any Gerontology Second Degree programme or Level III or IV of any Gerontology programme

GERONTOL 4C03 SPECIAL TOPICS IN GERONTOLOGY

Topics may vary from year to year. Students should consult the Committee of Instruction prior to registration, concerning topics to be examined.

Prerequisite: Registration in Level IV of a Combined Honours Programme in Gerontology and Another Subject or any Gerontology as a Second Degree programme

GERONTOL 4D03 CURRENT ISSUES IN GERONTOLOGY

The content of the course will vary from year to year; please consult the Chair of the Gerontology Committee of Instruction for details.

Prerequisite: Registration in Level IV of a Combined Honours Programme in Gerontology and Another Subject or any Gerontology as a Second Degree programme

GERONTOL 4E03 ADVANCED SEMINAR IN GERONTOLOGY

This course examines varied methodologies for gerontological research. With an emphasis on self-directed learning, students will learn about some of these methods in depth through individual and group projects and discussions with researchers.

Three hours (lectures and discussion); one term

Prerequisite: GERONTOL 2C03 or 3C03 and registration in Level IV of a Combined Honours programme in Gerontology and Another Subject or any Gerontology as a Second Degree programme

GERONTOL 4F06 DIRECTED RESEARCH FOR SECOND DEGREE STUDENTS

Directed study of a research problem through published materials and/or field inquiry and/or data analysis. Students will be required to write up the results of their inquiry in scholarly form.

Prerequisite: Registration in the B.A. Gerontology as a Second Degree programme

GERONTOL 4G03 INDEPENDENT STUDY IN GERONTOLOGY FOR SECOND DEGREE STUDENTS

The student will select a topic in gerontology for an in-depth investigation under the supervision of a faculty member and write a paper. This investigation could take several forms such as library research, field study, or a supervised experience in an applied setting.

Prerequisite: Registration in any Gerontology as a Second Degree programme

GERONTOL 4S03 SOCIAL POLICY AND THE AGING POPULATION

Critical examination of the social and economic implications of the aging population and the nature of social welfare policy with respect to the elderly.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject or any Gerontology as a Second Degree programme

Not open to students with credit in SOC WORK 4A03

Enrolment is limited.

GLOBALIZATION, SOCIAL CHANGE AND THE HUMAN EXPERIENCE

(SEE THEME SCHOOL ON GLOBALIZATION, SOCIAL CHANGE AND THE HUMAN EXPERIENCE)

GREEK

(SEE CLASSICS, GREEK)

HEALTH SCIENCES

Faculty Note:

Health Sciences courses are normally available only to students registered in Nursing (A, B and NP (C) Stream), Oncology or Midwifery, as applicable.

Courses

HTH SCI 1A06 HUMAN BIOCHEMISTRY

Term 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.

Term II: DNA replications, transcription and translation; recombinant DNA technology; and the molecular biology of inherited and acquired diseases.

Lectures/problem-based tutorial (three hours); two terms

Prerequisite: Registration in Level I of the B.Sc.N. (A) Stream, or Level III of the B.Sc.N. (B) Stream; or permission of the instructor

Antirequisite: HTH SCI 1CC7

HTH SCI 1B07 HUMAN BIOLOGICAL SCIENCE I

Term I examines cell structure, function and communication mechanisms and musculo-skeletal structure and function.

Term II examines homeostasis of the digestive, cardiovascular, respiratory, renal systems and their integration in control of acid base balance.

Two lectures (two hours each), one tutorial (two hours), one lab (two hours), every other week; two terms

Prerequisite: Credit or registration in HTH SCI 1A06; registration in Level I of the B.Sc.N. (A) Stream or permission of the instructor

HTH SCI 1C06 SOCIAL AND CULTURAL DIMENSIONS OF HEALTH CARE

Designed to introduce student midwives to social analysis primarily related to midwifery issues. Using a multidisciplinary perspective, the integrated analysis of race, class and gender will be discussed in relation to health and health care.

Lectures/tutorials; two terms

Prerequisite: Registration in the Midwifery Education programme

HTH SCI 1CC7 INTEGRATED BIOLOGICAL BASES OF NURSING PRACTICE I

Through a small group self-directed problem based learning format students will apply biological and biochemical principles essential to the assessment and management of health care problems.

Two problem based tutorials (three hours each), one lab (two hours); one term

Prerequisite: Permission of the instructor

Antirequisite: HTH SCI 1A06, 1ZZ4

HTH SCI 1D06 TOPICS IN BIOLOGICAL SCIENCES

This course covers basic concepts of human structure and function, genetics and embryology through lectures, demonstrations and appropriate laboratory assignments.

Lectures/tutorial; two terms

Prerequisite: Registration in the Midwifery Education programme

HTH SCI 1Z04 HUMAN ANATOMY

Study of gross human anatomy providing an overview of tissues and organs of the major body systems. This self-study course is required for Nursing students who have advanced credit for all of the required physiology. Others will be admitted by permission of the instructor.

Independent study (two hours lecture equivalent/four hours lab equivalent); one term

Prerequisite: Registration in the B.Sc.N. programme and permission of the instructor

HTH SCI 1ZZ4 INTRODUCTORY PHYSIOLOGY FOR POST DIPLOMA NURSING STUDENTS

This course focuses on integrative physiology of the gastrointestinal, cardiovascular, respiratory and renal systems and how these systems maintain acid base and ionic balance and homeostasis.

Lecture (two hours), tutorial/lab (three hours); one term

Prerequisite: credit or registration in HTH SCI 1A06, registration in Level III of the B.Sc.N. (B) Stream or permission of the instructor

Antirequisite: HTH SCI 1CC7

HTH SCI 2AA2 TOPICS IN HUMAN BIOLOGICAL SCIENCES I

Study of reproductive anatomy and physiology, with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction.

Two lectures (two-hours each), two tutorials (two hours each), one lab (two hours), every other week for six weeks; second term

Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1Z04 and 1ZZ4, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1ZZ4, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor

Antirequisite: HTH SCI 2B08, 2C07

HTH SCI 2B08 HUMAN BIOLOGICAL SCIENCE II

The first half of first term examines clinical microbiology and principles of pathology, and the latter half of the first term examines pharmacological principles. Second term examines the central and peripheral nervous system and anatomy and physiology in the first half, and reproductive anatomy and physiology in the second half.

Two lectures (two hours each), two tutorials (two hours each), one lab (two hours), every other week; two terms

Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1Z04 and 1ZZ4, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1ZZ4, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor

Antirequisite: HTH SCI 2C07

HTH SCI 2BB2 TOPICS IN HUMAN BIOLOGY SCIENCE II

Study of the central peripheral nervous system, including the special senses and neuroendocrine relationships. Introductory skills in neurological assessment and drug actions on the nervous system are also considered.

Two lectures (two hours each), two tutorials (two hours each), one lab (two hours), every other week for six weeks; second term

Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1Z04 and 1ZZ4, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1ZZ4, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C07

HTH SCI 2C07 INTEGRATED BIOLOGICAL BASES OF NURSING PRACTICE II

Continued application of biological and biochemical principles essential to the management of health care problems. Particular emphasis will be placed on introduction to principles of pharmacology and mechanisms of drug action.

Two problem-based tutorials (three hours each), one lab (two hours), one term

Prerequisite: HTH SCI 1CC7 or 1ZZ4 or permission of the instructor
Antirequisite: HTH SCI 2AA2, 2B08, 2BB2, 2CC2, 2DD2

HTH SCI 2CC2 TOPICS IN HUMAN BIOLOGICAL SCIENCES III

Medical microbiology and principles of pathology are considered, including structure and function of infectious agents, control measures and host defenses.

Two lectures (two hours each), two tutorials (two hours each), one lab (two hours) every other week for six weeks; first term

Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1Z04 and 1ZZ4, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1ZZ4, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C07

HTH SCI 2DD2 TOPICS IN HUMAN BIOLOGICAL SCIENCES IV

Principles of pharmacology and mechanisms of drug action are considered. Lecture (two hours), tutorial (six hours), every other week for six weeks; first term

Prerequisite: HTH SCI 1A06 and 1B07, or 1A06, 1Z04 and 1ZZ4, and registration in Level II of the B.Sc.N. (A) Stream; or HTH SCI 1A06 and 1ZZ4, and registration in Level IV of the B.Sc.N. (B) Stream; or permission of the instructor
Antirequisite: HTH SCI 2B08, 2C07

HTH SCI 3A03 CRITICAL APPRAISAL

A reinforcement of the principles of clinical research and statistical inference, with particular emphasis on critical assessment of evidence as presented in the health sciences literature related to the care of patients.

Problem-based tutorial (two hours), guided self-study (two hours); one term

Prerequisite: Normally HTH SCI 3L02 and registration in Level III of the B.Sc.N. (A) or (B) or NP (C) Stream or permission of the instructor; or registration in the Paediatric or Adult Oncology programmes; or registration in Level I of the Midwifery Education programme
Antirequisite: HTH SCI 3C04

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 lecture/problem-based tutorials (three hours each), guided self-study (two hours); 13 weeks

Prerequisite: Registration in Level III of the B.Sc.N. (A) Stream, or the NP (C) Stream, or Level III or IV of the B.Sc.N. (B) Stream; or registration in Level II of the Midwifery Education programme; or permission of instructor

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 (2.5 hours), guided self-study (2 hours) per week; one term.

Prerequisite: Normally registration in Level III of the BScN (A) or (B) or NP (C) Stream or permission of the instructor; or registration in the Paediatric or Adult Oncology programmes.
Antirequisite: HTH SCI 3A03, 3L02

HTH SCI 3LL3 PRINCIPLES AND METHODS OF RESEARCH

Advanced analysis of principles of research design, with an emphasis on quantitative and qualitative methodologies. A combination of self-directed and distance learning techniques will be used. Students will participate in an ongoing research project for a portion of their term.

Self-study/tutorial; two terms

Prerequisite: HTH SCI 3A03 and registration in the Midwifery Education programme or permission of the instructor

HTH SCI 3R03 INDEPENDENT STUDY IN A HEALTH SCIENCE TOPIC

Special topics will be considered in depth under the supervision of a faculty member. The plan of study must be negotiated with the supervisor.

Lecture or equivalent (three hours); one term

Prerequisite: Registration in Level II or above of the B.Sc.N. programme; permission of the instructor and permission of the Coordinator of Studies (Nursing)
Students will not normally be permitted to apply more than one independent study course in the Health Sciences toward their elective requirements for the B.Sc.N. degree.

HTH SCI 4E06 INTRODUCTION TO HEALTH CARE LEADERSHIP/MANAGEMENT

Theories and principles of leadership and management are applied to the health care disciplines. Given in both problem based tutorial format and through distance education. Enrolment in tutorial format is limited.

Problem based tutorial or equivalent (four hours); independent study at a clinical site (six hours); one term

Prerequisite: A minimum of one year clinical work experience in a health care profession or permission of the instructor

Antirequisite: NURSING 4B06

HTH SCI 4H03 ISSUES IN INTERNATIONAL AND INTERCULTURAL HEALTH

An introduction to health issues in a rural Canadian and international context including theories of: development; political economy; medical and social anthropology; and intercultural health care practice.

Three hours (lecture/problem-based tutorials); one term

Prerequisite: HTH SCI 3B03 and registration in Level III or IV of the BScN Programme or permission of the instructor

Antirequisite: NURSING 4H03

HTH SCI 4L02 RESEARCH PROJECT

Students participate in a research study. Concepts of research design, implementation and analysis and dissemination of results are studied.

Approximately two hours per week; two terms

Prerequisite: HTH SCI 3A03, 3L02 and registration in Level IV of the B.Sc.N. (A) or (B) or NP (C) Stream; or permission of the instructor

Antirequisite: HTH SCI 4L04

HEALTH AND SOCIETY

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

HEBREW

(SEE RELIGIOUS STUDIES, HEBREW)

HISPANIC STUDIES

(SEE MODERN LANGUAGES, HISPANIC STUDIES)

HISTORY**Faculty as of January 15, 1999****Chair**

Virginia Aksan

Professors

James D. Alsop/B.A. (Winnipeg), M.A. (Western Ontario), Ph.D. (Cambridge), F.R.H.S.

Daniel J. Geagan/A.B. (Boston), Ph.D. (Johns Hopkins)

Robert H. Johnston/B.A. (Toronto), M.A., Ph.D. (Yale)

Richard A. Rempel/B.A. (Saskatchewan), B.A., M.A., D. Phil. (Oxford)

David J. Russo/B.A. (Massachusetts), M.A. Ph.D. (Yale)

John C. Weaver/B.A. (Queen's), M.A., Ph.D. (Duke)

Associate Professors

- Virginia Aksan/B.A. (*Allegheny College*), M.L.S. (*Berkeley*), M.A., Ph.D. (*Toronto*)
 David P. Barrett/B.A., M.A., M.Phil. (*Toronto*), Ph.D. (*London*)
 Kenneth Cruikshank/B.A. (*Carleton*), M.A., Ph.D. (*York*)
 Ruth Frager/B.A. (*Rochester*), M.A., Ph.D. (*York*)
 J. Michael Gauvreau/B.A. (*Laurentian*), M.A., Ph.D. (*Toronto*)
 Evan W. Haley/A.B. (*Dartmouth*), Ph.D. (*Columbia*)
 Bernice M. Kaczynski/B.A. (*Pittsburgh*), M.Phil., Ph.D. (*Yale*)
 Wayne L. Thorpe/B.A. (*Washington*), B.A. (*Portland State*), M.A. (*Colorado*), Ph.D. (*British Columbia*)

Adjunct Associate Professor

John A. Sainsbury/B.A. (*Brock*), M.A. (*Cambridge*), Ph.D. (*McGill*)

Assistant Professor

Martin Horn/B.A. (*Western Ontario*), M.A. (*McMaster*), Ph.D. (*Toronto*)

Associate Members

Peter J. George/*(Economics)* B.A., M.A., Ph.D. (*Toronto*), D.U. (*Ottawa*)

Professors Emeriti

- Ezio Cappadocia/B.A., M.A. (*Toronto*), Ph.D. (*Chicago*)
 Alan Cassels/M.A. (*Oxford*), Ph.D. (*Michigan*), F.R.H.S.
 Paul S. Fritz/B.A. (*Queen's*), M.A. (*Wisconsin*), Ph.D. (*Cambridge*), F.R.H.S.
 Charles M. Johnston/B.A. (*McMaster*), M.A., Ph.D. (*Pennsylvania*)
 Harvey A. Levenstein/B.A. (*Toronto*), M.S., Ph.D. (*Wisconsin*)
 John H. Trueman/B.A., M.A. (*Toronto*), Ph.D. (*Cornell*)

Department Notes:

- The Department of History offers two Level I courses, each of which is designed to introduce the student to the study of History at the university level through the examination of an important aspect of the development of western civilization. HISTORY 1A06 is recommended for those students who anticipate entering B.A. or Honours programmes in History, but students will be admitted to programmes in History from HISTORY 1L06 (cross listed as CLASSICS 1L06). Students may take only one of these Level I History courses.
- Enrolment in any Level IV History seminar will be limited to 15 students. Students must be registered in an Honours History programme 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).
- Students interested in Ancient History are advised to examine the courses in Classics offered by the Department of Classics.

The following course may be applied towards degree requirements in History at Level II:

HUMAN 2F03 Selected Interdisciplinary Topics In Medieval Life And Culture

Courses *If no prerequisite is listed, the course is open.***HISTORY 1A06 EUROPE SINCE THE RENAISSANCE**

An examination of the principal themes and issues of European history from the Renaissance to 1945.

Three hours (lectures and discussion groups); two terms

HISTORY 1L06 HISTORY AND ARCHAEOLOGY OF THE ANCIENT WORLD

The history of the Ancient Near East, Greece, and Rome based on documentary sources and archaeological evidence.

Two lectures, one tutorial; two terms

Cross-list: CLASSICS 1L06

HISTORY 2A06 EARLY MODERN EUROPE 1400-1715

A study of the transition from late medieval to early modern civilization, with emphasis upon the breakup of feudal society and the consequent changes in the character of Europe.

Three lectures; two terms

Prerequisite: Registration in Level II and above

HISTORY 2BB6 WOMEN'S ROLE IN WESTERN EUROPEAN SOCIETY

An examination of the contribution of women to western European society from the late classical era to the early twentieth century. Whether examined from a historical, social or cultural perspective, the female role will be seen in relation to the major political changes taking place during this period.

Three hours; two terms

Cross-list: WOMEN ST 2B06

HISTORY 2C06 MODERN EUROPE

An examination of major themes in 19th- and 20th-century European history up to the 1990s.

Three lectures; two terms

Prerequisite: Registration in Level II and above

HISTORY 2EA3 ISLAM AND MEDITERRANEAN SOCIETY, 600-1300

An introduction to Islamic civilization from its beginnings in Arabia to the period of the Crusades, with an emphasis on Mediterranean culture of the period.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: HISTORY 2E06, RELIG ST 2O06

Cross-list: RELIG ST 2EA3

HISTORY 2EB3 ISLAM IN THE WORLD, 1300-1800

A survey course which emphasizes the role of Islam in the global setting in the period of the great Islamic empires.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: HISTORY 2E06, RELIG ST 2O06

Cross-list: RELIG ST 2EB3

HISTORY 2GG3 CHINA: HISTORICAL FOUNDATIONS

Political, social and cultural background to the modern age, with emphasis on the late imperial period (1600-1900).

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: HISTORY 2B06

HISTORY 2H06 UNITED STATES HISTORY

The history of the United States from the Colonial Era to the end of the Twentieth Century.

Three lectures; two terms

Prerequisite: Registration in Level II and above

HISTORY 2I06 EUROPE IN THE MIDDLE AGES

A survey of European History from A.D. 400-1400. Particular attention will be given to the attempts at political and social organization which led to the birth of Europe.

Three lectures; two terms

Prerequisite: Registration in Level II and above

HISTORY 2J06 THE HISTORY OF CANADA

A study of the major social and political forces that have contributed to the development of modern Canada.

Three hours (two lectures and discussion group); two terms

Prerequisite: Registration in Level II and 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 and above

Cross-list: CLASSICS 2K03

HISTORY 2L03 HISTORY OF CLASSICAL GREECE

Greece from the rise of the city-states to Alexander, with particular attention to the political, social and cultural development in the light of literary and archaeological evidence. (No Greek or Latin required).

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: HISTORY 2L06

Cross-list: CLASSICS 2L03

HISTORY 2LL3 HISTORY OF CLASSICAL ROME

Rome from the middle Republic through the Empire, with particular attention to the political, social and cultural development in the light of both literary and archaeological evidence. (No Greek or Latin required).

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: HISTORY 2L06

Cross-list: CLASSICS 2LL3

HISTORY 2N06 BRITISH HISTORY, 1500-1970
Emphasis will be placed on the main political, religious, economic and social developments.
Three hours (lectures and discussion groups); two terms
Prerequisite: Registration in Level II and above

HISTORY 3A03 IMPERIAL ISLAM: THE OTTOMANS
A study of the political, economic and social history of the Ottoman Empire, with an emphasis on its influence on the cultures of both Asia and Europe.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II and above

HISTORY 3AA3 THE MODERN MIDDLE EAST
A survey of the political and social history of the Middle East from 1800 to the present, with an emphasis on contemporary issues, such as the Islamic impulse and the Arab-Israeli conflict.
Three hours (lectures and discussion); one term
Prerequisite: Registration in Level II and above

HISTORY 3B03 MODERN JAPAN
A survey of 19th and 20th century Japan, with emphasis on political developments, social change, and Japan's relations with East Asia and the West.
Three lectures; one term
Prerequisite: Registration in Level II and above
Cross-list: JAPAN ST 3B03

HISTORY 3BB3 THE TOWN IN UNITED STATES HISTORY
A study of the political, economic, social, cultural and intellectual aspects of town life, as well as an examination of the relationship of the town to American society as a whole.
Three lectures; one term
Prerequisite: Six units of History above Level I

HISTORY 3C03 THE LATE REPUBLIC
An examination and analysis of major themes in the political, social and economic history of Rome from the mid-second century B.C. to the assassination of Caesar.
Three lectures; one term
Prerequisite: HISTORY 1L06 or 2LL3 or six units of Classics, and registration in Level III and above
Antirequisite: HISTORY 3MM3
Cross-list: CLASSICS 3C03
Alternates with HISTORY 3CC3

HISTORY 3CC3 THE EARLY EMPIRE
An examination and analysis of major themes in the political, social and administrative history of Rome under the early emperors.
Three lectures; one term
Prerequisite: HISTORY 1L06 or 2LL3 or six units of Classics, and registration in Level III and above
Antirequisite: HISTORY 3MM3
Cross-list: CLASSICS 3CC3
Alternates with HISTORY 3C03

HISTORY 3D03 THE FRENCH REVOLUTIONARY ERA
A study of the origins, nature and impact of the French Enlightenment and Revolution, and of the legacy of the Revolutionary-Napoleonic period.
Three hours (lectures and discussion); one term
Prerequisite: Six units of History and registration in Level II or above

HISTORY 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 and above
Cross-list: RELIG ST 3DD3

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: Registration in Level III and above
Cross-list: CLASSICS 3EE3

HISTORY 3F03 MEDIEVAL SOCIETY
An examination of the aristocratic, monastic, urban and rural communities of the Middle Ages. Attention will be given to patterns of social organization as well as to such specific themes as gender, popular piety, justice and warfare.
Three hours (lectures and discussion group); one term
Prerequisite: One of HISTORY 2I06, 2L03, 2LL3

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 and above

HISTORY 3GG3 CHINA: THE REVOLUTIONARY CENTURY, 1895-1995
End of the imperial system; the Republic; the rise of the Communist Party; Communist China: the varieties of revolution.
Three lectures; one term
Prerequisite: Registration in Level II and above
Antirequisite: HISTORY 2B06

HISTORY 3H06 THE HISTORY OF MODERN RUSSIA
A survey of the history of Russia with major emphasis on the 19th and 20th centuries.
Three lectures; two terms
Prerequisite: Registration in any programme in History or Honours Russian and East European Studies

HISTORY 3HH3 THE INTERNATIONAL RELATIONS OF THE EUROPEAN POWERS, 1815-1914
An examination of the post-Napoleonic settlement of 1815; its breakdown and the triumph of the national unification movements; the causes of World War I.
Three lectures; one term
Prerequisite: Registration in Level II and above

HISTORY 3I03 THE INTERNATIONAL RELATIONS OF THE EUROPEAN POWERS, 1914-1945
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 and 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 and above, with a minimum of six units of History
Enrolment is limited.

HISTORY 3K03 CANADIAN POLITICAL DEVELOPMENT SINCE 1840
An examination of the changing structure and role of the Canadian state since the Act of Union, with particular attention to the emergence of the modern regulatory and welfare state.
Three hours (lectures and discussion groups); one term
Prerequisite: HISTORY 2J06

HISTORY 3LL3 THE HELLENISTIC AGE
The successors of Alexander, the world of the monarchies and their absorption into the Roman Empire. Political, cultural and social achievements in the light of modern historical research will be emphasized.
Three hours (lectures and discussion groups); one term
Prerequisite: One of HISTORY 1L06, 2L03, or six units of Classics
Cross-list: CLASSICS 3LL3

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: HISTORY 2J06, or registration in a Labour Studies programme
Offered in alternate years.

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 groups); one term
Prerequisite: Registration in Level II and above
Offered in alternate years.

HISTORY 3Q03 HISTORY OF MODERN GERMANY
A survey of the 19th- and 20th-century Germany with major emphasis on social and political history.

Three hours (lectures and discussion groups); one term
Prerequisite: Registration in Level II and above

**HISTORY 3RR3 WAR AND SOCIETY IN
20TH-CENTURY BRITAIN**

Imperialism and Society in Britain: the impact of World War I and World War II on the British Empire.

Three hours (lectures and discussion groups); one term
Prerequisite: Registration in Level II and above

**HISTORY 3S03 HEALTH AND HEALTH CARE IN THE
ANGLO-AMERICAN WORLD, 1500-1750**

A thematic study of health and health care within the British Isles and the English Atlantic. The social history of medicine is developed within the contexts of socio-economic change, the rise of the early modern state, military and imperial expansion, and professionalization.

Three hours (lectures and discussion groups); one term
Prerequisite: Registration in Level II and above

Alternates with HISTORY 3SS3.

**HISTORY 3SS3 ASPECTS OF THE CULTURAL
HISTORY OF ENGLAND, 1500-1688**

An introduction to courtly, urban, and rural culture from pre-Reformation humanism through to the Restoration era, with emphasis upon social, political and religious influences.

Three hours (lectures and discussion groups); one term
Alternates with HISTORY 3S03.

HISTORY 3TT3 MATERIAL LIFE IN ENGLAND, 1500-1800

Among topics covered will be: food and drink, clothing, costume and fashion, lodging, health and medicine, architecture of towns and cities, technology, capitalism and the emergence of a consumer society.

Three hours (lectures and discussion groups); one term
Prerequisite: HISTORY 2N06

HISTORY 3U03 ASPECTS OF FRENCH CANADIAN HISTORY

Emphasis will be placed on Quebec from the 18th to mid-20th Century.

Three hours (lectures and discussion groups); one term
Prerequisite: Registration in Level II and above

Offered in alternate years.

**HISTORY 3X03 CANADIAN AND AMERICAN
WOMEN'S HISTORY**

An examination of the history of Canadian and American women primarily in the nineteenth and twentieth centuries. This includes investigation of paid and unpaid labour, sexuality, child-rearing, formal education and religion.

Three lectures; one term
Prerequisite: HISTORY 2H06 or 2J06, or WOMEN ST 2A06

Cross-list: WOMEN ST 3X03

Offered in alternate years.

HISTORY 3XX3 EARLY LATIN AMERICA

From the Amerindian cultures to 1823. The course will deal with the pre-Columbian civilizations, the Spanish conquest and its consequences until the wars for independence from Spain.

Three lectures; one term
Prerequisite: Registration in Level II and above

Alternates with HISTORY 3YY3.

HISTORY 3YY3 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 lectures; one term
Prerequisite: Registration in Level II and above

Alternates with HISTORY 3XX3.

**HISTORY 3Z03 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

Prerequisite: Open to students in Level II and above

Cross-list: RELIG ST 3Z03

**HISTORY 3ZZ3 JUDAISM AND THE JEWISH PEOPLE
IN THE TWENTIETH CENTURY**

Jews and Judaism in a century of catastrophe and renewal. The progress of Emancipation; Jews in Canada and the U.S.; the Jewish catastrophe in Europe; the Jewish identities in literature and the arts.

Two lectures, one tutorial; one term

Prerequisite: Open to students in Level II and above

Cross-list: RELIG ST 3ZZ3

**HISTORY 4AA6 SPECIAL STUDIES IN THE HISTORY
OF TUDOR AND STUART ENGLAND**

Studies in the political, religious, intellectual and social life of Tudor and Stuart England.

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2N06, 3QQ3, 3SS3, or 3TT3, and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

**HISTORY 4B06 MODERN CANADA, 1896-1968: AN
INTELLECTUAL AND CULTURAL HISTORY**

An intensive study of the shaping of the twentieth-century outlook in English-speaking Canada. Topics will include the growth of the welfare state, ideologies (liberalism, conservatism, socialism, feminism), the cultural impact of depression and the two world wars, and the role of religion in shaping the Canadian community.

Seminar (two hours); two terms

Prerequisite: HISTORY 2J06 or 3L03 and 3M03, and registration in Level III or IV of any Honours programme in History

Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06.

Enrolment is limited. Departmental permission required.

**HISTORY 4BB6 SPECIAL TOPICS IN THE
HISTORY OF MODERN JAPAN**

Japan from the Meiji Restoration to the post-war resurgence, with emphasis on political developments and social change.

Seminar (two hours); two terms

Prerequisite: HISTORY 3B03 and registration in Level III or IV of any Honours programme in History; or JAPAN ST 3B03 (HISTORY 3B03) with a grade of at least B- and registration in Level III or IV of the Japanese Studies programme

Enrolment is limited. Departmental permission required.

**HISTORY 4CC6 SPECIAL TOPICS IN THE SOCIAL AND
CULTURAL HISTORY OF VICTORIAN CANADA**

An examination of the social and cultural development of English Canada between 1837 and 1901.

Seminar (two hours); two terms

Prerequisite: HISTORY 2J06 and registration in Level III or IV of any Honours programme in History

Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06.

Enrolment is limited. Departmental permission required.

HISTORY 4D06 SPECIAL TOPICS IN GREEK HISTORY

Investigations into Greek social history and its interpretation.

Seminar (two hours); two terms

Prerequisite: Six units from HISTORY 2L03, 3L13, 3UU3, CLASSICS 2K03, and registration in Level III or IV of any Honours programme in History

Cross-list: CLASSICS 4D06

Enrolment is limited. Departmental permission required.

**HISTORY 4E06 SPECIAL TOPICS IN THE HISTORY
OF VICTORIAN BRITAIN**

An examination of such themes as the two-party system, the Irish question, working-class life, religious and literary movements, evolving industrialism, imperialism and social reform.

Seminar (two hours); two terms

Prerequisite: HISTORY 2N06 and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

**HISTORY 4G06 SPECIAL TOPICS IN THE
HISTORY OF MODERN CHINA**

Aspects of the political, social, and cultural history of nineteenth- and twentieth-century China.

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2B06, 2GG3 or 3GG3 and registration in Level III or IV of any Honours programme in History

Alternates with HISTORY 4BB6.

Enrolment is limited. Departmental permission required.

HISTORY 4GG6**TOPICS IN MIDDLE EASTERN AND ISLAMIC HISTORY**

Aspects of the social history of the Middle East and Islamic world, such as the Muslim-Christian encounter, gender and ethnicity.

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2E06, 2EA3, 2EB3, 3A03, 3AA3, and registration in Level III or IV of any Honours programme in History
Enrolment is limited. Departmental permission required.

HISTORY 4H06**CANADIAN WOMEN'S HISTORY**

An examination of historical changes in women's roles in Canadian society, particularly since Confederation. This includes investigation of family dynamics, women's work and women's political involvement.

Seminar (two hours); two terms

Prerequisite: HISTORY 2J06 or 3X03 and registration in Level III or IV of any Honours programme in History

Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06. Enrolment is limited. Departmental permission required.

HISTORY 4J06**SPECIAL TOPICS IN THE HISTORY OF THE UNITED STATES IN THE 20TH CENTURY**

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2H06 or 3E06 and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

HISTORY 4L06**SPECIAL TOPICS IN THE HISTORY OF THE UNITED STATES BEFORE 1865**

Seminar (two hours); two terms

Prerequisite: HISTORY 2H06 and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

HISTORY 4O06**RUSSIA AND REVOLUTION**

The impact of modernization upon the Soviet state and society.

Seminar (two hours); two terms

Prerequisite: HISTORY 3H06 and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

HISTORY 4P06**CONTEMPORARY EUROPE**

Topics in the history of Europe during the 20th Century.

Seminar (two hours); two terms

Prerequisite: Six units from HISTORY 2C06, 3HH3, 3I03, and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

HISTORY 4Q06**SPECIAL TOPICS IN THE HISTORY OF LATE ANTIQUITY AND BYZANTIUM**

An examination of the shift from pagan to Christian paradigms in the Mediterranean world, beginning with the conversion of Constantine in 313 and ending with the fall of Constantinople in 1453.

Seminar (two hours); two terms

Prerequisite: Six units from HISTORY 2I06, 2L03, 2L06, 2LL3, 3F03, 3LL3, 3MM3, 3UU3, 3VV3 and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

HISTORY 4T06**THE PROGRESSIVE IMPULSE IN CANADA AND THE UNITED STATES**

An examination of the social and political reform movements which swept across North America from the 1890's to the 1920's, as various social groups responded to the emergence of the modern corporate economy.

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2H06, 2J06, 3G03, 3K03, 3L03 and registration in Level III or IV of any Honours programme in History

Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06. Enrolment is limited. Departmental permission required.

Enrolment is limited. Departmental permission required.

HISTORY 4U06**INDEPENDENT RESEARCH**

A reading and/or research programme under the supervision of one member of the Department. A major paper is required, as well as a formal oral examination.

Prerequisite: Registration in Level IV of any Honours programme in History and the attainment of a CA of at least 9.0, and permission of the Department
Enrolment is limited. Departmental permission required.

HISTORY 4Y06**THE SECOND WORLD WAR**

Emphasis will be placed on the military and diplomatic aspects of the subject.

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2C06, 3I03 or 3I16 and registration in Level III or IV of any Honours programme in History

Enrolment is limited. Departmental permission required.

HUMANITIES (GENERAL)**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

Enrolment is limited.

HUMAN 2C03**CRITICAL THINKING**

This course aims to improve skills in analyzing and evaluating arguments and presentations found in everyday life and academic contexts, and to improve critical judgement.

Two lectures; one tutorial; one term

Prerequisite: Registration in Level II and above

Antirequisite: ARTS&SCI 1B06, PHILOS 2R03

HUMAN 2C03 is administered by the Department of Philosophy.

HUMAN 2F03**SELECTED INTERDISCIPLINARY TOPICS IN MEDIEVAL LIFE AND CULTURE**

The course will focus on themes to promote discussion and analysis of the roles played by women and men in the Middle Ages. It will explore some of the following topics: the history of health care and life cycles; the depiction of women by Latin and vernacular writers; female/male roles in the realm of spirituality; women as patrons and performers, authors, musicians and artists in medieval society; gender issues in legislation and law enforcement.

Three lectures; one term

Prerequisite: Registration in Level II or above

HUMAN 2F03 is administered by the School of Art, Drama and Music for 1999-2000.

HUMAN 3W03**APPLIED HUMANITIES I**

An opportunity for students to gain applied experience in a field related to a Humanities discipline. A student will apply skills and knowledge acquired in undergraduate studies in practical areas such as research projects, pedagogy and work placements. Students participate in defining learning goals and experiences.

Prerequisite: Registration in Level III or IV of any Honours programme offered by the Faculty of Humanities. Students must contact the Dean's Office, CNH-112, for information on opportunities that are available for the coming year.

Enrolment is limited.

HUMAN 4W03**APPLIED HUMANITIES II**

An opportunity for students to gain applied experience in a field related to a Humanities discipline. A student will apply skills and knowledge acquired in undergraduate studies in practical areas such as research projects, pedagogy and work placements. Students participate in defining learning goals and experiences.

Prerequisite: Registration in Level III or IV of any Honours programme offered by the Faculty of Humanities. Students must contact the Dean's Office, CNH-112, for information on opportunities that are available for the coming year.

Enrolment is limited.

INDIGENOUS STUDIES

An interdisciplinary minor in Indigenous Studies is offered. Please refer to the *Interdisciplinary Minors and Thematic Areas* section of this Calendar

Director

D.J. Martin-Hill/B.A., M.A., Ph.D. (McMaster)

Lecturer

R. Monture/B.A., M.A. (McMaster)

Committee of Instructors

S. Buck, *Clan Mother, Six Nations*

T. Deer, *Mohawk Language Instructor*

A. Jacobs, *Artist*

J. Longboat, *Traditional Herbalist*

D. McGregor, B.Sc. (Toronto), M. Envir.St. (York)

V. Shawanda, *Ojibwe Language Instructor*

Associate Elders

H. Longboat, *Confederacy Chief, Six Nations*
 A. General, *Confederacy Chief, Six Nations*
 N. General, *Faithkeeper, Six Nations*

President's Committee on Indigenous Issues**Co-Chairs**

S. Bowerbank (*McMaster University Representative*)
 L. Hill-MacDonald (*Six Nations of the Grand River Representative*)

Courses *If no prerequisite is listed, the course is open.***INDIGENOUS STUDIES ...****INDIG ST 1A06 INTRODUCTION TO INDIGENOUS STUDIES**

A study of the world views of Indigenous peoples, including the Inuit, First Nations and the Metis, and of contemporary Indigenous societies' social systems, political organization and economic development.
 Three hours (lecture and seminars); two terms

INDIG ST 2A06 INTRODUCTION TO INDIGENOUS PEOPLES' SPIRITUALITY

A review of the Indigenous peoples' views of the world, particularly as they relate to the natural world, their spirituality and their social systems.
 Three hours (lecture and seminars); two terms
 Prerequisite: INDIG ST 1A06

INDIG ST 2C03 INTRODUCTION TO CONTEMPORARY INDIGENOUS SOCIETIES

A review of the geographic, cultural and demographic composition of Inuit, First Nations and Metis, and of the major current developments on land, cultural integrity, treaties, economic development, community social development and self-government.
 Three hours (lecture and seminars); one term
 Prerequisite: INDIG ST 1A06

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 1A06 or permission of the instructor
Not open to students with credit in INDIG ST 3CC3, CONTEMPORARY INDIGENOUS SOCIETIES: SELECTED TOPICS, if the topic was Traditional Indigenous Ecological Knowledge.

INDIG ST 3A03 THE SPIRITUAL TEACHINGS OF ELDERS

An examination of the Great Law of the Iroquois people, the teachings of the Council of Three Fires, and other similar teachings of other groups.
 Three hours (lecture and seminar); one term
 Prerequisite: INDIG ST 2A06

INDIG ST 3B03 HISTORY OF THE EASTERN WOODLAND PEOPLE

A detailed study of the heritage of the main tribal groups from the Atlantic Coast to North-western Ontario, with an examination of social, political and economic systems.
 Three hours (lecture and seminar); one term
 Prerequisite: A Level II Indigenous Studies course

INDIG ST 3BB3 HISTORY OF CONTEMPORARY INDIGENOUS PEOPLES

An intensive examination of the history of aboriginal groups selected from the Northern Peoples (Cree, Inuit, Dene), the western peoples, or the Metis. The exact groups selected and range of topics will vary depending on the instructor.

Three hours (lecture and seminar); one term
 Prerequisite: A Level II Indigenous Studies course

INDIG ST 3C03 STUDY OF IROQUOIS FIRST NATIONS IN CONTEMPORARY TIMES

An intensive examination of the Iroquois First Nations Confederacy and its attempts to maintain its culture, socio-political systems and economic independence.
 Three hours (lecture and seminar); one term
 Prerequisite: A Level II Indigenous Studies course

INDIG ST 3CC3 CONTEMPORARY INDIGENOUS SOCIETIES: SELECTED TOPICS

1999-2000: Aboriginal Peoples and Film
 An intensive examination of selected political, economic, or social problems faced by selected Indigenous peoples.
 Three hours (lecture and seminar); first term
 Prerequisite: A Level II Indigenous Studies Course

INDIG ST 3D03 CONTEMPORARY NATIVE LITERATURE IN CANADA

A study of significant works by Native writers who give voice to their experience in Canada. Issues examined include appropriation of voice, native identity, women in Indigenous societies, and stereotyping.
 Three hours (lecture and seminars); one term
 Prerequisite: INDIG ST 1A06 or ENGLISH 1D06 or permission of the instructor
 Cross-list: ENGLISH 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 (lecture and seminars); one term
 Prerequisite: INDIG ST 1A06 or ENGLISH 1D06 or permission of the instructor
 Cross-list: ENGLISH 3X03

INDIG ST 3F06 INDIGENOUS WOMEN'S ISSUES

This course will focus on Indigenous (First Nations, Métis, Inuit) women's issues using traditional Indigenous and western text-based approaches to explore historical, theoretical, social and ecological elements.
 Prerequisite: INDIG ST 1A06 or WOMEN ST 1A06 or permission of the instructor
Not open to students with credit in WOMEN ST 3D06, WOMEN IN CROSS-CULTURAL PERSPECTIVE, if taken in 1994-95 or 1995-96.

INDIG ST 3G03 INDIGENOUS CREATIVE ARTS & DRAMA

1999-2000: Native Approaches to Drama and Performance
 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.
 Term two
 Prerequisite: INDIG ST 2A06 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 TRADITIONAL APPROACHES TO HEALING AND WELLNESS 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 visits to locations of health, wellness and healing.
 Three hours (lecture and seminars); one term
 Prerequisite: A Level II Indigenous Studies Course
Not open to students with credit in INDIG ST 3CC3, CONTEMPORARY INDIGENOUS SOCIETIES: SELECTED TOPICS, 1996-97, if the topic was Traditional Approaches to Healing and Wellness.

INDIG ST 3HH3 TRADITIONAL APPROACHES TO HEALING AND WELLNESS 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 (lecture and seminars); one term
 Prerequisite: A Level II Indigenous Studies Course
Not open to students with credit in INDIG ST 3CC3, CONTEMPORARY INDIGENOUS SOCIETIES: SELECTED TOPICS, 1998-99 if the topic was Traditional Approaches to Healing and Wellness.

CAYUGA ...**CAYUGA 1Z06 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); two terms

CAYUGA 2Z06 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); two terms
 Prerequisite: CAYUGA 1Z06

CAYUGA 3Z06 ADVANCED CAYUGA

An in-depth study of the structure and literature of the Cayuga language and a comparison of the different Cayuga dialects.

Three hours (lecture and seminars); two terms

Prerequisite: CAYUGA 2Z06

MOHAWK ...**MOHAWK 1Z06 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); two terms

MOHAWK 2Z06 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); two terms

Prerequisite: MOHAWK 1Z06

MOHAWK 3Z06 ADVANCED MOHAWK

An in-depth study of the structure and literature of the Mohawk language and a comparison of the different Mohawk dialects.

Three hours (lecture and seminars); two terms

Prerequisite: MOHAWK 2Z06

OJIBWE ...**OJIBWE 1Z06 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); two terms

OJIBWE 2Z06 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); two terms

Prerequisite: OJIBWE 1Z06

OJIBWE 3Z06 ADVANCED OJIBWE

An in-depth study of the structure and the literature of the Ojibwe language and a comparison of the Central dialect with other Ojibwe dialects.

Three hours (lecture and seminars); two terms

Prerequisite: OJIBWE 2Z06

INQUIRY**Note:**

These Level I courses unite the expertise of the Faculties' scholars and researchers with the University's distinctive inquiry-based approach to instruction. Students examine a key research question, as a class of no more than 25, in smaller groups, or in combination with other classes that are examining the same question in a section led by a different instructor.

Courses**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

Enrolment is limited.

INQUIRY 1SC3 INQUIRY IN SCIENCE

This introduction to the systematic investigation of an issue develops skills that will serve students well in their university careers. Students learn how to formulate questions, gather and interpret evidence, and reach well-considered conclusions, using, as content, a topic central to research in the Faculty of Science.

Three hours; one term

Prerequisite: Registration in Science I

Enrolment is limited.

INQUIRY 1SS3 INQUIRY IN THE SOCIAL SCIENCES

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 Social Sciences.

Three hours; one term

Prerequisite: Registration in Social Sciences I or Kinesiology I

Enrolment is limited.

ITALIAN

(SEE MODERN LANGUAGES, ITALIAN)

JAPANESE AND JAPANESE STUDIES

(SEE MODERN LANGUAGES, JAPANESE)

JEWISH STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

KINESIOLOGY

Faculty as of January 15, 1999

Chair

Janet L. Starkes

Professors

Cameron J. Blimkie/ B.A., B.P.E. (McMaster), M.A., Ph.D. (Western Ontario)

Digby Elliott/B.Sc., M.Sc., Ph.D. (Waterloo)

Timothy D. Lee/B.H.K., M.A. (Windsor), Ph.D. (Louisiana State)

J. Duncan MacDougall/B.A., B.P.H.E. (Queen's), M.S. (Oregon), Ph.D. (Wisconsin)

Neil McCartney/B.Ed. (Exeter), Ph.D. (McMaster)

Digby G. Sale/B.P.H.E. (Toronto), M.A. (Western Ontario), Ph.D. (McMaster)

Janet L. Starkes/B.A. (Western Ontario), M.Sc., Ph.D. (Waterloo)

Philip G. White/B.Sc. (London), Cert.Ed. (Carnegie), M.Sc., Ph.D. (Waterloo)

Associate Professors

Nicola Cipriano/B.P.H.E., M.Sc. (Lakehead)

James J. Dowling/B.H.K., M.H.K. (Windsor), Ph.D. (Waterloo)

Robert J. Henderson/B.P.E. (McMaster) M.A., Ph.D. (Alberta)

Audrey Hicks/B.P.E., M.Sc., Ph.D. (McMaster)

Susan E. Inglis/B.P.E., M.A. (Alberta), Ph.D. (Ohio State)

Mary E. Keyes/B.A., M.A. (Western Ontario), Ph.D. (Ohio State)

Cindy Riach/B.A., B.P.H.E., B.Ed., M.Sc. (Queen's), Ph.D. (Waterloo)

David C. Wilson/Cert.Ed. (St. Paul's College), B.Ed. (Bristol), M.A. (York)

Assistant Professors

Nancy B. Bouchier/B.A., M.A., Ph.D. (Western Ontario)

Kathleen A. Martin/B.Sc. (Toronto), M.A. (Western Ontario), Ph.D. (Waterloo)

Mark A. Tamopolsky/B.P.E., M.D., Ph.D., F.R.C.P. (C), (McMaster)

Associate Members

Oded Bar-Or/(Pediatrics) M.D. (Hebrew Un., Jerusalem)

Vicki Galea/(Rehabilitation Science) B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)

A.J. McComas/(Medicine) B.Sc., M.B., B.S. (Durham), F.R.C.P.(C)

Robert S. McKelvie/(Medicine) B.Sc., M.Sc., M.D. (Western Ontario), Ph.D. (McMaster)

Michael Pierrynowski/(Rehabilitation Science) B.Sc., M.Sc. (Waterloo), Ph.D. (Simon Fraser)

Laurie Wishart/(Rehabilitation Science) Dip.P&OT, B.Sc. (Toronto), M.Sc. Ph.D. (McMaster)

Professors Emeriti

Frank J. Hayden/B.A. (Western Ontario), M.A., Ph.D. (Illinois)

Alan J. Smith/B.S.A., M.Ed. (Toronto), D.Ed. (SUNY, Buffalo)

Department Notes:

1. **Kinesiology students may not register in Level III or IV Kinesiology courses until all required Level I and II Kinesiology courses have been successfully completed. (Exceptions may be made for some students completing Kinesiology as a Second Degree).**
2. Not all Level III and IV Kinesiology courses are taught every year.
3. KINESIOL 1A06 is available to all students (subject to enrolment restriction).
4. The following courses are available for elective credit for students enrolled in Level III or above of a non-Kinesiology programme: KINESIOL 3DD3, 3F03, 3JJ3, 3L03, 3M03, 3P03, 3Q03, 3SS3, 4JJ3, 4M03, 4T03 and 4Y03. Enrolment for such students is limited and places are assigned on a first come basis. Enrolment in some Level III and IV Kinesiology courses is limited.
5. **All courses are open only to Kinesiology students unless otherwise specified. (See Notes 3 and 4 above.)**

Courses**KINESIOL 1A06 ANATOMY/PHYSIOLOGY**

Macroscopic and microscopic anatomy and physiology of the skeletal, muscular, nervous, cardiovascular, and respiratory systems. The basic anatomy of the integumentary, immune, digestive, endocrine, and urogenital systems will also be presented.

Three hours (lectures, labs); two terms
Enrolment is limited. (See Note 3 above.)

KINESIOL 1D03 THE HISTORY AND PHILOSOPHY OF KINESIOLOGY

A study of the origins and development of modern Kinesiology including an examination of the evolution of Kinesiology subdisciplines and areas of allied professional practise such as physical education and sports medicine. Three hours (lectures, tutorials); one term

KINESIOL 1E03 PSYCHOMOTOR BEHAVIOUR

The behavioural and psychological principles underlying motor control and motor learning.

Three hours (lectures, labs); one term

KINESIOL 1FLO FITNESS, LIFESTYLE AND RECREATIONAL ACTIVITIES

An experiential course which teaches a holistic lifestyle, using both instructional and practical-based learning, to enhance the student's quality of life. One hour; two terms

KINESIOL 2A03 BIOMECHANICS

An introduction to basic mechanical principals and concepts as applied to human physical activity and the musculoskeletal system.

Three hours (lectures, lab); one term

KINESIOL 2B03 SOCIOLOGY OF SPORT

Critical examination of contemporary issues and problems of sport in Canadian society.

Three hours; one term

KINESIOL 2C06 PHYSIOLOGY OF EXERCISE

The effects of exercise on the physiological systems, and the application of physiological principles to human exercise performance.

Three hours (lectures, labs); two terms

KINESIOL 2FLO ASPECTS OF FITNESS, LIFESTYLE AND RECREATIONAL ACTIVITIES

An experiential course emphasizing participation in structured and unstructured physical activity sessions. Factors influencing personal fitness and living an active lifestyle will be explored. Students will design a personal fitness programme and take part in a variety of recreational activities.

Two hours; two terms

Prerequisite: Registration in Level II Kinesiology

This is a required non-credit course and must be completed in Level II. Last offered in 1999-2000.

KINESIOL 2G03 INTRODUCTION TO HEALTH BEHAVIOUR

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

KINESIOL 3A03 HISTORY OF PHYSICAL CULTURE AND SPORTS MEDICINE

Selected topics in the social and cultural history of physical culture and sports medicine in the Western World, with a particular emphasis on nineteenth and twentieth century developments in North America.

Three hours (lectures); one term

Enrolment is limited.

KINESIOL 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

Antirequisite: KINESIOL 2A06

KINESIOL 3B03 PHYSICAL ACTIVITY FOR CHALLENGED POPULATIONS

An introduction to special populations, together with an examination of issues related to integration, design, and objectives of special physical activity programming.

Three hours (lectures); one term

Corequisite: Registration in KINESIOL 3BP0 which is a field placement with special populations.

KINESIOL 3C03 STATISTICS AND RESEARCH DESIGN

Research design and descriptive and inferential statistics in Kinesiology.

Three hours (lectures, labs); one term

KINESIOL 3D03 GROWTH, MATURATION AND PHYSICAL ACTIVITY

Growth, development and maturation changes underlying morphologic and functional development of selected physiological systems which influence human exercise capacity during childhood.

Two lectures, one poster presentation; one term

KINESIOL 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.

Antirequisite: KINESIOL 4DD3

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; 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

KINESIOL 3F03 MANAGEMENT CONCEPTS AND PROGRAMME DELIVERY IN HUMAN MOVEMENT WORK ENVIRONMENTS

Combining theory and practice, the course includes concepts and issues related to: organizations, volunteerism, planning, policy, marketing and fiscal, legal and meeting management.

Three hours (lectures, seminars, group project); one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; however, enrolment for such students is limited.

KINESIOL 3H03 HISTORICAL INTERPRETATIONS OF SPORT AND PHYSICAL ACTIVITY

Critical inquiry into the development of physical activity and sport from ancient to modern civilizations in the perspective of cultural change.

Two lectures, one seminar; one term

Enrolment is limited.

KINESIOL 3JJ3 HISTORY OF MODERN DANCE

A survey of trends in modern dance including modern dance forerunners, pioneers, second generation, post-moderns, and new dance. Students attend performances and participate in workshops.

Three hours (lectures, practical); one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; however, enrolment for such students is limited.

Antirequisite: KINESIOL 4J03

KINESIOL 3K03 SPORTS INJURIES

Common athletic injuries will be discussed under the following headings: mechanism of injury, prevention, preliminary assessment, tissue healing, basic taping techniques, and emergency care.

Two lectures, one lab; one term (Approximately \$25.00 will be charged for supplies used in labs.)

Enrolment is limited. Priority will be given to Level IV Kinesiology students.

KINESIOL 3L03 ORGANIZATIONAL BEHAVIOUR AND THE APPLICATION TO HUMAN MOVEMENT WORK ENVIRONMENTS

An examination of concepts and issues of organizational behaviour in a variety of work environments. Topics include communications, leadership, conflict management, individuals and groups at work.

Three hours (lectures and seminars); one term

Prerequisite: KINESIOL 3F03

Antirequisite: COMMERCE 2BA3

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme.

Enrolment is limited.

KINESIOL 3M03 FOUNDATIONS OF ATHLETIC COACHING

An examination of the coaching process with emphasis placed on the behavioural aspects. Topics include leadership styles and decision making, motivation in sport, group cohesion, psychological considerations for youth in sport, ethics in coaching and psychological techniques for optimizing performance.

Three hours (lectures); one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; however, enrolment for such students is limited.

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: KINESIOL 2B03 or SOCIOLOG 1A06

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; however, enrolment for such students is limited.

KINESIOL 3Q03 SPORT AND SOCIALIZATION

Analysis of the process of becoming involved in sport, sustaining and changing that involvement, and retirement.

Three hours (lectures and discussion); one term

Prerequisite: KINESIOL 2B03 or SOCIOLOG 1A06

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; however, enrolment for such students is limited.

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

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme.

Enrolment is limited.

KINESIOL 3Z03 HUMAN MOVEMENT PRACTICUM

Experiential learning in three movement activities selected from team games, individual sports, indoor and outdoor recreational activities, body awareness, and dance.

Students may not select any practicum for which they have already received previous Practicum (PR) credit.

Not offered in 1999-2000.

KINESIOL 4A06 ADVANCED BIOMECHANICS

In-depth study of the mechanics of human movement including the topics of multi-linked segment analysis in 3-D, fluid resistance, optimization, movement simulation and individual muscle force estimation with applications to occupational biomechanics, injury and rehabilitation.

Three hours (lectures, labs); two terms

Prerequisite: One of KINESIOL 2A03 or 2A06

Prerequisite (Beginning in 2000-2001): KINESIOL 2A03 and 3AA3

Enrolment is limited.

KINESIOL 4AA3 LEISURE IN SOCIETY

Investigation of modern leisure with particular emphasis on the social construction of leisure, democratization and commercialization of leisure, and failure to achieve the promised *leisure society*.

Three hours (lectures, group work); one term

Not open to students who have taken KINESIOL 4F03, SELECTED TOPICS IN KINESIOLOGY, if the topic was Sociology of Leisure.

KINESIOL 4B03 PHYSICAL ACTIVITY AND CORONARY HEART DISEASE

An examination of the role of physical activity in the prevention and rehabilitation of coronary heart disease.

Three lectures; one term

Prerequisite: KINESIOL 1A06 and 2C06

KINESIOL 4C03 CARDIO-RESPIRATORY AND METABOLIC ASPECTS OF HUMAN PHYSICAL PERFORMANCE

Cardio-respiratory factors and metabolic aspects affecting human physical performance with emphasis on understanding the physiological and biochemical integration occurring during exercise.

Three hours (lectures, labs); one term

Prerequisite: KINESIOL 2C06

Enrolment is limited.

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 2C06

Enrolment is limited.

KINESIOL 4D03 OUTDOOR EDUCATION

An examination of skills, pedagogy and perspectives of outdoor (expeditionary) education. This course involves a 9 day canoe/camping field component before classes start.

Three hours (lectures, tutorials, field experiences); one term (Approximate cost of field component is \$320.00)

Enrolment is limited.

KINESIOL 4EE3 ADVANCED PLACEMENT

Students take part in a supervised practical experience that links classroom knowledge to professional practice. Placements are offered in dance, special needs populations, management, teaching and coaching, cardiac rehabilitation and outdoor education.

Placement experience equivalent to one day per week, seminars; one term

Prerequisite: One of KINESIOL 3B03, 3F03, 3M03, 4B03, 4D03 and 4JJ3 including completion of the corresponding non-credit field placement; registration in Level IV Kinesiology; a minimum C.A. of 7.0 and permission of the Undergraduate Coordinator and instructor

KINESIOL 4F03 SELECTED TOPICS IN KINESIOLOGY

Each year the Department of Kinesiology offers a number of different courses under this category reflecting topics of contemporary interest with emphasis upon current theory and research. Students are advised to contact the Department of Kinesiology, Undergraduate Office, for descriptions of the courses offered during the current academic year.

Three hours (lectures, seminars); one term

Enrolment is limited for some topics.

KINESIOL 4G03 PEDAGOGY OF CONTEMPORARY AND TRADITIONAL WILDERNESS TRAVEL

Canadian winter travel skills (traditional and contemporary), travel literature and pedagogy of travel guiding. Part of the course requirement is a mandatory five-day traditional winter travel experience during the February mid-term recess.

Three hours (lectures, tutorials, field experiences); one term

Prerequisite: KINESIOL 4D03

(Approximate cost of field component is \$50.00)

Enrolment is limited.

KINESIOL 4H03 PHYSICAL ACTIVITY AND LIFESTYLE INFLUENCES ON CHRONIC DISEASE

The relationship between physical activity and associated lifestyle influences on selected chronic diseases is examined from a biological perspective.

Three hours (two lectures, poster presentation); one term

KINESIOL 4HH3 HOCKEY IN CANADIAN CULTURE

Analysis of the myths, structures and significance of "Canada's national sport".

Three hours (lectures); one term

Not open to students with credit in KINESIOL 4F03, SELECTED TOPICS IN KINESIOLOGY, if the topic was Hockey in Canadian Culture.

KINESIOL 4JJ3 DANCE IN CONTEMPORARY SOCIETY

A survey of topics pertaining to the dance industry and the lifestyles of dancers in contemporary society. Content includes dance careers, administration, production, technology, education, health and special populations.

Three hours (lectures, seminars); one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme.

Antirequisite: KINESIOL 4J03

Enrolment is limited.

KINESIOL 4K03 PERCEPTUAL-MOTOR BEHAVIOUR

An advanced examination of current topics regarding perceptual-motor behaviour with particular reference to everyday experiences.

Three hours (lectures, labs); one term

Enrolment is limited.

KINESIOL 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 3K03

Enrolment is limited.

KINESIOL 4L03 COMPARATIVE SPORT (SELECTED TOPICS)

Contemporary physical education and sport in selected countries, with special attention given to international sports competition and the study of government sport systems.

One lecture, one two-hour seminar; one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme.

Enrolment is limited.

KINESIOL 4M03 SPORT PSYCHOLOGY

Principles of sport psychology are applied to individual and team performance issues. Research is emphasized and topics include: personality, motivation, arousal, perception, biofeedback, the process of competition, children in sport, and ethics in sport psychology.

Two lectures, one lab; one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme.

Enrolment is limited.

KINESIOL 4N03 ATHLETIC COACHING: TRAINING AND PLANNING PERSPECTIVES

An analysis of factors that facilitate sport performance at the elite level. Topics include periodization, talent identification, environmental factors, optimal arousal and scouting.

Three hours (lectures); one term

Prerequisite: KINESIOL 3M03

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 3D03

Enrolment is limited.

KINESIOL 4R03 INDEPENDENT RESEARCH

Investigation of a selected theoretical or applied problem mutually acceptable to instructor and student.

Prerequisite: Registration in Level IV Kinesiology; a minimum C.A. of 7.0 and permission of the Undergraduate Coordinator and instructor

Antirequisite: KINESIOL 4RR6

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 Kinesiology; a minimum CA of 7.0 and permission of the Undergraduate Coordinator and instructor by April 30

Antirequisite: KINESIOL 4R03

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 and one of KINESIOL 3BP0 or PR89

Enrolment is limited.

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

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: KINESIOL 2B03 or SOCIOL 2Q06

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme.

Enrolment is limited.

KINESIOL 4U03 ADVENTURE BASED LEARNING

Adventure based learning foundations, philosophy, and pedagogy will be examined through a combination of practices and theories relevant to contemporary educational issues.

Lectures, tutorials, and field experiences; one term

(Approximate field component cost is \$120.00.)

KINESIOL 4V03 HUMAN FACTORS AND ERGONOMICS

The abilities and limitations of human performance are examined with respect to how individuals interact with objects in their environment.

Three hours (lectures, labs); one term

Enrolment is limited.

KINESIOL 4W03 POSTURE AND GAIT

An examination of neural and mechanical factors in posture and gait control in normal and special populations. The format will be lectures, labs and group discussion of case studies. The first part of the course will include neuroanatomy labs.

Three hours (lectures, labs); one term

Prerequisite: KINESIOL 3E03 or 4E03

Enrolment is limited.

KINESIOL 4Y03 NUTRITION AND METABOLISM

This course focuses on the interactions between metabolic/biochemical pathways and their regulation and the impact of nutrition on human performance in exercise, health and some disease states.

Three hours (lectures, labs); one term

This course may be taken as elective credit by undergraduates in Level III or above of a non-Kinesiology programme; however, enrolment for such students is limited.

KINESIOL 4Z03 SELECTED TOPICS IN ADMINISTRATIVE STUDIES

A senior level seminar course which explores selected topics related to administrative theory and practice in human movement work environments.

Three hours (seminars and presentations); one term

Prerequisite: KINESIOL 3F03 and 3L03

NON-CREDIT FIELD PLACEMENTS ...**KINESIOL 3BP0 SPECIAL POPULATIONS PLACEMENT**

This placement is designed to supplement the student's classroom learning of the issues involving physical activity for special populations. Students design and/or implement physical activity programmes in a variety of community settings.

Corequisite: KINESIOL 3B03

This placement must be completed in conjunction with KINESIOL 3B03.

KINESIOL 3FP0 MANAGEMENT PLACEMENT

This placement is designed to provide practical experience in applying management concepts in a variety of community settings.

This placement may be completed in conjunction with KINESIOL 3F03.

KINESIOL 3JP0 DANCE PLACEMENT

This placement is designed to provide practical experience in dance production, choreography and improvisation.

This placement may be completed in conjunction with KINESIOL 3JJ3 or 4JJ3.

KINESIOL 3MP0 COACHING PLACEMENT

This placement is designed to apply the principles and theories of athletic coaching in a practical setting. The student will coach an athletic team for one season.

This placement may be completed in conjunction with KINESIOL 3M03 or 4N03.

KINESIOL 4BP0 CARDIAC REHABILITATION PLACEMENT

This placement is designed to supplement the student's classroom learning of the major issues in post-coronary exercise rehabilitation. Students serve as exercise leaders in the McMaster Cardiac Rehabilitation programme.

This placement may be completed in conjunction with KINESIOL 4B03.

KINESIOL 4DP0 OUTDOOR EDUCATION PLACEMENT

This placement is designed to allow the student to experience a variety of outdoor education activities.

This placement may be completed in conjunction with KINESIOL 4D03.

LABOUR STUDIES

Faculty as of January 15, 1999

Director

W. Lewchuk

Professors

W. Lewchuk/B.A., M.A. (Toronto), Ph.D. (Cambridge)

Associate Professors

R. Storey/B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)
 D. Wells/B.A. (Western Ontario), M.A. (British Columbia), Ph.D. (Toronto)
 C. Yates/B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)

Assistant Professors

O. Rafferty/B.A. (Western Ontario), M.A., Ph.D. (McMaster)
 L. Vosko/B.A. (Trent), M.A. (Simon Fraser), Ph.D. (York)

Associate Members

R. Adams/(Business) B.A. (Pennsylvania State), M.A., Ph.D. (Wisconsin)
 P. Daenzer/(Social Work) B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)
 A. Robb/(Economics) B.A., M.A. (British Columbia), Ph.D. (Essex)
 P. Sugimani/(Sociology) B.A., M.A., Ph.D. (Toronto)

Note:

The following courses may be taken for elective credit by qualified students registered in any programme, however, enrolment for such students is limited and permission of the instructor is required.

LABR ST 2A03	Trade Unions
LABR ST 2C03	Theoretical Foundations of the Labour Movement
LABR ST 2D03	Different Labours, Different Voices
LABR ST 3A03	Economics of Labour Market Issues
LABR ST 3C03	Labour Law and Policy
LABR ST 3D03	Occupational Health and Safety
LABR ST 3E03	Women, Work and Trade Unionism
LABR ST 3F03	Selected Topics in Labour Studies
LABR ST 3G03	Economic Restructuring and Work Organization

The Honours B.A. Programme and the B.A. Programme in Labour Studies are supervised and coordinated by an interdisciplinary Committee of Instruction.

Committee of Instruction

Chair

W. Lewchuk (Economics/Labour Studies)

B. Basadur (Business)
 A. Budros (Sociology)
 A. Harrison (Dean) ex officio
 S. Palmer (Social Work)
 P. Pringle (Business)
 J. Rose (Business)
 R. Storey (Labour Studies/Sociology)
 D. Wells (Labour Studies/Political Science)
 C. Yates (Labour Studies/Political Science)

COURSES If no prerequisite is listed, the course is open.

LABR ST 1A03 AN INTRODUCTION TO THE CANADIAN LABOUR MOVEMENT

An examination of the impact of economic, social, cultural and political factors on the historical evolution, structure and actions of the Canadian working class and labour movement.
 Lectures and discussions; one term

LABR ST 1Z03 AN INTRODUCTION TO ISSUES IN LABOUR STUDIES

An introduction to major issues in the field of Labour Studies. Topics will include the nature of work, technology, occupational health and safety, labour-management relations and the role of government.
 Lectures and discussion; one term
 Antirequisite: LABR ST 1AA3

LABR ST 2A03 TRADE UNIONS

An examination of trade unions and their economic and social environment. Topics may include collective bargaining, labour-state relations, internal union decision-making processes and public sector unions.
 Lectures and discussion; one term
 Prerequisite: Registration in a Labour Studies programme or permission of the instructor
 Antirequisite: LABR ST 2A06

LABR ST 2B03 SOCIAL WELFARE I

An examination of social welfare policy and the income security system in Canada in historical perspective.
 Lectures and discussion; one term
 Prerequisite: Registration in a Labour Studies programme
 Cross-list: SOC WORK 2B03.
 Students in a Labour Studies programme must register for this course as LABR ST 2B03.

LABR ST 2BB3 SOCIAL WELFARE II

An examination of particular social problems and the institutional arrangements intended to address them.
 Lectures and discussion; one term
 Prerequisite: LABR ST 2B03 and registration in a Labour Studies Programme
 Corequisite: Must be taken in the same academic session as LABR ST 2B03.
 Cross-list: SOC WORK 2BB3

LABR ST 2C03 THEORETICAL FOUNDATIONS OF THE LABOUR MOVEMENT

An examination of political, sociological and economic explanations of labour behaviour in industrial society. The focus will be on attempts to explain why labour has tended to organize as well as the different strategies which labour has pursued to achieve its goals.
 Lectures and discussion; one term
 Prerequisite: Registration in a Labour Studies programme or permission of the instructor
 Antirequisite: LABR ST 1B03

LABR ST 2D03 DIFFERENT LABOURS, DIFFERENT VOICES

An overview of the ways in which people's changing experiences of work are shaped by gender, race, class and culture in Canada and the wider global context.
 Lectures and discussion; one term
 Prerequisite: Registration in a Labour Studies programme or permission of the instructor

LABR ST 2I03 THE SOCIOLOGY OF ORGANIZATIONS

A theoretical and empirical analysis of formal and informal organizational structures and processes in the major sectors of modern industrial society.
 Lectures and discussion; one term
 Prerequisite: SOCIOL 1A06 and registration in a Labour Studies programme
 Cross-list: SOCIOL 2I03
 Antirequisite: LABR ST 3I03

LABR ST 3A03 ECONOMICS OF LABOUR MARKET ISSUES

This course applies economic analysis to issues of importance in the labour market. Topics vary and may include: women in the Canadian labour market; discrimination in hiring and promotion; unemployment; job loss and workplace closing; work sharing.
 Prerequisite: ECON 1A06 or 1B03 and 1BB3; registration in a Labour Studies programme or permission of the instructor
 Cross-list: ECON 2A03

LABR ST 3B03 ECONOMICS OF TRADE UNIONISM AND LABOUR

Topics will include the economics of the labour market, the impact of trade unions on the labour market, economic theories of strikes, trade unions and the state.
 Lectures and discussion; one term
 Prerequisite: ECON 1A06 or 1B03 and 1BB3, and registration in a Labour Studies programme
 Cross-list: ECON 2T03

LABR ST 3C03 LABOUR LAW AND POLICY

An analysis of the concepts and fundamentals of Canadian labour law and an analysis of Canadian labour policy.
 Lectures; one term
 Prerequisite: LABR ST 2A06 or 2A03; registration in a Labour Studies programme or permission of the instructor
 Cross-list: 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 a Labour Studies programme or permission of the instructor

Generally offered in alternate years.

LABR ST 3E03 WOMEN, WORK AND TRADE UNIONISM

An examination of the historical and contemporary relations between women and work, and women and trade unionism. Topics will include the evolution and structure of the gender division of labour, women and the labour market, and the relationship of women to the labour movement.

Lectures and discussion; one term

Prerequisite: Registration in a Labour Studies programme or permission of the instructor

Generally offered in alternate years.

LABR ST 3F03 SELECTED TOPICS IN LABOUR STUDIES

Topics of current interest to students in Labour Studies, with emphasis on current theory and research. Students should consult the Labour Studies Office concerning the topics to be examined.

Three hours (seminar); one term

Prerequisite: LABR ST 2A03 or 2A06; registration in a Labour Studies programme or permission of the instructor

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 or 2A06; registration in a Labour Studies programme or permission of the instructor

Antirequisite: LABR ST 3AA3

LABR ST 4A09 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) and will attend seminars to develop practical and research skills related to labour studies. 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 any Honours programme in Labour Studies

LABR ST 4C03 PUBLIC SECTOR COLLECTIVE BARGAINING

This course examines unionization and collective bargaining for employees in the public, and para-public sectors. The topics covered include the origin and growth of public sector unions, models of public sector bargaining, legal aspects of bargaining rights and impasse resolution, bargaining issues and bargaining outcomes, and empirical studies of the effectiveness of dispute resolution procedures.

Lectures and discussion; one term

Prerequisite: COMMERCE 4BC3 and registration in Level III or IV of a Labour Studies programme

Cross-list: COMMERCE 4BG3

LABR ST 4D03 COMPARATIVE INDUSTRIAL RELATIONS

A discussion of industrial relations, policies and practices in several selected countries. Topics will include the development, structure, objectives and strategies of labour and management organizations.

Lectures and discussion; one term

Prerequisite: Registration in Level III or IV of a Labour Studies programme.

Cross-list: COMMERCE 4BH3

LATIN

(SEE CLASSICS, LATIN)

LINGUISTICS

(SEE MODERN LANGUAGES, LINGUISTICS)

MANUFACTURING ENGINEERING

(SEE MECHANICAL ENGINEERING, MANUFACTURING ENGINEERING)

MANUFACTURING TECHNOLOGY

Note:

Manufacturing Technology courses are open only to students registered in the Manufacturing Engineering Technology programme and are subject to prerequisite requirements.

Courses

MAN TECH 1CD3 ADVANCED CADD

Design cycle; graphics workstations and UNIX; representation methods; Brep, CSG; shape then size modelling-profiles, relational dimensioning; libraries; assemblies; mechanism design; IGES/STEP; hardware, software, graphics, networking.

Two lectures, laboratory (two hours), one term

Corequisite: ENG TECH 1PG3

MAN TECH 1ID3 INDUSTRIAL ENGINEERING

Production and operations management; decision making tools; forecasting; strategies and capacity; location, operations layout and aggregate planning, inventory management and JIT tactics; material requirements; project management.

Three lectures, one term

MAN TECH 1TF3 THERMO FLUIDS I

Thermodynamic principles; steam plant cycles; heat engines; gas and steam turbine cycles; refrigeration and heat pumps; air conditioning; conduction; transient systems; convection; radiation; heat exchangers.

Three lectures, one tutorial; one term

Corequisite: ENG TECH 1MA3

MAN TECH 2MD3 MACHINE DYNAMICS

Transient and steady state vibrations of single degree-of-freedom systems, natural and forced vibrations; lumped mass systems—multi degree of freedom; vibrations of continuous systems; balancing and critical speeds of shafts.

Three lectures, one term

Prerequisite: ENG TECH 1MA3

MAN TECH 2MT3 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 laboratory (one hour); one term

Corequisite: ENG TECH 1MA3

MAN TECH 2TF3 THERMO FLUIDS II

Fluid statics; pressure, manometry, hydrostatic forces, forces on submerged and floating bodies; kinematics of flow, control volume approach, continuity, momentum, energy and Bernoulli's equations; dimensional analysis and similarity; flow in closed conduits.

Three lectures, laboratory (one hour); one term

Prerequisite: MAN TECH 1TF3

Corequisite: ENG TECH 1MA3

MAN TECH 3FB3 FABRICATION TECHNOLOGY

Welding: fuel gases, cutting and brazing; arc welding methods; welding joints, types of welds; laser beam welding and electron beam welding; general safety. Casting: pattern and mould types design, die casting, centrifugal casting, defects, heat treatment; steel ingots, continuous casting, wrought structure, furnaces.

Two lectures, laboratory (one hour); one term

Corequisite: ENG TECH 1MA3

MAN TECH 3FM3 CIM AND FLEXIBLE MANUFACTURING

Linear and circular interpolation, manual NC programming-G codes; CAM software; computer vision; coordinate measuring machines (CMM), touch probes; manipulator kinematics, dynamics and trajectory generation; robot programming

Two lectures, laboratory (two hours); one term

Prerequisite: ENG TECH 1PG3

Corequisite: MAN TECH 2MT3

MAN TECH 3FT3 FORMING TECHNOLOGY

Plasticity theory, yield surfaces, kinematic hardening, anisotropic plasticity and slip line field models; forming processes: plasticity models, process optimization; fabrication for metal and non-metallic materials including composites and polymers.

Three lectures, laboratory (one hour); one term

Corequisite: ENG TECH 1MA3

MAN TECH 3MT3 MECHATRONICS

Sensors; actuators: DC, AC and stepper motors, actuators; programmable controllers: modelling of dynamic systems. System identification; computer simulation and control; computer interfacing. Analog to digital conversion. Communication interfaces; case studies.

Three lectures, laboratory (one hour); one term

Prerequisite: ENG TECH 2CT3

MAN TECH 3ST3 STATISTICAL PROCESS AND QUALITY CONTROL

Statistical methods; statistical process control; control charts for variables, rational sampling and attributes; experimental design, two level factorial designs; Taguchi's approach to quality of design; ISO 9000; reliability and life testing; management of quality.

Three lectures; one term

Prerequisite: ENG TECH 1PG3

Corequisite: ENG TECH 1MA3

MATERIALS SCIENCE AND ENGINEERING

Faculty as of January 15, 1999

Chair

M.B. Ives

University Professors

J. David Embury/B.Sc. (Manchester), Ph.D. (Cambridge), F.R.S.C., P.Eng.
Gary R. Purdy/M.Sc. (Alberta), Ph.D. (McMaster), D.H.C. (Grenoble), F.R.S.C., P.Eng.

Professors

C.H. Cheh/B.A.Sc. (Ottawa), M.A.Sc., Ph.D. (Toronto)/part-time
Gordon A. Irons/B.A.Sc. (Toronto), Ph.D. (McGill), F.C.I.M., P.Eng., Dofasco/
NSERC Industrial Research Chair in Process Metallurgy
M. Brian Ives/B.Sc., Ph.D. (Bristol), F.A.S.M., P.Eng.
Gyan P. Johari/B.Sc., M.Sc., Ph.D. (Gorakhpur), D.H.C. (Lyon), F.R.S.C.
S.R. MacEwen/B.A.Sc., Ph.D. (Toronto)/part-time
George C. Weatherly/B.A., Ph.D. (Cambridge), F.A.S.M., P.Eng.
David S. Wilkinson/B.A.Sc. (Toronto), Ph.D. (Cambridge), P.Eng.

Adjunct Professors

Prasad A. Apte/B.Tech. (IIT, Bombay), Ph.D. (McMaster)
Yves Brechet/D.E.A. (Ecole Polytechnique), Ph.D. (Grenoble)
Michael J. Graham/B.Sci., Ph.D. (Liverpool), F.N.A.C.E.
Zoran D. Popovic/Dipl.Eng., M.Sc. (Belgrade), Ph.D. (McMaster)
Barry A. Strathdee/B.A.Sc., Ph.D. (Toronto), P.Eng.
S.V. Mani Subramanian/B.Sc. (Banaras), M.Met., Ph.D. (Sheffield)
Gregory X. Zhang/B.Sc. (Beijing Inst. of Aeronautics), M.Sc., Ph.D. (Free University of Brussels)

Associate Professors

Ken S. Coley/B.Sc. (Strathclyde), Ph.D., D.I.C. (Imperial College, London)
Adrian Kitai/B.Sc. (McMaster), Ph.D. (Cornell), P.Eng.
Anthony Petric/B.A.Sc. (Toronto), Ph.D. (Ecole Polytechnique), P.Eng.
Gu Xu/M.Sc., Ph.D. (Pittsburgh), D.E.S. (Columbia)
Shiping Zhu/B.Eng. (Zhejiang), Ph.D. (McMaster)

Assistant Professor

Marek Niewczas/M.Sc., Ph.D. (Krakow)

Professors Emeriti

Z.S. Basinski/B.Sc., D.Phil., D.Sc. (Oxford), D.H.C. (Krakow), O.C., F.R.S., F.R.S.C.
John S.G. Kirkaldy/M.A.Sc. (British Columbia), Ph.D. (McGill), D.Eng. (Waterloo), D.Sc. (Queen's), F.R.S.C., F.A.S.M., P.Eng.
Wei-Kao Lu/B.S. (Cheng-Kung), Ph.D. (Minnesota)

Patrick S. Nicholson/B.Sc. (Leeds), M.Sc., Ph.D. (California, Berkeley), F.A.Cer.S., F.C.C.S., M.Acad.Ceram., P.Eng.

Walter W. Smeltzer/B.Sc. (Queen's), Ph.D. (Toronto), D.H.C. (Dijon), F.R.S.C., F.A.S.M., P.Eng.

Courses If no prerequisite is listed, the course is open.

MATLS 1A03 INTRODUCTION TO MATERIALS

Introduction to the world of modern materials science. The relationship of the fundamental concepts of bonding and atomic, molecular, and macroscopic structure of condensed materials, to the properties of silicate minerals, glasses, polymeric materials, and metals and alloys.

Two lectures, one tutorial; second term

Prerequisite: Registration in or completion of Science I (or Natural Sciences I)

Antirequisite: Registration in the Faculty of Engineering, or ENGINEER 2E03, 2O03, 2O04

MATLS 2B03 THERMODYNAMICS OF MATERIALS I

Thermodynamics of gases and critical phenomena. The three laws of thermodynamics applied to materials processing; reactions in gases and condensed phases; Ellingham Diagrams. An introduction to statistical thermodynamics.

Three lectures, one tutorial; first term

Prerequisite: CHEM 1A03 or 1A06 or 1E03

Antirequisite: MATLS 2B06

MATLS 2D03 THERMODYNAMICS OF MATERIALS II

Solution thermodynamics, reactions and equilibria, Gibbs phase rule; aqueous electrochemistry.

Three lectures, one tutorial; second term

Prerequisite: CHEM 1A03 or 1A06 or 1E03; MATLS 2B03

Antirequisite: MATLS 2B06

MATLS 2H03 MEASUREMENTS AND COMMUNICATION

Methods of technical communication, involving oral and written practice; basic experimental methods of acquiring, analyzing and presenting data.

Two labs (three hours); first term: one lab (three hours); second term

Prerequisite: COMP SCI 1MA3 or 1MC3 or ENGINEER 1D04, and CHEM 1A03, 1A06 or 1E03, and registration in a programme administered by the Department of Materials Science and Engineering

MATLS 2X02 CRYSTALLINE STRUCTURE OF MATERIALS

Crystal geometry, x-ray diffraction methods for the determination of crystalline structures and chemical compositions, electron and neutron diffraction methods, microanalysis, crystalline defects.

One lecture, one lab (two and one half hours); second term

Prerequisite: ENGINEER 2O03

MATLS 3B03 MATERIALS PROCESSING I

Surface science and technology related to the preparation of particles and slurries of minerals for metals and ceramics production. Hydrometallurgy and electrometallurgy.

Two lectures, one lab (three hours); second term

Prerequisite: MATLS 2B06, or MATLS 2B03 and 2D03

MATLS 3C03 SOLUTION THERMODYNAMICS

Solution thermodynamics and its relationship to binary equilibrium diagrams; aqueous and high temperature electrochemistry; use of computerized thermodynamics data bases.

Two lectures, one lab (three hours) every other week, one tutorial; one term

Prerequisite: MATLS 2B06 or 2D03

Antirequisite: MATLS 3I05

MATLS 3D03 THERMODYNAMICS AND KINETICS

Introduction to chemical kinetics. Analysis of binary and ternary phase diagrams. Surface thermodynamics. Statistical thermodynamics.

Three lectures, one tutorial; second term

Prerequisite: MATLS 2B06 or 2D03

Antirequisite: MATLS 3I05

MATLS 3E04 MASS TRANSFER

Phenomenological and mechanistic approaches to diffusion; boundary conditions; diffusion in fluids and solids; point defects in solids.

Three lectures, two tutorials; first term.

Prerequisite: MATH 2M06; or 2O03 and one of MATH 2A03, 2G03

MATLS 3M03 MECHANICAL BEHAVIOUR OF MATERIALS

Elastic and plastic deformation, creep, fatigue and fracture of engineering materials. Basic concepts of fracture mechanics, materials selection by use of computer based databases of material properties.

Two lectures, one tutorial and/or laboratory; first term

Prerequisite: ENGINEER 2O03 or MATLS 1A03 and ENGINEER 2P04

Antirequisite: ENGINEER 3P03, MATLS 3P03

MATLS 3T04 PHASE TRANSFORMATIONS

Review of thermodynamics, binary phase diagrams and solid state diffusion. Role of interfaces; solidification, diffusional and martensitic transformations; welding; oxidation. Metallographic examination will be featured in laboratory work.

Three lectures or tutorial, one lab (three hours); one term

Prerequisite: MATLS 2X02 or ENGINEER 2O03

Corequisite: MATLS 3D03 (or 3I05), 3E04

MATLS 4A02 SEMINARS AND PLANT VISITS

Seminars and discussions by technical personnel from industry. Corresponding plant visits made by the class and reported both in written and oral form. Presentations and workshops on: Statistical process control; ISO 9000; industrial health and safety.

One seminar/tutorial/plant visit (three hours); both terms.

Prerequisite: Registration in the final level of a programme administered by the Department of Materials Science and Engineering

MATLS 4B04 MATERIALS PROCESSING II

Fundamentals of processing, building on a knowledge of heat and mass transfer. High temperature processing of materials, focussing on heat sources, solid state processing of powders and liquid state processing.

Three lectures, one lab or tutorial (three hours); first term

Prerequisite: CHEM ENG 2A04 or MATLS 3A03, and MATLS 3B03, 3E04

MATLS 4C03 MODERN IRON AND STEELMAKING

Theory and practice of iron making. Heat and material balances, iron making reactors, raw materials, direct reduction and new processes. Thermodynamics and kinetics of steel making. Hot metal treatment; static and dynamic process control; deoxidation; casting; specialty steel making; inclusion engineering.

Three lectures; second term

Prerequisite: CHEM ENG 2A04, MATLS 3A03, and MATLS 3E04

Corequisite: MATLS 4B04

MATLS 4D03 CORROSION

The oxidation of metals and alloys; electrochemical principles and methods applied to aqueous corrosion and its control.

Three lectures; one term

Prerequisite: CHEM ENG 2F04 or MATLS 3I05

MATLS 4K04 SENIOR THESIS

Individual experimental research problem with a selected supervisor. A preliminary written and oral report is required at the end of the first term. The thesis is defended orally. A minimum of six unscheduled hours each week, both terms.

Prerequisite: A CA of at least 6.0 and registration in the final level of a programme administered by the Department of Materials Science and Engineering

MATLS 4L02 MATERIALS MANUFACTURING LABORATORY

A sequence of experiments based on processing methods used in the metal and ceramic industries. Structure-property relationships are assessed at each step of the processing route.

One lecture, one lab (three hours); one term

Prerequisite: Registration in final year of a Materials Engineering programme

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 2WW4, ENGINEER 2O03, MATH 2M06

MATLS 4R03 CERAMIC SCIENCE

Microstructural development and properties of traditional ceramics. Acidic, basic, neutral and nonoxidizing refractories; ferro-electric, piezo-electric and ferromagnetic ceramics; superionic and structural ceramics.

Three lectures; one term

Prerequisite: GEO 2M04 (formerly GEOLOGY 2B04), MATLS 3B03, 3D03 (or 3I05), any of which may be taken concurrently

Antirequisite: MATLS 4R04

Offered in alternate years.

Offered in 1999-2000.

MATLS 4S03 GLASS SCIENCE

Theoretical and experimental aspects of silicates, metallic glasses, and glass ceramics. Modern concepts, and application of non-crystalline solids in optical communication, electrical conductor, and as high strength materials.

Three lectures, one lab; first term

Prerequisite: MATLS 3B03, 3D03 (or 3I05) any of which may be taken concurrently

Antirequisite: MATLS 4S04

Offered in alternate years.

Not offered in 1999-2000.

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; one term

Prerequisite: ENGINEER 3P03 or MATLS 3M03 or 3P03

MATLS 4Z04 INDUSTRIAL PROJECTS

Projects, in cooperation with industry, involving materials design in manufacturing, complemented by lectures in group problem solving and design methodology.

One lecture, one lab (three hours); first term: Two labs (three hours); both terms

Prerequisite: Registration in Level IV or V of any programme in Materials Engineering

MATHEMATICS AND STATISTICS**Faculty as of January 15, 1999****Chair**

Ian Hambleton

Associate Chair

Ernest R. Mead

Professors

N. Balakrishnan/B.Sc., M.Sc. (Madras), Ph.D. (I.I.T., Kanpur)

Thomas M.K. Davison/B.Sc. (Sir George Williams), M.A., Ph.D. (Toronto)

Abdel H. El-Shaarawi/B.Sc., M.Sc. (Cairo), Ph.D. (Waterloo)/part-time

Pengfei Guan/B.Sc. (Zhejiang), Ph.D. (Princeton)

Ian Hambleton/B.Sc., M.Sc. (Toronto), Ph.D. (Yale)

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)

Manfred Kolster/Dipl. (Hamburg), Dr. rer. nat. (Saarbrücken), Habil. (Munster)/Graduate Advisor, Mathematics

Peter D.M. Macdonald/B.Sc., M.Sc. (Toronto), D.Phil. (Oxford)/Graduate Advisor, Statistics

Maung Min-Oo/B.Sc. (Rangoon), Dipl. Math., Dr. rer. nat., Habil. (Bonn)

Gregory H. Moore/B.A. (Berkeley), M.A., M.Sc., Ph.D. (Toronto)

Andrew J. Nicas/B.Sc. (McGill), M.A., Ph.D. (Princeton)

Carl R. Riehm/B.A. (Toronto), Ph.D. (Princeton)

Eric T. Sawyer/B.Sc., Ph.D. (McGill)

Gordon Slade/B.A.Sc., M.Sc. (Toronto), Ph.D. (British Columbia)

Victor P. Snaith/B.A., M.A., Sc.D. (Cambridge), M.Sc., Ph.D. (Warwick), F.R.S.C., Britton Professor of Mathematics

Matthew A. Valeriotte/B.Math. (Waterloo), Ph.D. (Berkeley)/Undergraduate Advisor

McKenzie Y.-K. Wang/A.B. (Princeton), Ph.D. (Stanford)

Gail S.K. Wolkowicz/B.Sc., M.Sc. (McGill), Ph.D. (Alberta)

Patrick C. Yip/B.Sc. (Memorial), Ph.D. (McMaster)

Adjunct Professor

Ron A. Kerman/(Brock University) B.A., M.A. (Manitoba), Ph.D. (Toronto)

Associate Professors

Stanley Alama/B.S. (Columbia), M.S., Ph.D. (Courant, N.Y.U.)

Lia Bronsard/B.A. (Montreal), M.S., Ph.D. (Courant, N.Y.U.)

Andrew S. Dancer/B.A., D.Phil. (Oxford)

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)

Bradd Hart/B.Math. (Waterloo), Ph.D. (McGill)

Zdislav V. Kovarik/M.Sc. (Charles, Prague), Ph.D. (Toronto)

Ernest R. Mead/B.A., M.A., Ph.D. (Western Ontario), A.S.A.

Roman Viveros-Aguilera, B.A. (Veracruzana, Mexico), M.A. (National Polytechnic Inst., Mexico), Ph.D. (Waterloo)

Assistant Professors

Nicholas Kevlahan/B.Sc. (British Columbia), Ph.D. (Cambridge)

Miroslav Lovric/B.S. (Zagreb), M.S., Ph.D. (Ohio State)

Associate Members

- František Franek/*(Computing and Software)* M.Sc., RNDr. *(Charles University, Prague)*, Ph.D. *(Toronto)*
 Charles H. Goldsmith/*(Clinical Epidemiology and Biostatistics)* B.Sc., M.Sc. *(Manitoba)*, Ph.D. *(N. Carolina)*
 Patrick J. Ryan/*(Computing and Software)* B.Sc. *(Toronto)*, Ph.D. *(Brown)*
 William F. Smyth/*(Computing and Software)* B.A. *(Toronto)*, M.Sc. *(Ottawa)*, Ph.D. *(Curtin)*, C.Eng., F.B.C.S., F.I.C.A.

Lecturer

Anton M. Jopko/B.Sc., M.Sc., Ph.D. *(McMaster)*, Dipl. Educ. *(Althouse)*

Professors Emeriti

- Bernhard Banaschewski/Dipl. Math., Dr.rer.nat. *(Hamburg)*, F.R.S.C., McKay Professor of Mathematics
 Ernest A. Behrens/D.Phil.nat *(Hamburg)*
 Claude E. Billigheimer/B.A., B.Sc., M.A. *(Melbourne)*, Ph.D. *(Toronto)*
 Gunter W.A. Bruns/Dr.rer.nat. *(Berlin)*
 Tae Ho Choe/B.S., B.Sc., M.A. *(Kyungpook)*, Ph.D. *(Florida)*
 József Csima/Dipl. Math. *(Eotvos, Budapest)*, Ph.D. *(Toronto)*
 Charles W. Dunnett/M.B.E., B.A. *(McMaster)*, M.A. *(Toronto)*, D.Sc. *(Aberdeen)*
 Gerard Field/B.Sc., Ph.D. *(London)*
 Hans P. Heinig/B.Sc. *(McMaster)*, M.A. *(Western Ontario)*, Ph.D. *(Toronto)*
 Taqdir Husain/B.A., M.A. *(Aligarh)*, Ph.D. *(Syracuse)*
 Norman D. Lane/B.A. *(Queen's)*, M.A., Ph.D. *(Toronto)*
 Rubens G. Lintz/B.A., Ph.D. *(Sao Paulo)*
 S. Gopal Mohanty/B.A. *(Utkal)*, M.A. *(Panjab)*, Ph.D. *(Alberta)*
 Bruno J.W. Mueller/B.Sc. *(Göttingen)*, M.Sc., Ph.D. *(Mainz)*
 Alexander Rosa/M.S. *(Kiev State)*, Ph.D. *(Slovak Acad. Sciences)*
 James P. Stewart/B.Sc. *(Toronto)*, M.S. *(Stanford)*, Ph.D. *(Toronto)*
 Moti L. Tikul/B.A. *(Kashmir)*, M.A. *(Punjab)*, M.Sc. *(Patna)*, Ph.D., D.Sc. *(Aberdeen)*

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. Science I students who achieve at least a B+ in the Calculus Placement Examination in September and who complete MATH 1AA3 in term one will be exempt from taking MATH 1A03. These students must also complete at least one of MATH 1B03, 2AB3, STATS 1CC3 in Level I. Students who obtain an exemption from taking MATH 1A03 and who are interested in pursuing a programme involving Mathematics, Statistics or Physics are strongly encouraged to take both MATH 1B03 and 2AB3 in Level I. Please consult with the Chair of the Department.

MATHEMATICS ...

Courses *If no prerequisite is listed, the course is open.*

- MATH 1A03 CALCULUS I**
 Differential calculus, the definite integral, techniques of integration, differential equations with applications.
 Three lectures, one tutorial; one term
 Prerequisite: OAC Calculus or MATH 1K03 and one of OAC Finite Mathematics, OAC Algebra and Geometry, STATS 1L03
 Antirequisite: MATH 1N03, ARTS&SCI 1D06 (See Note 2 above.)
- MATH 1AA3 CALCULUS II**
 Power series, partial derivatives, extremal problems, multiple integrals.
 Three lectures, one tutorial; one term
 Prerequisite: MATH 1A03 (See Note 2 above.)
 Antirequisite: MATH 1NN3, ARTS&SCI 1D06
- MATH 1B03 LINEAR ALGEBRA I**
 Vectors, matrices, determinants, solvability of linear systems, Euclidean geometry, complex numbers, with applications.
 Three lectures, one tutorial; one term
 Prerequisite: One of OAC Finite Mathematics, OAC Algebra and Geometry, STATS 1L03
 Antirequisite: MATH 1H05
- MATH 1H05 ENGINEERING MATHEMATICS I**
 Matrices and determinants, vectors and vector spaces, linear transformations, complex numbers, eigenvalues and eigenvectors, with applications.
 Two lectures, one tutorial; first term; Three lectures, one tutorial; second term
 Prerequisite: Registration in Engineering I
 Antirequisite: MATH 1B03

- MATH 1K03 INTRODUCTORY CALCULUS FOR BUSINESS, HUMANITIES AND THE SOCIAL SCIENCES**
 An introduction to differential and integral calculus.
 Three lectures, one tutorial; one term
 Prerequisite: Grade 12 Mathematics (Advanced)
Normally not open to students who have completed OAC Calculus. Students transferring to the Faculty of Science do not retain credit for this course.
- MATH 1M03 CALCULUS FOR BUSINESS, HUMANITIES AND THE SOCIAL SCIENCES**
 Differential and integral calculus.
 Three lectures, one tutorial; one term
 Prerequisite: MATH 1K03, or OAC Calculus
Not open to students with credit or registration in MATH 1A03, 1N03, ARTS&SCI 1D06. Students transferring to the Faculty of Science do not retain credit for this course. Students considering upper year mathematics courses should take MATH 1A03.
- MATH 1N03 CALCULUS FOR ENGINEERING I**
 Differential calculus, the definite integral, techniques of integration, applications.
 Three lectures, one tutorial; one term
 Prerequisite: Registration in Engineering I
 Antirequisite: MATH 1A03
- MATH 1NN3 CALCULUS FOR ENGINEERING II**
 Applications of integration, differential equations, sequences and series, differential calculus of several variables, applications.
 Three lectures, one tutorial; one term
 Prerequisite: MATH 1N03
 Antirequisite: MATH 1AA3
- 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, ARTS&SCI 1D06 and credit or registration in one of MATH 1B03, 1H05
 Antirequisite: MATH 2L03
- MATH 2AB3 INTRODUCTION TO REAL ANALYSIS**
 Fundamental topics in analysis; properties of real numbers, sequences and series, power series, uniform continuity, uniform convergence.
 Three lectures; one term
 Prerequisite: MATH 1AA3 and credit or registration in 1B03
 Antirequisite: MATH 2AA3
- 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, ARTS&SCI 1D06, and one of MATH 1B03, 1H05
 Antirequisite: MATH 2O03
- MATH 2E03 INTRODUCTION TO MODELLING**
 General features of modelling. Examples from chemistry, physics, biology and economics are treated by a variety of elementary methods. Computer packages are used when appropriate.
 Three lectures, one lab (one hour); one term
 Prerequisite: One of MATH 1AA3, 1NN3, ARTS&SCI 1D06 and credit or registration in one of MATH 1B03, 1H05
Enrolment is limited. However, all students in programmes requiring this course will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.
- MATH 2K03 FINANCIAL MATHEMATICS**
 Nominal and effective rates of interest and discount, forces of interest and discount, compound interest, annuities certain; amortization, sinking funds; bonds, security evaluation, determination of yields.
 Three lectures; one term
 Prerequisite: One of MATH 1A03, 1M03, 1N03, ARTS&SCI 1D06
- MATH 2L03 MATHEMATICAL METHODS FOR BUSINESS AND SOCIAL SCIENCES**
 Topics in optimization, Markov chains, differential equations, and the calculus of several variables.
 Three lectures; one term
 Prerequisite: One of MATH 1A03, 1M03, 1NN3, ARTS&SCI 1D06, and one of MATH 1B03, STATS 1L03, OAC Finite Mathematics
 Antirequisite: MATH 2A03
Not open to students registered in Science or Engineering programmes.

MATH 2M06 ENGINEERING MATHEMATICS II
 Ordinary differential equations, Laplace transforms, Fourier series, vector calculus, orthogonal curvilinear coordinates, integral theorems, with engineering applications.
 Three lectures; two terms
 Prerequisite: MATH 1H05 and 1NN3

MATH 2P04 DIFFERENTIAL EQUATIONS FOR ENGINEERING
 Ordinary differential equations, systems of linear ordinary differential equations, Laplace transform, power series solutions, Fourier series with engineering applications.
 Three lectures and two tutorials; one term
 Prerequisite: Either MATH 1H05 and 1NN3; or registration in Honours Neural Computation and credit or registration in MATH 1B03

MATH 2Q04 ADVANCED CALCULUS FOR ENGINEERING
 Vector algebra; curves, partial differentiation, multiple integrals, Green's Theorem, line and surface integrals, integral theorems, scalar and vector potentials, orthogonal curvilinear coordinates, introduction to partial differential equations.
 Three lectures and two tutorials; one term
 Prerequisite: Either MATH 1H05 and 1NN3; or registration in Honours Neural Computation and credit or registration in MATH 1B03

MATH 2R03 LINEAR ALGEBRA II
 Abstract vector spaces, basis and dimension, linear transformations, linear equations, inner product spaces, eigenvalues, spectral theorems.
 Three lectures; one term
 Prerequisite: One of MATH 1AA3, 1NN3, ARTS&SCI 1D06 and one of MATH 1B03, 1H05

MATH 2S03 LINEAR ALGEBRA III
 Canonical forms, determinants, bilinear forms, groups of linear transformations, other topics selected by the instructor.
 Three lectures; one term
 Prerequisite: MATH 2R03
 Antirequisite: MATH 2T03

MATH 2T03 APPLIED LINEAR ALGEBRA
 Canonical forms, norms, matrix decomposition theorems, sensitivity analysis, Markov chains, iterative methods, applications selected by the instructor.
 Three lectures; one term
 Prerequisite: MATH 2R03
 Antirequisite: MATH 2S03

MATH 3A03 REAL ANALYSIS I
 The real number system, metric spaces, compactness, sequences and series, continuity, differentiability, the Riemann-Stieltjes integral, uniform convergence.
 Three lectures; one term
 Prerequisite: MATH 2AB3, 2C03, and 2R03

MATH 3AA3 REAL ANALYSIS II
 Equicontinuous functions, functions of several variables, the inverse function theorem, the implicit function theorem, the rank theorem, Stokes' Theorem, the Lebesgue integral.
 Three lectures; one term
 Prerequisite: MATH 3A03

MATH 3B03 INTRODUCTION TO DIFFERENTIAL GEOMETRY
 Curves and surfaces, Gaussian curvature, geodesics, parallel transport, Gauss-Bonnet theorem, selected topics by the instructor.
 Three lectures; one term
 Prerequisite: MATH 2A03 and 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, 2Q04; and one of MATH 2C03, 2O03, 2P04. One of PHYSICS 2B06, 2C03, 2D03, 2G03, or 2K03 is recommended.
Not open to students with credit or registration in MATH 3FF3, 3J04.

MATH 3D03 MATHEMATICAL PHYSICS II
 Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.
 Three lectures; one term
 Prerequisite: MATH 3C03
 Antirequisite: MATH 3K03
Not open to students with credit or registration in MATH 3J04, 3X03.
Not open to students registered in Honours Mathematics and Physics.

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 2S03

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, Poincaré-Bendixson theorem, applications.
 Three lectures; one term
 Prerequisite: MATH 2A03, 2C03, 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 2A03, 2C03, 2R03

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 Level II Mathematics or Statistics

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: MATH 2M06, or MATH 2P04 and 2Q04 or registration in Level III or IV of a programme in the Department of Materials Science and Engineering

MATH 3J04 ENGINEERING MATHEMATICS III
 Topics in mathematics of interest for civil engineering, including probability and statistics, partial differential equations, numerical analysis, and matrix algebra.
 Four hours; one term
 Prerequisite: MATH 2M06

MATH 3K03 ENGINEERING MATHEMATICS III
 Complex variable theory with applications to electrical and computer engineering.
 Three lectures; one term
 Prerequisite: MATH 2P04 and 2Q04
 Antirequisite: 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 2E03 and 3F03

MATH 3Q03 NUMERICAL ANALYSIS
 An introduction to the methods of numerical analysis, including methods for interpolation, numerical differentiation and integration, and the solution of transcendental, differential and matrix equations.
 Three lectures; one term
 Prerequisite: MATH 2M06; or one of MATH 2A03, 2Q04 and one of MATH 2C03, 2O03, 2P04. One of COMP SCI 1MC3, 1SA3, ENGINEER 1D04 is recommended.

MATH 3R03* LINEAR PROGRAMMING
 The general linear programming problem, simplex procedures, dual problems, degeneracy procedures, parametric linear programming, interior point methods. Applications including the transshipment and assignment problems.
 Three lectures; one term
 Prerequisite: MATH 1B03

MATH 3S03 SET THEORY AND GENERAL TOPOLOGY
 Naive set theory, Zorn's Lemma, metric spaces, point set topology.
 Three lectures; one term
 Prerequisite: MATH 2R03
 Antirequisite: MATH 4F03

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 2AB3, 2C03, and 2R03

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

MATH 4B03 CALCULUS ON MANIFOLDS
 Review of multivariable calculus, basic properties of manifolds, differential forms, Stokes' theorem, de Rham cohomology and applications.
 Three hours; one term
 Prerequisite: MATH 3C03; or MATH 2S03 and one of MATH 2AA3, or 2AB3

MATH 4BB3 DIFFERENTIAL GEOMETRY
 Riemannian metrics, connections, curvature, topological and analytical properties of Riemannian manifolds.
 Three lectures; one term
 Prerequisite: MATH 4B03

MATH 4C03* COMBINATORICS
 Inversion formulae, systems of distinct representatives, block designs and other configurations; and other topics.
 Three lectures; one term
 Prerequisite: MATH 2A03 and 2R03

MATH 4E03 ALGEBRA III
 Selected topics in algebra, such as an introduction to algebraic number theory, commutative algebra or algebraic geometry.
 Three lectures; one term
 Prerequisite: MATH 3EE3

MATH 4EE3 ALGEBRA IV
 Selected topics in algebra, such as: representation theory, rings and modules, homological algebra.
 Three lectures; one term
 Prerequisite: MATH 3EE3

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 4GG3 PARTIAL DIFFERENTIAL EQUATIONS II
 Elliptic, parabolic, and hyperbolic equations in several space dimensions: fundamental solutions, maximum principle, Sobolev spaces, variational methods, nonlinear equations, applications.
 Three lectures; one term
 Prerequisite: MATH 3FF3. MATH 3A03 is recommended.

MATH 4J03* GRAPH THEORY
 Graphs, trees, bipartite graphs, connectivity, graph colouring, matrix representations, applications.
 Three lectures; one term
 Prerequisite: MATH 2A03 and 2R03

MATH 4K03 MEASURE THEORY AND PROBABILITY
 Introduction to the theory of measure and integration with applications to probability theory.
 Three lectures; one term
 Prerequisite: MATH 3AA3

MATH 4L03 INTRODUCTION TO MATHEMATICAL LOGIC
 First order logic, deduction systems, completeness and compactness theorems, model theory.
 Three lectures; one term
 Prerequisite: MATH 3EE3
 Antirequisite: MATH 3L03

MATH 4Q03 NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS
 Methods for ordinary initial and boundary value problems. Stiff systems. Solution of partial differential equations: finite difference, finite element, boundary element methods. Convergence and stability analysis.
 Three lectures; second term
 Prerequisite: Credit or registration in MATH 3FF3 or 3D03, or permission of the instructor

MATH 4S03* THE THEORY OF COMPUTABILITY
 Automata and regular languages, Turing machines, recursive functions, decidability, Gödel's incompleteness theorems.
 Three lectures; one term
 Prerequisite: One of MATH 2S03, 2T03
 Antirequisite: COMP SCI 4TC3
 Alternates with COMP SCI 4TC3.
 Not offered in 1999-2000.

MATH 4T03 ALGEBRAIC TOPOLOGY
 Fundamental groups and covering spaces, topics selected by the instructor.
 Three lectures; one term
 Prerequisite: MATH 3E03, 3S03

MATH 4V03 APPLIED MATHEMATICAL ANALYSIS
 Lebesgue integration, distribution theory, Fourier Analysis, partial differential equations, integral equations, calculus of variations; additional topics.
 Three lectures; one term
 Prerequisite: One of MATH 3D03, 3FF3

MATH 4W03 DIRECTED READING
 Directed reading in areas of mathematics of interest to the student and the instructor.
 Prerequisite: Permission of the Chair of the Department. Application for permission must be received by March 31st of the previous year.

MATH 4X03 COMPLEX ANALYSIS II
 Conformal maps, analytic continuation, harmonic functions, the Riemann mapping theorem, Riemann surfaces.
 Three lectures; one term
 Prerequisite: MATH 3X03

MATH 4Z13 INQUIRY IN MATHEMATICS
 Research, problem solving, group discussion and directed readings relating to one of a variety of mathematical themes ranging from pure mathematics to life science and earth science applications.
 Three hours; one term
 Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry.
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

STATISTICS ...

Department Note:

Students wishing to enrol in Honours Statistics must take MATH 1AA3 and 1B03.

Courses *If no prerequisite is listed, the course is open.*

STATS 1A03 STATISTICAL REASONING
 The basic ideas of graphical displays, sampling methodology and probability are developed through diverse examples from a wide range of disciplines.
 Three lectures, one tutorial; one term
 Prerequisite: Grade 12 Mathematics
Not open to students registered in the Faculty of Science.
Not open to students with credit or registration in COMMERCE 2QA3, ECON 2B03, PSYCH 2R03, 2RR3, SOC SCI 2J03, STATS 1CC3, 2D03, 2MA3, 2MB3, STATS 2R06

STATS 1CC3 INTRODUCTORY COMPUTER-AIDED STATISTICS
 Applied statistics including simple probability calculations based on binomial, Poisson and normal distributions, with emphasis on inferential methods and linear regression using computer statistics packages.
 Two lectures, one lab (two hours); one term
 Prerequisite: MATH 1A03 or 1M03
 Antirequisite: COMMERCE 2QA3, ECON 2B03, PSYCH 2G03, 2R03
Not open to students with credit in any Level II or above Statistics course.
 See *Department Note* above.

STATS 1L03 PROBABILITY AND LINEAR ALGEBRA
 The algebra of probability, conditional probability and independence, discrete and continuous random variables, mean and variance, matrices, determinants, Cramer's rule, solution of linear equations.
 Three lectures, one tutorial; one term
 Prerequisite: Grade 12 Mathematics
Not open to students with credit in OAC Finite Mathematics or STATS 1CC3, 2D03, 2MA3, 2MB3, 2R06.
Not open to students registered in Science or Engineering programmes.
Students transferring to the Faculty of Science do not retain credit for this course.

208 MATHEMATICS AND STATISTICS

STATS 2D03 PROBABILITY THEORY

Combinatorics, independence, conditioning; Poisson-process; discrete and continuous distributions with statistical applications; expectation, transformations, order statistics. Distribution of sample mean and variance, moment-generating functions, central limit theorem.

Three lectures; one term

Prerequisite: One of MATH 1A03, 1M03 and credit or registration in MATH 1B03
Not open to students with credit or registration in STATS 2A03*, 2MA3, 2R06.

STATS 2MA3 PROBABILITY AND STATISTICAL METHODS FOR SCIENCE

Combinatorics; discrete and continuous probability distributions; expectations; central limit theorem; point and interval estimation; hypothesis testing; regression and correlation; analysis of variance.

Three lectures; one term

Prerequisite: STATS 1CC3; one of MATH 1A03, 1M03

Antirequisite: ECON 2B03, PSYCH 2R03

Not open to students with credit or registration in COMMERCE 2QA3, ECON 2B03, SOC SCI 2J03, STATS 2A03*, 2R06, 2D03, 2MB3.

STATS 2MB3 STATISTICAL METHODS

Estimation; sampling distributions; confidence intervals; hypothesis testing; power; robustness; analysis of variance for one and two factor designs; linear regression; graphical methods; statistical computing.

Three lectures; one term

Prerequisite: STATS 2D03

Antirequisite: ECON 2B03, PSYCH 2R03, 2RR3, STATS 2R06

Not open to students with credit or registration in COMMERCE 2QA3, ECON 2B03, SOC SCI 2J03, STATS 2A03*, 2MA3.

STATS 3D06 MATHEMATICAL STATISTICS

The multivariate normal distribution, point and interval estimation, sampling distributions, tests of hypotheses, elementary linear regression, and other topics.

Three lectures; two terms

Prerequisite: STATS 2D03 and one of MATH 2A03, 2L03, 2Q04

STATS 3G03* ACTUARIAL MATHEMATICS I

Survival distributions, life tables, life insurance, life annuities, net premiums and reserves.

Three lectures; one term

Prerequisite: STATS 2D03 and credit or registration in MATH 2K03

Offered in alternate years.

Not offered in 1999-2000.

STATS 3H03* ACTUARIAL MATHEMATICS II

Multiple life functions, multiple decrement models, valuation theory for pension plans.

Three lectures; one term

Prerequisite: STATS 3G03*

Offered in alternate years.

Not offered in 1999-2000.

STATS 3N03 STATISTICAL METHODS FOR ENGINEERING

Introduction to statistical methods and applications: data analysis and statistical methods.

Three lectures; one term

Prerequisite: Registration or credit in Levels III, IV or V Engineering; or registration in Level III or IV of a programme in the Department of Materials Science and Engineering; or registration in Level II of a programme in the Department of Chemical Engineering.

Antirequisite: STATS 3Y03

STATS 3S03* SURVEY SAMPLING

Survey design; simple random sampling; stratified sampling; proportional allocation; ratio estimation; cluster sampling; systematic sampling and sample size determination. A project associated with current research is required.

Three lectures; one term

Prerequisite: STATS 2D03 and 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: STATS 2D03 and MATH 2A03

STATS 3Y03 STATISTICAL ANALYSIS FOR ENGINEERING

Introduction to probability, statistical inference, regression, correlation and decision making.

Three lectures; one term

Prerequisite: Registration in an Engineering and Management programme or a programme in the Departments of Materials Science and Engineering or Mechanical Engineering, and credit in either MATH 2M06 or MATH 2P04 and MATH 2Q04; or permission of the instructor

Antirequisite: STATS 3N03, 4R03*

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: STATS 2D03 and MATH 3AA3

STATS 4H03* OPERATIONS RESEARCH

Network models and algorithms, dynamic models, queuing models and other topics.

Three lectures; one term

Prerequisite: Credit or registration in STATS 3D06

STATS 4M03 MULTIVARIATE ANALYSIS

Multivariate distributions: Normal, Wishart, T2 and others; regression, correlation, factor analysis, general linear hypothesis.

Three lectures; first term

Prerequisite: STATS 3D06, and one of MATH 2S03, 2T03

STATS 4O03* ORDER STATISTICS

Basic theory, moments, recurrence relations and identities. Approximations, linear estimation. Applications to life-testing problems.

Three lectures; one term

Prerequisite: STATS 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: STATS 3D06 and 4M03. Credit or registration in STATS 4T03 and one of STATS 3S03, 4H03, 4R03*

STATS 4R03* REGRESSION ANALYSIS

Linear and non-linear models; least squares theory; analysis of residuals; stepwise regression; weighted least squares; prediction and calibration; selected topics in regression.

Three lectures; one term

Prerequisite: STATS 3D06

Antirequisite: STATS 3Y03

STATS 4T03 DESIGN OF EXPERIMENTS

Analysis of variance and covariance; linear models; randomized block designs; Latin squares; factorial experiments. Emphasis on applications.

Three lectures; one term

Prerequisite: STATS 3D06

STATS 4U03* NONPARAMETRIC METHODS IN STATISTICS

Rank tests and nonparametric methods; rank correlation; comparisons with parametric methods.

Three lectures; one term

Prerequisite: Credit or registration in STATS 3D06

MECHANICAL ENGINEERING

Faculty as of January 15, 1999

Chair

M.A. Elbestawi

Professors

Mohamed Elbestawi/B.Sc. (Alexandria), M.Eng., Ph.D. (McMaster), P.Eng.
Ross L. Judd/B.E.Sc. (Western Ontario), M.Eng. (McMaster), Ph.D. (Michigan), P.Eng.

Mamdouh Shoukri/B.Sc. (Cairo), M.Eng., Ph.D., (McMaster), P.Eng.
David S. Weaver/B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Waterloo), P.Eng.

Associate Professors

Albert M.C. Chan/B.Sc. (Alberta), M.Eng, Ph.D. (McMaster)/part-time

Don R. Metzger/B.A.Sc., M.A.Sc., Ph.D. (Waterloo)

Mateusz P. Sklad/M.Sc., Ph.D. (Warsaw)

Samir Ziada/B.Sc. (Cairo), M.Eng. (McMaster), Ph.D. (Lehigh)

Assistant Professors

Gary Bone/B.Sc. App. Sc. (Queens), M.Eng., Ph.D. (McMaster)
 Dan Ewing/B.A.Sc. (Waterloo), Ph.D. (SUNY, Buffalo)
 Robert C. Hudspeth/B.Eng., M.Eng. (McMaster), P.Eng.
 Marilyn F. Lightstone/B.A.Sc. (Queens), M.A.Sc., Ph.D. (Waterloo)
 Allan Spence/B.Math., M.A.Sc. (Waterloo), Ph.D. (British Columbia), P.Eng.
 Vincent M. Sowa/B.Sc. (Illinois), M.A. (Purdue), Ph.D. (Waterloo)/part-time

Associate Members

David W. Capson/(Electrical and Computer Engineering) B.Sc. Eng. (New Brunswick), M.Eng., Ph.D. (McMaster), P.Eng.
 J. David Embury/(Materials Science and Engineering) B.Sc. (Manchester), Ph.D. (Cambridge), P.Eng.
 William J. Garland/(Engineering Physics) M.Eng., Ph.D. (McMaster), P.Eng.
 Diwaker Gupta/(Business) B.Tech. (New Delhi), M.A.Sc. (Windsor), Ph.D. (Waterloo)
 Andrew N. Hrymak/(Chemical Engineering) B.Eng. (McMaster), Ph.D. (Carnegie Mellon)
 G. John Miltenburg/(Business) B.Eng.Mgt., MBA (McMaster), M.Eng. (Toronto), Ph.D. (Waterloo), P.Eng.
 Ali-Reza Montazemi/(Business) H.N.D. (Teeside Polytechnic, U.K.), M.Sc. (Southampton), Ph.D. (Waterloo)
 W.F. Skipper Poehman/(Computing and Software) B.S. (Niagara), B.Sc. (Brock), M.Sc., Ph.D. (McMaster), P.Eng.
 Philip E. Wood/(Chemical Engineering) B.A.Sc. (Waterloo), Ph.D. (California Institute Tech.), P.Eng.

Professors Emeriti

Mohammed A. Dokainish/B.Sc. (Cairo), M.A.Sc., Ph.D. (Toronto), P.Eng.
 Brian Latto/B.Sc. (London), Ph.D. (Glasgow), P.Eng., C.Eng.
 W. Roy Newcombe/B.Sc. (Mount Allison), M.E. (Nova Scotia Tech.), P.Eng.
 George F. Round/B.Sc., Ph.D., D.Sc. (Birmingham), F.C.I.C., P.Eng.
 James N. Siddall/B.E. (Saskatchewan), S.M. (M.I.T.), P.Eng.
 Robert Sowerby/B.Sc., A.C.G.I. (London), M.Sc., Ph.D., D.Sc. (Manchester), P.Eng.

Department Note:

Enrolment in Mechanical Engineering courses by students in programmes other than those administered by the Department may be restricted.

MANUFACTURING ENGINEERING ...**Courses** *If no prerequisite is listed, the course is open.***MANUFACT 2C03 MECHANICAL ENGINEERING DESIGN I**

Two design projects involving modelling, analysis, synthesis, computing and drawing graded on the basis of participation and formal report preparation. Two labs (three hours); second term
 Prerequisite: ENGINEER 1C04, 1D04, 2P04

MANUFACT 3M02 MANUFACTURING LABORATORY I

Laboratory exercises in metalworking practices, measurements and solid mechanics.
 One lab (three hours); both terms
 Prerequisite: Registration in Manufacturing Engineering

MANUFACT 4A03 COMPUTER AIDED MANUFACTURING

Fixturing and part setups for machining and inspection. Detailed coverage of numerical control codes, computer aided tool path generation and part processing. Real time linear and circular interpolation algorithms. Geometric dimensioning and tolerancing. Introduction to coordinate measuring machines.

Two lectures, one lab (three hours); second term
 Prerequisite: Registration in Level III or Level IV of a programme administered by the Department of Mechanical Engineering.

MANUFACT 4M04 PROJECT

A major project in the area of manufacturing engineering. It may be of a design or experimental nature, to be completed under the supervision or co-supervision of a faculty member holding an appointment in the Department of Mechanical Engineering.

One lab (three hours), first term, three labs (three hours); second term
 Prerequisite: Registration in Level IV of Manufacturing Engineering or Level V of Manufacturing Engineering and Management or Manufacturing Engineering and Society

MANUFACT 4P02 MANUFACTURING LABORATORY II

Laboratory exercises in metalworking practices, solid mechanics and controls.
 One lab (three hours); both terms
 Prerequisite: MANUFACT 3M02

MECHANICAL ENGINEERING ...**COURSES** *If no prerequisite is listed, the course is open.***MECH ENG 2A03 KINEMATICS OF MECHANISMS**

Analysis and synthesis of planar mechanisms. Displacement, velocity and acceleration analysis methods. Design of 4-bar mechanisms. Cam design, gears and gear trains. Mechanical advantage.
 Two lectures, one lab (three hours); first term
 Prerequisite: MATH 1H05, 1N06 or 1N03 and 1NN3, and PHYSICS 1D03

MECH ENG 2B03 MECHANICAL ENGINEERING MEASUREMENTS

Introduction to the theory and practice of engineering measuring techniques. Theory of measurements, precision shop measurements and laser metrology; measurements of pressure, flow, temperature and power; combustion analysis and gas analysis, measurement of strain and force; elementary statistical analysis.

One lecture, one lab (three hours), first term, one lab (three hours); second term
 Prerequisite: MATH 1H05, PHYSICS 1D03

MECH ENG 2C03 MECHANICAL ENGINEERING DESIGN I

Two design projects involving modelling, analysis, synthesis, computing and drawing graded on the basis of participation and formal report presentation. One tutorial (two hours), one lab (three hours); second term
 Prerequisite: ENGINEER 1C04, 1D04, 2P04

MECH ENG 2W04 ENGINEERING THERMODYNAMICS

Introduction to the principles of thermodynamics, and 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: CHEM 1E03 and credit or registration in MATH 2M06, or MATH 2P04 and 2Q04

Antirequisite: ENGINEER 2W04

MECH ENG 3A03 ENGINEERING MECHANICS

Singularity functions, generalized Hooke's law; shear stress, shear flow in beams; shear centre. Biaxial and unsymmetrical bending, analysis of indeterminate beams and frames using energy methods, impact loads. Buckling of compression members. Introduction to yield criteria.

Three lectures; first term
 Prerequisite: ENGINEER 2P04

MECH ENG 3C03 MANUFACTURING ENGINEERING

A general introduction, encompassing the wide field of activities from iron and steel making through casting, rolling, forging, to cold forming, metal cutting, welding, bonding, electrical machining, surface treatment, mechanical handling, assembly, cleaning, packaging.

Three lectures; second term
 Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

MECH ENG 3D03 MECHANICAL ENGINEERING THERMODYNAMICS

Re-examination of the thermodynamic laws, developed in MECH ENG 2W04. Applied thermodynamics including advanced engineering thermodynamic processes, psychrometry, and an introduction to combustion, compressible flow and environmental problems.

Three lectures; second term
 Prerequisite: MECH ENG 2W04

MECH ENG 3E04 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.

Three lectures, one lab (three hours); second term
 Prerequisite: ENGINEER 2P04, 2Q04, MECH ENG 3A03

MECH ENG 3F04 MODELLING AND NUMERICAL SOLUTIONS

An introductory course in numerical analysis covering such topics as solution of differential and non-linear equations, matrices and systems of linear equations. One tutorial period, every other week, devoted to the modelling of mechanical systems.

Three lectures; one tutorial; first term
 Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering.

MECH ENG 3M02 COMPOSITE LABORATORY

Laboratory exercises in fluid mechanics, thermodynamics and solid mechanics.

One lab (three hours); both terms
 Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

210 MECHANICAL ENGINEERING

MECH ENG 3004 FLUID MECHANICS I

Fluid properties and statics, conservation laws, applications of the continuity, momentum and energy equations, dimensional analysis and similarity, boundary layer flow, internal and external flows.

Three lectures, one tutorial (two hours); first term

Prerequisite: MATH 2M06, or MATH 2P04 and 2Q04

MECH ENG 3R03 HEAT TRANSFER

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: MATH 2M06, MECH ENG 2W04

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 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: One of MECH ENG 4R03, ELEC ENG 3CA3 or 3CK4

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 4K03 INTRODUCTION TO ROBOTIC MECHANICS

Spatial descriptions and transformations, manipulator kinematics, inverse kinematics, Jacobians, dynamics.

Three lectures; first term

Prerequisite: ENGINEER 2Q04

MECH ENG 4L03 INDUSTRIAL DESIGN

Introduction for engineering students to the techniques of industrial design, case studies and introduction to illustration techniques.

Three lectures; second term

Prerequisite: MANUFACT 2C03 or MECH ENG 2C03

MECH ENG 4M04 PROJECT

A major project related to any option or branch of engineering which may be of a design or experimental nature, to be completed under the supervision or co-supervision of a faculty member holding an appointment in the Department of Mechanical Engineering.

One lab (three hours), first term; three labs (three hours); second term

Prerequisite: Registration in Level IV Mechanical Engineering, or in Level V Mechanical Engineering and Management or Mechanical Engineering and Society

MECH ENG 4P02 COMPOSITE LABORATORY

Laboratory exercises in vibration analysis, machine structures, controls, heat transfer, gas dynamics, fluid mechanics and thermodynamics.

One lab (three hours); both terms

Prerequisite: MECH ENG 3M02, and registration in a programme administered by the Department of Mechanical Engineering

MECH ENG 4Q03 MECHANICAL VIBRATIONS

Transient and steady state vibration of single- and multi-degree of freedom systems. Free and forced vibrations of single and multiple degree-of-freedom mechanical systems, transient response, damping and vibration isolation.

Two lectures, one tutorial (two hours); first term

Prerequisite: ENGINEER 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; first term

Prerequisite: STATS 3Y03

Antirequisite: ELEC ENG 3CA3 or 3CK4

MECH ENG 4S03 FLUID MECHANICS II

Introduction to potential flows, internal and external laminar and turbulent incompressible flows. Introduction to compressible flows and incompressible flow machines.

Three lectures; first term

Prerequisite: MECH ENG 3O04

MECH ENG 4T03 FINITE ELEMENT APPLICATIONS

The finite element method and its application to mechanical systems including static and dynamic analysis.

Three lectures; second term

Prerequisite: MECH ENG 4Q03

MECH ENG 4U03 ADVANCED THERMODYNAMICS

Compressible flows: Fanno and Rayleigh flows, normal and oblique shocks. Turbomachines: axial and radial flow gas and steam turbines, axial and radial flow compressors and fans.

Three lectures; second term

Prerequisite: MECH ENG 3D03

MECH ENG 4V03 THERMO-FLUIDS SYSTEMS DESIGN AND ANALYSIS

The analysis and synthesis of thermo-fluid systems including renewable energy source systems. Approaches to modelling including techniques for the design and analysis of the performance of thermo-fluid systems.

Three lectures; second term

Prerequisite: MECH ENG 3D03, 3R03, 4S03

MECH ENG 4X03 CODIFIED DESIGN AND FAILURE ANALYSIS

Application of mechanical design to engineering practice. Topics include codified design of steel structures and the analysis of common failures occurring in service.

Three lectures; second term

Prerequisite: MECH ENG 3A03

MECH ENG 4Z03 COMPUTER AIDED DESIGN

Project-oriented CAD course, 3-D modelling and graphics, design by features. I-DEAS and mechanical design application packages used on SUN workstations.

Two lectures, one tutorial (one hour), one lab (two hours); first term

Prerequisite: Registration in Level IV or Level V of a programme administered by the Department of Mechanical Engineering

MIDWIFERY

Faculty as of January 15, 1999

Chair

Karyn Kaufman

Professor

Karyn Kaufman/B.S.N. (Michigan), M.S. (New York), Dr.P.H. (North Carolina), R.M.

Assistant Professors

Eileen Hutton/B.N.Sc. (Queens), M.N.Sc. (Toronto), R.M.

Helen McDonald/M.H.Sc. (McMaster), R.M.

Patricia McNiven/M.Sc. (Toronto), Ph.D. (Toronto), R.M.

Bruce Wainman/B.Sc., (Laurentian), M.H.Sc. (McMaster), Ph.D. (York)

Courses *If no prerequisite is listed, the course is open.*

MIDWIF 1A06 INTRODUCTION TO MIDWIFERY

Orientation to the midwife's role and the philosophy of practice in Ontario will be covered. Includes two terms of following clients after a one-week intensive workshop as well as a weekly three-hour small group tutorial.

Two terms

Prerequisite: Registration in the Midwifery Education Programme

Antirequisite: MIDWIF 1A03

MIDWIF 1C03 LIFE SCIENCE FOR MIDWIFERY

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 term

Prerequisite: Registration in the Midwifery Education Programme

Co-requisite: HTH SCI 1D06

MIDWIF 2A03 MIDWIFERY CARE I-CLINICAL SKILLS INTENSIVE

Structured learning experiences are completed to prepare for MIDWIF 2E12. Students will learn fundamental clinical skills and theoretical information.

Four weeks

Prerequisite: MIDWIF 1A06

Antirequisite: MIDWIF 1B03, 1B12

MIDWIF 2B15 MIDWIFERY CARE II

Students are provided with an extended period of clinical experience within a midwifery practice. The course begins with a seven to ten day intensive workshop. A weekly tutorial based on case situations and self-study materials will cover topics in preconception, antepartum, intrapartum, postpartum and newborn care.

One term

Prerequisite: MIDWIF 2E12

Antirequisite: MIDWIF 2B12

MIDWIF 2C15 MIDWIFERY CARE III

This course is a continuation of clinical practice which will further develop the knowledge and skills relating to topics in preconception, antepartum, intrapartum, postpartum and newborn care.

One term

Prerequisite: MIDWIF 2B15

Antirequisite: MIDWIF 2C12

First offered in 2000-2001.

MIDWIF 2D03 REPRODUCTIVE PHYSIOLOGY

This course provides an in-depth understanding of human reproduction with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction. This course will also provide the basis for understanding alterations from normal mechanisms including the influence of medical conditions on reproductive processes.

One term

Prerequisite: HTH SCI 1D06

MIDWIF 2E12 MIDWIFERY CARE I-CLINICAL PRACTICUM

A clinical placement is completed which focuses on assessment skills of pre-natal and postnatal clients and observation of births. Included is a weekly situation-based, small group tutorial which will focus on thorough assessment of situations and integration of basic knowledge with clinical observations.

Eight weeks

Prerequisite: MIDWIF 2A03

Antirequisite: MIDWIF 1B12, 1E09

MIDWIF 2F03 PHARMACOTHERAPY

This course is an overview of basic concepts in pharmacy, pharmacology and therapeutics relevant to the practise of midwifery in Ontario. Content areas include pharmacokinetics, toxicology, adverse drug reactions during pregnancy and lactation and pharmacology in the neonate.

One term

Prerequisite: HTH SCI 1D06

MIDWIF 3A09 COMMUNITY BLOCK PLACEMENTS

Two placements of one month each will be organized with a family physician and an obstetrician. The third placement will be an elective chosen by the student. International experiences are possible.

One term

Prerequisite: One of MIDWIF 2B12 or 2B15

MIDWIF 3B15 MIDWIFERY CARE IV

This clinical course integrates theoretical and clinical content progressively. The weekly tutorial situations will increasingly focus on the recognition of indications for consultation and referral and the relationships with other health care providers.

One term

Prerequisite: MIDWIF 2C15

Antirequisite: MIDWIF 3B12

First offered in 2000-2001.

MIDWIF 3C12 MIDWIFERY CARE CLERKSHIP

Clinical judgement and decision-making skills form the basis of this final clinical course. The weekly tutorial problems will focus on all phases of child-birth and will integrate content related to inter-professional relationships, the organization of the health care system, the legal, ethical and professional responsibilities of a midwife, and the critical evaluation of practice.

One term

Prerequisite: One of MIDWIF 3B12 or 3B15

MIDWIF 3D03 HEALTH EDUCATION AND HEALTH PROMOTION

This reading self-study course will incorporate concepts and principles from areas that contribute to the understanding of human behaviour in health related situations. A variety of topics will be covered.

One term

Prerequisite: HTH SCI 1C06

MIDWIF 3E03 PROFESSIONAL ISSUES

Seminars and presentations will be used to cover various topics related to the profession of midwifery. Includes a two week intensive workshop.

One term

Prerequisite: One of MIDWIF 3B12 or 3B15

Co-requisite: MIDWIF 3C12

MIDWIF 3F03 FINAL SYNTHESIS PAPER

Each student will submit an academic paper concerning an aspect of midwifery within the wider social context. External readers with relevant expertise will be used to assist in the evaluation of papers.

One term

Prerequisite: Registration in Level III of the Midwifery Education Programme

MODERN LANGUAGES

Faculty as of January 15, 1999**Chair**

Nina Kolesnikoff

Professors

Joseph Adamson/B.A. (Trent), M.A., Ph.D. (Toronto)

John D. Browning/B.A., M.Phil. (London), Ph.D. (Essex)

Nina Kolesnikoff/M.A. (Moscow State), Ph.D. (Alberta)

Walter Smyrniw/B.A. (McMaster), M.A., Ph.D. (Toronto)

George Thomas/B.A., Ph.D. (London)

Associate Professors

María del C. Cerezo/B.A. (Puerto Rico), M.A. (McGill), Ph.D. (Toronto)

Gerald Chapple/B.A. (McMaster), A.M., Ph.D. (Harvard)

Gabriele Erasmi/B.A. (Yale), M.A., Ph.D. (Minnesota)

Florigio Minelli/B.A., M.A. (Western Ontario), Ph.D. (Brown)

Hans H. Schulte/Assessor (Munich), D. Phil. (Augsburg)

María M. Strojinska/M.A. (Warsaw), Ph.D. (Edinburgh)

M. Jean Wilson/B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto)

Assistant Professors

Vittorina Cecchetto/B.A., M.A., Ph.D. (Toronto)

Inga Dolinina/M.A., Ph.D. (Leningrad)

Geoffrey Rockwell/B.A. (Haverford College), M.A., Ph.D. (Toronto)

Associate Member

Cyril H. Levitt/(Sociology) B.A., M.A. (Waterloo), Dr. Phil. (Free Univ. Berlin)

Lecturers

Eiko Virginia Ariga/M.A. (Toronto), M.A. (Texas)

Tsuneko Iwai/B.A. M.Ed. (Toronto)

Ping-Mei Law/B.A., M.A. (Toronto)

Anna L. Moro/B.A., M.A., Ph.D. (Toronto)

Ruth Thomas/Staatsexamen (Bochum), M.A. (McMaster)

Research Associate

Branka Popovic/M.A., Ph.D. (Belgrade)

Professors Emeriti

Antonio G. Alessio/D. Litt. (Genoa)

Samuel D. Cioran/B.A. (McMaster), Ph.D. (Toronto)

Stelio Cro/L. en L. (Buenos Aires), Dott. Ling. e Lett. (Venice)

Karl Denner/M.A. (Kentucky), Ph.D. (Johns Hopkins)

Gerhart Teuscher/Dip. -Uebersetzer (Mainz-Germersheim), M.A. (Toronto), Ph.D. (SUNY, Buffalo)

Department Notes

1. The Department of Modern Languages administers all courses in Comparative Literature, German, Hispanic Studies, Italian, Japanese, Linguistics, Polish, and Russian. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.
 2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.
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COMPARATIVE LITERATURE ...

Courses and programmes in Comparative Literature are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

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 1A06 THE EUROPEAN LITERARY TRADITION**

An introduction to the origins and continuity of the Western literary tradition from the Bible and classical literature to modern literature, as seen in representative texts. Attention is given to the development of critical skills in reading and writing.

Two lectures, one tutorial; two terms

COMP LIT 2A03 MODERN EUROPEAN LITERATURE I

A study of the central themes and ideas shaping the Enlightenment and Romanticism through the reading of representative works.

Three lectures; one term

Prerequisite: COMP LIT 1A06

COMP LIT 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: COMP LIT 1A06

COMP LIT 2B03 SURVEY OF ITALIAN LITERATURE

Formerly: MOD LANG 2B03

This course will study the development of Italian literature from its beginnings to the present with emphasis on major authors and works. This will include some account of its influence upon other European literatures.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 2B03

COMP LIT 2C03 INTRODUCTION TO LITERARY STUDIES

Formerly: MOD LANG 2A03

An examination of the fundamental questions about the nature of literature and the purpose and methodology of literary studies, focusing on the interdisciplinary and cultural aspects of literature.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 2A03

COMP LIT 2G03 BIBLE AS STORY

An examination of narratives from the Hebrew Bible, Intertestamental literature, and New Testament, from a literary perspective. Attention is paid to narrative features such as character, plot, irony and symbolism, as well as to the dynamics of the reading experience.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

Cross-list: RELIG ST 2VV3

COMP LIT 2H03 GREEK AND ROMAN DRAMA

Selected Greek and Roman Tragedies and Comedies will be read in translation. The course will concentrate on characterization and the philosophical and religious aspects of ancient drama.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: COMP LIT 2H06

Cross-list: CLASSICS 2H03

COMP LIT 2HH3 MASTERWORKS OF GERMAN LITERATURE

Formerly: MOD LANG 2H03

A survey of major works from a variety of genres, by Goethe, Kleist, Heine, Büchner, Mann, Rilke, Brecht and others.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 2H03

COMP LIT 2M03 GREEK AND ROMAN MYTHOLOGY

A study of the myths of Greek and Roman gods and heroes, their explanation according to theories on the nature of myths and their use by Greek and Roman authors particularly Homer and Vergil.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2D03

COMP LIT 3A03 LITERATURE AND POLITICS IN GERMANY 1914-1945

Formerly: MOD LANG 3A03

A study of the literary responses to the social, political and cultural upheaval from the beginning of the First World War to the end of the Second. The course will involve a close scrutiny of the forms and functions of political rhetoric, manifestoes and *littérature engagée*.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 3A03

COMP LIT 3B03 RUSSIAN DRAMA SINCE 1800

Formerly: MOD LANG 3D03

An introduction to the major works of Russian theatre.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 3D03

COMP LIT 3CC3 MODERN EUROPEAN DRAMA FROM BRECHT TO THE PRESENT

A study of representative plays by ten major dramatists, including Garcia Lorca, Cocteau, Frisch, Sartre, Weiss, Genet, Dario Fo.

Seminar (two hours), plus play readings; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme

Cross-list: DRAMA 3CC3

Alternates with COMP LIT 3E03.

COMP LIT 3D03 TOPICS IN LITERARY GENRES I

Previous topics include: Lyric Poetry, The Novel. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level II and above of a Comparative Literature programme

COMP LIT 3D03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3DD3 TOPICS IN LITERARY GENRES II

Previous topics include: Short Fiction, Comedy, Tragedy. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level II and above of a Comparative Literature programme

COMP LIT 3DD3 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3E03 MODERN EUROPEAN DRAMA FROM IBSEN TO PIRANDELLO

A study of representative plays by eight major dramatists, including Strindberg, Chekhov, Gorki, Wedekind and Kaiser.

Seminar (two hours), plus play readings; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme

Cross-list: DRAMA 3C03

Alternates with COMP LIT 3CC3.

COMP LIT 3F03 THE METAMORPHOSES OF DON JUAN

Formerly: MOD LANG 3J03

The development of the myth of Don Juan from its origins to the present.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 3J03

COMP LIT 3FF3 THE LITERATURE OF THE DELINQUENT

Formerly: MOD LANG 3JJ3

A study of the picaresque mode in European literature from 1550 to 1800

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 3JJ3

COMP LIT 3G03 GERMAN DRAMA

Formerly: MOD LANG 3G03

A study of representative plays by major dramatists of the German-speaking world, from the 18th century to the present.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 3G03

COMP LIT 3I03 TOPICS IN GREEK AND ROMAN LITERATURE I
 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 programme
 Cross-list: CLASSICS 3I03

Alternates with COMP LIT 3I13.
COMP LIT 3I03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3I13 TOPICS IN GREEK AND ROMAN LITERATURE II
 Topics include: Greek and Roman Epic. Consult the Department concerning topic to be offered.
 Three lectures; one term
 Prerequisite: Registration in Level III or IV of a Comparative Literature programme
 Cross-list: CLASSICS 3I13
Alternates with COMP LIT 3I03.
COMP LIT 3I13 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3J06 STUDIES IN SIXTEENTH-CENTURY LITERATURE
 A critical study of the literature of the 1500s in England, particularly the second half of the century. The influence of continental writers will also be examined, and special attention will be paid to Spenser.
 Three lectures; two terms
 Prerequisite: Registration in a programme in Comparative Literature
 Antirequisite: COMP LIT 3J03, ENGLISH 3I03 or 3T03
 Cross-list: ENGLISH 3I06

COMP LIT 3K03 20TH-CENTURY RUSSIAN LITERATURE
Formerly: MOD LANG 3K03
 A study of Russian literature of the 1920s and 1930s with special attention to Akhmatova, Bulgakov and Sholokhov.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3K03
COMP LIT 3KK3.

COMP LIT 3K03 20TH-CENTURY RUSSIAN LITERATURE
Formerly: MOD LANG 3K03
 A study of Russian literature of the 1920s and 1930s with special attention to Akhmatova, Bulgakov and Sholokhov.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3K03
COMP LIT 3KK3.

COMP LIT 3KK3 CONTEMPORARY RUSSIAN LITERATURE
Formerly: MOD LANG 3KK3
 A study of contemporary Russian literature since 1955, with special attention to Pasternak, Solzhenitsyn and Yevtushenko.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3KK3
Alternates with COMP LIT 3K03.

COMP LIT 3L03 LITERATURE AND FILM
 An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.
 Three lectures, plus one weekly film screening; one term
 Prerequisite: Registration in Level III or IV of a Comparative Literature programme
 Cross-list: DRAMA 3H03 and ENGLISH 3CC3

COMP LIT 3LL3 SURVEY OF SPANISH THEATRE
Formerly: MOD LANG 3L03
 A study of the development of Spanish drama and stage from Lope to Lorca.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3L03

COMP LIT 3P03 LITERATURE AND POLITICS IN SPANISH AMERICA
Formerly: MOD LANG 3P03
 An exploration of the ways in which politics and aesthetics combine in Spanish American literature. Emphasis will be on the 20th-century works, but writings from previous centuries will also be included.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3P03

COMP LIT 3Q03 THE HISTORY AND THEORY OF CRITICISM
 A survey of the main developments in the theory and practice of literary criticism from Plato to the early 20th century.
 Three lectures; one term
 Prerequisite: Registration in Level III or IV of a Comparative Literature programme
 Cross-list: ENGLISH 3Q03

COMP LIT 3QQ3 MODERN CRITICAL THEORY
 The theory and practice of literary criticism from Eliot to the present.
 Three lectures; one term
 Prerequisite: Registration in Level III or IV of a Comparative Literature programme
 Cross-list: ENGLISH 3QQ3

COMP LIT 3R06 POSTCOLONIAL LITERATURES: THEORY AND PRACTICE
 A study of postcolonial literary theory and practice. Texts written in English from a variety of formerly colonized regions will be studied; these may include Africa, the Caribbean, South and Southeast Asia, Australia and New Zealand. The focus will be on such topics as imperialism, race, gender, ethnicity, nation, language, and representation.
 Three lectures; two terms
 Prerequisite: Registration in Level III or IV of a Comparative Literature programme
 Cross-list: ENGLISH 3R06

COMP LIT 3S03 19TH-CENTURY RUSSIAN LITERATURE I
Formerly: MOD LANG 3R03
 A study of the major prose of Gogol and Turgenev.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3R03
Alternates with COMP LIT 3SS3.

COMP LIT 3SS3 19TH-CENTURY RUSSIAN LITERATURE II
Formerly: MOD LANG 3RR3
 A study of the major novels by Dostoevsky and Tolstoy.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3RR3
Alternates with COMP LIT 3S03.

COMP LIT 3T03 THE THEATRE OF GREECE AND ROME
 The history of theatres and theatrical production in Greece and Rome with consideration of the social significance of drama in antiquity. The course will also include archaeological material.
 Three lectures; one term
 Prerequisite: COMP LIT 2H03 or six units of Classics
 Antirequisite: COMP LIT 2H06
 Cross-list: CLASSICS 3T03

COMP LIT 3V03 TOPICS IN NATIONAL CINEMAS I
Formerly: MOD LANG 3T03
 Previous topics include: Soviet and East European Cinema. Consult the School of Art, Drama and Music concerning the topic to be offered.
 Two lectures, plus one weekly film screening; one term
 Prerequisite: DRAMA 2X06
 Antirequisite: MOD LANG 3T03
 Cross-list: DRAMA 3T03
COMP LIT 3V03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3VV3 TOPICS IN NATIONAL CINEMAS II
Formerly: MOD LANG 3TT3
 Previous topics include: Canadian Cinema, French Cinema and Japanese Cinema. Consult the School of Art, Drama and Music concerning the topic to be offered.
 Two lectures, plus one weekly film screening; one term
 Prerequisite: DRAMA 2X06
 Antirequisite: MOD LANG 3TT3
 Cross-list: DRAMA 3TT3
COMP LIT 3VV3 may be repeated, if on a different topic, to a total of six units.

COMP LIT 3W03 GERMAN WOMEN WRITERS
Formerly MOD LANG 3W03
 A study of selected works by German women writers from the eighteenth century to the present.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Antirequisite: MOD LANG 3W03

COMP LIT 4AA3 TOPICS IN LITERARY MOVEMENTS
 Previous topics include: European Romanticism. Consult the Department concerning topic to be offered.
 Seminar (two hours); one term
 Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4AA3 may be repeated, if on a different topic, to a total of six units.

COMP LIT 4B03 TOPICS IN LITERARY METHODOLOGY

Previous topics include: Narrative and Psychoanalysis, Feminist Theory, Formalism and Structuralism, Semiotics. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4B03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 4C03 LITERATURE AND OTHER DISCIPLINES

Previous topics include: Literature and Philosophy, Literature and Politics. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4C03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 4E03 TOPICS IN COMPARATIVE LITERATURE

Previous topics include: Twentieth-Century Women Writers, Literature and Ideology. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme
COMP LIT 4E03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 4I13 INDEPENDENT STUDY

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Prerequisite: Registration in Level IV of a Comparative Literature programme and permission of the Department

COMP LIT 4T03 SPECIAL TOPICS

Formerly: MOD LANG 4T03

Topics may include Literary Translation, Science Fiction, Humour in Literature. Consult the Department concerning the topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 4T03

COMP LIT 4T03 may be repeated, if on a different topic, to a total of six units.

GERMAN ...

Courses and programmes in German are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

Notes:

- 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 1B06, 2Z06

Advanced Level Language Courses

GERMAN 2E03, 2G03, 3Z03, 4CC3

- 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.***GERMAN 1B06 INTRODUCTION TO GERMAN STUDIES**

An intensive review of the grammatical structures of German and an introduction to composition, together with oral practice. There will also be an introduction to the culture and civilization of the German-speaking peoples. Four hours (including lab); two terms

Prerequisite: OAC German or permission of the Department

GERMAN 1Z06 BEGINNER'S INTENSIVE GERMAN

This course is designed to give students the ability to express themselves reasonably well in German. In addition, they will acquire the basics of German grammar and considerable reading skill. Small tutorial groups will ensure maximum participation by each student. This course is enhanced by a CALL (Computer-Aided Language Learning) module. Five hours (including lab practice); two terms

Antirequisite: OAC German

Enrolment is limited.

Students with prior knowledge of the language as determined by an interview may be required to enrol in an appropriate alternative.

GERMAN 2AA3 INTRODUCTION TO GERMAN LITERATURE

Lectures outline the development of German literature against its cultural background and readings of literary texts.

Three hours; one term

Prerequisite: GERMAN 1B06 or concurrent registration in GERMAN 2Z06

GERMAN 2E03**GERMAN GRAMMAR**

A systematic review of grammar; this knowledge will be applied to writing short essays and translations.

Three hours; one term

Prerequisite: One of GERMAN 1B06 or 2Z06

GERMAN 2G03**ORAL PRACTICE IN GERMAN**

The course develops the skills of speaking, writing and listening comprehension. Emphasis will be on fluent and correct expression in dialogue situations.

Three hours; one term

Prerequisite: GERMAN 1B06 or 2Z06

Priority is given to students in a programme requiring German. Students with native or near native fluency may be required to enrol in an appropriate alternative.

Enrolment is limited.

GERMAN 2Z06**INTERMEDIATE GERMAN**

A course designed to further proficiency in spoken and written German. The course makes extensive use of unedited German materials for listening comprehension and reading. This course is enhanced by a CALL (Computer-Aided Language Learning) module.

Four hours (including lab practice); two terms

Prerequisite: GERMAN 1Z06

Antirequisite: GERMAN 1B06

GERMAN 3B03**GERMAN LITERATURE IN****THE CLASSIC-ROMANTIC AGE**

The development of German literature and thought from the period of *Sturm and Stress* and German Classicism through the Romantic age, with close readings from Goethe and Schiller to Eichendorff and Heine.

Three lectures; one term

Prerequisite: GERMAN 2AA3

Offered in alternate years.

GERMAN 3C03**GERMAN LITERATURE OF THE****NINETEENTH AND TWENTIETH CENTURIES**

A study of authors and literary movements from Realism to the present, with emphasis on shorter prose texts and lyric poetry.

Three lectures; one term

Prerequisite: GERMAN 2AA3

Antirequisite: GERMAN 2A03

GERMAN 3Z03**ADVANCED ORAL AND WRITTEN****LANGUAGE PRACTICE**

A practically-oriented course designed to increase the student's facility in using German as a means of oral and written communication. Students will be required to express their views on a variety of topics in written assignments and subsequent class discussions. Extensive reading will expand the students' vocabulary and improve general language ability.

Three lectures; one term

Prerequisite: GERMAN 2E03

GERMAN 4A03**TOPICS IN GERMAN LITERATURE II**

Topics include: Modern Literature and the Arts; History of the German Language. Consult with the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Nine units of German above Level I, including GERMAN 2AA3

GERMAN 4A03 may be repeated, if on a different topic, to a total of six units.

GERMAN 4CC3**TRANSLATION: TECHNIQUES AND PRACTICE**

Practice in the translation of texts of a literary and non-literary nature. (English to German and German to English). This course makes use of a special Annotated Screens programme available in the Humanities Computer Laboratory.

Three hours; one term

Prerequisite: GERMAN 3Z03

GERMAN 4I13**INDEPENDENT STUDY**

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Prerequisite: 12 units of German above Level I and permission of the Department

GERMAN 4T03**TOPICS IN GERMAN LITERATURE I**

Previous topics include: German Symbolism and Expressionism; German Literature 1933-45; The So-Called Inner Emigration. Consult with the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Nine units of German above Level I, including GERMAN 2AA3

GERMAN 4T03 may be repeated, if on a different topic, to a total of six units.

HISPANIC STUDIES ...

Courses and programmes in Hispanic Studies are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

Notes:

1. Students should note that the Department has classified its Hispanic language courses under the following categories:
Introductory Level Language Course
 HISPANIC 1Z06
Intermediate Level Language Courses
 HISPANIC 1A06, 2A03, 2Z06
Advanced Level Language Courses
 HISPANIC 3D03, 3DD3, 4G03
2. Not all courses are offered on an annual basis. Students should consult the timetable for available courses.

Courses

HISPANIC 1A06 INTERMEDIATE SPANISH

A course designed to further the student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be upon composition, expansion of vocabulary, and the more advanced aspects of the language.
 Three hours; two terms
 Prerequisite: OAC Spanish or permission of the Department
 Antirequisite: HISPANIC 2Z06
Enrolment is limited.
Students with prior knowledge of the language as determined by a placement test may be required to enrol in an appropriate alternative.

HISPANIC 1Z06 BEGINNER'S INTENSIVE SPANISH

A course designed to cover the rudiments of the language in both written and oral forms. This course also provides preparation for more advanced work in Spanish. This course is enhanced by a CALL (Computer-Aided Language Learning) module.
 Four hours (including lab practice); two terms
 Antirequisite: OAC Spanish or equivalent
Enrolment is limited.
Students with prior knowledge of the language as determined by a placement test may be required to enrol in an appropriate alternative.

HISPANIC 2A03 LANGUAGE PRACTICE I

A course devoted to the expansion of vocabulary, the improvement of comprehension, and the achievement of greater confidence and versatility in the language by using different and creative forms of communication.
 Three hours; one term
 Prerequisite: HISPANIC 1A06; or credit in or concurrent registration in HISPANIC 2Z06; or permission of the Department
Not available to students who have native fluency in Spanish.

HISPANIC 2B03 INTRODUCTION TO SPANISH LITERATURE AND CIVILIZATION

A survey of Spanish literature from the Middle Ages to the present. Discussions will bring into focus the historical, intellectual and aesthetic context in which this literature flourished.
 Three lectures; one term
 Prerequisite: HISPANIC 1A06 or 1Z06

HISPANIC 2L03 SPANISH AMERICAN LITERATURE AND CIVILIZATION

A survey of Spanish American literature from the fifteenth century to the present. The most significant cultural currents and representative writers will be studied with the purpose of understanding the development of literary genres and the cultural, political and social context in which they flourished.
 Three lectures; one term
 Prerequisite: HISPANIC 1A06 or 1Z06

HISPANIC 2Z06 INTERMEDIATE SPANISH

A course designed to further the student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be upon composition, expansion of vocabulary, and the more advanced aspects of the language.
 Three hours; two terms
 Prerequisite: HISPANIC 1Z06
 Antirequisite: HISPANIC 1A06
Enrolment is limited.

HISPANIC 3D03 LANGUAGE PRACTICE II

The emphasis is on precision, conciseness and other pertinent aspects of the language. Students will prepare business documents such as letters, memos, application forms and résumés and will develop related vocabulary.
 Three lectures; one term
 Prerequisite: HISPANIC 2A03

HISPANIC 3DD3 ADVANCED LANGUAGE PRACTICE

The main objective is to develop the students' abilities in the kinds of writing they are expected to do at university level such as outlines, book reviews and essays.
 Three hours; one term
 Prerequisite: HISPANIC 3D03

HISPANIC 4G03 INTRODUCTION TO TRANSLATION

A course designed to introduce the student to the basic principles of translation from Spanish to English, and from English to Spanish. Practice will be given in comprehension and in précis writing.
 Three hours; one term
 Prerequisite: HISPANIC 3DD3, or permission of the department
 Antirequisite: HISPANIC 4DD3

HISPANIC 4I03 INDEPENDENT STUDY

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area in which the student has demonstrated competence.
 Prerequisite: 12 units of Hispanic Studies above Level I and permission of the Department

HISPANIC 4T03 TOPICS IN SPANISH LITERATURE

Previous topics include: The Enlightenment in Spain. Consult the Department concerning topic to be offered.
 Three lectures; one term
 Prerequisite: Nine units of Hispanic Studies above Level I
HISPANIC 4T03 may be repeated, if on a different topic, to a total of six units.

HISPANIC 4TT3 TOPICS IN SPANISH AMERICAN LITERATURE

Topics may include: The Spanish American Essay, The Spanish American Short Story, The Spanish American Novel. Consult the Department concerning topic to be offered.
 Three lectures; one term
 Prerequisite: Nine units of Hispanic Studies above Level I
HISPANIC 4TT3 may be repeated, if on a different topic, to a total of six units.

ITALIAN ...

Courses and programmes in Italian are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

Notes:

1. Students should note that the Department has classified its Italian language courses under the following categories:
Introductory Level Language Courses
 ITALIAN 1Z06, 1ZZ6
Intermediate Level Language Courses
 ITALIAN 1A06, 2Z06
Advanced Level Language Courses
 ITALIAN 2G03, 3D03, 4A03, 4B03
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.*

ITALIAN 1A06 INTERMEDIATE ITALIAN

An intensive review of the grammatical structures of Italian and an introduction to composition, together with oral practice.
 Four hours; two terms
 Prerequisite: OAC Italian or permission of the Department
 Antirequisite: ITALIAN 2Z06

ITALIAN 1Z06 BEGINNER'S INTENSIVE ITALIAN

An intensive beginner's course designed for students with no prior knowledge of the language. The course gives the student a basic knowledge of Italian grammar and the opportunity to practise the spoken language. This course is enhanced by a CALL (Computer-Aided Language Learning) module.
 Four hours (including lab practice); two terms
 Antirequisite: OAC Italian, or ITALIAN 1ZZ6
Enrolment is limited.
Students who speak or understand an Italian dialect or Standard Italian may not register in this course, but should register in ITALIAN 1ZZ6.

ITALIAN 1ZZ6 BEGINNER'S INTENSIVE ITALIAN FOR DIALECT SPEAKERS

An intensive beginner's course designed for students who understand an Italian dialect or Standard Italian. The course gives the student a basic knowledge of Italian grammar and the opportunity to practise the spoken language. This course is enhanced by a CALL (Computer-Aided Language Learning) module.

Four hours (including lab practice); two terms

Antirequisite: OAC Italian, or ITALIAN 1Z06

Enrolment is limited.

Students with prior knowledge of the language as determined by a placement test may be required to enrol in an appropriate alternative.

ITALIAN 2F03 CONTEMPORARY ITALIAN LITERATURE AND CULTURE

This course will study Italian literature from Fascism and the Second World War, focusing on Neorealism in literature and film, and on major contemporary authors, from Moravia to Calvino.

Three lectures; one term

Prerequisite: ITALIAN 1A06 or 2Z06

ITALIAN 2G03 ADVANCED GRAMMAR PRACTICE

This course is designed to improve the student's written and oral proficiency through exercises, compositions, and analysis of texts.

Three hours; one term

Prerequisite: ITALIAN 1A06 or 2Z06

Antirequisite: ITALIAN 2A03 or 2D03

ITALIAN 2Z06 ITALIAN GRAMMAR PRACTICE

An intensive review of the grammatical structures of Italian and an introduction to composition, together with oral practice.

Four hours; two terms

Prerequisite: ITALIAN 1Z06 or 1ZZ6

Antirequisite: ITALIAN 1A06

ITALIAN 3D03 COMPOSITION AND STYLISTICS I

An introduction to the study of Italian stylistics through an intensive and systematic analysis of Italian clause, sentence and discourse structure in the written and spoken language.

Three hours; one term

Prerequisite: ITALIAN 2A03, 2D03, or 2G03

ITALIAN 3N03 EARLY TWENTIETH-CENTURY ITALIAN LITERATURE AND CULTURE

This course will study Italian literature and drama with emphasis on D'Annunzio, Svevo, Pirandello and the Hermetic school of poetry.

Three lectures; one term

Prerequisite: ITALIAN 1A06 or 2Z06

ITALIAN 3R03 DANTE

This course will focus on the *Divina Commedia*, with special reference to its historical and literary significance.

Three lectures; one term

Prerequisite: ITALIAN 1A06 or 2Z06

Antirequisite: MOD LANG 3B03

ITALIAN 3RR3 BOCCACCIO AND PETRARCH

A study of Petrarch's *Canzoniere* and Boccaccio's *Decameron*.

Three lectures; one term

Prerequisite: ITALIAN 1A06 or 2Z06

Antirequisite: MOD LANG 3B03

ITALIAN 4A03 COMPOSITION AND STYLISTICS II

An advanced course in composition and stylistics designed to develop the student's skills in critical writing and oral expression.

Three hours; one term

Prerequisite: ITALIAN 3D03

Antirequisite: ITALIAN 4M03

ITALIAN 4B03 INTRODUCTION TO TRANSLATION

A course designed to introduce the students to the basic techniques of translation from English to Italian and from Italian to English, including comparative stylistics. Translation materials will be selected from contemporary literary and journalistic sources.

Three hours; one term

Prerequisite: ITALIAN 3D03

ITALIAN 4G03 NINETEENTH-CENTURY ITALIAN LITERATURE AND CULTURE

This course will study Italian poetry, fiction and drama, with special emphasis on the works of Foscolo, Manzoni, Leopardi, Carducci, Verga, Fogazzaro and Pascoli.

Three lectures; one term

Prerequisite: ITALIAN 1A06 or 2Z06

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 4R03 RENAISSANCE

A study of the literature of the Renaissance.

Three lectures; one term

Prerequisite: ITALIAN 1A06 or 2Z06

Antirequisite: MOD LANG 3SS3

JAPANESE ...

Japanese courses are administered within the Department of Modern Languages of the Faculty of Humanities. The Combined Honours in Japanese Studies and Another Subject Programme is coordinated by an interdisciplinary Committee of Instruction. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

Committee of Instruction**Acting Director**

David Barrett (History)

Koichi Shinohara (Religious Studies)

Tsuneko Iwai (Modern Languages)

Eiko Virginia Ariga (Modern Languages)

Kenneth S. Chan (Economics)

J.S. Chang (Engineering Physics)

Phyllis Granoff (Religious Studies)

K. L. Liaw (Geography and Geology)

Richard Stubbs (Political Science)

Françoise Winnick (Chemistry)

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**

This course is designed to give students basic listening, speaking, reading and writing skills in Japanese. Exercise in the computerized language laboratory are an essential part of this course.

Five hours (including lab practice); two terms

Students with prior knowledge of the language as determined by a placement test may be required to enrol in an appropriate alternative.

JAPANESE 2Z06 INTERMEDIATE INTENSIVE JAPANESE

This course aims to develop students' communicative skills in Japanese through conversational exercises, creative writing and other practice speaking, listening, reading and writing. Emphasis will be placed upon refining the knowledge of grammar and expanding vocabulary (kanji characters).

Four hours; two terms

Prerequisite: JAPANESE 1Z06, with a grade of at least B-, or permission of the instructor

JAPANESE 3B03 BUSINESS JAPANESE

A study of Japanese language in a context of culture, values and customs of the Japanese business world. Emphasis on oral and aural proficiency in Japanese.

Three hours; one term

Prerequisite: JAPANESE 2Z06

Enrolment is limited.

JAPANESE 3ZZ6 ADVANCED INTENSIVE JAPANESE

This course continues the study of written and spoken Japanese begun in JAPANESE 1Z06 and 2Z06. Particular attention will be focused on the development of the following language skills: conversational practice based on situational drills; study of advanced grammar structures; development of reading skills based on selected literary materials; writing short essays; continued study of kanji.

Four hours; two terms

Prerequisite: JAPANESE 2Z06, or permission of the instructor

JAPANESE 4L03 JAPANESE LITERATURE

Readings in the original of contemporary Japanese prose and poetry (Haiku and Tanka). Previous readings include: Murakami Haruki, Akutagawa, Itsumi Hiroyuki, Oe Kenzaburo, Toson, Siki, Basho. Consult the Department for readings to be offered.

Three lectures; one term

Prerequisite: JAPANESE 3ZZ6, or permission of the instructor

JAPANESE 4Z03 ADVANCED PRACTICE IN JAPANESE

This course is designed to improve and increase the student's spoken and written proficiency through selected readings, exercises and class discussions.

Four hours; one term

Prerequisite: JAPANESE 3ZZ6, or permission of the instructor

JAPANESE STUDIES ...

JAPAN ST 2C03 ASIA-PACIFIC ECONOMIES

Economic conditions and factors influencing economic growth in selected countries in the Asia-Pacific region. Topics include government policies related to exchange rates and trade and development, as well as the Japanese style of management, the bonus system and job tenure.

Three hours; one term

Prerequisite: ECON 1A06 with a grade of at least C-

Cross-list: ECON 2C03

JAPAN ST 2P06 JAPANESE CIVILIZATION

Introduction to Japanese history, society, and culture through a study of religious traditions, literature, and art of Japan.

Two lectures, one tutorial; two terms

Prerequisite: Registration in Level II and above

Cross-list: RELIG ST 2P06

JAPAN ST 3B03 MODERN JAPAN

A survey of 19th- and 20th-century Japan, with emphasis on political developments, social change, and Japan's relations with East Asia and the West.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: HISTORY 3B03

JAPAN ST 3E03 JAPANESE RELIGION

A study of Japanese religion and how it functions 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 and above. One of RELIG ST 1B06 or 2MM6 or JAPAN ST 2P06 is recommended.

Cross-list: RELIG ST 3E03

JAPAN ST 3H03 STORYTELLING IN EAST ASIAN RELIGIONS

An in-depth study of selected examples of story literature in China and Japan with attention to the way religion is represented in them.

Two lectures, one tutorial; one term

Cross-list: RELIG ST 3H03

JAPAN ST 3JJ3 GEOGRAPHY OF JAPAN

Human and physical geography of Japan with emphasis on historical, international, demographic and economic aspects.

Three lectures; one term

Prerequisite: GEOG 1B06 or registration in a Japanese Studies programme

Cross-list: GEOG 3JJ3

JAPAN ST 3S03 ISSUES IN ASIAN RELIGIOUS THOUGHT: EAST ASIA

Readings in East Asian religious texts in translation will centre around themes such as culture vs. nature, virtue vs. power, social responsibility vs. personal cultivation, bookish learning vs. meditation.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level III and above

Cross-list: ARTS&SCI 3S03, RELIG ST 3S03

JAPAN ST 3UU3 CH'AN AND ZEN BUDDHISM

An examination of Ch'an and Zen Buddhist myth, history, doctrine, monastic, culture, and ritual practice.

Two lectures, one tutorial; one term

Cross-list: RELIG ST 3UU3

JAPAN ST 4A06 GUIDED READING IN JAPANESE STUDIES

Independent study on an approved topic. A major essay and/or final examination will be required.

Two terms

Prerequisite: Registration in Level III or IV of a Japanese Studies programme and permission of the Director

JAPAN ST 4B03 GUIDED READING IN JAPANESE STUDIES

Independent study on an approved topic. A research essay and/or final examination will be required.

One term

Prerequisite: Registration in Level III or IV of a Japanese Studies programme and permission of the Director

LINGUISTICS ...

Linguistics courses and programmes are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

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 1A06 THE STUDY OF LANGUAGE

An introduction to the study of linguistics—the scientific study of language and communication. The main topics covered in the course are: background concepts in linguistics; the traditional sub-fields (phonetics/phonology, morphology, syntax and semantics); historical linguistics; linguistic typology, sociolinguistics, psycholinguistics and language acquisition.

Two lectures, one tutorial; two terms

Antirequisite: ENGLISH 3J06

LINGUIST 2A03 THE MAKING OF THE EUROPEAN LINGUISTIC LANDSCAPE

The history of language use in Europe from antiquity to the present day. The course will illustrate the different functions of language in social life and the growth of national, standardized idioms. It will also serve as an introduction to the history of linguistics as a discipline.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: ANTHROP 2AL3

LINGUIST 2AA3 THE ORIGIN AND DEVELOPMENT OF THE EUROPEAN LANGUAGES

The phonetic, morphological, syntactic and lexical structures of Indo-European languages and the role of these features in the genesis and development of English, German, French, Russian, Italian and Spanish and other Indo-European-based languages of Europe.

Three lectures; one term

Prerequisite: LINGUIST 1A06 or 2A03

Antirequisite: ANTHROP 2AA3, LINGUIST 3B03

LINGUIST 2LL3 INTRODUCTION TO TYPOLOGY

A study of the diversity of languages of the world and of three major classifications of languages (genetic, areal and typological) with concentration on typological classification: language universals, cross-linguistic analysis of grammatical systems and methods of typological descriptions of languages.

Three hours (lectures and discussion); one term

Prerequisite: LINGUIST 1A06 or permission of the Department

Antirequisite: ANTHROP 2LL3

LINGUIST 3B03 PSYCHOLINGUISTICS

The course discusses biological foundations of language and the way language is represented and processed in the brain (in norm and pathology). Special attention is paid to methods of psycho- and neurolinguistic research and to their connection with theoretical linguistics.

Three hours (lectures and discussion); one term

Prerequisite: LINGUIST 3I03 or 3M03, or permission of the Department

LINGUIST 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 (lectures and discussions); one term

Prerequisite: LINGUIST 2LL3, or permission of the Department

Antirequisite: ANTHROP 3I03

LINGUIST 3I13 SEMANTICS

The study of patterns of meaning in language; a critical survey of theories and issues.

Three lectures; one term

Prerequisite: LINGUIST 3I03 or 3M03

Antirequisite: ANTHROP 3I13

218 MODERN LANGUAGES

LINGUIST 3M03 MORPHOLOGY

The study of word formation in the languages of the world; a critical survey of current theories and issues.

Three lectures; one term

Prerequisite: LINGUIST 2LL3

Antirequisite: ANTHROP 3M03

LINGUIST 3P03 PRAGMATICS AND DISCOURSE

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.

Prerequisite: LINGUIST 1A06 or FRENCH 2H03

Antirequisite: ANTHROP 3PL3

LINGUIST 3X03 SOCIOLINGUISTICS

An introduction to sociolinguistics with particular emphasis on the social situation of the major European languages. Topics covered include linguistic variation (geographic, social, situational), social and ethical issues (language and sex/gender, language and disadvantage/power) and pragmatics.

Three lectures; one term

Prerequisite: LINGUIST 2A03

Antirequisite: ANTHROP 3X03

LINGUIST 4B03 APPLIED LINGUISTICS

The course is designed to acquaint the student with the contributions that the linguist, psycholinguist, sociolinguist can make to the planning, organization and implementation of a language-teaching methodology. CAI/CALL will be one of the methodologies investigated with particular emphasis.

Three lectures; one term

Prerequisite: Registration in Level III or IV of a Linguistics programme, or permission of the Department

Antirequisite: ANTHROP 4BL3

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 lectures, one lab.; one term

Prerequisite: Registration in Level III or IV of a Linguistics programme, or permission of the Department

LINGUIST 4I13 INDEPENDENT STUDY

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Prerequisite: 18 units of Linguistics above Level I and permission of the Department

LINGUIST 4X03 TOPICS IN SOCIOLINGUISTICS

Topics include: Languages in Contact; Standard Languages; Gender and Language.

Seminar (two hours); one term

Prerequisite: LINGUIST 3X03

LINGUIST 4X03 may be repeated, if on a different topic, to a total of six units.

LINGUIST 4XX3 TOPICS IN TYPOLOGY

Topics include: Linguistic Typology; Advanced Philology.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a Linguistics programme, or permission of the Department

LINGUIST 4XX3 may be repeated, if on a different topic, to a total of six units.

MODERN LANGUAGES ...

Former Modern Languages courses are now listed as Comparative Literature courses. Students having credit in Modern Languages courses may not take the corresponding course under the Comparative Literature designation. To determine the new Comparative Literature designation of a former Modern Language course, please see below. To determine the former Modern Language designation of a Comparative Literature course, please see *Comparative Literature* in the *Course Listings* section of this Calendar.

Former Course	New Course	Course Title
MOD LANG 2A03	COMP LIT 2C03	Introduction to Literary Studies
MOD LANG 2B03	COMP LIT 2B03	Survey of Italian Literature
MOD LANG 2H03	COMP LIT 2HH3	Masterworks of German Literature
MOD LANG 3A03	COMP LIT 3A03	Literature and Politics in Germany 1914-1945
MOD LANG 3D03	COMP LIT 3B03	Russian Drama Since 1800
MOD LANG 3G03	COMP LIT 3G03	German Drama

MOD LANG 3J03	COMP LIT 3F03	The Metamorphoses of Don Juan
MOD LANG 3JJ3	COMP LIT 3FF3	The Literature of the Delinquent
MOD LANG 3K03	COMP LIT 3K03	20th-Century Russian Literature
MOD LANG 3KK3	COMP LIT 3KK3	Contemporary Russian Literature
MOD LANG 3L03	COMP LIT 3LL3	Survey of Spanish Theatre
MOD LANG 3P03	COMP LIT 3P03	Literature and Politics in Spanish America

MOD LANG 3R03	COMP LIT 3S03	19th-Century Russian Literature I
MOD LANG 3RR3	COMP LIT 3SS3	19th-Century Russian Literature II
MOD LANG 3T03	COMP LIT 3V03	Topics in National Cinemas I
MOD LANG 3TT3	COMP LIT 3VV3	Topics in National Cinemas II
MOD LANG 3W03	COMP LIT 3W03	German Women Writers
MOD LANG 4T03	COMP LIT 4T03	Special Topics

POLISH ...

Courses in Polish are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

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.

POLISH 1Z06 BEGINNER'S POLISH

An introduction to basic conversational and written Polish, teaching the skills of listening, speaking, reading and writing.

Five hours (lectures and lab practice); two terms

Students with prior knowledge of the language, as determined by a placement test, may be required to enrol in an appropriate alternative.

Alternates with POLISH 2Z06.

POLISH 2Z06 INTERMEDIATE POLISH

A course designed to further the student's command of oral and written Polish. It will concentrate on developing conversational skills, as well as studying basic grammatical structures and rules of composition.

Four hours; two terms

Prerequisite: POLISH 1Z06

Alternates with POLISH 1Z06.

RUSSIAN ...

Courses and programmes in Russian are administered within the Department of Modern Languages of the Faculty of Humanities. For information and counselling, please contact the departmental office, Togo Salmon Hall, Room 611.

Notes:

- Students should note that the Department has classified its Russian language courses under the following categories:

Introductory Level Language Course

RUSSIAN 1Z06

Intermediate Level Language Course

RUSSIAN 2C06

Advanced Level Language Courses

RUSSIAN 3G03, 3GG3, 4G03, 4GG3

- 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.

RUSSIAN 1Z06 BEGINNER'S INTENSIVE RUSSIAN

An intensive beginner's course designed for students with no prior knowledge of the language. This course gives the student a basic knowledge of Russian grammar, while emphasizing spoken Russian. The course is enhanced by a CALL (Computer-Aided Language Learning) module.

Four hours (including lab practice); two terms

Students with prior knowledge of the language as determined by a placement test may be required to enrol in an appropriate alternative.

RUSSIAN 2B03 RUSSIAN SHORT STORY

Reading of short stories in the original language to develop comprehension, writing and speaking skills.

Three lectures; one term

Prerequisite: RUSSIAN 1Z06

RUSSIAN 2C06 INTERMEDIATE LANGUAGE STUDY

Intermediate Russian will continue the study of Russian grammar for both the conversational and written language. 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.

Four hours; two terms

Prerequisite: OAC Russian or RUSSIAN 1Z06

RUSSIAN 3G03 ADVANCED LANGUAGE PRACTICE I

This course is designed to enhance the student's writing and reading skills in Russian through readings of narrative texts, writings of short compositions and translations from Russian into English and from English into Russian.

Three hours; one term

Prerequisite: RUSSIAN 2C06

Antirequisite: RUSSIAN 3C06

RUSSIAN 3GG3 INTENSIVE CONVERSATIONAL PRACTICE I

This course is designed to increase the student's ability to converse in Russian and to understand various modes of spoken Russian. The oral assignments and class discussions shall be based on readings of newspaper articles, viewing of films and video recordings of newscasts.

Three hours; one term

Prerequisite: RUSSIAN 2C06

Antirequisite: RUSSIAN 3C06

RUSSIAN 4G03 ADVANCED LANGUAGE PRACTICE II

The study of Russian syntax and advanced composition. Reading of selected texts from contemporary literature and magazines for the purpose of language study.

Three hours; one term

Prerequisite: RUSSIAN 3G03

Antirequisite: RUSSIAN 4C06

RUSSIAN 4GG3 INTENSIVE CONVERSATIONAL PRACTICE II

This course concentrates on the development of oral skills, reading of selected dialogues, short plays and the viewing of Russian films and videotapes.

Three hours; one term

Prerequisite: RUSSIAN 3GG3

Antirequisite: RUSSIAN 4C06

RUSSIAN 4I13 INDEPENDENT STUDY

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Prerequisite: 12 units of Russian above Level I and permission of the Department

RUSSIAN 4T03 TOPICS IN RUSSIAN LITERATURE I

Previous topics include: 19th-Century Lyric Poetry, 20th-Century Short Story, 19th-Century Drama. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: RUSSIAN 2C06

RUSSIAN 4T03 may be repeated, if on a different topic, to a total of six units.

RUSSIAN 4TT3 TOPICS IN RUSSIAN LITERATURE II

Previous topics include: Soviet Plays of the 1920's. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: RUSSIAN 2C06

RUSSIAN 4TT3 may be repeated, if on a different topic, to a total of six units.

MOHAWK

(SEE INDIGENOUS STUDIES, MOHAWK)

MOLECULAR BIOLOGY

The Molecular Biology courses are administered within the Faculty of Science through a Committee of Instruction, and draw on the Departments Biochemistry, Biology and Pathology and the McMaster Institute for Molecular Biology and Biotechnology. Information and counselling may be obtained from the Programme Coordinator.

Courses If no prerequisite is listed, the course is open.

MOL BIOL 4F03 MOLECULAR INVESTIGATIONS IN DEVELOPMENT

Students will investigate a topical problem in developmental biology, make two presentations, and write a research proposal. The research is self- and group-directed.

Three lectures; one term

Prerequisite: BIOLOGY 3M03 or 3NN3; or permission of the instructor. Application for permission must be received by March 31st of the previous year. *Enrolment is limited.* See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

MOL BIOL 4H03 MOLECULAR BIOLOGY OF CANCER

Cancer at the cellular and molecular level. Topics include: properties of cancer cells, activation of proto-oncogenes, function of oncoproteins, transgenic mouse models, and tumour viruses.

Two lectures; one tutorial; one term

Prerequisite: One of BIOLOGY 3H03, 3HH3, BIOCHEM 3B03, 3G03; or permission of the instructor

MOL BIOL 4J03 MOLECULAR IMMUNOLOGY

This advanced course applies small group based learning to immunological problems. Problems concern development of immunoassays, resistance to infection and immunity in health and disease

One session (two hours) per week, one tutorial; one term

Prerequisite: One of BIOLOGY 4I03, 3X03 and one of BIOLOGY 3H03, BIOCHEM 3B03, 3G03; or permission of the instructor

Cross-list: BIOCHEM 4J03

MOL BIOL 4R09 SENIOR THESIS

A thesis based on a research project in molecular biology supervised or co-supervised by a member of the Department of Biology or the Department of Biochemistry.

Prerequisite: Registration in Level IV Honours Molecular Biology and permission of the Course Coordinator. Application for permission must be received by March 31st of the previous year. Normally, a CA of at least 8.5 is required.

Antirequisite: BIOLOGY 4F06; BIOCHEM 4L03, 4P03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

MULTIMEDIA**Assistant Professors**

Joanne Buckley/B.A., M.A., Ph.D. (*Western Ontario*)

Andrew Mactavish/B.A. (*Mount Saint Vincent*), M.A. (*Dalhousie*), PhD. (*Alberta*)

Geoffrey Rockwell/B.A. (*Haverford College*), M.A., Ph.D. (*Toronto*)

Courses If no prerequisite is listed, the course is open.

MMEDIA 1A03 INTRODUCTION TO COMPUTERS IN THE HUMANITIES

An introduction to issues in Humanities Computing. Students will study the history and present state of computing and information technology with particular attention given to issues around communication and electronic texts. Students will also learn skills such as word processing, electronic mail, electronic textbases, how to browse the Internet and how to create a WWW page.

One lecture (two hours); one tutorial; one term

Antirequisite: HUMAN 2E03

Enrolment is limited.

MMEDIA 1B03 THE DIGITAL IMAGE

An introduction to the critique and creation of digital images. Readings will explore issues concerning the digital image and graphic design for the Internet. Students will be expected to use graphics software and create WWW pages in order to complete design assignments.

One lecture (two hours); one tutorial; one term

Antirequisite: HUMAN 2H03

Enrolment is limited.

MMEDIA 1C03 WRITING IN THE ELECTRONIC AGE

An introduction to grammar and essay composition in the context of new writing technologies. Students will use supplementary writing software, WWW materials, e-mail discussion lists and readings to explore the effects of information technology on communication.

One lecture; one tutorial; one lab; one term

Antirequisite: HUMAN 1A03

Enrolment is limited.

MMEDIA 2A03 INTRODUCTION TO MULTIMEDIA

This course presents arts students with the fundamentals of computer-based multimedia. Students will read about and discuss how to critique multimedia works, create such works, and consider the application of multimedia technology.

One lecture (two hours); one tutorial; one term

Prerequisite: One of MMEDIA 1A03 or 1B03, HUMAN 2E03 or 2H03

Antirequisite: HUMAN 3G03

Enrolment is limited.

MMEDIA 2B03 DIGITAL MEDIA (AUDIO AND VIDEO)

A study of digital media where students will create and critique digital audio and video. Readings will explore the evolution of digital media and the technical and social aspects of digital audio and video.

One lecture (two hours); one tutorial; one term

Prerequisite: One of MMEDIA 1A03 or 1B03, HUMAN 2E03 or 2H03

Enrolment is limited.

MMEDIA 2C06 COMPUTER ARCHITECTURE AND NETWORK SERVICES

Students will study the fundamentals of microcomputers, operating systems, and network systems. Emphases will be on knowledge of the hardware, operating systems and network services used in the area of multimedia. Readings will cover the history of computing, networking, and the Internet.

Two lectures (one hour); one lab (three hours) every other week; two terms
Prerequisite: Registration in Level II of the Combined Honours in Multimedia Programme

Enrolment is limited.

MMEDIA 2D03 ELECTRONIC TEXTS AND THEIR STUDY

An introduction to the fundamentals of computer-assisted text-analysis in the humanities. In the context of humanities research, students will learn to use text-analysis tools and will be introduced to computational linguistics. Students will be expected to work on projects related to another subject.

One lecture (two hours); one tutorial; one term

Prerequisite: One of MMEDIA 1A03, 1B03, 2I03, HUMAN 1A03, 2E03 or 2J03

Antirequisite: HUMAN 3F03

Enrolment is limited.

MMEDIA 2E03 COMPUTER GRAPHICS

This course develops both technical and conceptual aspects of computer drawing using standard computer graphics tools. Students will concentrate on developing drawing abilities through the computer and will be expected to present their work and discuss that of others.

One lecture (one hour); one tutorial (one hour); one hour of independent study; one term

Prerequisite: MMEDIA 1B03 or HUMAN 2H03

Enrolment is limited.

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.

Three lectures; one term

Prerequisite: Registration in Level II or above

Cross-list: ART HIST 2F03

MMEDIA 2G03 INTRODUCTION TO MIDI AND COMPUTER MUSIC

Basic electroacoustic theory; introduction to techniques of digital music composition, emphasizing MIDI applications; computer music notation; aesthetics of music composition. Students will be expected to produce at least one original work. Prior experience with computers and/or music composition is strongly encouraged, though not required. Independent studio work will be required.

Two lectures; one tutorial; one term

Prerequisite: Registration in the Combined Honours in Multimedia Programme

Enrolment is limited.

MMEDIA 2H03 INTRODUCTION TO ANIMATION

This class will begin with an introduction to the history and basic principles of animation. Students will be expected to create a significant work of computer animation in which they display 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: MMEDIA 1B03 or HUMAN 2H03

Enrolment is limited.

MMEDIA 2I03 RHETORIC AND COMMUNICATION IN THE ELECTRONIC AGE

An introduction to the history of rhetoric, the study of classical and electronic examples of oral discourse. Students will analyze the persuasive technique of examples of oral communication collected from print and electronic media. There will be a practicum where students deliver an expository speech with multimedia support.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II or above

Antirequisite: HUMAN 2J03

Enrolment is limited.

MMEDIA 3A03 ADVANCED MULTIMEDIA

A study of multimedia programming, this course expands 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 or HUMAN 3G03

Enrolment is limited.

MMEDIA 3B03 TOPICS IN THE PHILOSOPHY AND HISTORY OF COMPUTING

A seminar in the history and philosophy of computing and communications technology; topics may include: Computers and Culture, The History of Computers and Communications Technology, Computers and Education, and Privacy and the Freedom of Speech in the Electronic Age.

One lecture (two hours); one tutorial; one term

Prerequisite: One of MMEDIA 1A03 or 1C03, HUMAN 1A03 or 2E03

Antirequisite: HUMAN 3A03

MMEDIA 3B03 may be repeated, if on a different topic, to a total of six units.

MMEDIA 3C03 ADVANCED COMPUTER MUSIC

Digital audio workstations, including hard disk recording techniques, computer scoring, and multimedia applications. Students will be responsible for at least one extended original work which may be produced in collaboration with other students in this or another approved course.

Two lectures; one tutorial; one term

Prerequisite: MMEDIA 2G03

Enrolment is limited.

MMEDIA 3D03 TECHNICAL WRITING AND COMMUNICATION

An introduction to technical writing and documentation. Students will explore issues such as audience analysis, the role of jargon and specialized language. Students will be asked to complete a project of their own devising, including a proposal, a final report, and a videotaped presentation.

One lecture (two hours), one tutorial; one term

Prerequisite: One of MMEDIA 1C03, 2I03, HUMAN 1A03 or 2J03

Antirequisite: HUMAN 3B03

Enrolment is limited.

MMEDIA 3E03 HYPERTEXT THEORY

This class will consider the history of hypertext systems and key theoretical issues in the area of hypertext and hypermedia. Students will be expected to try significant hypertext systems and read current theories of hypertext. Assignments will include reviews of hypertexts, presentations, and the creation of a hypertext essay.

One lecture (two hours); one tutorial; one term

Prerequisite: One of MMEDIA 1A03 or 1C03, HUMAN 1A03 or 2E03

MMEDIA 3F03 HUMAN COMPUTER INTERFACE DESIGN

This course explores the history and design of computer interfaces. A variety of design approaches and techniques will be surveyed to understand the relationship between computers and people. Topics such as usability and evaluation of computer interfaces; drama, narrative, and interface; interface and representation; and the politics of interface design will be covered.

One lecture (two hours); one tutorial; one term

Prerequisite: Six units of MMEDIA courses beyond Level I and registration in the Combined Honours in Multimedia Programme

Enrolment is limited.

MMEDIA 4A03 THE MANAGEMENT OF MULTIMEDIA

Multimedia development requires collections of media and teams of developers. Students will study case histories, learn how to build and manage content collections and learn how to lead and participate in team-based multimedia production. Readings will 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 the Combined Honours in Multimedia Programme

MMEDIA 4B03 SENIOR THESIS PROJECT

The Senior Thesis Project provides students with an opportunity to pursue individual advanced multimedia projects under the supervision of a Thesis Committee. Students will propose a multimedia project and have it approved by the Multimedia Programme Committee. Students will be expected to present their completed project publicly.

Prerequisite: Registration in Level IV of the Combined Honours in Multimedia Programme

MMEDIA 4C03 COMPUTERS AND EDUCATION

This class will survey the history of instructional technology and uses of computers in education. Students will be expected to review instructional materials in their field, and to create, evaluate, and present an instructional application. Students will also be expected to read critics of technology and discuss the effects of technology on education.

One lecture (two hours); one tutorial; one term
Prerequisite: MMEDIA 3A03

MMEDIA 4D03 VIRTUAL REALITY AND THE DESIGN OF SPACE

This course will introduce students to the design of three-dimensional spaces and to theories of architecture as applied to virtual reality. Computer-Aided Design (CAD) software will be used in order to complete projects related to other subjects. Projects might include the design of fictional spaces, sculptural objects, dramatic settings, or archaeological re-creations.

One lecture (two hours); one tutorial; one term
Prerequisite: Registration in Level IV of the Combined Honours in Multimedia Programme

Enrolment is limited.

MUSIC

Courses and programmes in Music are administered within the School of Art, Drama and Music of the Faculty of Humanities.

Courses *If no prerequisite is listed, the course is open.*

MUSIC 1A06 INTRODUCTION TO MUSIC

An introductory survey of Western art music from ancient times to the present. The historical development of styles and genres within major music periods. Instruction in elementary theory. No previous musical knowledge required. Three lectures; two terms

Antirequisite: Registration in Honours Music

MUSIC 1B06 HISTORY OF WESTERN MUSIC (c. 500-1800)

A survey of medieval, renaissance, baroque and classical music. Includes consideration of performance practices, and influences of the other arts and of socio-political developments.

Three lectures, one tutorial; two terms
Prerequisite: Registration in a Music programme; or MUSIC 1A06 or permission of the School of Art, Drama and Music

MUSIC 1CC3 HARMONY

The analysis and writing of functional harmony. Includes study of music by J.S. Bach and others.

Two lectures; two terms
Prerequisite: Registration in a Music programme, or qualifying tests

MUSIC 1D03 AURAL SKILLS

Sight-singing and dictation.

Two lectures, one lab; two terms
Prerequisite: Registration in a Music programme, or qualifying tests

MUSIC 1E06 SOLO PERFORMANCE

Intensive study of the technique and repertoire of any orchestral instrument, piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

12 one-hour meetings per term; two terms
Prerequisite: Registration in a Music programme or permission of the School of Art, Drama and Music
Antirequisite: MUSIC 1E03

Lesson fees are charged to students taking MUSIC 1E06 if the course is not a specific requirement for their music degree programme.

MUSIC 1G03 ENSEMBLE PERFORMANCE

McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.

Prerequisite: Successful audition required

MUSIC 2AA3 POPULAR MUSIC

A study of 20th-century popular music from the late 1940's to the present. Topics include: rhythm and blues (Chuck Berry), hard rock (Led Zeppelin), and punk (Sex Pistols).

Three lectures; one term
Prerequisite: Registration in Level II or above

MUSIC 2B03 HISTORY OF WESTERN MUSIC (c. 1800-1914)

A survey of romantic and postromantic music.

Three lectures; one term
Prerequisite: MUSIC 1B06
Antirequisite: MUSIC 2B06

MUSIC 2BB3 HISTORY OF WESTERN MUSIC (c. 1914 TO THE PRESENT)

A survey of 20th-century music.

Three lectures; one term
Prerequisite: MUSIC 2B03 or 2B06
Antirequisite: MUSIC 3Y03

MUSIC 2C03 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.

Two lectures, term one; one lecture, term two
Prerequisite: Registration in a Music programme, or qualifying tests

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 programme, or qualifying tests

MUSIC 2E06 SOLO PERFORMANCE

A continuation of MUSIC 1E06.

12 one-hour meetings per term; two terms
Prerequisite: MUSIC 1E03 or 1E06, registration in a Music programme or permission of the School of Art, Drama and Music.
Lesson fees are charged to students taking MUSIC 2E06 if the course is not a specific requirement for their music degree programme.

MUSIC 2G03 ENSEMBLE PERFORMANCE

McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.

Prerequisite: MUSIC 1G03 and successful audition

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 3AA3 ELEMENTARY MUSIC EDUCATION

A survey of elementary music education methods such as those of Kodály, Orff and Suzuki.

Three lectures; one term
Prerequisite: MUSIC 1A06 or 18 units of Music

MUSIC 3B03 TOPICS IN MUSIC HISTORY: MEDIEVAL AND/OR RENAISSANCE MUSIC

Previous topics include: Gregorian chant, The Renaissance Madrigal. Consult the School of Art, Drama and Music concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: MUSIC 2B03 or 2B06, registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3BB3.

MUSIC 3B03 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

MUSIC 3BB3 TOPICS IN MUSIC HISTORY: MUSIC OF THE ROMANTIC ERA

Previous topics include: Liszt's Symphonic Poems, 19th-Century Piano Music. Consult the School of Art, Drama and Music concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: MUSIC 2B03 or 2B06, registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3B03.

MUSIC 3BB3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

MUSIC 3C03 TONAL COUNTERPOINT

The writing and analysis of tonal counterpoint in Baroque style. Includes study of music by major composers of the 17th and early 18th centuries.

Seminar (two hours); one term
Prerequisite: MUSIC 2C03 and 2CC3, registration in Honours Music
Enrolment is limited.

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 2E03 or 2E06
Antirequisite: MUSIC 3E06

Lesson fees are charged to students taking MUSIC 3E03 if the course is not a specific requirement for their music degree programme.

MUSIC 3E06 SOLO PERFORMANCE

A continuation of MUSIC 2E06.
12 one-hour meetings per term; two terms
Prerequisite: MUSIC 2E03 or 2E06
Antirequisite: MUSIC 3E03

Lesson fees are charged to students taking MUSIC 3E06 if the course is not a specific requirement for their music degree programme.

MUSIC 3G03 ENSEMBLE PERFORMANCE

McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.

Prerequisite: MUSIC 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 and 2H03 and registration in Honours Music
Offered in alternate years.
Enrolment is limited.

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 and 2D03 and registration in a Music programme

MUSIC 3K03 BRASS METHODS

A study of the basic techniques of playing brass instruments. Brass literature for various educational levels. No previous study of brass required. The instruments studied differ from those studied in MUSIC 4K03.

Two lectures, one lab; one term
Prerequisite: Registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4K03.
Enrolment is limited.

MUSIC 3L03 WOODWIND METHODS

A study of the basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. No previous study of woodwinds required. The instruments studied differ from those studied in MUSIC 4L03.

Two lectures, one lab; one term
Prerequisite: Registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4L03.
Enrolment is limited.

MUSIC 3M03 STRING METHODS

A study of the basic techniques of playing string instruments. String literature for various educational levels. No previous study of strings required. The instruments studied differ from those studied in MUSIC 4M03.

Two lectures; two terms
Prerequisite: Registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4M03.
Enrolment is limited.

MUSIC 3N03 VOCAL METHODS

A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral Literature. No previous study of voice required. Techniques and materials focus on the primary and junior levels.

Two lectures; one term
Prerequisite: Registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4N03.
Enrolment is limited.

MUSIC 3O03 CONDUCTING

Fundamental conducting techniques applied to works selected from the standard repertoire.

Three lectures; one term
Prerequisite: MUSIC 2D03 and registration in Honours Music or permission of the School of Art, Drama and Music
Enrolment is limited.

MUSIC 3P03 PERCUSSION METHODS

A study of the basic techniques of playing percussion instruments. Percussion literature for various educational levels. No previous study of percussion required.

Two lectures; one term
Prerequisite: Registration in Honours Music or permission of the School of Art, Drama and Music
Antirequisite: MUSIC 4P03
Enrolment is limited.

MUSIC 3R03 RESEARCH METHODS AND BIBLIOGRAPHY

An examination of the major reference and bibliographic sources. Historical, analytical, and critical methods of research.

Two lectures; one term
Prerequisite: MUSIC 2B06 or 2B03 and 2BB3, and registration in Honours Music
Offered in alternate years.
Enrolment is limited.

MUSIC 3T03 CANADIAN MUSIC

A historical survey of music in Canada, in the context of social and political developments, from c. 1600 to the present.

Two lectures, one tutorial; one term
Prerequisite: Registration in Level II or above
Offered in alternate years.

MUSIC 3U03 JAZZ

An historical survey of jazz, focusing on selected performers and arrangers.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II or above

MUSIC 3V03 MUSIC EDUCATION SEMINAR

A study of the philosophical, psychological and sociological foundations of music education, leading to the formation of a personal philosophy of music education.

Seminar (two hours); one term
Prerequisite: Registration in Level III or IV of an Honours Music programme
Offered in alternate years.
Enrolment is limited.

MUSIC 4B03 TOPICS IN MUSIC HISTORY: BAROQUE AND/OR CLASSICAL MUSIC

Previous topics include: Choral music of Bach and Handel, Beethoven's Piano Sonatas. Consult the School of Art, Drama and Music concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: MUSIC 2B03 or 2B06, registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4BB3.

MUSIC 4B03 may be repeated, if on a different topic, to a total of six units.
Enrolment is limited.

MUSIC 4BB3 TOPICS IN MUSIC HISTORY: MUSIC OF THE 20TH CENTURY

Previous topics include: The Evolution of the Avant-garde, Shostakovich and the Soviet Union. Consult the School of Art, Drama and Music concerning topic to be offered.

Seminar (two hours); one term
Prerequisite: MUSIC 2BB3 or 3Y03 and registration in Honours Music or permission of the School of Art, Drama and Music
Alternates with MUSIC 4B03.
MUSIC 4BB3 may be repeated, if on a different topic, to a total of six units.
Enrolment is limited.

MUSIC 4C03 HARMONY AND COUNTERPOINT

Advanced studies in the writing an analysis of classical and romantic music.

Seminar (two hours); one term
Prerequisite: MUSIC 3C03 and registration in Honours Music
Offered in alternate years.
Enrolment is limited.

MUSIC 4E03 SOLO PERFORMANCE

A continuation of MUSIC 3E03 or 3E06.

12 one-hour meetings; one term
Prerequisite: MUSIC 3E03 or 3E06
Antirequisite: MUSIC 4E06
Lesson fees are charged to students taking MUSIC 4E03 if the course is not a specific requirement for their music degree programme.

MUSIC 4E06 SOLO PERFORMANCE

A continuation of MUSIC 3E06 or 3E03.

12 one-hour meetings per term; two terms
Prerequisite: MUSIC 3E03 or 3E06
Antirequisite: MUSIC 4E03
Lesson fees are charged to students taking MUSIC 4E06 if the course is not a specific requirement for their music degree programme.

MUSIC 4G03 ENSEMBLE PERFORMANCE
McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.
Prerequisite: MUSIC 3G03 and successful audition

MUSIC 4H03 ANALYSIS
Advanced studies in analysis.
Seminar (two hours); one term
Prerequisite: MUSIC 2H03; either MUSIC 2BB3 or 2CC3 and registration in Honours Music
Offered in alternate years.
Enrolment is limited.

MUSIC 4I03 AESTHETICS AND CRITICISM
Philosophies of music. A discussion of major theories from the ancient Greeks to the present.
Seminar (two hours); one term
Prerequisite: One of MUSIC 2B03, 2B06 or one of MUSIC 2BB3, 3Y03 and registration in Honours Music
Offered in alternate years.
Enrolment is limited.

MUSIC 4K03 BRASS METHODS
A study of the basic techniques of playing brass instruments. Brass literature for various educational levels. No previous study of brass required. The instruments studied differ from those studied in MUSIC 3K03.
Two lectures, one lab; one term
Prerequisite: Registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3K03.
Enrolment is limited.

MUSIC 4L03 WOODWIND METHODS
A study of the basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. No previous study of woodwinds required. The instruments studied differ from those studied in MUSIC 3L03.
Two lectures, one lab; one term
Prerequisite: Registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3L03.
Enrolment is limited.

MUSIC 4M03 STRING METHODS
A study of the basic techniques of playing string instruments. String literature for various educational levels. No previous study of strings required. The instruments studied differ from those studied in MUSIC 3M03.
Two lectures; two terms
Prerequisite: Registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3M03.
Enrolment is limited.

MUSIC 4N03 VOCAL METHODS
A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral literature. No previous study of voice required. Techniques and materials focus on the intermediate and senior levels and beyond.
Two lectures; one term
Prerequisite: Registration in Honours Music, or permission of the School of Art, Drama and Music
Alternates with MUSIC 3N03.
Enrolment is limited.

MUSIC 4O03 ADVANCED CONDUCTING
A continuation of MUSIC 3O03.
One lecture, term one (choral); two lectures, term two (instrumental)
Prerequisite: MUSIC 3O03, and registration in Honours Music or permission of the School of Art, Drama and Music
Enrolment is limited.

MUSIC 4P03 PERCUSSION METHODS
A continuation of MUSIC 3P03.
Two lectures; one term
Prerequisite: MUSIC 3P03, registration in Honours Music, or permission of the School of Art, Drama and Music
Enrolment is limited.

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 programme
Enrolment is limited.
Offered in alternate years.

MUSIC 4S03 SPECIAL STUDIES
Advanced supervised study in any area offered and approved by the School of Art, Drama and Music.

Times to be arranged between the student and instructor; one term
Prerequisite: Registration in Level IV of an Honours Music programme, and permission of the School of Art, Drama and Music. Students requesting this course must submit a written proposal to the School of Art, Drama and Music by April 15th.

MUSIC 4U03 JAZZ IMPROVISATION
Study and performance of jazz improvisations in various styles.
Two hours; one term
Prerequisite: MUSIC 3U03 and permission of the instructor
Offered in alternate years.

MUSIC 4X03 MUSIC OF THE WORLD'S CULTURES
A survey of music traditions of non-European cultures, e.g., far Eastern, Indian, African.
Three lectures; one term
Prerequisite: Registration in Level II or above
Offered in alternate years.

MUSIC 4Z03 COMPOSITION
The composition of various instrumental or vocal works.
Times to be arranged between the student and instructor; one term
Prerequisite: Registration in Level III or IV of an Honours Music programme, and permission of the instructor

MUSIC 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, registration in an Honours Music programme, and permission of the instructor

NEURAL COMPUTATION

The Neural Computation Programme is administered within the Faculty of Science through a committee of instruction consisting of Dr. S. Haykin (Electrical and Computer Engineering), Dr. R. Racine (Psychology), Dr. S. Becker (Psychology), Dr. N. Balakrishnan (Mathematics and Statistics) and Dr. W. Smyth (Computing and Software) and draws on the Departments of Psychology, Mathematics and Statistics and Computing and Software.

COURSES *If no prerequisite is listed, the course is open.*

NEURCOMP 3W03 NEURAL COMPUTATION
An introduction to the use of neural network computational models for understanding the neural bases of psychological processes, and for solving real-world problems.

Three lectures; one term
Prerequisite: COMP SCI 1MC3 or COMP SCI 1SA3 with a grade of at least B+ and one of MATH 1A03, 1N03, ARTS&SCI 1D06. MATH 1B03 is strongly recommended.
Cross-list: PSYCH 3W03

NEURCOMP 4D09 NEURAL COMPUTATION THESIS
Students conduct research projects with individual faculty members
Prerequisite: Registration in Level IV of Honours Neural Computation

Related Courses

BIOCHEM	2EE3	Metabolism and Physiological Chemistry
BIOLOGY	2B03	Cell Biology
	2C03	Genetics
	4T03	Neurobiology
CHEM	2E03	Introductory Organic Chemistry
COMP SCI	3GA3	Introduction to Computer Graphics
	3SD3	Computer Simulation Techniques
	3TA3	Introduction to Automata and Formal Language
	4IB3	Artificial Intelligence and Knowledge-Based Systems
	4TC3	Recursive Function Theory and Computability
MATH	2E03	Introduction to Modelling
	2P04	Differential Equations for Engineering
	4S03	The Theory of Computability
PSYCH	2E03	Sensory Processes
	2F03	Fundamentals of Neuroscience
	2H03	Human Learning and Cognition
	3FA3	The Neurobiology of Learning and Memory
	3J03	Neurophysiology of Vision
	3WW3	Measuring The Mind
	4I03	Computational Models of Mind and Brain
STATS	3D06	Mathematical Statistics

NURSE PRACTITIONER

(SEE NURSING, NURSE PRACTITIONER (C) STREAM)

NURSING

Faculty as of January 15, 1999

Associate Dean of Health Sciences (Nursing) and Director of the School of Nursing

Andrea Baumann

Professors

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.
Joan Crook/B.S. (Niagara), M.A. (Dalhousie), M.Sc. (McMaster), Ph.D. (Toronto), R.N.
Alba DiCenso/B.Sc.N., M.Sc. (McMaster), Ph.D. (Waterloo), R.N.
Jo-Ann Fox-Threlkeld/B.N. (New Brunswick), M.Sc., Ph.D. (Queen's), R.N.
Susan French/B.N. (McGill), M.S. (Boston), Ph.D. (Toronto), R.N.
Leah Parisi/B.S.N. (Ohio State), M.A. (Lindenwood), Ed.D. (Pepperdine), J.D. (Loyola), R.N.
Robin Weir/B.Sc.N. (Western Ontario), M.Sc. (Boston), M.Ed., Ph.D. (Toronto), R.N.

Associate Professors

Heather Arthur/B.Sc.N. (McMaster), M.Sc.N., Ph.D. (Toronto), R.N.
Margaret Black/B.Sc.N. (McGill), M.Sc.N. (Case Western Reserve), Ph.D. (Michigan), R.N.
Barbara Brown/B.A., B.Sc.N. (Windsor), M.Sc.N. (Toronto), R.N.
Carolyn Byrne/M.H.Sc. (McMaster), R.N.
Donna Ciliska/B.Sc.N., M.Sc.N. (Western Ontario), Ph.D. (Toronto), R.N.
Patricia Ellis/B.Sc.N. (Wagner), M.Sc. (Maryland), R.N.
Mary Fawcett/B.Sc.N., M.H.Sc. (McMaster), CNN(C) (CNA), R.N.
Mabel Hunsberger/B.S. (Goshen), M.Sc.N. (Pennsylvania), R.N.
Basanti Majumdar/B.Sc.(N.), M.Sc.N. (Delhi), M.Ed. (Columbia), Ph.D. (Michigan), R.N.
Ann Mohide/B.Sc.N. (Toronto), M.H.Sc., M.Sc. (McMaster), R.N.
Janet Pinelli/B.S. (Boston), M.Sc.N. (Toronto), D.N.S. (Buffalo), R.N.
Elizabeth Rideout/B.N. (New Brunswick), M.H.Sc. (McMaster), M.Sc., Ph.D. (Toronto), R.N.
Jackie Roberts/B.Sc.N., M.Sc., (McMaster), R.N.
Joan Royle/B.Sc.N. (McMaster), M.Sc.N. (Toronto), R.N.
Heleen Thomas/B.N.Sc. (Queen's), M.Sc. (Waterloo), R.N.
Catherine Tompkins/B.Sc.N. (Western Ontario), M.Ed. (Toronto), Ph.D. (California), R.N.

Assistant Professors

Gertrude Benson/B.N. (McGill), M.Sc.N. (Boston), R.N.
Jennifer Blythe/B.A. (Hull), M.A., Ph.D. (McMaster), M.L.S. (Toronto)
Sheryl Boblin-Cummings/B.Sc.N. (Alberta), M.Ed. (Alberta), Ph.D. (Toronto), R.N.
Denise Bryant-Lukosius/B.Sc.N. (McMaster), M.Sc.N. (D'Youville), R.N.
Barbara Carpio/B.Sc.N. (Alberta), M.Sc.N. (Toronto), M.Sc.(T) (McMaster), R.N.
Dauna Crooks/B.Sc.N. (Toronto), M.Sc.N. (Western Ontario), D.N.S. (SUNY), R.N.
Michelle Drummond-Young/B.Sc.N., M.H.Sc. (McMaster), R.N.
Anne Ehrlich/B.N.Sc. (Queen's), M.H.Sc. (Toronto), R.N.
Heather Hoxby/B.Sc.N., M.H.Sc. (McMaster), R.N.
Carolyn Ingram/B.Sc.N. (Pittsburg), M.Sc.N. (Maryland), R.N.
Michael Ladouceur/B.S.N. (Victoria), M.P.H. (Boston), R.N.
Janet Landeen/B.Sc.N. (Connecticut), M.Ed. (Victoria), R.N.
Jeannette LeGris/B.N. (Manitoba), M.H.Sc. (McMaster), R.N.
Barbara Love/B.Sc.N. (Toronto), M.H.Sc. (McMaster), R.N.
Ola Lunyk-Child/B.Sc.N. (McMaster), M.Sc.N. (Toronto), R.N.
Johanne Mousseau/B.A. (Western Ontario), M.Sc. (McMaster), R.N.
Charlotte Noesgaard/B.N. (McGill), M.Sc.N. (Western Ontario), R.N.
Cottie Ofosu/B.A. (McMaster), M.Ed. (Brock), Ph.D. (Toronto)
Linda O'Mara/B.N., M.Sc.N. (McGill), R.N.
Marilyn Parsons/B.N.Sc. (Queen's), M.H.Sc. (McMaster), R.N.

Chris Patterson/B.Sc. (Waterloo), B.Sc.N. (McMaster), M.Sc.N. (Western Ontario), R.N.

Jenny Ploeg/B.Sc.N., M.Sc.N. (Western Ontario), R.N.
Otto Sanchez-Sweetman/M.Sc. (Toronto), Ph.D. (McMaster)
Dyanne Semogas/B.N. (McGill), M.N. (Washington), 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.
Ruta Valaitis/B.A., B.Sc.N. (Windsor), M.H.Sc. (McMaster), R.N.

Lecturer

Claire Mallette/B.Sc.N. (McGill), M.Sc. (Toronto)

The Aga Khan University Based Faculty

Susan Beaton/B.A. (Newcastle), M.Ed. (Manchester)
Anita Fisher/B.A. (Windsor), M.H.Sc. (McMaster)
Marilyn Lee/B.A., B.Sc.N. (St. Louis), M.N. (S. Carolina)
Donna Sergeant/B.Sc.N., M.H.Sc. (McMaster)
Grace Stanley/B.N. (McGill), M.N. (Calgary)
Lorraine Tinevez/B.Sc.N. (Alberta), M.P.H. (Hawaii)

Professors Emeriti

E. Mary Buzzell/B.N. (McGill), M.Sc.N., M.Ed. (Boston), R.N.
Alma Reid/B.A. (Toronto), R.N.
Karin von Schilling/B.Sc.N. (Toronto), M.Sc.N. (California), R.N.

Note:

The School of Nursing has a large number of part-time faculty appointed from community health-care agencies. A complete list is available from the office of the Associate Dean of Health Sciences (Nursing).

School Notes:

- This course listing is divided into eight parts:
 - Basic (A) Stream:** Those courses taken only by students registered in the B.Sc.N. programme, (A) Stream.
 - Post-Diploma R.N. (B) Stream:** Those courses taken only by students registered in the B.Sc.N. programme, (B) Stream.
 - (A) and (B) Stream:** Those courses taken by students registered in the B.Sc.N. programme, (A) or (B) Stream.
 - Nurse Practitioner (C) Stream:** Those courses taken only by students registered in the B.Sc.N. Nurse Practitioner programme, (C) Stream or Nurse Practitioner Certificate.
 - Northern Nursing Courses:** Not offered in 1999-2000.
 - Nursing Leadership/Management Courses:** Those courses taken by nurses enrolled in the Nursing Management programme or by Diploma R.N. (B) stream students with permission of the coordinator.
 - Paediatric Oncology Courses:** Those courses taken by nurses enrolled in the Paediatric Oncology programme.
 - Adult Oncology Courses:** Those courses taken by nurses enrolled in the Adult Oncology programme.
- Normally, registration in all courses above Level I will require satisfactory completion of the prerequisite Nursing courses with a grade of at least C- in graded courses or a pass in clinical practice courses. (See the Faculty of Health Sciences, School of Nursing, Academic Regulations section in this Calendar.)
- Normally, Level I, II, III, and IV courses are available to Level I, II, III, and IV B.Sc.N. (A) and (B) Stream students respectively.
- The Nursing Leadership/Management courses are open to students registered in the Nursing Leadership/Management programme, which was previously administered and is currently endorsed by the Canadian Nurses Association. Students in the Diploma R.N. (B) stream may apply to the coordinator of the Nursing Leadership/Management programme for permission to take these courses.
- The Paediatric and Adult Oncology courses are respectively open to nurses working in or who have an interest in paediatric or adult oncology. A candidate must be currently registered as a nurse in a province or territory in Canada.

BASIC (A) STREAM ...

Courses

NURSING 1F04 INTRODUCTION TO NURSING AND HEALTH 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 Level I of the B.Sc.N. (A) Stream

NURSING 1G04 INTRODUCTION TO NURSING AND HEALTH II
An introduction to reflective practice. Concepts and theories related to specific priority health issues are studied in problem-based tutorials. There is continued development of skills in health assessment and an introduction to health education. A clinical practice component includes laboratory and community experience. A continuation of NURSING 1F04.

Two and one half hours (lecture/problem-based tutorials); four hours (clinical lab); one term

Prerequisite: NURSING 1F04

NURSING 2L03 GUIDED NURSING PRACTICE I
Nursing concepts basic to health and illness are examined across the continuum of individual and family growth and development. Planned and guided experiences are provided in acute care institutions, including adult medical and surgical and paediatric settings. This course is evaluated on a *Pass/Fail* basis. Nine hours (clinical lab); one term

Prerequisite: NURSING 1F04, 1G04

Normally to be taken concurrently with NURSING 2M03.

NURSING 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

Normally to be taken concurrently with NURSING 2L03.

NURSING 2N03 NURSING CONCEPTS IN HEALTH AND ILLNESS II
Integration of nursing, biological, psychological, and social sciences theory in problem-based tutorials. A continuation of Nursing 2M03.

Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 2M03

Normally to be taken concurrently with NURSING 2P03.

NURSING 2P03 GUIDED NURSING PRACTICE II
Planned and guided clinical practice in institutional settings. A continuation of Nursing 2L03. This course is evaluated on a *Pass/Fail* basis. Nine hours (clinical lab); one term

Prerequisite: NURSING 2L03

Normally to be taken concurrently with NURSING 2N03.

NURSING 2Q02 POPULATION HEALTH
An introduction to the major factors that determine the health of populations. Approaches to the assessment of the health status of communities will be considered. This course also provides experience in conducting a community assessment.

Three hour (clinical lab) and one hour (lecture); one term

Prerequisite: NURSING 1G04

NURSING 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 inferred to nursing practice. Two hours (lecture/student presentations); one term

Prerequisite: NURSING 2P03; HTH SCI 2B08 (or HTH SCI 2AA2, 2BB2, 2CC2 and 2DD2); registration in Level III of the B.Sc.N. (A) Stream

Normally to be taken concurrently with NURSING 3X04 or 3Y04.

NURSING 3X04 GUIDED NURSING PRACTICE III
Planned and guided clinical practice in a variety of institutional and community settings emphasizing that nursing is contextual and relational. Nursing practice roles and selected theories/models are tested with individuals and groups, emphasis is given to formulating nursing interventions. This course is evaluated on a *Pass/Fail* basis.

Twelve hours (clinical lab); 13 weeks

Prerequisite: NURSING 2P03

Normally to be taken concurrently with NURSING 3S03.

NURSING 3Y04 GUIDED NURSING PRACTICE IV
A continuation of NURSING 3X04 with emphasis on integration of scientific mechanisms.

Twelve hours (clinical lab); 13 weeks

Prerequisite: NURSING 3X04

Normally to be taken concurrently with NURSING 3T03 and NURSING 3U02.

NURSING 4J07 GUIDED NURSING PRACTICE V
This course focuses on the application of theory and concepts to clinical practice, including the introduction to the leadership role in patient care. Students are individually placed in a variety of health-care settings. This course is evaluated on a *Pass/Fail* basis.

Twenty-four hours (clinical lab, including tutorials); 12 weeks

Prerequisite: NURSING 3Y04, 3Y07

Normally to be taken concurrently with NURSING 4E03.

NURSING 4K07 GUIDED NURSING PRACTICE VI
A continuation of Nursing 4J07. This course is evaluated on a *Pass/Fail* basis.

Prerequisite: NURSING 4J07

Normally to be taken concurrently with NURSING 4F03.

DIPLOMA RN (B) STREAM ...

NURSING 3LL2 ADVANCED CLIENT ASSESSMENT SKILLS
Advanced skills in history-taking and client assessment relevant to community-based primary health care are developed through small group tutorials, self-study packages, skills practice in the clinical skills lab and use of standardized patients. This course is evaluated on a *Pass/Fail* basis.

Two hours (problem-based tutorials); one term

Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream

Normally to be taken concurrently with NURSING 3MM3 and 3S03.

Antirequisite: NURSING 3GG5, 3L04, 3L05, 3V05

NURSING 3M05 GUIDED NURSING PRACTICE I
An applied nursing practice experience in a community-based health care setting with an emphasis on the development of expanded role skills in areas such as health promotion, health education, and community assessment. This course is evaluated on a *Pass/Fail* basis.

Eight hours (clinical lab), 2 hours (tutorial); one term

Prerequisite: NURSING 3L05, or NURSING 3LL2 and 3MM3

Normally to be taken concurrently with NURSING 3T03.

NURSING 3MM3 ADVANCED COMMUNICATION SKILLS
Advanced therapeutic communication skills relevant to community-based primary health care are developed through small group tutorials and use of standardized patients. This course is evaluated on a *Pass/Fail* basis.

Three hours (problem-based tutorials); one term

Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream

Normally to be taken concurrently with NURSING 3LL2 and 3S03.

Antirequisite: NURSING 3GG5, 3L04, 3L05, 3V05

NURSING 4S06 GUIDED NURSING PRACTICE III
An applied nursing practice course in which the focus is on the integration of theory and concepts in a variety of interdependent health care settings. This course will allow the development of independent decision-making capacity in a selected area of clinical practice. This course is evaluated on a *Pass/Fail* basis.

Twelve hours (clinical lab), two hours (tutorials); 13 weeks

Prerequisite: For community focus: NURSING 3M05

Prerequisite: For non-community focus: Registration in B.Sc.N. (B) Stream

Normally to be taken concurrently with NURSING 4E03.

NURSING 4T06 GUIDED NURSING PRACTICE IV
A continuation of NURSING 4S06. This course is evaluated on a *Pass/Fail* basis.

Twelve hours (clinical lab), two hours (tutorials); 13 weeks

Prerequisite: NURSING 4S06

Normally to be taken concurrently with NURSING 4F03.

(A), (B), AND (C) STREAM ...

NURSING 3S03 NURSING CONCEPTS IN HEALTH AND ILLNESS III
Biological, physical, psychological, social sciences, and nursing theory are integrated and applied to health care situations through problem-based learning.

Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 2N03 and 2P03 for B.Sc.N. (A) Stream students or

registration in Level III of the B.Sc.N. (B) or NP (C) Stream students

Normally to be taken concurrently with NURSING 3X04 (for (A) Stream students) or NURSING 3L05 (for (B) Stream students).

NURSING 3T03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV

A problem-based course in which students integrate theories from biological, physical, psychological, social and nursing sciences and apply them to health care situations. A continuation of Nursing 3S03.

Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 3S03 or registration in Level III of B.Sc.N. NP (C) Stream

Normally to be taken concurrently with NURSING 3Y04 (for (A) Stream students) or NURSING 3M05 (for (B) Stream students).

NURSING 4A02 CURRENT TRENDS AND ISSUES IN NURSING

Issues facing the profession, and the implications of current changes in the health field for future nursing practice.

Two hours (lecture/student presentations) every week; one term
Prerequisite: Registration in Level IV of the B.Sc.N. (A) or (B) Stream or Level III of the B.Sc.N. NP (C) Stream, or permission of the instructor

NURSING 4E03 ADVANCED NURSING CONCEPTS I

A problem based course in which students focus on theories and concepts related to client/patient care e.g., leadership and management, education of clients/patients, students, and staff. Student participation includes selecting appropriate situations and related theories for study, and identifying interventions and evaluation strategies.

Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 3T03 (for (A) and (B) Streams) and NURSING 3Y04 (for (A) Stream)

Normally taken concurrently with NURSING 4J07 (for (A) Stream) or NURSING 4S06 (for (B) Stream).

NURSING 4F03 ADVANCED NURSING CONCEPTS II

A problem-based course in which students integrate concepts and theories related to clinical practice issues. A continuation of NURSING 4E03.

Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 4E03
Normally taken concurrently with NURSING 4K07 (for (A) Stream) or NURSING 4T06 (for (B) Stream).

NURSING 4G03 SELECTED TOPICS IN NURSING

Topics of contemporary interest in nursing. Emphasis may be upon theory, research or clinical application. Consult the School regarding the topics to be examined.

Three hours, problem-based tutorial or equivalent; one term
Prerequisite: Permission of the instructor

NURSING 4H03 ISSUES IN INTERNATIONAL AND INTERCULTURAL HEALTH

An introduction to health issues in a rural Canadian and international context including theories of: development; political economy; medical and social anthropology; and intercultural health care practice.

Three hours (lecture/problem-based tutorials); one term
Prerequisite: HTH SCI 3B03 and registration in Level III or IV of the BScN Programme or permission of the instructor
Antirequisite: HTH SCI 4H03

NURSE PRACTITIONER (C) STREAM ...**Note:**

Distance education modalities are employed in all courses. Students must attend McMaster for the clinical laboratory components of the programme.

NURSPRAC 4A10 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS

This course assists the students to determine and monitor health status and disease symptomatology of diverse communities, families and individuals throughout the age spectrum. Students will conduct a full range of health assessment towards the goal of providing comprehensive primary health care based on advanced clinical decision making and diagnostic reasoning skills.

Three hours (tutorial), three hours (clinical lab); two terms
Prerequisite: Registration in Level IV of the B.Sc.N. NP (C) Stream; registration in or completion of NURSING 4P03
Antirequisite: NURSPRAC 4A05, 4AA5

NURSPRAC 4C13 NURSE PRACTITIONER INTEGRATIVE PRACTICUM

This course builds on students' knowledge and experience gained in previous courses and focuses on methods to integrate theory and clinical practice. The tutorial component allows students to discuss and apply theories regarding the management of clients' clinical manifestations.

29 hours (clinical lab; six hours (tutorial)); 13 weeks
Prerequisite: NURSPRAC 4A10, 4P03, 4R03, 4T10, registration in Level IV of the B.Sc.N. NP (C) Stream
Antirequisite: NURSPRAC 4C10, 4S03

NURSPRAC 4P03 PATHOPHYSIOLOGY FOR NURSE PRACTITIONERS

This course uses a systems approach to examine concepts in pathophysiology as a basis for advanced nursing practice in primary health care. The course will provide a comprehensive overview of etiology, pathogenesis and clinical manifestation of diseases in adults and children found in primary care.

Three hours (tutorial); one term
Prerequisite: HTH SCI 1CC7, 2C07; registration in Level IV of the B.Sc.N. NP (C) Stream

NURSPRAC 4R03 NURSE PRACTITIONER ROLES AND RESPONSIBILITIES

Historical development, legal and ethical considerations, scope of practice, interdisciplinary teams, primary health policy formation are addressed.

Three hours (tutorial); one term
Prerequisite: NURSING 4A02 and registration in Level III or IV of the B.Sc.N. NP (C) Stream

NURSPRAC 4T10 THERAPEUTICS IN PRIMARY HEALTH CARE

The course is designed to develop the knowledge, skill and competencies required of a nurse practitioner in managing health and injury through a variety of clinical therapeutic strategies, including counselling, pharmacology and complementary modalities. The effectiveness and efficiency of these strategies are examined.

Three hours (tutorial), three hours (clinical lab); two terms
Prerequisite: HTH SCI 1CC7, 2C07; registration in Level IV of the B.Sc.N. NP (C) Stream; registration in or completion of NURSPRAC 4A10, 4P03
Antirequisite: NURSPRAC 4T05, 4TT5

PAEDIATRIC ONCOLOGY COURSES...**NURSING 3P03 NURSING CONCEPTS IN HEALTH AND ILLNESS III**

Bio-psycho-social sciences and nursing theory are intergrated and applied to health care situations through problem-based learning. Concepts and theories will focus on assisting the child, family and community in responding to the oncological process.

Three hours (lecture/problem-based tutorials); one term
Prerequisite: Either registration in Paediatric Oncology programme; or registration in Level III of the B.Sc.N. (B) Stream and permission of the instructor
Antirequisite: NURSING 3S03

NURSING 3Q03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV

A problem-based course in which students intergrate theories from biological, physical, psychological, social and nursing sciences and apply them to paediatric haematology-oncology situations. A continuation of Nursing 3P03.

Three hours (lecture/problem-based tutorials); one term
Prerequisite: NURSING 3P03; and either registration in the Paediatric Oncology programme; or registration in Level III of the B.Sc.N. (B) Stream and permission of the instructor
Antirequisite: NURSING 3T03

NURSING 3W05 GUIDED NURSING PRACTISE I

An applied nursing practice experience in a hospital or community-based paediatric haematology-oncology setting with an emphasis on the development of expanded role skills in areas such as illness-response, health maintenance and promotion, client education, client assessment and client treatment and support. This course is evaluated on a "Pass or Fail" basis.

Eight hours (clinical lab), two hours (tutorials); one term
Prerequisite: NURSING 3V05; and either registration in the Paediatric Oncology programme; or registration in Level III of the B.Sc.N. (B) Stream and permission of the instructor
Antirequisite: NURSING 3M05

ADULT ONCOLOGY COURSES ...**NURSING 3CC3 CONCEPTS AND THEORIES IN ADULT ONCOLOGY NURSING I**

Biological, psychological, physical, social sciences, and nursing theory are integrated and applied to selected health care situations related to adult oncology through the problem-based format.

Three hours (problem-based tutorials, lectures, self-directed study); one term
Prerequisite: Either registration in the Adult Oncology programme; or registration in Level III of the B.Sc.N. (B) Stream and permission of the instructor
Antirequisite: NURSING 3S03

NURSING 3DD3 CONCEPTS AND THEORIES IN ADULT ONCOLOGY NURSING II

A problem-based course where students integrate and apply theories from the biological, physical, psychological, social and nursing sciences to selected adult oncology situations. Within the cancer care continuum, the health care situations will focus on assisting clients, families and the community related continuation of 3CC3.

Three hours (problem-based tutorials, lectures, self-study); one term
Prerequisite: NURSING 3CC3; and either registration in the Adult Oncology programme; or registration in Level III of the B.Sc.N. (B) Stream and permission of the instructor
Antirequisite: NURSING 3T03

NURSING 3HH5 ADULT ONCOLOGY NURSING PRACTICE II

A continuation of 3GG5, the focus of this course is a theory based nursing practice experience in a primary or tertiary health care setting. The emphasis cancer and the well being of adult clients, families and the community including: health education, cancer prevention, early detection, client and family assessment, treatment and support. This course is evaluated on a Pass/Fail basis.

Eight hours (clinical practice setting, clinical lab)

Two hours (small group tutorials, self-directed study)

Prerequisite: NURSING 3GG5; and either registration in the Adult Oncology programme; or registration in Level III of the B.Sc.N. (B) Stream and permission of the instructor

Antirequisite: NURSING 3M05

NURSING LEADERSHIP / MANAGEMENT COURSES ...

NURSING 4B06 INTRODUCTION TO NURSING LEADERSHIP/MANAGEMENT

Introduction to theories and methods of leadership and management integrating the nursing and management disciplines. Given in both distance education and problem-based tutorial formats. A document of recognition is granted on course completion. Enrolment in tutorial format is limited.

Four hours (problem-based tutorial or equivalent); six hours (independent study at a clinical site); one term

Prerequisite: Registered Nurse with a minimum of one year clinical experience or permission of the instructor

Antirequisite: HTH SCI 4E06

Equivalent to NURSING 4S06, 4T06.

NURSING 4C01 NURSING BUDGETING

Introduction to sources of health care funding in Canada and the principles of decentralized financial management. Given in distance education and problem-based tutorial formats. This course is evaluated on a Pass/Fail basis.

One hour (lecture or equivalent); one term

Prerequisite: Registered Nurse or permission of the instructor

NURSING 4D01 TOTAL QUALITY MANAGEMENT IN NURSING

Introduction to total quality management, quality assurance, quality improvement, risk management and utilization management. Given in distance education. The course is evaluated on a Pass/Fail basis.

One hour (lecture or equivalent); one term

Prerequisite: Registered Nurse or permission of the instructor

OCCUPATIONAL THERAPY AND PHYSIOTHERAPY

Faculty as of January 15, 1999

Associate Dean, Rehabilitation Science

M. Westmorland

Chair, Bachelor of Health Sciences (OT) Programme

S. Baptiste

Chair, Bachelor of Health Sciences (PT) Programme

P. Solomon

Professors

Barbara A. Cooper/Dip. P&OT (Toronto), B.A. Honours, M.H.Sc. (McMaster), Ph.D. (Wisconsin-Milwaukee)

Mary C. Law/B.Sc. OT (Queen's), M.Sc. (McMaster), Ph.D. (Waterloo)

Jean Wessel/B.Sc. PT (McGill), M.H.Sc. (McMaster), Ph.D. (Alberta)

Associate Professors

Susan E. Baptiste/Dip. OT (England), M.H.Sc. (McMaster)

Jean M. Crowe/Dip. PT (Australia), B.Sc. PT (Toronto), M.H.Sc. (McMaster)

Elsbeth Finch/B.Sc. P&OT (McGill), M.H.Sc. (McMaster)

Hallie M. Groves/Dip. RT (British Columbia), B.Sc. (British Columbia), M.Sc., Ph.D. (McMaster)

Michael R. Piernynowski/B.Sc. (Waterloo), M.Sc. (Waterloo), Ph.D. (Simon Fraser)

Nancy A. Pollock/B.Sc. OT (Queen's), M.Sc. (McGill)

Julie Richardson/Dip. PT (New Zealand), B.Sc. PT (Toronto), M.Sc. (New Zealand)

Penny S. Salvatori/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Patricia E. Solomon/Dip. PT (Manitoba), M.H.Sc. (McMaster), Ph.D. (Waterloo)

Mary Stratford/Dip. PT, M.Sc. (McMaster)

Mary K. Tremblay/Dip. P&OT (Toronto), M.H.Sc. (McMaster), Ph.D. (SUNY, Buffalo)

Joyce Trysenaar/B.Sc. OT (Western Ontario), M.Ed. (Brock)

Muriel G. Westmorland/Dip. OT (England), M.H.Sc. (McMaster)

Assistant Professors

Beverley M. Clarke/Dip. PT (Manitoba), B.A., M.Sc. (McMaster)

Carol Dematteo/Dip. P&OT (Toronto), M.Sc. (McMaster)

Vicki Galea/B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)

Helene Larin/B.Sc. PT (Montreal), M.Sc. (North Carolina), M.Ed., Ph.D. (Toronto)

Lori Letts/B.Sc. OT (Western Ontario), M.A. (Waterloo)

Julia A. Lockhart/B.Sc. OT (Queen's), M.Ed. (Brock)

Cheryl Missiuna/B.Sc. OT (Western Ontario), M.Sc. (Calgary), Ph.D. (Toronto)

Ellenore M.J. Palmer/B.Sc. (Western Ontario), B.Sc. PT (Toronto), M.Sc. (Toronto)

Seanne Wilkins/Dip. P&OT, B.Sc. OT, M.Sc., Ph.D. (Toronto)

Renee M. Williams/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Laurie R. Wishart/Dip. P&OT (Toronto), B.Sc. (Toronto), M.Sc., Ph.D. (McMaster)

Linda Woodhouse/B.A. (Western Ontario), B.Sc. PT (Toronto), M.A. (Western Ontario)

Lecturers

Laura Babiski/B.Sc. OT (Toronto), M.H.Sc. (McMaster)

Linda Brett/B.A. (Toronto), B.Ed. (Queen's), B.H.Sc. PT (McMaster)

Elaine Foster-Sargeant/Dip. PT (Mohawk), B.H.Sc. PT (McMaster)

Maryan Gemus/B.Sc. PT (McGill), M.Sc. PT (Western Ontario)

Lynne Geddes/B.Sc. PT (Western Ontario), M.R.E. (Toronto)

Bonny F.M. Jung/B.Sc. OT (Toronto), M.Ed. (Brock)

In addition, a number of part-time faculty teaching in the B.H.Sc. (O.T. and P.T.) programmes have appointments in the School of Rehabilitation Science. If further information is requested, please contact the School at (905) 525-9140, ext. 22867.

Note:

Occupational Therapy and Physiotherapy courses are open only to students who are registered in the Bachelor of Health Sciences Second Degree Programme in Occupational Therapy or Physiotherapy.

OCCUPATIONAL THERAPY ...

Courses

Unit I - Occupation and Health Across the Life Span

OCCUP TH 1T15 PROBLEM-BASED TUTORIAL I

Students are introduced to small groups and problem-based learning using a variety of health problems in order to explore the biological, psychological, and social determinants of health. The role of the Occupational Therapist in a wide range of settings is explored.

Five hours (tutorial); 14 weeks

OCCUP TH 1L17 SKILLS LAB I

Students develop basic communication skills, physical assessment skills, an understanding of normal human movement and activity analysis, within the framework of current models of OT practice.

Seven hours (lab); 14 weeks

OCCUP TH 1S13 INQUIRY SEMINAR I

Students investigate issues of importance to the profession, from theory to the health care system overall. Themes for exploration include determinants of health, health policy, the history, development, and future directions of occupational therapy.

Three hours (large group discussion/seminar); 14 weeks

Unit II - Occupation and Mental Health in Adulthood

Note:

Prior to January 2000, Unit II consisted of *Occupation and Health in Childhood and Adolescence*

OCCUP TH 1T23 PROBLEM-BASED TUTORIAL II

Student explore various clinical problems encountered in the practice of mental health and mental illness.

Five hours (tutorial); eight weeks

OCCUP TH 1L24 SKILLS LAB II

Students develop engagement, assessment and treatment skills for persons with mental illness and mental health issues. Seven hours (lab); eight weeks

OCCUP TH 1S23 INQUIRY SEMINAR II

Students investigate various conceptual issues related to mental health and mental illness.

Five hours (lecture/seminar); eight weeks

OCCUP TH 1C26 FIELDWORK EDUCATION

Students integrate knowledge, skills and professional behaviours into clinical practice in a mental health setting under the supervision of a qualified occupational therapist.

35-40 hours (fieldwork); six weeks, full-time

Unit III - Occupation and Physical Health in Adulthood**OCCUP TH 1T33 PROBLEM-BASED TUTORIAL III**

Students explore clinical problems encountered in the field of adult rehabilitation. Functional, vocational and ethical management issues are discussed.

Five hours (tutorial); eight weeks

OCCUP TH 1L34 SKILLS LAB III

Students develop skills in assessment, program planning and intervention related to adult physical health.

Seven hours (lab); eight weeks

OCCUP TH 1S33 INQUIRY SEMINAR III

Students investigate various conceptual issues related to adult physical health.

Five hours (lecture/seminar); eight weeks

OCCUP TH 1C36 FIELDWORK EDUCATION

Students integrate knowledge, skills and professional behaviours into clinical practice in a physical health setting under the supervision of a qualified occupational therapist.

35-40 hours (fieldwork); six weeks, full time

**Unit IV - Occupation and Mental Health in Adulthood
September 1999 Only****OCCUP TH 2T43 PROBLEM-BASED TUTORIAL IV**

Student explore various clinical problems encountered in the practice of mental health and mental illness.

Five hours (tutorial); eight weeks

OCCUP TH 2L44 SKILLS LAB IV

Students develop engagement, assessment and treatment skills for persons with mental illness and mental health issues.

Seven hours (lab); eight weeks

OCCUP TH 2S43 INQUIRY SEMINAR IV

Students investigate various conceptual issues related to mental health and mental illness.

Five hours (lecture/seminar); eight weeks

OCCUP TH 2C46 FIELDWORK EDUCATION

Students integrate knowledge, skills and professional behaviours into clinical practice in a mental health setting under the supervision of a qualified occupational therapist.

35-40 hours (fieldwork); six weeks, full-time

**Unit IV - Occupation and Health in Childhood and Adolescence
Effective September 2000****OCCUP TH 2T43 PROBLEM-BASED TUTORIAL IV**

Students explore various clinical problems encountered in the practice of paediatric occupational therapy.

Five hours (tutorial); eight weeks

OCCUP TH 2L44 SKILLS LAB IV

Students develop skills in assessment, program planning, and intervention with children and adolescents.

Seven hours (lab); eight weeks

OCCUP TH 2S43 INQUIRY SEMINAR IV

Students investigate various conceptual issues related to child health during infancy, childhood and adolescence, from a developmental perspective.

Five hours (lecture/seminar); eight weeks

OCCUP TH 2C46 FIELDWORK EDUCATION

Students integrate knowledge, skills and professional behaviours into clinical practice in a paediatric setting under supervision of a qualified occupational therapist.

35-40 hours (fieldwork); six weeks, full time

Unit V - Occupation and Health in Older Adulthood**OCCUP TH 2T53 PROBLEM-BASED TUTORIAL V**

Students explore and develop understanding of various health and social problems encountered in the practice area of aging and health.

Five hours (tutorial); eight weeks

OCCUP TH 2L54 SKILLS LAB V

Students implement the CAOT client centred guidelines for occupational therapy practice with older persons, and develop clinical competence in specific assessment, treatment, and care management processes and techniques.

Seven hours (lab); eight weeks

OCCUP TH 2S53 INQUIRY SEMINAR V

Students explore and develop understanding of various theoretical, methodological, and substantive issues in the area of aging and health.

Five hours (lecture/seminar); eight weeks

OCCUP TH 2C56 FIELDWORK EDUCATION

Students integrate knowledge, skills and professional behaviours into clinical practice with older persons under supervision of a qualified occupational therapist.

35-40 hours (fieldwork); six weeks, full-time

**Unit VI - Occupation and Health Across the Lifespan:
Advanced Study and Integration****OCCUP TH 2T64 PROBLEM-BASED TUTORIAL VI**

Priority health problems are explored in-depth through contact with resource people and clients in the community, using a population health/community health perspective. Issues involving quality assurance and economics are also included.

Six hours (tutorial); ten weeks

**OCCUP TH 2M63 EXPLORING HEALTH CARE SYSTEMS,
ORGANIZATIONS AND PROFESSIONAL ROLES**

In this interprofessional course, occupational therapy (OT) and physiotherapy (PT) students will apply systems theory and principles of organizational analysis to explore issues facing the OT and PT professions in today's rapidly changing health care environment.

Fourteen hours; three weeks

Antirequisite: OCCUP TH 2L63

OCCUP TH 2I65 RESEARCH INTERNSHIP

Student study focuses on scientific inquiry through research related to occupational therapy/physiotherapy. Such research may involve literature searches, simple research design or proposal preparation, or participation in ongoing research with a faculty member.

Ten-twelve hours; 14 weeks

OCCUP TH 2S63 HUMAN OCCUPATION

Students will have the opportunity to choose an area of human occupation for in-depth study. The students will design individual projects in consultation with faculty and clinical experts. The course format consists of weekly work-in-progress seminars and a final symposium on human occupation, organized by students and faculty.

Four hours; ten weeks

OCCUP TH 2C66 FIELDWORK EDUCATION

The placement provides students with the opportunity to integrate knowledge, skills and professional behaviours in a setting that addresses areas of professional practice that can include clinical practice, administration, research, or consultation. Opportunities for international placements can be available.

35-40 hours (fieldwork); six weeks, full-time

Antirequisite: OCCUP TH 2C76

PHYSIOTHERAPY ...**Unit I Musculoskeletal I****PHYSIOTH 1T15 PROBLEM-BASED TUTORIAL**

The problem-based tutorials in Unit 1 are designed to introduce the student to the anatomy, physiology, pathology, and physiotherapy assessment and treatment of peripheral musculoskeletal systems. In addition, students acquire a basic level of knowledge of psychological and sociological determinants of health.

Five hours (tutorial); 14 weeks

PHYSIOTH 1L17 CLINICAL SKILLS LAB I

The clinical skills labs focus on the clinical assessment, diagnosis and introduction to treatment of peripheral joints. The labs integrate relevant human biology, biomechanics, clinical skills and measurement concepts. Seven hours (lab); 14 weeks

PHYSIOTH 1S13 INQUIRY SEMINAR I

Students investigate issues related to the provision of health care from the perspective of a treating clinician, a multi-disciplinary team member, and the broader components of the health care system. Topics include: prevention, determinants of health, exercise physiology, gait analysis and clinical decision making.

Three hours (lecture/seminar); 14 weeks

Unit II Musculoskeletal II

PHYSIOTH 1T23 PROBLEM-BASED TUTORIAL

Students continue studying the musculoskeletal system in the problem-based tutorials by focusing on the anatomy, pathology, assessment and treatment of spinal conditions. Skills in musculoskeletal differential diagnosis are developed further.

Five hours (tutorial); eight weeks

PHYSIOTH 1L24 CLINICAL SKILLS LAB II

Students acquire basic level competencies in the assessment and treatment of spinal conditions. Students are responsible for completing further electrotherapy modules. Effectiveness of physiotherapy interventions in spinal and musculoskeletal conditions are considered.

Seven hours (lab); eight weeks

PHYSIOTH 1S23 INQUIRY SEMINAR II

Seminars focus on ergonomics, the physiology, evaluation and management of pain, and, considerations re: differential diagnosis of pain in the spine.

Five hours (seminar); eight weeks

PHYSIOTH 1C26 CLINICAL EDUCATION

Students practice in a variety of clinical facilities to integrate knowledge and skills in providing care for episodic musculoskeletal problems.

35-40 hours (fieldwork); six weeks

Unit III Musculoskeletal III

PHYSIOTH 1T33 PROBLEM-BASED TUTORIAL

Students study complex and/or chronic injuries and diseases of the musculoskeletal system and resulting disabilities and handicaps in all age groups, with an emphasis on older adults. This unit explores the natural history of a condition.

Five hours (tutorial); eight weeks

PHYSIOTH 1L34 CLINICAL SKILLS LAB III

Students acquire advanced interviewing, assessment and treatment skills which are required to manage clients of all ages, with an emphasis on older adults, with complex and chronic musculoskeletal problems.

Seven hours (lab); eight weeks

PHYSIOTH 1S33 INQUIRY SEMINAR III

Seminars focus on issues related to determinants of health and chronicity. Themes to be explored include cultural, ethnic and racial factors in health, biopsychosocial aspects of chronic illness and its management.

Five hours (seminar); eight weeks

PHYSIOTH 1C36 CLINICAL EDUCATION

Students practice in selected clinical facilities to integrate knowledge and skills into clinical practice with appropriate clients with chronic or complex musculoskeletal problems.

35-40 hours (fieldwork); six weeks

Unit IV Cardiopulmonary

PHYSIOTH 2T43 PROBLEM-BASED TUTORIAL

Students study the pathology, etiology, assessment and physiotherapeutic management of cardiac and pulmonary conditions, and the impact on the body system. Criteria for establishing causation are also addressed.

Five hours (tutorial); eight weeks

PHYSIOTH 2L44 CLINICAL SKILLS LAB IV

Students acquire the assessment and treatment skills which are required for the physiotherapeutic management of clients with cardiac and/or pulmonary conditions.

Seven hours (lab); eight weeks

PHYSIOTH 2S43 INQUIRY SEMINAR IV

Seminars focus on issues related to fitness in special populations encountered in the practice of physiotherapy. Themes include exercise physiology, exercise testing and prescription, and compliance with exercise.

Five hours (seminar); eight weeks

PHYSIOTH 2C46 CLINICAL EDUCATION

Students integrate learning and skills with clinical practice for a selected group of clients with cardiac and/or pulmonary conditions in a variety of clinical facilities.

35-40 hours (fieldwork); six weeks

Unit V Neurology

PHYSIOTH 2T53 PROBLEM-BASED TUTORIAL

Students study the pathology, etiology, assessment and physiotherapeutic management of clients of all ages with neurological problems.

Five hours (tutorial); eight weeks

PHYSIOTH 2L54 CLINICAL SKILLS LAB V

Students acquire basic level assessment and treatment skills required for the management of clients with neurological conditions.

Seven hours (lab); eight weeks

PHYSIOTH 2S53 INQUIRY SEMINAR V

Seminars focus on issues with clients who present neurological disorders. Themes include: neuro-patho kinesiology, neuro-plasticity, motor control and learning, WHO classification, related psych-social issues, client-centred practice, health measurement, and evidence-based practice.

Five hours (lecture/seminar); eight weeks

PHYSIOTH 2C56 CLINICAL EDUCATION

Students practice in a variety of clinical facilities to integrate learning and clinical skills for the management of neurological problems in all age groups.

35-40 hours (fieldwork); six weeks

Unit VI Advanced Theory, Inquiry and Skills

PHYSIOTH 2I65 RESEARCH INTERNSHIP

Student study focuses on scientific inquiry through research related to occupational therapy/physiotherapy. Such research may involve literature searches, simple research design or proposal preparation, or participation in ongoing research with a faculty member.

Ten-twelve hours; 14 weeks

PHYSIOTH 2M63 EXPLORING HEALTH CARE SYSTEMS, ORGANIZATIONS AND PROFESSIONAL ROLES

Students will apply systems theory and principles of organizational analysis to explore issues facing the OT and PT professions in today's rapidly changing health care environment.

Fourteen hours; three weeks

PHYSIOTH 2P62 GROWING UP WITH ABILITIES

Students explore a variety of multi-system, complex clinical scenarios relevant to the practice of paediatric physiotherapy, within a broad psychosocial framework and continuum of care. Students have the opportunity to practice skills in the management of children with disabilities and their families, in various environments.

Ten hours; three weeks

Antirequisite: PHYSIOTH 2T64, 2L63

PHYSIOTH 2A63 ADULT HEALTH

Students explore a variety of multi-system, complex problems encountered within a broad psychosocial framework and continuum of care. Students have the opportunity to practice advanced skills in the physiotherapy management of adults.

Ten hours; four weeks

Antirequisite: PHYSIOTH 2T64, 2L63

PHYSIOTH 2G62 AGING AND HEALTH

Students explore a variety of multi-system, complex clinical problems encountered in the practice of physiotherapy with older adults. These problems are viewed within a broad psychosocial framework and continuum of care. Students have the opportunity to practice advanced skills in the health management of older adults.

Ten hours; three weeks

Antirequisite: PHYSIOTH 2T64, 2L63

PHYSIOTH 2C66 CLINICAL EDUCATION

Students select an area of professional practice for a 6-week elective. Areas of practice might include clinical practice, administration, research or consultation. An appropriate setting will be selected by the student in consultation with the Clinical Education Co-ordinator.

35-40 hours (fieldwork); six weeks

Antirequisite: PHYSIOTH 2C76

OJIBWE

(SEE INDIGENOUS STUDIES, OJIBWE)

ONCOLOGY

(SEE NURSING)

PEACE STUDIES

(SEE INTERDISCIPLINARY MINORS AND THEMATIC AREAS)

PHARMACOLOGY

With the exception of PHARMAC 4B03, these courses are available only to those students registered in Honours Biology and Pharmacology.

Department 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**

Receptor theory and classification, receptor response coupling, mechanisms of drug absorption, distribution, metabolism and excretion and their roles in drug selectivity.

One tutorial (one hour), one tutorial (two hours); two terms

Prerequisite: Registration in the Honours Biology and Pharmacology programme

PHARMAC 3B06 METHODS IN PHARMACOLOGY

Methods to study effects of drugs in vitro (such as organ baths, ligand binding, and electrophysiological actions) and analysis of pharmacological data.

One lab (six hours); two terms

Prerequisite: Credit or registration in PHARMAC 3A06

PHARMAC 4A03 DRUG AND SIGNAL TRANSMISSION I

Introduction to the effects of drugs on communication by chemical signals in biological systems.

One tutorial (one hour), one tutorial (two hours); one term

Prerequisite: PHARMAC 3A06

PHARMAC 4AA3 DRUG AND SIGNAL TRANSMISSION II

The continuation of Pharmacology 4A03.

One tutorial (three hours); one term

Prerequisite: PHARMAC 4A03

PHARMAC 4B03 DRUGS AND BEHAVIOUR

Behavioural measures to study drug action and the use of drugs to study the organization and physiochemical mechanisms in normal and abnormal behaviour.

One tutorial (three hours); one term

Prerequisite: PHARMAC 3A06 or BIOLOGY 3AA3 and permission of the instructor. Application for permission must be received by March 31st of the previous year.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PHARMAC 4C03 PRINCIPLES OF TOXICOLOGY

General principles of toxicology, adverse effects of selected agents on man and other organisms.

One tutorial (one hour), one tutorial (two hours); one term

Prerequisite: PHARMAC 3A06

PHARMAC 4D03 DRUG DESIGN

Principles of drug design based on drug transport, metabolism and selectivity of action at the target sites with emphasis on quantitative structure-activity relationships.

One tutorial (one hour), one tutorial (two hours); one term

Prerequisite: PHARMAC 3A06

PHARMAC 4E03 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 (one hour), one tutorial (two hours); one term

Prerequisite: PHARMAC 3A06

PHARMAC 4F09 SENIOR THESIS

A thesis based upon a research project carried out under the direction of a member of the Faculty.

Prerequisite: PHARMAC 3A06

Antirequisite: BIOLOGY 4C09, 4F06, MOL BIOL 4R09

PHILOSOPHY**Faculty as of January 15, 1999****Chair**

Spiro Panagiotou

Professors

Nicholas Griffin/B.A. (Leicester), Ph.D. (Australian National)

Wilfrid Waluchow/B.A., M.A. (Western Ontario), D.Phil. (Oxford)

Associate Professors

Samuel Aizenstat/B.A., M.A. (Toronto), Ph.D. (Pennsylvania)

Barry G. Allen/B.A., (Lethbridge), M.A., Ph.D. (Princeton)

Catherine Beattie/B.A. (McMaster), M.A. (Guelph), Ph.D. (London)

Elisabeth Boetzkes/B.A., M.A. (Alberta), Ph.D. (Calgary), MTh. (Newman Theological College)

David L. Hitchcock/B.A. (McMaster), Ph.D. (Claremont)

Jill LeBlanc/B.A. (McMaster), M.A., Ph.D. (Toronto)

Sami M. Najm/A.A. (Beirut), B.A. (Wesleyan), M.A., Ph.D. (Yale)

Spiro Panagiotou/B.Sc., M.A. (Guelph), Ph.D. (St. Andrews)

Mark Vorobej/B.A. (Carleton), M.A., Ph.D. (Toronto)

Assistant Professor

Brigitte Sassen/B.A. (Toronto), M.A., Ph.D. (Pennsylvania State)

Associate Members

Caroline Bayard/(French) L. ès L., M. ès L. (Toulouse), M.A., Ph.D. (Toronto)

Kenneth M. Blackwell/(Russell Archivist, Mills Library), B.A. (Victoria), M.L.S. (Western Ontario), M.A. (McMaster), Ph.D. (Guelph)

Howard Jones/(Classics), B.A. (London), M.A., Ph.D. (Indiana)

Professors Emeriti

Gary B. Madison/B.A. (St. Joseph's College), M.A. (Marquette), Ph.D. (Paris)

James H. Noxon/B.A., M.A. (Queen's), Ph.D. (Edinburgh)

Evan Simpson/A.B. (Amherst), Ph.D. (Duke)

Department Notes:

1. The Department of Philosophy offers two Level I courses, PHILOS 1B06 and PHILOS 1D06, which are designed to introduce the student to the study of the subject. No student may take more than one of these courses.
2. 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 programmes.
3. Students who do not meet the specified prerequisites for a course may, in exceptional circumstances, obtain permission of the instructor to take the course.
4. An Undergraduate Philosophy Handbook is available in the Departmental Office.
5. 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 1B06 PHILOSOPHY AND SOCIETY**

An introduction to philosophy, through the social-political thought of up to four of Plato, Hobbes, Rousseau, Mill, Marx, and Nietzsche, focusing on rival views of human nature and the state, social conflict, inequality and justice.

Two lectures, one tutorial; two terms

Antirequisite: PHILOS 1D06

PHILOS 1D06 PROBLEMS IN PHILOSOPHY

A critical investigation of philosophical arguments concerning God, politics, morality, human nature, knowledge and art.

Two lectures, one tutorial; two terms

Antirequisite: PHILOS 1B06

PHILOS 2A06 ANCIENT GREEK PHILOSOPHY

A study of Western philosophical thought from its earliest beginnings to late Roman times, with emphasis on Plato and Aristotle.

Three lectures; two terms

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2P06

PHILOS 2B03 INTRODUCTORY LOGIC

Sentential and quantification logics are introduced and applied to arguments in English.

Three lectures; one term

Prerequisite: Registration in Level II and above

PHILOS 2C06 DESCARTES TO HUME

A 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 and above

PHILOS 2D03 MORAL ISSUES

An introduction to moral philosophy, accenting biomedical ethics. Issues such as abortion, human experimentation, euthanasia, and genetic screening will be investigated.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

Cross-list: RELIG ST 2C03

Enrolment is limited to 475 students.

PHILOS 2F03 PHILOSOPHICAL PSYCHOLOGY

A consideration of such questions as: In what terms might human nature be described? How do intentional and unintentional behaviour differ? How do physical and mental states differ? When is action free? Can intelligence be duplicated artificially?

Three lectures; one term

Prerequisite: Registration in Level II and above

PHILOS 2G03 SOCIAL AND POLITICAL ISSUES

A philosophical examination of some contemporary issues in public policy, such as environmental problems, the question of a just distribution of society's goods and services, and problems of liberty and coercion.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

PHILOS 2H03 AESTHETICS

An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: ART HIST 2H03

Offered in alternate years.

PHILOS 2N03 BUSINESS ETHICS

An analysis of ethical issues arising in contemporary business life. Sample topics include: fair and unfair competition; responsibilities towards employees, society and the environment; honesty and integrity in business; the moral status of corporations.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

PHILOS 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 IV of any programme

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: PHILOS 2D03 or RELIG ST 2C03 with a grade of at least B, and at least three additional units of Philosophy; or registration in Level III or IV of an Honours programme in Philosophy

Offered in alternate years.

PHILOS 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 IV of any programme

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: At least six units of Philosophy, and registration in Level III or IV of any programme

Offered in alternate years.

PHILOS 3I03 PHILOSOPHY AND FEMINISM

A study of philosophical issues in feminist thought.

Three lectures; one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme

Offered in alternate years.

PHILOS 3K03 PHILOSOPHY OF EDUCATION

A systematic account of education through a critical analysis of the concepts of teaching, learning, and subject matter.

Two lectures, one tutorial; one term

Prerequisite: At least six units of Philosophy

Offered in alternate years.

PHILOS 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 IV of any programme

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 IV of any programme

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 IV of any programme

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 programme 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 IV of any programme

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 IV of any programme Offered in alternate years.

PHILOS 4D03 20TH-CENTURY ANALYTIC PHILOSOPHY

A study of some main currents of 20th-Century philosophy, including the work of such figures as Russell, Wittgenstein, Quine, and Davidson.

Seminar (two hours); one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme

Offered in alternate years.

PHILOS 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 IV of any programme

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 IV of any programme

Offered in alternate years.

PHILOS 4G03 BERTRAND RUSSELL

An introduction to various aspects of Russell's philosophical thought. Each year two or three topics in his theory of knowledge, metaphysics, philosophy of language and social philosophy will be selected for special attention.

One lecture (two hours), one seminar (one hour); one term

Prerequisite: PHILOS 2B03, and registration in Level III or IV of any programme.

Offered in alternate years.

PHILOS 4H03 METAPHYSICS

An investigation of metaphysical concepts, such as substance, individuation, identity, essence, quality, process, mind, time and causality. Some contemporary criticisms of metaphysics will be discussed.

Seminar (two hours); one term

Prerequisite: PHILOS 2A06 and 2C06, and registration in Level III or IV of a programme in Philosophy

PHILOS 4I03 MEDIEVAL PHILOSOPHY

A study of one or more central medieval philosophers, such as Augustine, Aquinas, or William of Ockham.

Seminar (two hours); one term

Prerequisite: One of PHILOS 2A06, 2C06

Offered in alternate years.

PHILOS 4K03 ANCIENT PHILOSOPHY

A critical study of one or more ancient Greek philosophers such as Parmenides, Plato, Aristotle.

Seminar (two hours); one term

Prerequisite: PHILOS 2A06 and registration in Level III or IV of any programme

Antirequisite: PHILOS 4C03, 4J03

Cross-list: CLASSICS 4K03

Offered in alternate years.

PHILOS 4L03 PRAGMATISM

A study of the most distinctive American contribution to philosophy with emphasis on such figures as C.S. Peirce, William James, John Dewey, C.I. Lewis and Richard Rorty.

Seminar (two hours); one term

Prerequisite: Six units of Philosophy and registration in Level III or IV of any programme

Antirequisite: PHILOS 3D03

Offered in alternate years.

PHILOS 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 programme 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 programme in Philosophy, with a Cumulative Average of at least 8.5 and permission of the Department

Antirequisite: PHILOS 4W03

PHYSICS AND ASTRONOMY**Faculty as of January 15, 1999****Chair**

D.L. Welch

University Professor

Jules P. Carbotte/B.Sc. (Manitoba), M.Sc., Ph.D. (McGill), D.Sc. (Waterloo), F.R.S.C.

Associate Chair

D.E. Venus

Professors

A. John Berlinsky/B.Sc. (Fordham), M.Sc., Ph.D. (Pennsylvania)

Rajat K. Bhaduri/M.Sc. (Calcutta), Ph.D. (McMaster)

John A. Cameron/B.A. (Toronto), Ph.D. (McMaster)

David R. Chettle/B.Sc., M.Sc., Ph.D. (Birmingham)

Malcolm F. Collins/M.A., Ph.D. (Cambridge)

Bruce D. Gaulin/B.Sc. (McGill), Ph.D. (McMaster)

William E. Harris/B.Sc. (Alberta), M.Sc., Ph.D. (Toronto)

Harold K. Haugen/B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)

Catherine Kallin/B.Sc. (British Columbia), A.M., Ph.D. (Harvard)

William V. Prestwich/B.Sc., Ph.D. (McMaster)

Ralph E. Pudritz/B.Sc. (British Columbia), M.Sc. (Toronto), Ph.D. (British Columbia)

Peter G. Sutherland/B.Sc. (McGill), M.S., Ph.D. (Illinois)

David W. Taylor/B.A., D.Phil. (Oxford)

David E. Venus/B.Sc. (Queen's), Ph.D. (Toronto)

James C. Waddington/B.Sc. (Queen's), Ph.D. (McMaster)

Douglas L. Welch/B.Sc., Ph.D. (Toronto)

Associate Professors

Stephane Flibotte/B.Sc., M.Sc., Ph.D. (Montréal)

Graeme M. Luke/B.Sc. (Queen's), Ph.D. (British Columbia)

Christine D. Wilson/B.Sc. (Toronto), Ph.D. (California Institute of Technology)

Assistant Professor

Fiona E. McNeill/B.Sc. (Edinburgh), Ph.D. (Birmingham)

Associate Members

Thomas J. Farrell/(Radiology) B.Sc., B.Ed. (Toronto), M.Sc. (Western Ontario), Ph.D. (McMaster)

Michael S. Patterson/(Radiology) B.Sc. (Queen's), M.Sc. (McMaster), Ph.D. (Toronto)

Andrew J. Rainbow/(Biology) B.Sc. (Manchester), M.Sc. (London), Ph.D. (McMaster)

David A. Thompson/(Engineering Physics) B.Sc., Ph.D. (Reading)

Douglas R. Wyman/(Radiology) B.Math. (Waterloo), Ph.D. (McMaster)

Lecturer

Anton M. Jopko/B.Sc., M.Sc., Ph.D. (McMaster), Dipl. Educ. (Althouse)

Sessional Lecturer

Néil McKay/B.Sc. (Queen's), M.Sc., Ph.D. (McMaster)/part-time

Instructional Assistant

J. Everett Cairns/B.Eng., M.Sc. (McMaster)

Professors Emeriti

Bertram N. Brockhouse/B.A. (British Columbia), M.A., Ph.D. (Toronto), D.Sc. (Waterloo, McMaster), F.R.S.C., F.R.S., Nobel Laureate

I. David Brown/B.Sc., Ph.D. (London), F.C.I.C.

Dennis G. Burke/B.E., M.Sc. (Saskatchewan), Ph.D. (McMaster)

W. Brian Clarke/B.A. (Dublin), Ph.D. (McMaster)
 W. Ross Datars/M.Sc. (McMaster), Ph.D. (Wisconsin), F.R.S.C.
 David A. Goodings/B.A. (Toronto), Ph.D. (Cambridge)
 Archie A. Harms/B.Sc. (British Columbia), M.Sc.Eng., Ph.D. (Washington),
 P.Eng.
 Martin W. Johns/M.A. (McMaster), Ph.D. (Toronto), D.Sc. (Brandon),
 F.R.S.C.
 Terence J. Kennett/M.Sc., Ph.D. (McMaster)
 John A. Kuehner/B.Sc. (Bishop's), M.A. (Queen's), Ph.D. (Liverpool),
 F.R.S.C.
 Carman C. McMullen/M.Sc., Ph.D. (McMaster)
 Yukihisa Nogami/B.Sc., D.Sc. (Kyoto)
 Melvin A. Preston/B.A., M.A. (Toronto), Ph.D. (Birmingham), D.Sc.
 (McMaster), C.D., F.R.S.C.
 Donald W.L. Sprung/B.A. (Toronto), Ph.D., D.Sc. (Birmingham), F.R.S.C.
 Cari V. Stager/B.Sc. (McMaster), Ph.D. (M.I.T.)
 Robert G. Summers-Gill/M.A. (Saskatchewan), Ph.D. (California)
 Thomas Timusk/B.A. (Toronto), Ph.D. (Cornell), F.R.S.C.
 Anatole B. Volkov/B.S. (North Carolina), M.S., Ph.D. (Wisconsin)
 Derek Walton/B.Sc.A. (Toronto), Ph.D. (Harvard)

Department Notes:

1. The Department reserves the right to withdraw a Level III or IV course which is not specifically required in a Physics programme if the registration falls below four.
2. Students in Level III or IV of Physics programmes will find a number of relevant electives among the offerings of the Department of Biology, the Department of Engineering Physics and the School of Geography and Geology.

ASTRONOMY...

Courses *If no prerequisite is listed, the course is open.*

ASTRON 1F03 INTRODUCTION TO ASTRONOMY AND ASTROPHYSICS

Topics include orbital motion, electromagnetic radiation, telescopes, the solar system, stars and stellar evolution, the Milky Way Galaxy, galaxies and quasars, the evolution of the universe.

Three lectures; one term
 Prerequisite: OAC Calculus and OAC Physics or PHYSICS 1P03.
 Antirequisite: SCIENCE 2D03

Intended for Science students. Non-science students interested in these topics are directed to SCIENCE 2D03.

ASTRON 3X03 GALAXIES AND COSMOLOGY

Basic stellar evolution, the interstellar medium. The Milky Way Galaxy; normal and active galaxies and large scale structure in the universe; modern ideas in cosmology.

Three lectures and occasional lab periods; one term
 Prerequisite: One of PHYSICS 2D03, 2G03, 2K03 and one of PHYSICS 2A03, 2B06, and either one of PHYSICS 2H03, 2H04, CHEM 2P06, 2R03 or both CHEM 2PA3 and 2PB3.
 Antirequisite: PHYSICS 3X03

*Alternates with ASTRON 3Y03.
 Offered in 1999-2000.*

ASTRON 3Y03 STELLAR STRUCTURE

The physics of stellar interiors. The main sequence and the life cycle of a star. Stellar evolution, including white dwarfs, neutron stars, and black holes.

Three lectures; one term
 Prerequisite: One of PHYSICS 2D03, 2G03, 2K03 and one of PHYSICS 2A03, 2B06, and either one of PHYSICS 2H03, 2H04, CHEM 2P06, 2R03 or both CHEM 2PA3 and 2PB3. COMP SCI 1MC3 is strongly recommended.
 Alternates with ASTRON 3X03.

Not offered in 1999-2000.

PHYSICS ...

Courses *If no prerequisite is listed, the course is open.*

PHYSICS 1B03 MECHANICS AND WAVES

Mechanics of a point particle, emphasising work and energy. Fluids. Simple Harmonic Motion and Waves, including properties of sound and light waves, interference and diffraction.

Three lectures, one lab (three hours) every other week; one term
 Prerequisite: Either PHYSICS 1P03 or at least 60% in OAC Physics, and credit or registration in SCIENCE 1A00 and MATH 1A03 or 1AA3
 Antirequisite: PHYSICS 1A06, 1B06, 1C06, 1C03

PHYSICS 1BA3 INTRODUCTION TO MODERN PHYSICS A

A course for students intending to proceed in the physical sciences. Linear and angular momentum. Atomic and quantum physics. Nuclear and Particle Physics. Cosmology.

Three lectures, one lab (three hours) every other week; one term
 Prerequisite: PHYSICS 1B03 or 1C03
 Antirequisite: PHYSICS 1A06, 1B06, 1BB3, 1C06

PHYSICS 1BB3 INTRODUCTION TO MODERN PHYSICS B

Linear and angular momentum. Electric fields. Atomic and quantum physics. Nuclear Physics. Applications directed to topics in the life sciences.

Three lectures, one lab (three hours) every other week; one term
 Prerequisite: PHYSICS 1B03 or 1C03
 Antirequisite: PHYSICS 1A06, 1B06, 1BA3, 1C06

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 I

PHYSICS 1E03 WAVES, ELECTRICITY AND MAGNETIC FIELDS

A course for engineering students. Oscillations and waves, interference; electrostatics, electric potential, circuit elements; magnetic fields, optics.

Three lectures, one lab (three hours) every other week; one term
 Prerequisite: Registration in Engineering I

PHYSICS 1P03 INTRODUCTORY PHYSICS

Classical mechanics and waves for students without OAC Physics. Topics include kinematics, Newton's Laws, work, energy, momentum, interference and diffraction. Some topics in modern physics will be discussed.

Three lectures; one term
 Prerequisite: OAC Mathematics
 Antirequisite: At least 60% in OAC Physics

PHYSICS 2A03 INTRODUCTORY ELECTRICITY AND MAGNETISM

Electrostatics, D.C. circuits, the magnetic field; Faraday's law of induction; Maxwell's equations.

Three lectures; one term
 Prerequisite: One of PHYSICS 1A06, 1B03, 1B06, 1C03, 1C06, and one of MATH 1AA3, ARTS&SCI 1D06
 Antirequisite: PHYSICS 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 1A06, 1B03, 1B06, 1C03, 1C06
 Corequisite: MATH 2A03 and either 2C03 or 2O03
 Antirequisite: PHYSICS 2A03

PHYSICS 2D03 MECHANICS FOR ENGINEERING

Dynamics of a particle, central field problem, many-particle systems, the mechanics of rigid bodies, Lagrange's equations.

Three lectures, first term
 Prerequisite: Registration in a programme in Engineering Physics
 Antirequisite: PHYSICS 2G03, 2K03

PHYSICS 2H04 THERMODYNAMICS

An introduction to thermodynamics and its statistical basis at the microscopic level, with applications.

Three lectures, one lab (three hours), tutorial every other week; second term
 Prerequisite: MATH 2A03 and credit or registration in MATH 2C03 or 2O03; either one of PHYSICS 1A06, 1B06, 1C06 or both PHYSICS 1B03 (or 1C03) and credit or registration in PHYSICS 1BA3 (or 1BB3)
 Antirequisite: CHEM 2P06, 2PA3, 2R03, ENGINEER 2V04, PHYSICS 2H03
 Cross-list: ENG PHYS 2H04

PHYSICS 2K03 MECHANICS AND RELATIVITY

Dynamics of a particle, central field problem, many-particle systems, Lagrange's equations, Special Relativity.

Three lectures; first term
 Prerequisite: Credit or registration in MATH 2A03; one of PHYSICS 1A06, 1B06, 1C06, 1B03, 1C03
 Antirequisite: PHYSICS 2C03, 2D03, 2G03

PHYSICS 2L03 DYNAMICAL SYSTEMS

The continuation of PHYSICS 2K03, including rigid body motion and chaos.

Three lectures, second term
 Prerequisite: PHYSICS 2K03, and credit or registration in either MATH 2C03 or 2O03

PHYSICS 3A03 RELATIVITY

An introduction to general relativity.

Three lectures; one term

Prerequisite: PHYSICS 2C03 or 2K03 and registration in any Honours programme in Science or any programme in the Faculty of Engineering

Offered in alternate years.

Not offered in 1999-2000.

PHYSICS 3B06 ELECTRONICS

Circuit theorems, principles of semiconductors and devices, bipolar junction transistor (DC biasing and AC model), amplifier circuits (single and multi-stage), field effect transistors and circuits, difference amplifier, feedback, oscillators, operational amplifier and applications.

Two lectures, both terms; one lab (two hours); two terms

Prerequisite: PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04

Antirequisite: PHYSICS 3BA3, 3BB3

PHYSICS 3BA3 ELECTRONICS I

Circuit theorems, principles of semiconductors and devices, bipolar junction transistor (DC biasing and AC model), amplifier circuits (single and multi-stage).

Two lectures, one lab (two hours); first term

Prerequisite: PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04

Antirequisite: PHYSICS 3B06

PHYSICS 3BB3 ELECTRONICS II

Field effect transistors and circuits, difference amplifier, feedback, oscillators, operational amplifier and applications.

Two lectures, one lab (two hours); second term

Prerequisite: PHYSICS 3BA3

Antirequisite: PHYSICS 3B06

PHYSICS 3C03 ANALYTICAL MECHANICS

Stability theory; Lagrange's equations, conservative Hamiltonian systems; transformation theory and action angle variables; perturbation theory, resonances; non-integrable systems and chaos.

Three lectures; one term

Prerequisite: Credit or registration in, MATH 3C03 and registration in any Honours programme in Science or any programme in the Faculty of Engineering; or registration in Honours Mathematics and Physics; or permission of the instructor

Offered in alternate years.

Offered in 1999-2000.

PHYSICS 3H04 INTERMEDIATE LABORATORY

Experiments in atomic physics, neutron physics, optics, spectroscopy, mechanics.

One lecture, one term; one lab (three hours) two terms

Prerequisite: PHYSICS 2B06 and credit or registration in PHYSICS 3M03 or 3O03

PHYSICS 3HA2 INTERMEDIATE LABORATORY (CO-OP) I

Experiments in atomic physics, neutron physics, optics, spectroscopy, mechanics.

One lecture, one lab (three hours); first term

Prerequisite: PHYSICS 2B06, credit or registration in PHYSICS 3M03 or 3O03, and registration in Level III of Honours Medical and Health Physics Co-op

PHYSICS 3HB2 INTERMEDIATE LABORATORY (CO-OP) II

The continuation of PHYSICS 3HA2.

One lab (three hours); second term

Prerequisite: PHYSICS 3HA2

PHYSICS 3I01 SEMINAR I

Preparation and presentation of report on first work term.

One seminar (one hour); first term

Prerequisite: Registration in Level IV of Honours Medical and Health Physics Co-op

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: PHYSICS 2H04 (or 2H03), MATH 2A03, and one of MATH 2C03, 2O03; or registration in Honours Chemistry and Physics

Antirequisite: CHEM 4Y03*, PHYSICS 3K04

PHYSICS 3M03 QUANTUM MECHANICS AND ITS APPLICATIONS I

Phenomenological basis for quantum physics, topics from atomic and photon physics; wave phenomena; Schrödinger equation for one dimensional systems, barriers, harmonic oscillator.

Three lectures; one term

Prerequisite: One of MATH 3C03, 3I03 and either one of PHYSICS 2B06, ENGINEER 2MM3 or both ENG PHYS 2A03 and 2E04; or registration in Honours Mathematics and Physics. MATH 3C03 or 3I03 may be taken concurrently.

PHYSICS 3MM3 QUANTUM MECHANICS AND ITS APPLICATIONS II

Schrödinger equation for 3D systems with applications to atomic and modern physics.

Three lectures; one term

Prerequisite: PHYSICS 3M03

PHYSICS 3N03 PHYSICAL OPTICS

Interference; Fraunhofer and Fresnel diffraction; Maxwell's equations and the electromagnetic character of light; polarization and double refraction; interference of polarized light; selected topics in modern optics.

Three lectures; one term

Prerequisite: One of MATH 2A03, 2Q04 and one of MATH 2C03, 2O03, 2P04; and either PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04

PHYSICS 3O03 MODERN PHYSICS AND WAVE MECHANICS

Phenomenological basis for quantum physics, topics from atomic and photon physics; wave phenomena; Schrödinger equation for one dimensional systems, barriers, harmonic oscillator.

Three lectures; one term

Prerequisite: PHYSICS 2A03 or 2B06

Not open to students with credit or registration in PHYSICS 3M03.

PHYSICS 3Q03 INTRODUCTORY QUANTUM MECHANICS

Schrödinger equation for 3D systems with applications to atomic and modern physics.

Three lectures; one term

Prerequisite: PHYSICS 3O03 and MATH 3C03

Not open to students with credit or registration in PHYSICS 3MM3.

PHYSICS 3R03 COMPUTATIONAL MEDICAL PHYSICS

A problem-based introduction to the use of numerical methods in medical physics.

Three lectures, one lab (three hours); second term

Prerequisite: Registration in Level III of Honours Medical and Health Physics or Level III or IV of Honours Medical and Health Co-op

PHYSICS 3T03 RADIOACTIVITY AND RADIATION INTERACTIONS

Radioactivity and radiation phenomenology: interaction of radiations with matter, dosimetry, tracer methods, radiation in medicine, biological effects, radiation levels and regulations, radiation protection.

Three lectures; one term

Prerequisite: One of PHYSICS 1A06, 1B06, 1BA3, 1BB3, 1C06 or permission of the instructor.

Cross-list: BIOLOGY 3L03

PHYSICS 3XX3 HUMAN BIOLOGY FOR PHYSICAL SCIENCE

An overview of the structure and the function of the major organ systems of the body with some reference to radiation interactions.

Three lectures; first term

Prerequisite: Registration in Level IV of a Medical and Health Physics programme or permission of the instructor.

Antirequisite: BIOLOGY 3XX3

GEO 3ZZ3 GEODYNAMICS

Formerly: GEOLOGY 2I03

Application of physical methods to understanding large-scale processes in the Earth. Plate tectonics, structure of Earth's interior, rock magnetism, seismology, gravitation, natural radioactivity, heat flow.

Two lectures, one tutorial; one term

Prerequisite: One of PHYSICS 1A06, 1B03, 1B06, 1C06, 1C03

Antirequisite: GEOLOGY 2I03, PHYSICS 2I03, 3ZZ3

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, 2Q04; and one of MATH 2C03, 2O03, 2P04.

One of PHYSICS 2B06, 2C03, 2D03, 2G03, or 2K03 is recommended.

Not open to students with credit or registration in MATH 3FF3, 3J04.

MATH 3D03 MATHEMATICAL PHYSICS II

Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.

Three lectures; one term

Prerequisite: MATH 3C03

Antirequisite: MATH 3K03

Not open to students with credit or registration in MATH 3J04, 3X03.

Not open to students registered 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 programme in which PHYSICS 4A03 is required or is a specified option

PHYSICS 4B04 ELECTROMAGNETIC THEORY

Potential theory, electrostatics and magnetostatics in matter, electrodynamics, electromagnetic waves and wave guides, radiation from dipoles; Special Relativity and electromagnetism.
Two lectures; two terms
Prerequisite: PHYSICS 2B06 or ENG PHYS 2A03 and 2E04, and MATH 3D03; or registration in Honours Mathematics and Physics

PHYSICS 4D06 DIGITAL LOGIC AND COMPUTER SYSTEMS

The design and use of digital logic systems and their application to data acquisition and control techniques. The project-oriented laboratory involves both hardware and software.
Two lectures, one lab (three hours); first term
Prerequisite: PHYSICS 2B06, or ENG PHYS 2A03 and 2E04
Antirequisite: COMP ENG 3HB3, 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); first term
Prerequisite: PHYSICS 2B06, or ENG PHYS 2A03 and 2E04
Antirequisite: COMP ENG 3HB3, PHYSICS 4D06

PHYSICS 4DB3 DIGITAL LOGIC AND COMPUTER SYSTEMS II

The continuation of PHYSICS 4DA3
Two lectures, one lab (three hours); second 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, or a grade of at least B- in PHYSICS 3Q03 or registration in Level IV of an Honours Medical and Health Physics programme

PHYSICS 4F03 QUANTUM MECHANICS

A sequel to Physics 3MM3, including general structure of quantum mechanics, matrix mechanics, scattering, perturbation theory and the variational method.
Three lectures; one term
Prerequisite: PHYSICS 3MM3, and MATH 3D03; or registration in Honours Mathematics and Physics

PHYSICS 4G03 COMPUTATIONAL PHYSICS

A course using microcomputers to solve selected problems in physics. The emphasis is in applying computational methods to physics, rather than numerical methods or computer programming.
One lab (three hours); one term
Prerequisite: PHYSICS 3MM3

PHYSICS 4I01 SEMINAR II

Preparation and presentation of report on second work term.
One seminar (one hour); second term
Prerequisite: Registration in Level IV of Honours Medical and Health Physics Co-op

PHYSICS 4J04 ADVANCED LABORATORY

Projects in atomic, nuclear and solid state physics. Three or four projects are required, one of which may be associated with a faculty research programme.
One lab (three hours); two terms
Prerequisite: Registration in a programme in which PHYSICS 4J04 is required or is a specified option; or permission of the Chair of the Department

PHYSICS 4K03 SOLID STATE PHYSICS

Crystal structure and binding; lattice vibrations; electron energy bands; metals and semiconductors; magnetism.
Three lectures; one term
Prerequisite: PHYSICS 3MM3 or a grade of at least B- in 3O03 and 3Q03 or registration in Level IV of an Honours Medical and Health Physics programme

PHYSICS 4Q04 RESEARCH PROJECT

An experimental or theoretical project to be carried out under the supervision of a faculty member. A report will be required.
Lab (six hours); two terms
Prerequisite: Registration in Level IV of any Physics programme, a CA of at least 9.0 and permission of the Chair of the Department. Application for permission must be received by March 31st of the previous year.
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PHYSICS 4R06 RADIATION AND RADIO ISOTOPE METHODOLOGY

Techniques and theory of the measurement of radiation. Includes radioactivity and radioactive decay, solid state dosimetry, principles of radioactive detectors, counting statistics and data reduction, advanced multidetector systems.
One lecture, one lab (three hours) every other week; two terms
Prerequisite: Registration in Level IV of an Honours Medical and Health Physics programme or permission of the instructor

PHYSICS 4T03 INTRODUCTION TO MEDICAL PHYSICS

Basic concepts in radiology, nuclear medicine, radiotherapy, physiological measurements and laser applications.
Three lectures; one term
Prerequisite: One of MATH 2A03, 2Q04 and one of MATH 2C03, 2O03, 2P04; and either PHYSICS 3T03 or ENG PHYS 3D03

PHYSICS 4Z13 INQUIRY: ENERGY, PHYSICS AND THE ENVIRONMENT

Inquiry seminars are designed to develop skills basic to the systematic investigation of public issues related to Science.
Three lectures or seminars; one term
Prerequisite: Enrolment in Level IV of an Honours (Complementary Studies Option) programme in the Faculty of Science. One of PHYSICS 1A06, 1B06, 1C06, or 1B03 (or 1C03) and 1BA3 (or 1BB3) is recommended.
Antirequisite: PHYSICS 2H03, 2H04, SCIENCE 4I03
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PHYSICS 4ZJ3 INQUIRY: RELATIVITY AND GRAVITATION

To acquire a qualitative understanding of Einstein's Special and General Theories of Relativity.
Lectures and tutorials (three hours); one term
Prerequisite: Enrolment in Level IV of an Honours (Complementary Studies Option) programme in the Faculty of Science.
Antirequisite: SCIENCE 4J03
Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PHYSIOTHERAPY

(SEE OCCUPATIONAL THERAPY AND PHYSIOTHERAPY)

POLISH

(SEE MODERN LANGUAGES, POLISH)

POLITICAL SCIENCE

Faculty as of January 15, 1999

Chair

Richard W. Stubbs

Professors

- Michael M. Atkinson/B.A. (Alberta), M.A., Ph.D. (Carleton)
- Barbara A. Carroll/B.A. (Manitoba), M.A. (Carleton), Ph.D. (American)
- William D. Coleman/B.A. (Carleton), A.M., Ph.D. (Chicago)
- Henry J. Jacek/B.S.S. (Fairfield), M.A., Ph.D. (Georgetown)
- Thomas J. Lewis/B.A. (Carleton), M.A., Ph.D. (SUNY, Buffalo)
- Kim Richard Nossal/B.A., M.A., Ph.D. (Toronto)
- Mark Sproule-Jones/B.Sc. (London), M.A., Ph.D. (Indiana)/V.K. Copsps Chair in Urban Studies
- Michael B. Stein/B.A. (McGill), M.A., Ph.D. (Princeton)
- Richard W. Stubbs/B.Sc. (Wales), M.A. (Lancaster), Ph.D. (Alberta)

Associate Professors

Janet Aizenstat/B.A. (Toronto), M.A. (McMaster), Ph.D. (Toronto)
 George B. Breckenridge/M.A. (Glasgow and Duke), Ph.D. (Duke)
 Stefania Szlek Miller/M.A. (McMaster), Ph.D. (Toronto)
 Tony Porter/B.A. (McGill), M.A., Ph.D. (Carleton)
 John W. Seaman/B.A. (Mount Allison), M.A. (Dalhousie), Ph.D. (Toronto)
 Donald M. Wells/B.A. (Western Ontario), M.A. (British Columbia), Ph.D. (Toronto)
 Charlotte A. B. Yates/B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)

Assistant Professors

Karen Bird/B.A. (Wilfrid Laurier), Ph.D. (Minnesota)
 Nibaldo H. Galleguillos/B.A. (Chile), M.A., Ph.D. (Toronto)
 Robert J. O'Brien/B.A. (Carleton), M.Sc. (London), Ph.D. (York)
 Leah F. Vosko/B.A. (Trent), M.A. (Simon Fraser), Ph.D. (York)

Associate Members

Rhoda E. Howard/(Sociology) B.A., M.A., Ph.D. (McGill)
 Julia O'Connor/(Sociology) B.A., M.Soc.Sci. (Ireland), Ph.D. (Toronto)
 James J. Rice/(Social Work) B.A. (Sir George Williams), B.S.W., M.S.W. (Calgary), Ph.D. (Exeter)

Professors Emeriti

Adam Bromke/M.A. (St. Andrews), Ph.D. (Montreal and McGill)
 William M. Chandler/B.A. (Cornell), Ph.D. (North Carolina)
 Marshall N. Goldstein/B.A. (Florida), Ph.D. (North Carolina)
 Gordon P. Means/B.A. (Reed College), M.A., Ph.D. (Washington)
 Derry Novak/B.A. (Toronto)
 Peter J. Potichnyj/B.A. (Temple), M.A., Ph.D. (Columbia)
 Klaus H. Pringsheim/B.A. (California, Los Angeles), M.A. (Columbia)

Department Notes:

- The Department of Political Science offers courses in Canadian Politics, Comparative Politics, Political Theory, International Politics and Research Methods.
- 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.
- All students are encouraged to seek advice from members of the Department in developing a programme of study. All Honours students are strongly advised to discuss their programme with an undergraduate advisor to ensure that it meets Departmental requirements.
- POL SCI 3N06 (previously 2F06) and 2O06 are required for students in Honours Political Science programmes. These two courses are recommended for students in B.A. programmes.
- 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.
- Level III courses identified as *Enrolment is limited* have a limit of 50 students. Although priority is given to Political Science students, many Level III courses have spaces for other students.
- There are no course prerequisites for Level III courses. 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.
- With the exception of 4Z06, enrolment in all Level IV courses is limited. In courses cross-listed in the Graduate Calendar (4BB6, 4E06, 4O06), the limit is 14 undergraduate students; in all others, the limit is 18. Admission to Level IV limited enrolment courses is by preregistration preferential ballot. Preference will be given as follows:
 - Level IV Honours and Combined Honours Political Science
 - Continuing Students
 - Level III Honours and Combined Honours Political Science
 - B.A. in Political Science
 - Others

All students seeking registration in Level IV courses for the Fall/Winter Session including part-time degree students, are urged to consult the Departmental Office (Kenneth Taylor Hall, Room 527) no later than **May 1**, regarding balloting for the following academic year. Permission from the Department will be required to complete registration in Level IV limited-enrolment courses.

Courses *If no prerequisite is listed, the course is open.***POL SCI 1G06 POLITICS AND GOVERNMENT**

An introduction to the study of politics with the spotlight on Canada, emphasizing critical discussion of issues before us today: social conflict, prospects for democracy, citizens' rights and responsibilities and Canada's future as a nation.

Antirequisite: POL SCI 1A06, 1B03, 1C03, 2G06

POL SCI 2A06 COMPARATIVE POLITICS

An introduction to comparative politics with emphasis on the different forms of government in a number of selected countries including Canada.

Three hours (lectures and tutorials); two terms

POL SCI 2B06 U.S. POLITICS

A study of the development, nature, and functioning of the political system of the U.S.A.

Three hours (lectures and tutorials); two terms

POL SCI 2E06 GLOBAL POLITICS

A study of the institutions and processes of the international political system.

Three hours (lectures and tutorials); two terms

POL SCI 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 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

POL SCI 3A06 HISTORY OF POLITICAL IDEAS

A study of the political ideas of some eminent thinkers from classical times to the 19th century.

Three hours; two terms

Enrolment is limited.

POL SCI 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

Enrolment is limited.

POL SCI 3C03 GOVERNMENT AND POLITICS OF INDIGENOUS PEOPLES

An historical examination of the leadership and politics in Canada's indigenous communities, with a particular focus on pre-contact political structures, the Indian Act and its consequences, and contemporary social questions.

Three hours; one term

Enrolment is limited.

POL SCI 3D03 POLITICS OF RESTRUCTURING: THE STATE AND THE ECONOMY

An examination of the politics of economic restructuring in selected industrialized countries during the past decade; major issues include privatization, labour policies, and trade agreements.

Three hours; one term

Enrolment is limited.

POL SCI 3DD3 PARTICIPATION AND ELITIST POLITICS IN CANADA

An analysis of the changing impact of citizen participation and of elitist politics on major Canadian political institutions and on the overall performance of the Canadian political system.

Three hours; one term

Antirequisite: POL SCI 3DD6

Enrolment is limited.

POL SCI 3E03 THE POLITICS OF INTERNATIONAL ECONOMIC ORGANIZATIONS

An analysis of the structure, function and politics of the principal multilateral organizations governing the postwar international economy.

Three lectures; one term

Enrolment is limited.

POL SCI 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

Enrolment is limited.

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; one term

Enrolment is limited.

POL SCI 3FF3**CANADIAN FOREIGN POLICY**

An analysis of recent issues in Canada's external relations designed to indicate themes, problems and constraints in the making and execution of foreign policy in Canada.

Three hours; one term

Enrolment is limited.

POL SCI 3GG3**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

Enrolment is limited.

POL SCI 3HH3**INTERGOVERNMENTAL POLICY
ISSUES IN CANADA**

A survey of the policy processes and substantive policy concerns in the operation of the federal system of Canada, including economic, social and ethno-cultural policy areas.

Three hours; one term

Enrolment is limited.

POL SCI 3I03**TOPICS IN AMERICAN POLITICS**

The study of a central component of the U.S. political system.

Three hours; one term

Enrolment is limited.

POL SCI 3I13**ELECTIONS AND ELECTORAL
BEHAVIOUR IN CANADA**

A study of the development, nature and functioning of the electoral process in Canada and the basis of voters' decisions.

Three hours; one term

Enrolment is limited.

POL SCI 3JJ3**PROVINCIAL POLITICS IN CANADA**

A study of the development, nature and functioning of the political systems of the Canadian provinces.

Three hours; one term

Enrolment is limited.

POL SCI 3L03**THE AMERICAN PRESIDENCY**

An examination of the office of the American presidency and the ideological and institutional environment within which it functions.

Three hours; one term

Enrolment is limited.

POL SCI 3N06**RESEARCH METHODS, STATISTICS
AND POLITICAL ANALYSIS**

An introduction to the study of concept and theory formation, and an overview of the scope, research methods and statistical techniques of political science.

Three hours; two terms

Antirequisite: POL SCI 2F06

(See Note 4 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

Enrolment is limited.

POL SCI 3O06**MODERN POLITICAL THOUGHT**

A critical analysis of modern political ideas, from the early nineteenth century to the present time, with special emphasis on the theories of modern conservatism, liberalism, socialism, fascism and democracy.

Three hours; two terms

Enrolment is limited.

POL SCI 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

Enrolment is limited.

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

Enrolment is limited.

POL SCI 3R03**POLITICAL PSYCHOLOGY**

Psychological explanations for the political behaviour of elites and masses.

Three hours; one term

Enrolment is limited.

POL SCI 3S03**LOCAL GOVERNMENT
AND POLITICS IN CANADA**

A description of the laws and institutions of local government; examination of relationships with citizens and other levels of government; the dynamics of local politics.

Three hours; one term

Enrolment is limited.

POL SCI 3T03**PROBLEMS OF POSTCOMMUNIST TRANSITION**

An examination of the legacy of communism and system transformation in Eastern European countries such as Poland, the Czech Republic and Slovakia.

Three hours; one term

Antirequisite: POL SCI 3M06, 4J06

Enrolment is limited.

POL SCI 3TT3**POLITICS OF POSTCOMMUNIST RUSSIA**

An examination of the legacy of the Soviet communist system and system transformation in Russia.

Three hours; one term

Antirequisite: POL SCI 3K06, 4J06

Enrolment is limited.

POL SCI 3U03**POLITICS IN EUROPE**

Politics, government and policies of the European Union and/or selected countries within Europe.

Three hours; one term

Enrolment is limited.

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 programme in Political Science, and the written permission of an Undergraduate Advisor on behalf of the Department. A written proposal must be submitted to the Department prior to the term in which the course is to be taken.

POL SCI 3W03**POLITICS IN BRITAIN**

A study of the development and functioning of the British political system, including political culture, political parties and parliamentary institutions.

Three hours; one term

Enrolment is limited.

POL SCI 3WW3**ISSUES IN COMPARATIVE POLITICS**

An examination of emerging theoretical and substantive issues in a comparative context.

Three hours; one term

Enrolment is limited.

POL SCI 3X03**POLITICS AND SOCIETY IN AFRICA**

An examination of the problems of democratic institutions in Sub-Saharan Africa.

Three hours; one term

Enrolment is limited.

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; one term

Enrolment is limited.

POL SCI 3YY3**ISSUES IN PUBLIC POLICY**

An examination of emerging theoretical and substantive issues in the field of public policy studies.

Three hours; one term

Enrolment is limited.

**POL SCI 3Z03 PUBLIC ADMINISTRATION:
STRUCTURES AND PROGRAMME DELIVERY**

The organizational arrangements for implementing public policies in Canada, including an assessment of their efficiency, effectiveness and accountability. Three hours; one term
Antirequisite: POL SCI 3Z06
Enrolment is limited.

**POL SCI 3ZZ3 PUBLIC ADMINISTRATION:
THEORY AND DECISION-MAKING**

Explanations of organizational design, bureau resources and other public management issues in Canada. Three hours; one term
Antirequisite: POL SCI 3Z06
Enrolment is limited.

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 of POL SCI 2B06, 3I03, 3L03 and permission of the Department
Enrolment is limited.

POL SCI 4BB6 THE TRIAL OF SOCRATES

Plato's understanding of the status of philosophy with respect to politics and rhetoric on the basis of the dialogues thematically connected to the trial and death of Socrates. Three hours (seminar); two terms
Prerequisite: Registration in Level IV of any programme, a course in Political Theory and permission of the Department
Enrolment is limited.

**POL SCI 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: POL SCI 2E06 and permission of the Department
Antirequisite: POL SCI 4D03, 4F06
Enrolment is limited.

POL SCI 4E06 ISSUES IN LIBERAL-DEMOCRATIC THEORY

An analysis of liberal and liberal-democratic approaches to a select issue, such as justice, religion, education, political authority or community. Three hours (seminar); two terms
Prerequisite: Registration in Level IV of any programme, a course in Political Theory and permission of the Department
Not open to students with credit in POL SCI 4U06 if taken in 1995/96.
Enrolment is limited.

POL SCI 4G06 COMPARATIVE PUBLIC POLICY

A critical analysis of the formation, content and impact of public policy within advanced industrial societies. Three hours (seminar); two terms
Prerequisite: Six units of Comparative Politics and permission of the Department
Enrolment is limited.

POL SCI 4H03 ADVANCED STATISTICAL ANALYSIS

An outline of advanced levels of measurement and descriptive statistics, and a study of the logic of statistical inference and its applications. Three hours (lectures and labs); one term.
Prerequisite: POL SCI 3N06 and permission of the Department
Antirequisite: SOCIOL 4Z03

POL SCI 4M06 ISSUES IN INTERNATIONAL POLITICS

An examination of selected topics in international politics and foreign policy. Three hours (seminar); two terms
Prerequisite: A course in International Relations and permission of the Department
Enrolment is limited.

**POL SCI 4MM6 INTERNATIONAL RELATIONS
OF THE PACIFIC RIM**

An examination of the major international and regional economic and strategic issues that currently preoccupy the governments and peoples of the Pacific Rim. Three hours (seminar); two terms
Prerequisite: A course in International Relations and permission of the Department
Enrolment is limited.

POL SCI 4O06 CANADIAN PUBLIC POLICY

An examination of the patterns of public policy in Canada and a critical evaluation of several types of explanation. Three hours (seminar); two terms
Prerequisite: One of POL SCI 1G06 or 2G06; registration in Level IV of any programme and permission of the Department
Enrolment is limited.

POL SCI 4Q06 POLITICS AND SOCIETY IN LATIN AMERICA

An examination of Latin America's longstanding hegemonic crisis and corresponding ideologies such as populism, corporatism, and authoritarianism. Three hours (seminar); two terms
Prerequisite: POL SCI 3XX3 and permission of the Department
Enrolment is limited.

POL SCI 4S06 CANADIAN POLITICAL THEORY

An investigation into the character of Canadian liberalism and the various critiques of liberalism found in the works of G.P. Grant, C.B. Macpherson, George Woodcock and other Canadian political theorists. Three hours (seminar); two terms
Prerequisite: Two courses from Political Theory, Canadian Politics, or Philosophy and permission of the Department
Enrolment is limited.

POL SCI 4W06 QUEBEC POLITICS

The political ideology of Quebec-based parties and movements, the impact of industrialization upon Quebec culture, and the economic implications of separatism. Three hours (seminar); two terms
Prerequisite: One of POL SCI 1G06 or 2G06 and permission of the Department
Enrolment is limited.

POL SCI 4Z06 HONOURS ESSAY

A major piece of scholarly writing designed to cap the undergraduate Honours programme in Political Science. The subject matter is to be different from that covered in 3UU3, if the student is registered or has credit in that course.
Prerequisite: Registration in Level IV of any Honours programme in Political Science. For registration in the summer, written permission of the Course Coordinator is also required.

PSYCHOLOGY**Faculty as of January 15, 1999****Chair**

Betty A. Levy

Professors

Lorraine G. Allan/B.A., M.A. (Toronto), Ph.D. (McMaster)
Lee R. Brooks/A.B. (Columbia), M.S., Ph.D. (Brown)
Martin Daly/B.A. (Toronto), M.A. (McGill), Ph.D. (Toronto)
Denys deCatanzaro/B.A., M.A. (Carleton), Ph.D. (British Columbia)
Bennett G. Galef/A.B. (Princeton), M.A., Ph.D. (Pennsylvania)
Larry L. Jacoby/B.A. (Washburn), M.A., Ph.D. (Southern Illinois)
Betty A. Levy/B.A. (Dalhousie), M.A., Ph.D. (Toronto)
Stephen W. Link/B.A. (Colorado), Ph.D. (Stanford)
Daphne M. Maurer/B.A. (Swarthmore), M.A. (Pennsylvania), Ph.D. (Minnesota)
John R. Platt/B.A. (Kansas), Ph.D. (Texas)
Ronald J. Racine/B.Sc. (Oregon), M.Sc., Ph.D. (McGill)
Larry E. Roberts/B.A., Ph.D. (Minnesota)
Shepard Siegel/A.B. (New York), M.S., Ph.D. (Yale)
Harvey Weingarten/B.Sc. (McGill), M.S., M.Phil., Ph.D. (Yale)

Adjunct Professors

Mertice M. Clark/B.A., Ph.D. (McMaster)
Terri L. Lewis/B.A. (Toronto), Ph.D. (McMaster)
Margo I. Wilson/B.A. (Alberta), M.A. (California), Ph.D. (London)

Associate Professors

Sue Becker/B.A., M.Sc. (Queen's), Ph.D. (Toronto)
Richard B. Day/B.A. (Massachusetts), M.A. (Iowa), Ph.D. (McMaster)
Kathryn M. Murphy/B.A. (Western Ontario), M.A., Ph.D. (Dalhousie)
Laurel J. Trainor/ARCT (Royal Conservatory of Toronto), B.Mus., M.A., Ph.D. (Toronto)

Assistant Professors

Bruce Milliken/B.A., Ph.D. (*Waterloo*)
 Louis A. Schmidt/B.A. (*Maryland*), M.S. (*Baltimore*), Ph.D. (*Maryland*)
 Judith M. Shedden/B.Sc. (*Alberta*), M.S., Ph.D. (*Pittsburgh*)
 Hongjin Sun/B.Sc., M.Sc. (*Peking*), M.A. (*Western Ontario*), Ph.D. (*Queen's*)

Associate Members

Suzanne M. Archie/(*Psychiatry*) B.Sc., M.D. (*McMaster*), F.R.C.P.S.
 Ramona M. Carbotte/(*Psychiatry*) B.Sc. (*Manitoba*), M.Sc. (*McGill*), Ph.D. (*McMaster*)
 Charles E. Cunningham/(*Psychiatry*) B.A. (*California State*), M.A. (*San Diego State*), Ph.D. (*The American University*)
 John R. Davis/(*Psychiatry*) B.A. (*George Washington*), M.A., Ph.D. (*Wayne State*)
 Joseph M. Ducharme/(*Psychiatry*) B.A., M.A. (*Windsor*), Ph.D. (*Toronto*)
 Jan E. Fleming/(*Psychiatry*) B.Sc., M.D. (*Toronto*)
 Eleni Hapidoul/(*Psychiatry*) B.A. (*The American College of Greece*), M.A. (*New Brunswick*), Ph.D. (*McMaster*)
 Joel P. Hundert/(*Psychiatry*) B.A., M.A. (*McMaster*), Ph.D. (*Western Ontario*)
 Ellen Lipman/(*Psychiatry*) B.Sc. (*Western Ontario*), M.D., M.Sc. (*McMaster*)
 Harriet L. MacMillan/(*Psychiatry*) M.D. (*Queen's*), M.Sc. (*McMaster*), F.R.C.P.S.
 William Mahoney/(*Pediatrics*) M.D. (*McMaster*)
 Catherine L. Mancini/(*Psychiatry*) B.Sc., M.Sc., M.D. (*Western Ontario*)
 Harold R. Miller/(*Psychiatry*) A.B., M.Sc. (*Ohio*), Ph.D. (*Missouri*)
 Alison G. Niccols/(*Psychiatry*) B.A., M.A., Ph.D. (*York*)
 Geoff R. Norman/(*Clin. Epidem. & Biostats.*) B.Sc. (*Manitoba*), M.A. (*Michigan State*), Ph.D. (*McMaster*)
 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.
 Mark N. Sanford/(*Psychiatry*) M.B., Ch.B. (*Otago*)
 Karen L. Shue/(*Psychiatry*) B.A. (*Hood College*), Ph.D. (*McGill*)
 William Sulis/(*Psychiatry*) 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*)
 Michael A. Van Ameringen/(*Psychiatry*) B.Sc., M.D. (*McMaster*)
 Priyanthy Weerasekera/(*Psychiatry*) B.A., M.D. (*McMaster*), M.Ed. (*Harvard*)
 Trevor Young/(*Psychiatry*) M.D. (*Manitoba*), M.Sc., Ph.D. (*Toronto*)

Professors Emeriti

Ian M. Begg/B.A., M.A., Ph.D. (*Western Ontario*)
 D. William Carment/B.A. (*Saskatchewan*), M.A., Ph.D. (*Toronto*)
 Herbert M. Jenkins/A.B. (*Oberlin*), Ph.D. (*Harvard*)
 Alfred B. Kristofferson/B.S., M.A., Ph.D. (*Michigan*)
 G. Rolfe Morrison/B.Sc., M.Sc. (*McGill*), Ph.D. (*Brown*)
 Roy M. Pritchard/B.Sc., Ph.D. (*Reading*)
 Grant K. Smith/B.Sc., Ph.D. (*McGill*)

Department Notes:

1. The University reserves the right to limit enrolment in any course. Where priorities have to be established first consideration will be given to Honours B.Sc. and Honours B.A. Psychology students.
2. Registration in all courses with a course code ending "****" (ie. selected topics, independent research, individual readings and honours essays) requires written permission of the Department. Registration with appropriate permission must be completed no later than the last day for registration as stated in the Calendar under *Sessional Dates*.
3. In certain cases students lacking the specific prerequisites listed for a course may be deemed, by the course instructor, to have equivalent qualifications. In such cases permission to register in the course may be requested from the instructor.
4. Students who entered Level II Honours B.A. Psychology before September 1994, may, in Level IV register for PSYCH 4D06 (Psychology Thesis) with permission of the course coordinator: These students will be transferred to Honours Psychology (Specialist Option).

COURSES *If no prerequisite is listed, the course is open.*

PSYCH 1A03 INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY

This course introduces experimental psychology, and includes basic research methods in psychology, the relationship between the brain and behaviour, sensation and perception, conditioning and learning, and memory and reasoning.
 Three hours (lectures and tutorials); one term
 Antirequisite: PSYCH 1A06

PSYCH 1AA3 THE PSYCHOLOGY OF INTERPERSONAL BEHAVIOUR

A discussion of phenomena and theory in areas of psychology related to interpersonal behaviour. Topics include child development, personality, abnormal psychology, social psychology, and sociobiology.
 Three hours (lectures and tutorials); one term
 Prerequisite: PSYCH 1A03
 Antirequisite: PSYCH 1A06

PSYCH 2AA3 SURVEY OF DEVELOPMENTAL PSYCHOLOGY

A general survey of theories and mechanisms of development, illustrated through examples from neural, perceptual, cognitive, social and emotional development. This course is designed for students not registered in a psychology programme or not wishing to do further work in developmental psychology. Others are referred to PSYCH 3GG3.
 Three lectures; one term
 Prerequisite: PSYCH 1AA3 or 1A06
 Antirequisite: Psych 2A03, 3G03, 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: PSYCH 1AA3 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2C03 INTRODUCTION TO SOCIAL PSYCHOLOGY

An overview of research and theory in areas such as social perception, attitude and attitude change, social influence, interpersonal attraction, altruism, aggression, small group processes.
 Three lectures; one term
 Prerequisite: PSYCH 1AA3 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2E03 SENSORY PROCESSES

General processes mediating sensation and perception. Topics include neural principles of sensory pathways, the measurement of perception and the role of sensory processes in behaviour.
 Three lectures; one term
 Prerequisite: PSYCH 1A06 or 1AA3 or registration in Honours Biology and Psychology

PSYCH 2F03 FUNDAMENTALS OF NEUROSCIENCE

Fundamentals of nervous system and endocrine function in humans and animals, including neurophysiology, neural transmission and neuroanatomy.
 Prerequisite: PSYCH 1AA3 or 1A06 or registration in Honours Biology and Psychology, and BIOLOGY 1A03 or 1A06
 Antirequisite: PSYCH 3F03

PSYCH 2G03 PSYCHOLOGICAL STATISTICS

An introduction to descriptive statistics and to the logic of statistical inference. This course is intended to provide an understanding of statistical procedures commonly found in the psychological literature.
 Three lectures; one term
 Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1K03 or 1M03 and registration in B.A. Psychology or B.A. Psychology Major
 Antirequisite: PSYCH 2R03, STATS 1CC3
Not open to students with credit or registration in PSYCH 2RR3, STATS 2R06 or equivalent

PSYCH 2H03 HUMAN LEARNING AND COGNITION

The psychological study of knowledge and how people use it. Topics include pattern recognition, remembering and reasoning.
 Three lectures, one term
 Prerequisite: PSYCH 1AA3 or 1A06 or registration in Honours Biology and Psychology

PSYCH 2003**NEUROPSYCHOLOGY**

Neural organization and the relationship between human brain function and behaviour.

Three lectures; one term

Prerequisite: PSYCH 1AA3 or 1A06

Antirequisite: PSYCH 2W06, 3F03

Not open to students with credit or registration in PSYCH 2F03.

PSYCH 2RR3**RESEARCH DESIGN AND STATISTICS FOR PSYCHOLOGISTS**

Advanced statistical principles in the design and analysis of experiments in psychology. Parametric and non-parametric techniques for two sample and multi sample designs.

Three lectures; one term

Prerequisite: STATS 1CC3 and registration in an Honours Psychology programme; or STATS 1CC3 with a grade of at least C+ and registration in a Psychology programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) Stream B programme; or PSYCH 2R03 and registration in a Psychology programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) Stream B programme

Antirequisite: STATS 2MB3, 2R06.

Not open to students with credit or registration in STATS 2D03.

PSYCH 2T03**PRINCIPLES OF CONDITIONING**

An experimental survey of conditioning processes based on the study of animal behaviour.

Three lectures; one term

Prerequisite: PSYCH 1AA3 or 1A06 or registration in Honours Biology and Psychology

PSYCH 3A03**AUDITION**

An introduction to auditory perception. The emphasis is on the application of classical and modern psychoacoustical methods to the development of theories of hearing.

Three lectures; one term

Prerequisite: PSYCH 2E03 or 2V03

Not offered in 1999-2000.

PSYCH 3B03**SPECIAL POPULATIONS**

Discusses selected topics related to normal and atypical development in children, including behavioral and affective disorders, developmental disability, and perceptual or cognitive disorder.

Three lectures; one term

Prerequisite: One of Psych 2A03, 2AA3, 3GG3, 3N03

PSYCH 3FA3**THE NEUROBIOLOGY OF LEARNING AND MEMORY**

Learning and memory mechanisms will be discussed from several perspectives ranging from cognitive neuroscience to synaptic physiology.

Three lectures; one term

Prerequisite: PSYCH 2F03 or 2V03

Antirequisite: PSYCH 3FF3

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: 6 units from PSYCH 2E03, 2F03, 2H03, 2T03 or 2V03, and one of PSYCH 2G03, 2R03, STATS 1CC3

Antirequisite: PSYCH 2AA3, 3G03

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

Antirequisite: PSYCH 3G03

Offered in alternate years.

Not offered in 1999-2000.

PSYCH 3II3**COGNITIVE DEVELOPMENT**

The development of attention, concepts, memory, reasoning and language.

Three lectures; one term

Prerequisite: PSYCH 2H03, 3GG3

Antirequisite: PSYCH 3H03

Offered in alternate years.

Offered in 1999-2000.

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

Offered in alternate years.

Not offered in 1999-2000.

PSYCH 3I06**PRACTICA IN PSYCHOLOGY**

Supervised laboratory and field placements will be arranged for a maximum of 16 students each year. The placements may vary from year to year, but will include cognitive, language, perceptual, memory, neuropsychological and behavioral disorders. A 20 page final report must be submitted to the coordinator by April 1. Applications must be submitted to the coordinator by February 1 of the preceding year, with selection for placements announced by March 15.

Prerequisite: PSYCH 2RR3; registration in Level III or IV of an Honours Psychology or Combined Honours Psychology programme and permission of the coordinator. This course cannot be combined with any independent study course with the same supervisor.

Antirequisite: PSYCH 3I03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PSYCH 3J03**NEUROPHYSIOLOGY OF VISION**

Neurophysiological and clinical aspects of perceptual processes. One component of the course will examine perceptual processes in terms of the major visual pathways and brain structures. The second component will relate this to specific perceptual deficits.

Three lectures; one term

Prerequisite: PSYCH 2V03, or PSYCH 2E03 and 2H03

PSYCH 3K03**PSYCHOLOGICAL MEASUREMENT**

Theory of psychological testing and measurement. Topics include the statistical bases and assumptions of measurement, test validity and reliability and the measurement of human characteristics.

Three lectures; one term

Prerequisite: PSYCH 1AA3 or 1A06, and one of PSYCH 2G03, 2R03, STATS 1CC3, 2R06. Students with grades less than B- in PSYCH 2G03 are advised not to enrol in this course.

PSYCH 3L03**NEUROSCIENCE LABORATORY**

Seminars and laboratory experience in current problems in neurobiology. Two hours, seminar; three hours lab; one term

Prerequisite: One of PSYCH 2E03, 2F03, BIOLOGY 3P03 and registration in Level III or IV of an Honours programme.

Antirequisite: PSYCH 4G03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PSYCH 3LL3**GENERAL EXPERIMENTAL PSYCHOLOGY LABORATORY**

Students undertake to learn critical appraisal skills and to answer general and specific questions by manipulating and analyzing real or simulated data sets drawn from a variety of areas in psychology.

Tutorials, lab by appointment; one term

Prerequisite: PSYCH 2RR3 and registration in an Honours Psychology programme

PSYCH 3M03**MOTIVATION AND EMOTION**

Theory and data concerning human and nonhuman motivation and emotion, drawing on perspectives from evolution, physiology, learning, and culture.

Three lectures; one term

Prerequisite: One of PSYCH 2F03, 2T03, 2V03

PSYCH 3N03**ABNORMAL PSYCHOLOGY I (FUNDAMENTALS)**

Fundamentals of clinical psychology, including viewpoints on the nature of behavioural disorder, diagnostic systems, clinical judgement, and treatment approaches.

Three lectures; one term

Prerequisite: Six units from PSYCH 2E03, 2F03, 2H03, 2O03, 2T03 or 2V03 or registration in Level III or IV of a Nursing or Social Work programme

Antirequisite: PSYCH 3N06

PSYCH 3NN3**ABNORMAL PSYCHOLOGY II (MAJOR DISORDERS)**

A review of the major forms of mental disorder including dementia, neuropsychological disorder, schizophrenia, mood and anxiety disorders, psychophysiological disorders, addiction, and problems of sexual adaptation.

Three lectures; one term

Prerequisite: Credit or registration in PSYCH 3N03

Antirequisite: PSYCH 3N06

PSYCH 3P03 PSYCHOLOGICAL TOPICS IN THINKING

Areas to be examined include decision making, inference and problem solving. Particular attention will be paid to the informal reasoning and heuristics that are crucial to everyday decisions.

Three lectures; one term

Prerequisite: One of PSYCH 2H03, 2V03 and one of PSYCH 2G03, 2R03, STATS 1CC3 (or an equivalent course in statistics)

PSYCH 3Q03 INDIVIDUAL STUDY I**

A library project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.

Prerequisite: Registration in Level III or IV and permission of the course coordinator. Application for permission must be received by March 31st of the previous year.

Antirequisite: PSYCH 3QQ3**

PSYCH 3QQ3 INDIVIDUAL LAB STUDY I**

A laboratory project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.

Prerequisite: Registration in Level III or IV and permission of the course coordinator. Application for permission must be received by March 31st of the previous year.

Antirequisite: PSYCH 3Q03**

PSYCH 3R03 INTRODUCTION TO ANIMAL BEHAVIOUR

The development, stimulus control, and function of behaviour as seen in evolutionary perspective. Instinctive behaviour, learned behaviour, and their interactions.

Three lectures; one term

Prerequisite: Registration in a Psychology programme, B.Sc. Life Science, the Honours Science (Complementary Studies Option) Stream B programme, or in a four-level programme in Biochemistry or Biology

PSYCH 3S03 ANIMAL BEHAVIOUR LABORATORY

Experiments involving a wide variety of animal species, both vertebrate and invertebrate.

One lab (three hours); one term

Prerequisite: PSYCH 3R03 and registration in an Honours programme in Psychology or Biology

Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 3T03 SOCIOBIOLOGY

Social behaviour of people and other animals from the perspective of evolutionary theory. Topics include aggression, altruism, kinship, parent-offspring interaction, sex and reproduction.

Three lectures; one term

Prerequisite: One of ANTHROP 2D03, 2E03, BIOLOGY 2C03, 3J03, PSYCH 3R03

PSYCH 3U03 HUMAN LANGUAGE PROCESSING

Cognitive processes involved in encoding, storing and retrieving spoken and written language will be discussed in terms of information processing models.

Three lectures; one term

Prerequisite: PSYCH 2H03 or 2V03 and registration in Level III or IV of a Psychology, Computer Science, or Linguistics programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) Stream B programme

PSYCH 3V03 LABORATORY IN HUMAN MEMORY AND COGNITION

Experiments illustrating important issues in human memory and cognition. Problems in the design, analysis, and reporting of experiments will be emphasized. Individual projects required.

One lab (three hours); one term

Prerequisite: PSYCH 3VV3, and STATS 2R06, or credit or registration in PSYCH 2RR3 and registration in Level III or IV of an Honours Psychology programme

Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

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 or 2V03 and registration in Level III or IV of a Psychology programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) Stream B programme

PSYCH 3W03 NEURAL COMPUTATION

An introduction to the use of neural network computational models for understanding the neural bases of psychological processes, and for solving real-world problems.

Three lectures; one term

Prerequisite: COMP SCI 1MC3 or COMP SCI 1SA3 with a grade of at least B+ and one of MATH 1A03, 1N03, ARTS&SCI 1D06. MATH 1B03 is strongly recommended.

Cross-list: NEURCOMP 3W03

PSYCH 3WW3 MEASURING THE MIND

The course reviews, discusses, and illustrates how psychophysical theories and experiments about discrimination, preference and choice, are crucial to the development of modern experimental psychology.

Three lectures; one term

Prerequisite: PSYCH 2E03 or 2V03 and PSYCH 2RR3

Not offered in 1999-2000.

PSYCH 3X03 COGNITIVE NEUROPSYCHOLOGY OF AGING

An introduction from the neuropsychological perspective of the impact of aging on cognitive functions such as attention, memory, and language.

Three lectures; one term

Prerequisite: PSYCH 1AA3 or 1A06, 2O03 or 2F03 and 2H03

Antirequisite: PSYCH 3O03

Not offered in 1999-2000.

PSYCH 3XX3 TEACHING PRACTICUM

This course is designed to give a maximum of 70 Honours Psychology students practical experience with general teaching methods as they relate to the classroom teaching of Psychology. Applications must be submitted to the coordinator by February 1 of the preceding year, with selection for placements announced by March 15.

One lecture and one practicum; two terms

Prerequisite: Registration in Level III or IV of an Honours Psychology programme and permission of the course coordinator.

Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 3Z03 CONCEPTUAL AND ASSESSMENT ISSUES FOR PEOPLE WITH DEVELOPMENTAL DISABILITIES

Conceptual and assessment issues related to interventions for problems associated with children and adults with developmental disabilities.

Three lectures; one term

Prerequisite: Credit or concurrent registration in PSYCH 3N03 and registration in a Psychology programme.

PSYCH 3ZZ3 TREATMENT APPROACHES FOR PEOPLE WITH DEVELOPMENTAL DISABILITIES

Treatment issues related to problems associated with children and adults with developmental disabilities.

Three lectures; one term

Prerequisite: PSYCH 3Z03 and registration in a Psychology programme.

PSYCH 4B03 HISTORY OF PSYCHOLOGY

An historical account of the main lines of development of psychology.

Three lectures; one term

Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CA of at least 6.0.

PSYCH 4C03 LANGUAGE DISORDERS IN CHILDHOOD

Seminar with student presentations on selected language disorders. Papers will be required.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme and PSYCH 3U03

Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 4D06 PSYCHOLOGY THESIS

Students conduct an individual research project under the supervision of a faculty member. Three copies of a completed thesis must be submitted to the Psychology Department Office by the end of classes.

Prerequisite: Registration in Level IV of an Honours (Specialist Option) or Combined Honours (B.Sc.) programme in Psychology for which this course is required. If space permits, students in the non-specialist Honours Psychology programmes may be permitted to register. Permission must be requested from the course coordinator by March 1. If PSYCH 3Q03**, 3QQ3**, 4Q03**, or 4QQ3** is taken concurrently with PSYCH 4D06, a different faculty member must supervise each course. (See Department Note 4.)

Antirequisite: BIOLOGY 4C09

Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

PSYCH 4I03 COMPUTATIONAL MODELS OF MIND AND BRAIN

A discussion of the contemporary literature on computer models of neural and cognitive processes with practical exercises.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme or an Honours B.Sc. programme

PSYCH 4J03 INQUIRY IN PSYCHOLOGY I

This course will provide students with an opportunity to develop skills required to launch investigations of selected psychological themes in nonhuman populations.

Seminar and discussions (three hours); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme. Students registered in Honours Psychology (Complementary Studies Option) will be given preference.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PSYCH 4K03 INQUIRY IN PSYCHOLOGY II

This course will provide students with an opportunity to develop skills required to launch investigations of selected psychological themes in human populations.

Seminar and discussions (three hours); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme. Students registered in Honours Psychology (Complementary Studies Option) will be given preference.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PSYCH 4Q03 INDIVIDUAL STUDY II**

A library project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.

Prerequisite: Registration in Level IV of an Honours Psychology programme or Level IV Major Psychology with a CA of at least 6.0 and permission of the course coordinator. Application for permission must be received by March 31st of the previous year.

Antirequisite: PSYCH 4QQ3**

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

PSYCH 4QQ3 INDIVIDUAL LAB STUDY II**

A laboratory project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.

Prerequisite: Registration in Level IV of an Honours Psychology programme and permission of the course coordinator. Application for permission must be received by March 31st of the previous year.

Antirequisite: PSYCH 4Q03**

Enrolment is limited. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

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 (or one) lecture(s), one (or two) tutorial(s); one term

Prerequisite: BIOLOGY 3P03; or permission of the instructor. One or more of BIOLOGY 3H03, 3HH3, 3UU3, PSYCH 2F03, 3FA3 are also recommended.

Offered in alternate years.

Not offered in 1999-2000.

RELIGIOUS STUDIES**Faculty as of January 15, 1999****Chair**

Stephen R. Westerholm

Professors

Phyllis Granoff/B.A. (*Radcliffe College*), Ph.D. (*Harvard*)

David R. Kinsley/B.A. (*Drew*), B.D. (*Union Theological Seminary*), M.A., Ph.D. (*Chicago*)

Alan Mendelson/A.B. (*Kenyon College*), M.A. (*Brandeis*), Ph.D. (*Chicago*)

Adele Reinhartz/B.A. (*Toronto*), M.A., Ph.D. (*McMaster*)

John C. Robertson/B.A. (*Texas Wesleyan College*), B.D. (*Southern Methodist University*), S.T.M., M.A., Ph.D. (*Yale*)

Eileen Schuller/B.A. (*Alberta*), M.A. (*Toronto*), Ph.D. (*Harvard*)

Koichi Shinohara/B.L., M.L. (*Tokyo*), Ph.D. (*Columbia*)

Associate Professors

Ellen Badone/B.A., M.A. (*Toronto*), Ph.D. (*California, Berkeley*)

P. Travis Kroeker/B.A. (*Winnipeg*), M.A. (*Manitoba*), Ph.D. (*Chicago*)

Graeme MacQueen/B.A., M.A. (*McMaster*), Ph.D. (*Harvard*)

Zdravko Planinc/B.A., M.A. (*York*), A.M., Ph.D. (*Harvard*)

Stephen R. Westerholm/B.A., M.A. (*Toronto*), D.Th. (*Lund*)

Wayne K. Whillier/B.A. (*Sir George Williams*), Ph.D. (*McMaster*)/part-time

Peter Widdicombe/B.A. (*Manitoba*), M.Phil. (*Oxford*), M.Div. (*Toronto*), D.Phil. (*Oxford*)

Associate Member

Virginia Aksan/(*History*) B.A. (*Allegheny College*), M.L.S. (*California-Berkeley*), M.A., Ph.D. (*Toronto*)

Professors Emeriti

John G. Arapura/B.A. (*Serampore College, and Bishop's College, Calcutta*), S.T.M. (*Union Theological Seminary*), M.A., Ph.D. (*Columbia*)

A. Eugene Combs/B.A. (*Trinity, San Antonio*), M.Div. (*Union Theological Seminary*), Ph.D. (*Columbia*)

Louis I. Greenspan/M.A. (*Dalhousie*), Ph.D. (*Brandeis*)

Yun-hua Jan/M.A., Ph.D. (*Visva-Bharati*)

Johannis J. Mol/B.D. (*Union Theological Seminary*), M.A., Ph.D. (*Columbia*)

Gérard Vallée/B.A. (*Laval*), M.A. (*Montréal*), Ph.D. (*Münster*)

Paul Younger/A.B. (*LaFayette*), M.A. (*Banaras*), B.D. (*Serampore*), Th.M., M.A., Ph.D. (*Princeton*)

Department Notes:

Students are advised to consult both the Department's Handbook (available in University Hall 105) and the Undergraduate Timetable for a list of the courses offered in the current year. It is especially important that students interested in the Level IV Advanced Reading courses (4AA3, 4BB3, 4CC3, and 4DD3) consult a departmental undergraduate advisor.

Fields of Study

The Department offers courses in four fields of study. Students are encouraged to specialize in any one of these fields: Level II, III and IV courses are allocated to the fields as follows:

I. ASIAN RELIGIONS

RELIG ST 2E03, 2J06, 2L03, 2P06, 2RR3, 2T03, 3AA3, 3E03, 3H03, 3I03, 3L03, 3S03, 3U03, 3UU3

SANSKRIT 3A06, 4B06

II. BIBLICAL STUDIES

RELIG ST 2B03, 2DD3, 2EE3, 2GG3, 2NN3, 2VV3, 2YY3, 2Z03, 3DD3, 3M03, 3N03, 3R03, 3T03

HEBREW 2A03, 2B03, 3A03, 3B03

III. WESTERN RELIGIOUS THOUGHT

RELIG ST 2C03, 2CC3, 2H03, 2I3, 2JJ3, 2KK3, 2U03, 2UU3, 2Y03, 2ZZ3, 3D03, 3I3, 3KK3, 3LL3, 3MM3, 3NN3, 3W03, 3Z03, 3ZZ3

IV. CONTEMPORARY AND COMPARATIVE RELIGIONS

RELIG ST 2AA3, 2BB3, 2EA3, 2EB3, 2M03, 2N03, 2Q03, 2QQ3, 2SS3, 2V03, 2W03, 2WW3

Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit or Japanese or both early in their programme (see the calendar offerings listed under these headings). Students wishing to specialize in Biblical Studies should consider work in Greek (see offerings under *Classics, Greek*) or Hebrew or both. For further study of the Hebrew Bible, RELIG ST 2DD3, 2EE3, 3M03 are recommended.

Courses *If no prerequisite is listed, the course is open.***RELIG ST 1B06 WORLD RELIGIONS**

A comparative study of religions such as Hinduism, Buddhism, Islam, Christianity, and Judaism with special reference to selected texts, traditions and thought.

Two lectures, one tutorial; two terms

RELIG ST 1D06 MODERN STUDY OF THE BIBLE

An introduction to the discipline of modern biblical criticism focusing on the development of selected central themes.

Two lectures, one tutorial; two terms

RELIG ST 1E06 IDEAS OF LOVE

This course will discuss the variety of accounts of love in Western civilization from the time of the ancient Greeks and the rise of Christianity to modernity. Two lectures, one tutorial; two terms

RELIG ST 1H03 RELIGIOUS DISSENT AND REVITALIZATION

A study of recent dissent from establishment religion as exemplified in feminist thought, liberation theology, and ecological spirituality. Two lectures, one tutorial; one term

RELIG ST 1I03 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

RELIG ST 2AA3 MYSTICISM IN HINDU AND CHRISTIAN TRADITIONS

An exploration of the unique and common characteristics of mysticism in the Hindu and Christian traditions, both in its philosophical and popular expression through the study of selected texts.

Two lectures, one tutorial; one term

RELIG ST 2B03 WOMEN IN THE BIBLICAL TRADITION

This course will focus on the portrayal of women in the Hebrew Scriptures and the New Testament. Among the texts to be dealt with are examples of biblical narrative and legal material, the gospels, the letters of Paul and extra-biblical material.

Two lectures, one tutorial; one term

RELIG ST 2BB3 IMAGES OF THE DIVINE FEMINE

An examination of goddesses and female religious symbols in a variety of cultures: tribal, eastern and western.

Two lectures, one tutorial; one term

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 and above

Cross-list: PHILOS 2D03

Enrolment is limited to 475 students.

RELIG ST 2CC3 SPIRITUAL AUTOBIOGRAPHIES

A study of the interplay of self and circumstance in the quest for personal identity in selected modern autobiographies: Rousseau, Goethe, Tolstoy, Merton and Weil.

Two lectures, one tutorial; one term

RELIG ST 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 2E03 ENGAGED BUDDHISM

A study of contemporary Buddhist thinkers from Asia and the West who have advocated a renewed, socially engaged Buddhism that addresses issues of war, oppression and the destruction of the environment.

Two lectures, one tutorial; one term

RELIG ST 2EA3 ISLAM AND MEDITERRANEAN SOCIETY, 600-1300

An introduction to Islamic civilization from its beginnings in Arabia to the period of the Crusaders, with an emphasis on Mediterranean culture of the period.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: RELIG ST 2O06

Cross-list: HISTORY 2EA3

RELIG ST 2EB3 ISLAM IN THE WORLD, 1300-1800

A survey course which emphasizes the role of Islam in the global setting in the period of the great Islamic empires.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: RELIG ST 2O06

Cross-list: HISTORY 2EB3

RELIG ST 2EE3 THE PROPHETS

The role and teaching of biblical prophets in their ancient setting and their impact on modern religious life and thought.

Two lectures, one tutorial; one term

RELIG ST 2GG3 EARLIEST PORTRAITS OF JESUS

A study of the Gospels of Matthew, Mark, and Luke. Special attention will be given to the possible literary relationships among them as well as to the distinctive features of their Jesus stories.

Two lectures, one tutorial; one term

RELIG ST 2H03 THEORY AND PRACTICE OF NON-VIOLENCE

An introduction to the history, theory and practice of non-violence, with attention to the relations between religious representatives of the tradition such as Tolstoy, Gandhi and King and secular or political figures such as Gene Sharp and James Scott.

Two lectures, one tutorial; one term

RELIG ST 2HH3 PAUL AND CHRISTIAN ORIGINS

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 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 2J06 INDIA: ITS CULTURE, SOCIAL HISTORY, RELIGION AND PHILOSOPHY

A systematic study of the intellectual and spiritual traditions of India. The course will include political, economic and social thought, as well as religion and philosophy.

Two lectures, one tutorial; two terms

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 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 2M03 DEATH AND DYING: COMPARATIVE VIEWS

A comparative survey of the diversity of social and ritual practices, religious beliefs, and emotional responses surrounding death in a variety of non-Western cultural contexts.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

RELIG ST 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, focussing on biomedical, social and cultural themes.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

RELIG ST 2P06 JAPANESE CIVILIZATION

Introduction to Japanese history, society, and culture through a study of the religious traditions, literature, and art of Japan.

Two lectures, one tutorial; two terms

Cross-list: JAPAN ST 2P06

RELIG ST 2Q03 INTRODUCTION TO ISLAM

The origins and early history of Islam with an emphasis on the Koran and the early Muslim community.

Two lectures, one tutorial; one term

RELIG ST 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 2RR3 INTRODUCTION TO HINDU PHILOSOPHY

An introduction to the vast field of Hindu philosophy from the poetic writings of the Vedas to the development of speculative inquiry in the Upanisads. Primary emphasis is on Indian modes of inquiry and the typical answers bearing upon reality, life and the world.

Two lectures, one tutorial; one term

RELIG ST 2SS3 WOMEN AND RELIGION

A study of the status and roles of women in several religions, such as Hinduism, Buddhism, Confucianism, Christianity, Judaism, and Islam. Important women religious figures and feminist theology will also be studied.

Two lectures, one tutorial; one term

RELIG ST 2T03 TOPICS IN INDIAN PHILOSOPHY

This course explores select themes in Indian philosophy through a reading of primary texts in English translation. Possible topics include: an examination of Indian concepts of the soul, free will and determinism, origins of the universe and Indian debates concerning the existence and function of an omnipotent god.

Two lectures, one tutorial; one term

RELIG ST 2U03 RELIGION AND MORALITY I: ANCIENT AND MEDIEVAL

An examination of the development of moral thought in the West through a study of pre-modern texts and authors, such as the Bible, the Greeks, Augustine, and Thomas Aquinas.

Two lectures, one tutorial; one term

RELIG ST 2UU3 RELIGION AND MORALITY II: MODERN

A study of representative literature on the moral life in the modern West, with particular attention given to the impact of secular, scientific culture and technology on developments in religious ethics.

Two lectures, one tutorial; one term

RELIG ST 2V03 ISLAM AND THE MODERN WORLD

The spread of Islam, Islam as a minority community, the role of women in Islam and fundamentalism.

Two lectures, one tutorial; one term

RELIG ST 2VV3 BIBLE AS STORY

An examination of narratives from the Hebrew Bible, Intertestamental literature, and New Testament, from a literary perspective. Attention is paid to narrative features such as character, plot, irony and symbolism, as well as to the dynamics of the reading experience.

Two lectures, one tutorial; one term

Cross-list: 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 2Y03 RELIGION AND THE CULTURE OF THE TWENTIETH CENTURY I

A study of religion in the thought of the founding figures of the twentieth century. Topics include: religion and the promise of science; religious modernism; Freud; Marxism; religion in the age of ideology.

Two lectures, one tutorial; one term

RELIG ST 2YY3 THE BIBLE AND FILM

An examination of the use of the Bible in film. A variety of film genres will be studied including the Disney cartoon, biblical epic, horror film, 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 2Z03 GREEK AND ROMAN RELIGION

A study of the role of religion in Greek and Roman public and private life.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2Z03

RELIG ST 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 3AA3 POPULAR RELIGION IN INDIA

The Music, Dance and Festivals of Indian Temples will be analyzed in terms of their social, psychological and political implications.

Two lectures, one tutorial; one term

RELIG ST 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

Cross-list: HISTORY 3DD3

RELIG ST 3E03 JAPANESE RELIGION

A study of Japanese religion and how it functions in Japanese society. Topics will include Shinto, Shamanism, Ancestor Worship, Japanese Buddhism and the New Religions of Japan.

Two lectures, one tutorial; one term

Cross-list: JAPAN ST 3E03

RELIG ST 3F03 APPROACHES TO THE STUDY OF RELIGION

A study of the various ways religious phenomena can be studied, e.g. 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 3H03 STORYTELLING IN EAST ASIAN RELIGIONS

An in-depth study of selected examples of story literature in China and Japan with attention to the way religion is represented.

Two lectures, one tutorial; one term

Cross-list: JAPANESE 3H03

RELIG ST 3I03 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

RELIG ST 3II3 RELIGION AND SOCIAL JUSTICE

An examination of conceptions of justice, ancient and modern, and their relationship to religious understandings of human nature and society.

Two lectures, one tutorial; one term

Antirequisite: RELIG ST 2I03

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 ISSUES IN ASIAN RELIGIOUS THOUGHT: INDIA

Readings of Indian religious texts in translation will centre around themes such as the nature of human nature; free will and determinism; personal identity and the quest for perfection; renunciation and social action; violence and non-violence; altruism and selfishness.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level III and above

Cross-list: ARTS&SCI 3L03

RELIG ST 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 SONGS OF DAVID: POETRY IN THE HEBREW BIBLE

A study of poetry in the Hebrew Bible (in translation). The course will give primary attention to the study of the psalms. Some examples of early epic poetry and wisdom poetry will also be included.

Two lectures, one tutorial; one term

RELIG ST 3MM3 SCEPTICISM, ATHEISM AND RELIGIOUS FAITH

What is authentic human existence and is religious faith essential, irrelevant or inimical? A study of the struggle of several remarkable *outsiders* with questions of life's meaning and God: Pascal, Nietzsche, Buber and Simone Weil.

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 3NN3 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

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 after-life 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 3S03 ISSUES IN ASIAN RELIGIOUS THOUGHT: EAST ASIA

Readings in East Asian religious texts in translation will centre around themes such as culture vs. nature, virtue vs. power, social responsibility vs. personal cultivation, bookish learning vs. meditation.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level III and above

Cross-list: ARTS&SCI 3S03, 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

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

RELIG ST 3UU3 CH'AN AND ZEN BUDDHISM

An examination of Ch'an and Zen Buddhist myth, history, doctrine, monastic culture, and ritual practice.

Two lectures, one tutorial; one term

Cross-list: JAPAN ST 3UU3

RELIG ST 3W03 PLATO: RELIGIOUS AND POLITICAL THEMES

An examination of ethical, political, philosophic and religious themes in selected Platonic dialogues, including the *Apology of Socrates*, *Phaedo*, *Symposium*, *Gorgias* and *Republic*.

Two lectures, one tutorial; one term

RELIG ST 3Z03 JUDAISM, THE JEWISH PEOPLE AND THE BIRTH OF THE MODERN WORLD

On the lures and threats of the modern world from the early eighteenth to the early twentieth century. Topics include: Jewish philosophy in the Age of Reason, new Jewish denominations, assimilation, early Zionism, Yiddish socialism, the beginnings of modern anti-semitism, movements of cultural renewal.

Two lectures, one tutorial; one term

Antirequisite: RELIG ST 2X03

Cross-list: HISTORY 3Z03

RELIG ST 3ZZ3 JUDAISM AND THE JEWISH PEOPLE IN THE TWENTIETH CENTURY

Jews and Judaism in a century of catastrophe and renewal. The progress of Emancipation: Jews in Canada and the U.S.; the Jewish catastrophe in Europe; the Jewish state; Jewish identities in literature and the arts.

Two lectures, one tutorial; one term

Antirequisite: RELIG ST 2XX3

Cross-list: HISTORY 3ZZ3

RELIG ST 4A06 HONOURS SEMINAR

A seminar in selected topics in the study of religion, including a presentation and discussion of research conducted by students in the Honours Research Course (4J06).

Seminar (three hours); two terms

Prerequisite: Registration in Level IV Honours Religious Studies

RELIG ST 4AA3 ADVANCED READING: ASIAN RELIGIONS

Independent study of special topics in Asian Religions.

Prerequisite: Registration in Level IV of an honours programme and written permission of the supervising instructor

RELIG ST 4BB3 ADVANCED READING: BIBLICAL STUDIES

Independent study of special topics in Biblical Studies.

Prerequisite: Registration in Level IV of an honours programme and written permission of the supervising instructor

RELIG ST 4CC3 ADVANCED READING: WESTERN RELIGIOUS THOUGHT

Independent study of special topics in Western Religious Thought.

Prerequisite: Registration in Level IV of an honours programme and written permission of the supervising instructor

RELIG ST 4DD3 ADVANCED READING: CONTEMPORARY AND COMPARATIVE RELIGION

Independent study of special topics in Contemporary and Comparative Religion.

Prerequisite: Registration in Level IV of an honours programme and written permission of the supervising instructor

RELIG ST 4J06 HONOURS RESEARCH COURSE

Students in this course will work closely with faculty members who specialize in the fields in which they plan to write their honours essay.

Two terms

Prerequisite: Registration in Level IV Honours Religious Studies

HEBREW ...

HEBREW 2A03 INTRODUCTION TO BIBLICAL HEBREW I

An introduction to the basics of grammar, syntax and vocabulary of the language of the Hebrew Bible. The student will begin to read in the Hebrew Bible.

Four hours (two lectures); one term

Antirequisite: HEBREW 2A06

HEBREW 2B03 INTRODUCTION TO BIBLICAL HEBREW II

An introduction to more grammar, syntax and vocabulary of the language of the Hebrew Bible. The knowledge acquired should enable the student to read the simple prose and poetry of the Hebrew Bible.

Four hours (two lectures); one term

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 ...

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 MODERN LANGUAGES, RUSSIAN)

SANSKRIT

(SEE RELIGIOUS STUDIES, SANSKRIT)

SCHOOL OF ART, DRAMA AND MUSIC**Faculty as of January 15, 1999****Director**

Hugh Hartwell

Professors

Hayden B.J. Maginnis/B.A. (Western Ontario), M.F.A., Ph.D. (Princeton) (Art History)

Paul Rapoport/A.B. (Michigan), M.Mus., Ph.D. (Illinois) (Music)

Associate Professors

Donald F. Carr/B.A. (Guelph), M.F.A. (Chicago) (Art)

James A. Deaville/B.M., M.M., Ph.D. (Northwestern) (Music)

Susan Fast/B.M. (Western Washington), M.A., Ph.D. (Iowa) (Music)

Hugh G. Galloway/Dipl. Art (Edinburgh) (Art)

Frederick A. Hall/Assoc. Dipl., B.Mus. (McGill), M.A., Ph.D. (Toronto) (Music)

Hugh K. Hartwell/Assoc. Dipl., B. Mus. (McGill), A.M., Ph.D. (Pennsylvania) (Music)

Keith W. Kinder/Dip.F.A. (Calgary), B.Mus. (Western Ontario), M.Mus. (Northwestern), Ph.D. (Colorado) (Music)

Judy N. Major-Girardin/B.F.A. (Windsor), M.F.A. (Alabama) (Art)

Brian S. Pocknell/M.A. (Manchester), D. de l'U. (Paris-Sorbonne) (Drama)

William Renwick/B.Mus. (British Columbia), Ph.D. (CUNY), A.A.G.O., F.R.C.C.O. (Music)

Graham Todd/L.D.A.D. Dip. (Chelsea School of Art) M.F.A. (Guanajuato) (Art)

Valerie Tryon/L.R.A.M., F.R.A.M., A.R.C.M., Artist in Residence/part-time (Music)

Assistant Professors

Niamh O'Laoghaire/B.A., M.A., Ph.D. (Toronto) (Art History)

Warren D. Tresidder/B.A. (New South Wales), M.A. (British Columbia), Ph.D. (Michigan) (Art History)

Adjunct Assistant Professor

Kim Ness/(Museology) B.A. (McMaster), M.Litt. (Edinburgh), M.M.St. (Toronto)

Sessional Lecturers

Greg Bush/B.F.A. (Concordia), M.Mus. (McGill) (Music)

Caroline Colenbrander/B.Mus. (McMaster) (Music)

Taras Cymbalisty/B.A. (McMaster)/Part-time (Drama)

Michael J. Dahey/B.Mus. (McMaster), M.A. (York) (Music)

Maureen Epp (Music)

Vera Faig (Music)

Roger Flock (Music)

Paul Grimwood/B.Mus. (Western Ontario) (Music)

William Holinaty/Dipl. (Humber), B.Mus. (McMaster), B.Ed. (Toronto) (Music)

Pauline Minevich (Music)

David Montgomery (Music)

John Packer/B.A. (McMaster) (Music)

Paul Rivers (Drama)

Darrell Varga (Drama)

David Wilkie (Music)

Music Studio Instructors

Elise Bédard/B.Mus., L.Mus., M.Mus. (McGill)/voice

Greg Bush/B.F.A. (Concordia), M.Mus. (McGill)/trumpet

Lita Classen/B.Mus. (Ottawa), M.Mus. (Vincent d'Indy Montréal) Dipl. Perf. (Vienna)/voice

Mark Donatelle/B.A. (Northwestern), M.A. (Southern California)/trombone

Paula Elliott/B.Mus. (Oberlin), M.M. (New England Conservatory)/flute

Don Englert/jazz saxophone

Roger Flock/percussion

David Gerry/A.R.C.T., B.Mus. (Toronto), Dipl. Ped. (Japan)/flute

Paul Grimwood/B.Mus. (Western Ontario)/harpichord & organ

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

Willy Jarvis/electric bass

Zoltan Kalman/Dipl. (Franz Liszt Academy of Music, Budapest)/clarinet

Leokadia Kanovich/B.Mus. (Vilnius), M.A. (Moscow)/piano

Marie Lorcini/Premier Prix du Conservatoire de Musique de Montreal/harp

Kenneth MacDonald/B.A. (British Columbia)/french horn

Jeffrey McFadden/B.Mus. (Western Ontario), Mus. M. (Toronto)/guitar

Willem Moolenbeek/A.R.C.T., B.Sc., M.Sc. (Guelph)/saxophone

Stephen Pierre/Mus. Bac. (Toronto)/clarinet

Phillip Sarabura/A.R.C.T., B.Mus. (Western Ontario)/choir

Michael Schulte/violin

Suzanne Shuiman/A.R.C.T., Dipl. Perf. (Toronto)/flute

Pamela Van Weelden/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/Dipl. Licenta in Music, Spec. in Instrumental Music/Performance (Bucharest)/violin

Geoff Young/jazz guitar

Alla Zacarelli/piano/Dipl. Perf. (Odessa, St. Petersburg)/piano

Professors Emeriti

Marta Hidy/Dipl. Perf. (Budapest), F.R.H.C.M. (Hon.) (Music)

Graham Petrie/M.A. (St. Andrews), B. Litt. (Oxford) (Drama)

Ronald W. Vince/B.A. (McMaster), M.A. (Rice), Ph. D., (Northwestern) (Drama)

Alan Walker/B. Mus., D. Mus. (Durham), A.R.C.M., L.G.S.M., F.G.S.M. (Hon.), 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)

Note:**Art, Drama and Music 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 Art, Drama and Music offers the following SADM courses for students who wish to combine various disciplines within the School.

Courses**SADM 3A03****MUSIC AND THE OTHER ARTS**

An exploration of the connections between music and the other arts. Topics include: Music for Television and Film, Musical Theatre, Music and Painting. Three lectures; one term

Prerequisite: Registration in Level II and above

SADM 3A03 may be repeated, if on a different topic, to a total of six units.

SADM 4A03**INTERDISCIPLINARY STUDY IN THE ARTS (INDEPENDENT STUDY)**

This course is designed to accommodate proposals for independent study combining at least two of the disciplines within the School of Art, Drama and Music. Enrolment will be based on the submission of a proposal acceptable to faculty supervisors. Students will be supervised and assessed by one or more faculty members.

Prerequisite: Registration in Level IV of a programme in Art, Drama or Music and permission of the School. Students must submit a written proposal to the School by April 15.

Enrolment is limited.

SCIENCE

With the exception of SCIENCE 1A00, the Science courses are designed primarily for students in the Humanities and Social Sciences to give an appreciation of important areas of modern science and do not assume any specific background in science. Other science courses that may be of interest to students in the Humanities and Social Sciences are listed by Department. They are:

BIOLOGY 1J03	Human Physiology
COMP SCI 1SA3	Computing Fundamentals
COMP SCI 1TA3	Elementary Computing and Computer Use
STATS 1A03	Statistical Reasoning
STATS 1L03	Probability and Linear Algebra

INQUIRY 1SC3 INQUIRY IN SCIENCE

This introduction to the systematic investigation of an issue develops skills that will serve students well in their university careers. Students learn how to formulate questions, gather and interpret evidence, and reach well-considered conclusions, using, as content, a topic central to research in the Faculty of Science.

Three hours; one term

Prerequisite: Registration in Science I

Enrolment is limited.

SCIENCE 1A00 WHMIS, HEALTH AND SAFETY

Introduction to safety guidelines at McMaster University, acceptable safety conduct and positive safety attitudes and practices in laboratories and Workplace Hazardous Materials Information System (WHMIS). Evaluation: one multiple choice examination graded Pass or Fail; students who fail will be required to attend the course again during the same academic year.

One three hour session

SCIENCE 2A03 THE NATURE OF MATTER

Contemporary ideas about the structure of atoms and molecules; the collective behaviour of large numbers of atoms in solids, liquids, and gases and the technological implications of such behaviour.

Three lectures; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme

No mathematics is required.

Offered in alternate years.

Not offered in 1999-2000.

SCIENCE 2D03 ASTRONOMY

A survey of modern and historical concepts in astronomy. Light and the telescope; distance measurement in space; the structure and evolution of stars, galaxies, cosmology.

Three lectures; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme.

Grade 12 Mathematics required.

Antirequisite: ASTRON 1F03

SCIENCE 2G03 THE RIGHT TO FOOD

Human food requirements; how food is produced; alternative approaches to alleviating world hunger.

Three lectures or two lectures, one tutorial; one term

Prerequisite: Registration in Level II, III, or IV of any programme

Enrolment is limited to 100. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.

SCIENCE 2H03 THE MOLECULAR BASIS OF LIFE

A survey of the molecular basis of life; the current revolution in biology caused by recombinant DNA technology and its implications for the future.

Three lectures; or two lectures, one tutorial; one term

Prerequisite: Registration in Level II, III, or IV of any programme

Antirequisite: BIOLOGY 1A03, 1A06, 1AA3

Offered in alternate years.

Offered in 1999-2000.

SCIENCE 2J03 PHYSICS OF MUSICAL SOUND

Sound waves, production of sound by musical instruments; properties of the ear, musical scales and intervals; auditorium acoustics.

Three lectures with demonstrations; one term

Prerequisite: Registration in Level II, III or IV of a non-science programme.

Antirequisite: PHYSICS 2J03

Knowledge of Grade 12 Mathematics would be helpful.

SCIENCE 2K03 HEREDITY, EVOLUTION AND THE ENVIRONMENT

Introduction to the principles of human genetics and evolutionary biology, the adaptation of organisms to their environment, biological diversity and integrated ecosystems.

Three lectures or two lectures and one tutorial; one term

Prerequisite: Registration in Level II, III, or IV of any programme

Antirequisite: BIOLOGY 1A06, 1A03, 1AA3

Offered in alternate years.

Not offered in 1999-2000.

SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

(SEE THEME SCHOOL ON SCIENCE, TECHNOLOGY, AND PUBLIC POLICY)

SOCIAL SCIENCES

Courses *If no prerequisite is listed, the course is open.*

INQUIRY 1SS3 INQUIRY IN THE SOCIAL SCIENCES

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 Social Sciences.

Three hours; one term

Prerequisite: Registration in Social Sciences I or Kinesiology I

Enrolment is limited.

SOC SCI 1H03 HEALTH STUDIES

An introduction to the key themes and questions concerning health and health care from within social sciences perspective.

Three hours (lectures and discussion); one term

SOC SCI 2C03 GENOCIDE AND ETHNOCIDE

The general sociological and political issue of genocide approached through the analysis of three types: (1) ethnocide (Armenians, Jews, Gypsies), (2) political (the Ukraine, Cambodia), (3) ethnocide of indigenous peoples in settler societies.

Three hours; one term

SOC SCI 2E03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES I

1999-2000: 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

SOC SCI 2E03 may be repeated, if on a different topic, for a total of six units.

SOC SCI 2F03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II

1999-2000: Canadian Adolescents

The 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. (This course should not normally be considered as an extension of SOC SCI 2E03.)

Three hours (lectures and discussion); one term

SOC SCI 2F03 may be repeated, if on a different topic, for a total of six units.

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 and above

Not open to students with credit or registration in: COMMERCE 2QA3, ECON 2B03, 3O06, 3U03, GEO 2S03, GEOG 2LL3, 2N03, KINESIOL 3C03, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, 2RR3, SOCIOL 2Y03, 3H06 or STATS 1A03, 1CC3, 2MA3, 2MB3, 2R06

SOCIAL WORK

Faculty as of January 15, 1999

Director

J. McEwan Macintyre

Professors

Sally Palmer/B.A. (Western Ontario), B.S.W., M.S.W., Ph.D. (Toronto)

M. Susan Watt/B.A., M.S.W., Adv. Dip. S.W. (Toronto), D.S.W. (UCLA)

Adjunct Professor

Ramesh Mishra/(York), B.Sc., Ph.D. (London)

Associate Professors

Jane Aronson/B.Sc. (New University of Ulster), B.S.W., M.S.W. (McGill), Ph.D. (Toronto)

Ralph A. Brown/B.A., M.S.W. (Waterloo Lutheran), D.S.W. (UCLA)

Roy Cain/B.S.W., M.S.W., Ph.D. (McGill)

Patricia M. Daenzer/B.A., B.S.W., (York), M.S.W., Ph.D. (Toronto)

James W. Gladstone/B.A. (McGill), M.S.W. (British Columbia), Ph.D. (Toronto)

Nora Gold/B.S.W. (McGill), M.S.W., Ph.D. (Toronto)

- L. William Lee/B.A. (St. Thomas, Texas), M.S.W., Adv. Dip. S.W., Ed.D. (Toronto).
 J. McEwan Macintyre/B.A., M.S.W. (British Columbia), D.S.W. (Southern California)
 James J. Rice/B.A. (Sir George Williams), B.S.W., M.S.W. (Calgary), Ph.D. (Exeter)

Assistant Professor

Sheila Sammon/B.A. (Nazareth College, New York), M.S.W. (Toronto)

Associate Members

- N.C. Agarwal/(Business)B.A., M.A. (Delhi), Ph.D. (Minnesota)
 M. Dooley/(Economics) B.A. (Indiana), M.S., Ph.D. (Wisconsin-Madison)

Practice Instructors

- Michael Balkwill/B.A., B.S.W., M.A. (McMaster)
 Donna Burtis/B.A. (Guelph), M.S.W. (Toronto)
 Janice Chaplin/B.A. (Mount Allison), B.S.W., M.S.W. (McMaster)
 Mary Ciotti/B.S.W. (Western Ontario), M.S.W. (Toronto), C.C.C.W. (Fanshawe)
 Mary Ann Covi/B.A. (SUNY, Buffalo), M.S.W. (Toronto)
 Leslie Cunningham/B.A., M.S.W. (Wilfrid Laurier)
 Margaret Doma/B.A., M.S.W. (Wilfrid Laurier)
 Mark Fraser/B.A. (Acadia), B.S.W. (McMaster), M.S.W. (Toronto)
 M. Heather Gardner/B.A., B.S.W. (McMaster), M.S.W. (Toronto)
 Rocco Gizzarelli/B.A., B.S.W. (McMaster), M.S.W. (York)
 Niki Gomez-Perales/B.A. (Winnipeg), B.S.W. (McMaster), M.S.W. (Toronto)
 Gordon Greenway/B.A., M.S.W. (Carleton)
 Barbara Hill-Laurienzo/ B.S.W. (Western Ontario), M.S.W. (Wilfrid Laurier)
 Liz Lamb/B.A., B.S.W. (McMaster), M.S.W. (Carleton)
 Maxine Lane/B.A., B.S.W. (McMaster), M.Ed. (Brock)
 Kelly Lazure-Valconi/B.A., B.S.W. (McMaster), M.S.W. (York)
 Linda Learn/B.S.W. (McMaster), M.S.W. (Toronto)
 Ruth Locis-Murphy/B.A., B.S.W. (McMaster), M.S.W., Grad.Dip.Soc.Admin. (Wilfrid Laurier)
 Gillian McClosky/B.A. (Queen's), M.S.W. (Toronto)
 Carol McKenna/B.S.W. (Western Ontario), M.S.W. (Toronto)
 Anna Marie Pietrantonio/B.A. (McMaster), M.S.W. (Toronto)
 Cindy Player/B.A. (Victoria), M.S.W. (Carleton)
 Tony Quick/B.A. (St. Mary's), M.S.W. (Dalhousie)
 Shelley M. Rempel/B.A. (Toronto), B.S.W., M.A. (McMaster)
 Randy Scott/B.S.W. (Calgary), M.S.W. (Wilfrid Laurier)
 Gerald Smith/B.S.W., M.S.W. (Windsor)
 Brenda Symons-Moulton/B.A., B.S.W. (McMaster), M.S.W. (Wilfrid Laurier)
 Karen Van Dyke/B.A. (Dordt College, Iowa), M.S.W. (SUNY, Buffalo)
 Jane Vock/B.A. (Wilfrid Laurier), M.A. (McMaster), M.S.W. (Wilfrid Laurier)
 Susan West/B.A. (Alberta), M.A. (McMaster)

Professors Emeriti

- Cyril Greenland/M.Sc. (North Wales), Ph.D. (Birmingham)
 Harry L. Penny/Dip. Theol. (Union College, British Columbia), B.A., M.S.W. (British Columbia), LL.D. (McMaster)
 Michael Wheeler/B.A. (London), M.S.W. (British Columbia), Dip. Sc. Admin. (London School of Economics)

Notes:

- SOC WORK 1A06 is available to all students.
- The following courses are available for elective credit for students enrolled in Level III or above of a non-Social Work programme. SOC WORK 1A06 is strongly recommended as preparation. Enrolment for such students is limited and places are assigned on a first come basis.
 - SOC WORK 3C03 Social Aspects of Health and Illness
 - SOC WORK 3H03 Justice and Social Welfare
 - SOC WORK 3O03 Human Sexuality in Social Context
 - SOC WORK 4B03 Adult Family Violence
 - SOC WORK 4C03 Racism and Social Marginalization in Canadian Society
 - SOC WORK 4F03 Child Abuse
 - SOC WORK 4G03 Selected Topics
 - SOC WORK 4J03 Social Change: Social Movements and Advocacy
 - SOC WORK 4L03 Social Work with an Aging Population
 - SOC WORK 4M03 International and Comparative Social Welfare
 - SOC WORK 4R03 Social Work with Women
 - SOC WORK 4W03 Child Welfare

Courses All courses are open only to Social Work students unless otherwise specified.**SOC WORK 1A06 INTRODUCTION TO SOCIAL WORK**

General introduction to the values, perspectives, ideologies, settings and methods of social work within the broad field of social welfare. This course combines a practical and theoretical orientation to the field. 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 2C06, 2C03, 2D03
 Enrolment is limited.

SOC WORK 2B03 SOCIAL WELFARE I: GENERAL INTRODUCTION

Purpose, values underlying development of social welfare programmes; Canada's social security system in historical perspective. Lectures, discussion; one term
 Antirequisite: SOC WORK 2B06
 Cross-listed: LABR ST 2B03
 Students in a Social Work programme must register for this course as SOC WORK 2B03.

SOC WORK 2BB3 SOCIAL WELFARE II: POLICY AND PROCESS

Analysis of key concepts in the process and dynamics of social policy development in Canada. Examination of current issues and strategies influencing social policy formation in selected areas. Lectures, discussion; one term
 Prerequisite: SOC WORK 2B03
 Antirequisite: SOC WORK 2B06, 3G03
 Cross-listed: LABR ST 2BB3
 Students in a Social Work programme 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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06. This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.
 Enrolment is limited.

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 2B03 and 2BB3; 2C03 and 2D03 or 2A06; PSYCH 2A03 or SOC WORK 2E03 and registration in 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
 Enrolment is limited.

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. 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: Registration in SOC WORK 3D06.

This course is evaluated on a Pass/Fail basis
Credit in this course is dependent on receiving a Pass and a minimum grade of C+ in SOC WORK 3D06.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Not open to students with credit or registration in SOC WORK 4Z03 SELECTED ISSUES IN SOCIAL WELFARE POLICY, if the issue was Family Violence.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

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.

Enrolment is limited.

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 and registration in 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.

Enrolment is limited.

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.

Option of equivalent block placement in conjunction with SOC WORK 4D06.

Prerequisite: Registration in SOC WORK 4D06. This course is evaluated on a Pass/Fail basis

Credit in this course is dependent on receiving a Pass and a minimum grade of C+ in SOC WORK 4D06.

Enrolment is limited.

SOC WORK 4F03 CHILD ABUSE

Societal and familial context; types of child abuse; child welfare policies; prevention, protection and treatment.

Seminars; one term

Prerequisite: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

Not open to students with credit in SOC WORK 4G03, SELECTED SOCIAL ISSUES AND SOCIAL WORK PRACTICE, if the topic was Child Abuse.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

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 programme.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

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: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

Antirequisite: SOC WORK 4A03, 4V03

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

SOC WORK 4M03 INTERNATIONAL AND COMPARATIVE SOCIAL WELFARE

Comparative perspective on problems of social structures in shaping social welfare institutions. Scope and limits of international collaboration.

Seminars; one term

Prerequisite: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

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: Registration or credit in SOC WORK 3D06 and 3DD6, or 3D09; or permission of the instructor

SOC WORK 4R03 SOCIAL WORK WITH WOMEN

Critical examination of the potential of social policies and programmes, community organizations and service practices to challenge women's systemic disadvantage and enhance women's welfare.

Seminars; one term

Prerequisite: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

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 programme.

Enrolment is limited.

SOC WORK 4W03 CHILD WELFARE

This course analyzes the Canadian child welfare system, its policies and programmes and teaches skills for working with children, families and substitute caregivers.

Lectures, discussions, skills development; one term

Prerequisite: It is anticipated that beginning in 2000-2001, the prerequisite of this course will be registration in a Social Work programme or SOC WORK 1A06.

This course may be taken as elective credit by undergraduates in Level III or above of a non-Social Work programme.

Enrolment is limited.

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 3D09; or permission of the instructor

Antirequisite: SOC WORK 3M03

SOCIOLOGY**Faculty as of January 15, 1999****Chair**

Cyril Levitt

Professors

W. Peter Archibald/B.A. (Mt. Allison), M.A. (British Columbia), Ph.D. (Michigan)

Carl J. Cuneo/B.A., M.A., Ph.D. (Waterloo)

John Fox/B.A., M.A., Ph.D. (Michigan)

Rhoda E. Howard/B.A., M.A., Ph.D. (McGill) F.R.S.C.

Cyril H. Levitt/B.A., M.A. (Waterloo), Ph.D. (Freie Universitat, Berlin)

Carolyn Rosenthal/B.A. (Toronto), M.A., Ph.D. (McMaster)

William B. Shaffir/B.A., M.A., Ph.D. (McGill)

Vivienne Walters/B.A., M.A. (Sheffield), Ph.D. (McGill)

Associate Professors

Scott Davies/B.A. (Toronto), M.A. (McMaster), Ph.D. (Toronto)

Margaret Denton/B.A., M.A., Ph.D. (McMaster)

Graham K. Knight/B.A. (Kent), M.A., Ph.D. (Carleton)

Rhonda Lenton/B.A. (Winnipeg), M.A. (Manitoba), Ph.D. (Toronto)

Charlene Miall/B.A. (Ottawa), M.A. (Calgary), Ph.D. (York)

Julia O'Connor/B.A., M.Soc.Sc. (Ireland), Ph.D. (Toronto)

Jack Richardson/B.A., M.A., Ph.D. (Toronto)/part-time

Gerald Rosenblum/A.B. (California, Berkeley), M.S. (Oregon), A.M., Ph.D. (Princeton)

Victor Satzewich/B.A., M.A. (Saskatchewan), Ph.D. (Glasgow)

Robert H. Storey/B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)

Pamela Sugiman/B.A., M.A., Ph.D., (Toronto)

Jane Syngge/M.A. (Aberdeen), Ph.D. (London)

Assistant Professors

Art Budros/B.A. (San Jose State), M.A. (UCLA), Ph.D. (UCLA)

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)

Associate Members

Jane Aronson/(Social Work) B.Sc. (New Univ. 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)

C. Charles/(Clinical Epidemiology and Biostatistics) B.A., M.A. (Toronto), M.Phil., Ph.D. (Columbia)

John Eyles/(Geography and Geology) M.A., M.Sc. (L.S.E.), Ph.D. (London)

Susan French/(Nursing) B.N. (McGill), M.S. (Boston), Ph.D. (Toronto), R.N.

C. Jones/(Sociology, Toronto) B.A. (Cambridge), Ph.D. (Edinburgh)

Philip G. White/(Kinesiology) B.Sc. (London), M.Sc., Ph.D. (Waterloo)

Professors Emeriti

Jack W. Haas/B.S. (SUNY, Brockport), Ph.D. (Syracuse)

Frank E. Jones/B.A., M.A. (McGill), Ph.D. (Harvard)

D. Ralph L. Matthews/B.A. (Memorial), M.A., Ph.D. (Minnesota)

Peter C. Pineo/B.A. (British Columbia), M.A. (McGill), Ph.D. (Chicago)

Department Notes:

1. Students should consult the *Department's Handbook for Undergraduates, 1999-2000*, which will be available prior to registration, for fuller course descriptions and any changes in the list of courses offered in 1999-2000. Students should check the Handbook in order to find the term in which 'one term' courses are offered. Please note that some courses in Sociology may require familiarity with the computer, including the Internet.
2. SOCIOL 1A06 and several other courses are divided into independent sections. For more information, see the Sociology Department's *Handbook for Undergraduates, 1999-2000*. This booklet gives course descriptions for the various SOCIOL 1A06 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 limited-enrolment courses to Sociology students, and in all Level IV courses to Honours Sociology students.
4. **Limited enrolment courses:** Level III courses identified as *Enrolment is limited* have a limit of 65 students with the exception of the Methods courses, SOCIOL 3I03, 3O03, and 3W03 which have smaller enrolments. Priority will be given to Sociology students.
Limited enrolment courses: With the exception of SOCIOL 4M03, 4MM6 and 4N03 enrolment in all Level IV courses is limited. Admission to Level IV limited enrolment courses is by pre-registration ballot. Preference will be given in order to students in the following categories:
a. Level IV Honours and Combined Honours Sociology
b. Continuing students
c. Level III Honours and Combined Honours Sociology
d. B.A. in Sociology
e. Others
All students requiring registration in Level IV courses for the 1999-2000 Fall/Winter Session including part-time degree students, must obtain a ballot sheet from the Departmental Office (Kenneth Taylor Hall, Room 627) no later than **May 3, 1999**. Students must return their ballot no later than **May 17, 1999**. Permission from the Department will be required to complete registration in Level IV limited enrolment courses.

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

Enrolment is limited.

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

Enrolment is limited.

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 THE SOCIOLOGY OF ORGANIZATIONS I

A theoretical and empirical analysis of formal and informal organizational structures and processes in the major sectors of modern industrial society.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 1A06

Cross-list: LABR ST 2I03

Antirequisite: LABR ST 3I03

SOCIOL 2P06 THE SOCIOLOGY OF EDUCATION

A comprehensive analysis of educational institutions in modern society.

Three hours (lectures and discussion); two terms

Prerequisite: SOCIOL 1A06

Enrolment is limited.

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
Enrolment is limited.

SOCIOL 2R03 THEORIES OF CLASS AND STRATIFICATION
 This course will introduce the student to major theories of social inequality, such as the Marxian, Weberian and structural-functionalist perspectives.
 Three hours (lecture and discussion); one term
 Prerequisite: SOCIOL 1A06
 Antirequisite: SOCIOL 2O06

SOCIOL 2RR3 EMPIRICAL STUDIES OF CLASS AND STRATIFICATION
 This course will introduce the student to the empirical literature on social inequality. Depending on the year, the focus will be on class, status, power and elites, income, education, region, age, gender and race/ethnicity.
 Three hours (lecture and discussion); one term
 Prerequisite: SOCIOL 1A06. SOCIOL 2R03 is strongly recommended.
 Antirequisite: SOCIOL 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 any programme in Sociology
 Antirequisite: SOCIOL 2S03 or 3A06.

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
Enrolment is limited.

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 2X03 PSYCHOANALYTIC APPROACHES TO LITERARY TEXTS
 The basic assumptions and methods of psychoanalytic criticism will be studied with reference to selected texts in drama, fiction and poetry from Shakespeare to the present.
 Three lectures; one term
 Prerequisite: Registration in Level II and above
 Cross-list: ENGLISH 3B03

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 any programme in Sociology or Social Work
 Antirequisite: GERONTOLOG 2C03 (or 3C03)
 Cross-list: ANTHROP 2Z03

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 programme
 Antirequisite: SOCIOL 3A06
Enrolment is limited.

SOCIOL 3AA3 THE SOCIOLOGY OF MASS MEDIA
 The development of the mass media (the press, magazines, radio, television), with particular attention to their social organization, how information and news are produced, and effects upon social attitudes and behaviour.
 Three hours (lectures and discussion); one term
 Prerequisite: SOCIOL 1A06 and registration in any Social Sciences programme
Enrolment is limited.

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
Enrolment is limited.

SOCIOL 3CC3 SPECIAL TOPICS IN THE SOCIOLOGY OF THE FAMILY AND THE LIFE CYCLE
 An advanced course allowing detailed study of the family and the life cycle. Special attention will be paid to the mid and later years.
 Three hours (lecture and discussion); one term
 Prerequisite: SOCIOL 2U06 or registration in a Combined Honours in Sociology and Gerontology programme
Alternates with SOCIOL 3D03.
Enrolment is limited.

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
Alternates with SOCIOL 3CC3.
Enrolment is limited.

SOCIOL 3DD3 SPORT AND SOCIAL DEVELOPMENT
 Macro-analysis of sport and culture, considering the place of sport and leisure in cultural transmission and change.
 Three hours (lectures and discussion); one term
 Prerequisite: SOCIOL 1A06
 Cross-list: KINESIOL 3P03
Only Kinesiology students who are working towards a Minor in Sociology may, if they meet the prerequisite and with permission of the instructor, register for this course as SOCIOL 3DD3. All other Kinesiology students must register for this course as KINESIOL 3P03.
Enrolment is limited

SOCIOL 3E03 SELECTED TOPICS IN THE SOCIOLOGY OF WOMEN
 An advanced course allowing detailed study of selected topics in the sociology of women.
 Three hours (lectures and discussion); one term
 Prerequisite: SOCIOL 1A06 and 2Q06
Enrolment is limited.

SOCIOL 3EE3 SPORT AND SOCIALIZATION
 Micro-analysis of sport in small social systems: investigation of the dynamics of involvement in sport encounters, the team as a small group, and sport sub-cultures.
 Three hours (lectures and discussion); one term
 Prerequisite: SOCIOL 1A06
 Cross-list: KINESIOL 3Q03
Only Kinesiology students who are working towards a Minor in Sociology may, if they meet the prerequisite and with permission of the instructor, register for this course as SOCIOL 3EE3. All other Kinesiology students must register for this course as KINESIOL 3Q03.
Enrolment is limited.

SOCIOL 3F06 POLITICAL SOCIOLOGY
 A survey of social and state institutions, focusing on current debates in the field.
 Three hours (lectures and discussion); two terms
 Prerequisite: SOCIOL 1A06
Enrolment is limited.

SOCIOL 3G03 SOCIOLOGY OF HEALTH CARE
 Selected issues concerning forms of providing health care.
 Three hours (lectures and discussion); one term
 Prerequisite: SOCIOL 1A06
Enrolment is limited.

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.
Enrolment is limited.

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 programme in Sociology. Students in Honours Anthropology, Gerontology and Labour Studies will have second priority
 Not open to students with credit or registration in any six units of Research Methods as prescribed by all other Social Science programmes; SOCIOL 2Y03; all STATS courses **except** 1A03, 1L03, 2D03, 3S03*, 3U03, 4H03*
Enrolment is limited.

SOCIOL 3HH3 SOCIOLOGY OF HEALTH

Sociological approaches to the study of health and illness.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 1A06

Enrolment is limited.

SOCIOL 3I03 SURVEY METHODS

An introduction to survey research methods in the social sciences, including issues of research design, data collection, and data analysis.

Three hours (seminar and discussion); one term

Prerequisite: SOCIOL 2Z03, registration in or completion of SOCIOL 3H06 (or the equivalent for students enrolled in a Combined Honours Programme) and registration in Honours Sociology

Enrolment is limited. However, the Department of Sociology guarantees that all Third and Fourth Level Honours Sociology students will have access to either this course, SOCIOL 3O03 or 3W03.

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

Prerequisite: SOCIOL 1A06

SOCIOL 3J03 may be repeated, if on a different topic.

Enrolment is limited.

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.

Enrolment is limited.

SOCIOL 3L03 SELECTED TOPICS IN OCCUPATIONAL SOCIOLOGY

An advanced course allowing detailed study of one or more topics of special interest in the sociology of occupations.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 1A06

Enrolment is limited.

SOCIOL 3LL3 SOCIOLOGY OF WORK AND LABOUR MARKETS

A consideration of the manner in which labour markets are structured and how they influence the access that people have to employment.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 1A06

Enrolment is limited.

SOCIOL 3N03 THE SOCIOLOGY OF KNOWLEDGE AND CULTURE

An analysis of the origins, development and functions of ideas, images, and other cultural representations through which knowledge about society, its institutions and practices is formed, distributed and used.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 1A06

Enrolment is limited.

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

Enrolment is limited. However, the Department of Sociology guarantees that all Level III and Level IV Honours Sociology students will have access to either this course, SOCIOL 3I03 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 programme.

Antirequisite: SOCIOL 3A05

Alternates with SOCIOL 3PP3.

Enrolment is limited.

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 programme.

Alternates with SOCIOL 3P03.

Enrolment is limited.

SOCIOL 3S03 PSYCHOANALYSIS AND CREATIVITY

A study of the motivations of some representative writers, and of the psychological processes in literary creativity. Psychoanalytic and psychiatric contributions to understanding the subject will be considered.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: ENGLISH 3F03

SOCIOL 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

Enrolment is limited. However, the Department of Sociology guarantees that all Level III and IV Honours Sociology students will have access to either this course, SOCIOL 3I03 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 entering a Gerontology programme as of September 1998.

Enrolment is limited.

SOCIOL 3Y03 THE SOCIOLOGY OF ORGANIZATIONS II

An advanced course which allows detailed examination of relevant theories and research, including those to which the student was introduced in SOCIOL 2I03.

Three hours (lecture and discussion); one term

Prerequisite: SOCIOL 1A06. SOCIOL 2I03 is strongly recommended.

Enrolment is limited.

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

Enrolment is limited.

SOCIOL 4A03 ETHNIC/RACIAL TENSIONS

The course will investigate the processes by which racial and/or ethnic tensions develop in various societies.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOL 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. Students wishing to register in this course must seek the permission of the Department.

Not open to students with credit in SOCIOL 4GG3, SPECIAL TOPICS IN THE SOCIOLOGY OF DEVIANCE, if on a similar topic.

Enrolment is limited.

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. Students wishing to register in this course must seek the permission of the Department.

Not open to students with credit in SOCIOL 4J03, SELECTED TOPICS IN SOCIOLOGY I, or SOCIOL 4K03, SELECTED TOPICS IN SOCIOLOGY II, if on a similar topic.

Enrolment is limited.

**SOCIOL 4C03 SELECTED PROBLEMS IN
QUANTITATIVE RESEARCH**

Students will undertake a class project that involves the application of statistical methods to a research problem.

Three hours (seminar); one term

Prerequisite: SOCIOL 3H06 and registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Antirequisite: SOCIOL 4C06

Enrolment is limited.

SOCIOL 4D03 CRITIQUES OF SOCIOLOGICAL THEORY

A discussion of various sociological and non-sociological critiques of sociological theory.

Three hours (seminar); one term

Prerequisite: SOCIOL 2S06 and registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOL 4E03 SELF AND IDENTITY

A consideration of theoretical and empirical questions relating to self and identity viewed from historical, cross-cultural and cross-disciplinary perspectives.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOL 4G03 THE SOCIAL PRODUCTION OF ILLNESS

An examination of the social bases of illness. In different years consideration may be given to topics such as gender, social class and occupational and environmental health issues.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

**SOCIOL 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. Students wishing to register in this course must seek the permission of the Department.

SOCIOL 4GG3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

**SOCIOL 4H03 SELECTED TOPICS IN THE
SOCIOLOGY OF ORGANIZATIONS**

An advanced course allowing detailed study of aspects of organizational analysis of special interest.

Three hours (seminar); one term

Prerequisite: SOCIOL 2I03 and registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOL 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. Students wishing to register in this course must seek the permission of the Department.

May be repeated if on a different topic

Enrolment is limited.

**SOCIOL 4JJ3 THE SOCIOLOGY OF
CYBERSPACE/INTERNET**

The purpose of this course is to examine the economic, political, and social organization of the Internet, and its social effects, in such areas as education, work, and leisure.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department. NOTE: Students entering this course should be well-versed in basic Internet naviga-

tion skills, such as the use of e-mail, usenet, listservs, and the World Wide Web. Such skills are required to complete the research paper using internet electronic sources of information.

Enrolment is limited.

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. Students wishing to register in this course must seek the permission of the Department.

SOCIOL 4K03 may be repeated, if on a different topic.

Enrolment is limited.

**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. Students wishing to register in this course must seek the permission of the Department.

**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. Students wishing to register in this course must seek the permission of the Department.

**SOCIOL 4N03 DIRECTED RESEARCH II
FOR HONOURS STUDENTS**

Same as SOCIOL 4M03.

One term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

**SOCIOL 4PP3 SPECIAL TOPICS 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: One of SOCIOL 3X03 or GERONTOL 1A06; and registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Antirequisite: SOCIOL 4P03

Enrolment is limited.

SOCIOL 4Q03 INDIVIDUAL AND SOCIETY I

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. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOL 4R03 INDIVIDUAL AND SOCIETY II

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. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

**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. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

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. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

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. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOCIOL 4X03 LABOUR AND SOCIETY

The course will focus on the emergence of labour organizations during the course of modernization and the factors determining the political outlook of labour.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

Enrolment is limited.

SOFTWARE ENGINEERING

(SEE COMPUTING AND SOFTWARE)

SPANISH

(SEE MODERN LANGUAGES, HISPANIC STUDIES)

STATISTICS

(SEE MATHEMATICS AND STATISTICS)

TECHNOLOGY

(SEE MANUFACTURING TECHNOLOGY AND ENGINEERING TECHNOLOGY)

THEME SCHOOL ON GLOBALIZATION, SOCIAL CHANGE AND THE HUMAN EXPERIENCE

Faculty as of January 15, 1999

Director

William Coleman (*Political Science*)

Virginia Aksan (*History*)

Caroline Bayard (*French and Philosophy*)

Kenneth Chan (*Economics*)

Daniel Coleman (*English*)

James Deaville (*Art, Drama and Music*)

F. Susan Fast (*Art, Drama and Music*)

Graham Knight (*Sociology*)

Gary Madison (*Philosophy*)

Kim Richard Nossal (*Political Science*)

Susie O'Brien (*English*)

Tony Porter (*Political Science*)

Petra Rethmann (*Anthropology*)

Geoffrey Rockwell (*Modern Languages*)

William Scarth (*Economics*)

Richard Stubbs (*Political Science*)

Jean Wilson (*Modern Languages*)

Note:

Admission to the theme school is through registration in GSCHE 2A06. Students should only consider registering in this course if they wish to pursue the theme school minor.

For information on the Theme School on Globalization, Social Change and the Human Experience, see *Theme Schools* in the programme section of this Calendar.

Courses**GSCHE 2A06 INTRODUCTION TO GLOBALIZATION**

This course provides students with an introduction to the theme school minor by developing skills necessary for self-directed learning and by providing a critical introduction to globalization and its effects from various disciplinary perspectives.

Three hours (seminar)

Prerequisite: Admission to any four- or five-level programme or permission of the Director.

Enrolment will be limited to 80 students.

GSCHE 3A03 THE CHALLENGE OF GLOBAL GOVERNANCE

An examination of those issues that no longer can be addressed with a single nation-state. It approaches these problems by drawing on contemporary developments in international relations theory and by critically examining new sources of global governance.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 3B03 GLOBALIZATION: GENDER, DOMINATION AND RESISTANCE AT THE LOCAL LEVEL

An examination of issues of gender by investigating broader frameworks of globalization and marginalization and an investigation of how processes of domination and resistance are negotiated on a local level and how they influence gender.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 3C03 GLOBALIZATION AND SOCIAL CHANGE IN THE WORLD'S MUSIC CULTURES

An examination of several issues with respect to the globalization of music, including World Beat and the appropriation of non-Western music by Western musicians, and the way in which this globalization has served as a catalyst for social change.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

Enrolment is limited.

GSCHE 3D03 THE (ENGLISH) LITERATURE OF GLOBALIZATION; THE GLOBALIZATION OF (ENGLISH) LITERATURE

A study of literary responses to globalization through an exploration of contemporary works of fiction in English, focusing on literary texts which represent changing notions of global relationships.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 3E03 COMPARATIVE LITERARY PERSPECTIVES ON GLOBALIZATION

A study of selected literary texts from a range of periods and cultures, leading to a critical discussion of key issues of globalization, including questions of language, translation, and canonicity in world literature.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 3F03**DISLOCATION AND BE LONGING: THE LITERATURES OF IMMIGRATION AND DIASPORA**

An examination of contemporary literature written in English by authors who have migrated from ex-colonial countries to metropolitan centres in order to assess the cultural refractions and displacements occasioned by globalization.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 3G03**GLOBALIZATION AND REGIONALISM IN THE ASIA-PACIFIC**

An examination of the impact of more frequent and intensive cross-border flows of capital, goods, services, technology, information, and values on the political economy of the Asia-Pacific region. The consequences of globalization will be explored at the local, nation-state, and regional levels.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2001-2002.

Enrolment is limited.

GSCHE 3H03**ECONOMIC ISSUES IN THE ASIA-PACIFIC REGION**

An examination of the economic conditions and factors influencing economic growth in selected countries in the Asia-Pacific region. Topics include government policies pertinent to trade, exchange rates and development, and the institutional and cultural aspects of business practices in Southeast Asia.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2001-2002.

Enrolment is limited.

GSCHE 3I03**GLOBALIZATION AND DEMOCRATIC POLITICS I**

Drawing on policy case studies and on an overview of democratic theory, this course will review how nation-states either lose or share sovereignty in a globalizing era and will assess the implications of these changes for democratic institutions and reform.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2001-2002.

Enrolment is limited.

GSCHE 3J03**GLOBALIZATION AND DEMOCRATIC POLITICS II**

Taking a universalist perspective, this course will examine the potential of economic globalization to contribute to the world-wide democratic movement.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 3K03**GLOBALIZATION AND THE SCOPE FOR INDEPENDENT ECONOMIC POLICY**

An examination of issues such as the conditions for an effective stabilization policy, the feasibility of income redistribution, and the possible role of international financial investors as a new world super-power.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

Enrolment is limited.

GSCHE 3L03**POSTMODERNITY, GLOBALIZATION AND IDENTITY**

An examination of themes that include the relevance of sovereignty versus globalization process and the pertinence of difference, otherness and identity as interpretation mechanisms, with local case studies of Quebec, France, and Central Europe.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

Enrolment is limited.

GSCHE 3M03**GLOBALIZATION AND COMMUNICATION**

Covering both telecommunications and mass communications, the course examines historical development of media, the tension between the internationalizing tendencies of private media and the political and cultural project of nation-building, and the globalization of media content.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

Enrolment is limited.

GSCHE 4A03**DIALOGUE IN THE ELECTRONIC AGE**

An introduction to communications technology, including consideration of the possibilities and limitations of the technology in terms of the types of conversations they encourage and whether it enhances or diminishes opportunities for human dialogue.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2001-2002.

Enrolment is limited.

GSCHE 4B03**GLOBALIZATION AND MUSIC: MEDIA AND MARKETS**

An examination of the connections between the various media of today (print, broadcasting, film, internet) and globalization in the production and dissemination of music and of how technologies have made possible such global phenomena as *The Three Tenors*.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 4C03**GLOBALIZATION, TRADE AND ECONOMIC DEVELOPMENT**

This course examines the economic impacts in developing countries of exports, effective protection, commercial policies, financial development, regionalism and direct investments.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

Enrolment is limited.

GSCHE 4D03**SPECIAL TOPICS IN GLOBALIZATION, SOCIAL CHANGE, AND THE HUMAN EXPERIENCE I**

Topics will vary from year to year.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

GSCHE 4D03 may be repeated, if on a different topic

Enrolment is limited.

GSCHE 4E03**SPECIAL TOPICS IN GLOBALIZATION, SOCIAL CHANGE, AND THE HUMAN EXPERIENCE II**

Topics will vary from year to year.

Three hours (seminar)

Prerequisite: GSCHE 2A06

Preference will be given to Level III or IV Theme School students.

First offered in 2000-2001.

GSCHE 4E03 may be repeated, if on a different topic

Enrolment is limited.

THEME SCHOOL ON SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

Faculty as of January 15, 1999

Director

Robert Hudspith (*Mechanical Engineering*)

Harris Ali (*Sociology, part-time*)

Alex Berezin (*Engineering Physics*)

Barbara Carroll (*Political Science*)

Carl Cuneo (*Sociology*)

256 THEME SCHOOLS

Fred L. Hall (*Civil Engineering and Geography and Geology*)
David Jackson (*Engineering Physics*)
David Jones (*Computing and Software*)
Travis Kroeker (*Religious Studies*)
Shepard Siegel (*Psychology*)

Note:

Admission to the theme school is through registration in STPP 2A06. Students should only consider registering in this course if they wish to pursue the theme school minor. For further information on the Theme School on Science, Technology and Public Policy, see *Theme Schools* in the programme section of this Calendar.

Courses

STPP 2A06 INTRODUCTION TO SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

This course provides students with an introduction to the theme school minor by developing skills for self-directed learning and by providing a critical introduction to an understanding of science and technology, and how public policy is formulated, implemented and changed.

Three hours (lectures, discussion, group projects, seminars); two terms
Prerequisite: Admission to any four- or five-level programme or permission of the Director. Enrolment will be limited to 80 students.

Antirequisite: ENGSOCY 2X03, 3Y03, ARTS&SCI 3B03

STPP 3A03 COMPUTERS, ETHICS, AND PUBLIC POLICY

Ethical, professional, and policy perspectives on issues relating to computer technology in society, including: privacy, free speech, copyright, security, regulation. Forces shaping public policy, including the role of the media.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level III Theme School students.

Enrolment is limited.

STPP 3B03 TECHNOLOGY, ETHICS AND SOCIETY

The intellectual and cultural premises underlying the growing dominance of the technological paradigm, and its ethical implications. Moral issues that arise in ethical reflection, judgment and action.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level III Theme School students.

Enrolment is limited.

STPP 3C03 POLICY AND REGULATION OF DISCOVERY AND INNOVATION

The key issues of the existing regulating mechanisms (administrative, social, political, legal) for science and technology with the emphasis on the societal support for discovery and innovation.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level III Theme School students.

Enrolment is limited.

STPP 3D03 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

1999-2000: Environment, Technology and Society

The influence of social and political factors on the relationship between citizens, technical experts and public officials involved in environmental policy formation. Special emphasis directed towards the role of public trust and risk perceptions in environmental assessment, conflict and regulation.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level III Theme School students.

STPP 3D03 may be repeated, if on a different topic

Enrolment is limited.

STPP 4A03 BUILDINGS, ROADS AND SOCIETY

The inter-relationships among public policy, social organization, and civil engineering technologies, focusing particularly on transportation infrastructure, but possibly also looking at flood control technologies, and/or high-rise structures.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level IV Theme School students.

Enrolment is limited.

STPP 4B03 PUBLIC POLICY AND DRUG USE

The interactive roles of science, history, law, and politics in the formulation of policy with respect to the use of illicit drugs.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level IV Theme School students.

Enrolment is limited.

STPP 4C03 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

1999-2000: The Internet, Society and Change

The Internet in terms of government, corporate and community policies, the social participation of individuals and groups, and societal consequences, such as in education and work. Research conducted using the Internet as a resource. Some Internet skills assumed.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level IV Theme School students.

STPP 4C03 may be repeated, if on a different topic.

Enrolment is limited.

STPP 4D03 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

1999-2000: Science and Technology in the Media

Role of the media in developing perceptions, public opinion, and public policy. Critical assessment of media messages. Strategies for effective public communication in science.

Three hours (lectures, discussion, group projects, seminars); one term
Prerequisite: Registration in the Theme School or permission of the Director
Preference will be given to Level IV Theme School students.

STPP 4D03 may be repeated, if on a different topic.

Enrolment is limited.

WOMEN'S STUDIES

The Honours B.A. Women's Studies and Another Subject Programme is taught by an interdisciplinary Committee of Instruction.

Director

Patricia M. Daenzer (*Social Work*) B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)

Academic Advisory Committee

Maroussia Ahmed (*French*) L. ès L., M. ès L., D. de l'U (Paris-Sorbonne)
Virginia Aksan (*History*) B.A. (Allegheny College), M.L.S. (Berkeley), M.A., Ph.D. (Toronto)

Jane Aronson (*Social Work*) B.Sc. (New University of Ulster), B.S.W., M.S.W. (McGill), Ph.D. (Toronto)

Elisabeth Boetzkes (*Philosophy*) B.A., M.A. (Alberta), Ph.D. (Calgary), MTh. (Newman Theological College)

Sylvia Bowerbank (*Arts & Science and English*) B.A. (McMaster), B.Educ. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)

Vera Chouinard (*Geography*) B.A. (Western Ontario), M.A. (Toronto), Ph.D. (McMaster)

Joanne Fox-Threlkeld (*Nursing*) B.N. (New Brunswick), M.Sc., Ph.D. (Queen's), R.N.

Ruth Frager (*History*) B.A. (Rochester), M.A., Ph.D. (Toronto)

Donald Goellnicht (*English*) B.A. (Queen's), M.A., Ph.D. (McMaster)

Rhonda Lenton (*Sociology*) B.A. (Winnipeg), M.A. (Manitoba), Ph.D. (Toronto)

Mary O'Connor (*English*) B.A. (McGill), M.A., Ph.D. (Toronto)

Cottie Ofosu (*Nursing*) B.A. (McMaster), M.Ed. (Brock), Ed.D. (Toronto)

Victor Satzewich (*Sociology*) B.A., M.A. (Saskatchewan), Ph.D. (Glasgow)

Lorraine York (*English*) B.A., M.A., Ph.D. (McMaster)

Isik Zeytinoglu (*Business*) B.A., M.A., (Bogazici), M.S., Ph.D. (Pennsylvania)

Committee of Instruction as of January 15, 1999

Maroussia Ahmed (*French*) L. ès L., M. ès L., D. de l'U (Paris-Sorbonne)

Rhiannon Bury/B.A. (York), M.A. (Sherbrooke)

Lori Chambers/B.A., M.A. (McMaster), Ph.D. (Toronto)

Nicolette DiFrancesco/B.A. (Carleton), M.A. (McMaster)

Ruth Frager (*History*) B.A. (Rochester), M.A., Ph.D. (Toronto)

Nairn Galvin/B.A., M.A. (McMaster)

Kathy Garay/B.A. (East Anglia), M.A. (McMaster), Ph.D. (Toronto)

Ella Haley/B.Sc. (Guelph), M.A. (Waterloo)
 Jennifer Henderson/B.A. (McGill), M.A. (York)
 Janice Hladki/B.A. (York), M.A. (Western Ontario)
 Nisha Karumanchery-Luik/B.A., M.A., Ph.D. (Toronto)
 Mary O'Connor/(English)B.A., (McGill), M.A., Ph.D. (Toronto)
 Patricia Simpson/B.A., M.Ed. (Toronto)
 Lorraine York/(English)B.A., M.A., Ph.D. (McMaster)

Courses *If no prerequisite is listed, the course is open.*

WOMEN ST 1A06 WOMEN IN CANADIAN SOCIETY

An interdisciplinary introduction to Women's Studies, designed to illustrate and account for women's position in Canadian society. Possible areas of enquiry include health, law, history, work, literature, artists and musicians. Three hours (two lectures, one tutorial); two terms

WOMEN ST 2A06 WOMEN'S ACTION FOR SOCIAL CHANGE

The course explores the collective efforts of women to improve social conditions, examining key historical and contemporary social movements and studying utopias as envisioned by women writers.

Three hours (Seminar and discussion); two terms

Prerequisite: Registration in the Women's Studies Programme, or permission of the Director of Women's Studies

WOMEN ST 2B06 WOMEN'S ROLE IN WESTERN EUROPEAN SOCIETY

An examination of the contribution of women to Western European society from classical times to the early twentieth century. Whether examined from a historical, sociological or cultural perspective, the female role is seen in relation to major political changes taking place during this period.

Cross-list: HISTORY 2BB6

WOMEN ST 2C06 PERSPECTIVES ON GENDER

An overview of debates and research on the shaping of gender identity. Approaches may be from the viewpoint of social psychology, literature or cultural studies, and may include sex typing and socialization experiences, daughter/parent relationships and moral development.

Three hours; two terms

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

WOMEN ST 2D03 WOMEN AND TECHNOLOGY

This course attempts to situate women within technological change. It will focus on theoretical aspects of technology, technology in relation to culture, new gender theorists and feminist assessment strategies, and will provide a practical introduction to Internet resources for women. Topics may include aspects of computer, communications and design.

Three hours; one term

WOMEN ST 2H03 REPRODUCTIVE BIOLOGY

A medical study of human reproductive anatomy and physiology, with particular emphasis on control and regulation of reproduction. Topics may include effects of stress, exercise and aging on the reproduction of both sexes.

Three hours; lectures, tutorials and guided reading; one term

Note: Since this course will be taken in conjunction with Nursing students, some background in Biology is recommended.

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Enrolment is limited

WOMEN ST 2HH3 WOMEN'S HEALTH: A SOCIO-CULTURAL PERSPECTIVE

This course studies women's actions to improve health and health care. Topics may include the relationship between biomedicine and the social construction of gender, women as paid and unpaid health workers, the consequences of discrimination for women's health and the provision of health care and historical analysis of female healers.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Antirequisite: SOCIOL 4U03

WOMEN ST 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 1A06, or permission of the Director of Women's Studies

Cross-list: ENGLISH 2K06

WOMEN ST 3A06 FEMINIST THEORY AND METHODOLOGY

This interdisciplinary seminar explores various theoretical perspectives and methodological approaches in feminist research and their epistemological foundations. It includes a critical dialogue between feminism and contemporary theories such as post-structuralism, post-modernism, standpoint theory and action research.

Three hours (Seminar and discussion); two terms

Prerequisite: WOMEN ST 2A06, or permission of the Director of Women's Studies

WOMEN ST 3B03 TOPICS IN WOMEN AND THE ARTS

1999-2000: Women and Film

This course explores the roles of women in any one of the following fields: music, visual arts, film or theatre, whether as subjects or creators. Approaches may be practical, historical and/or theoretical, and interrelationships between the fields will be examined where appropriate.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

WOMEN ST 3B03 may be repeated, if on a different topic, to a total of six units.

WOMEN ST 3C03 WOMEN AND ECOLOGY

This course explores women's roles in the ecology movement. It examines the various meanings of ecofeminism and its focus on the interconnections between human life and our physical environment. Possible areas of enquiry are: environmental ethics, anti-militarism, earth-goddess religions and the nature/culture debate.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

WOMEN ST 3CC3 WOMEN AND THE URBAN ENVIRONMENT

An interdisciplinary enquiry into how women's lives are shaped by an urban environment. It examines women's experience of urban living with a focus on such issues as women's responses to urban change, women and urban planning, women and housing problems, and women's struggles for socially safer environments.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

WOMEN ST 3D06 WOMEN IN CROSS-CULTURAL PERSPECTIVE

The course explores the experience of women in different cultures through examination of social and historical conditions, symbolic systems and personal narratives. Topics such as: the family and household, the sexual division of labour, the social construction of gender, and social change will be explored through cross-cultural comparison.

Three hours; two terms

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

WOMEN ST 3E03 SPECIAL TOPICS IN WOMEN'S ISSUES

1999-2000: Ethical Issues in Women's Health

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

WOMEN ST 3F06 INDIGENOUS WOMEN'S ISSUES

This course will focus on Indigenous (First Nations, Metis, Inuit) women's issues using traditional Indigenous and western text-based approaches to explore historical, theoretical, social and ecological elements.

Three hours; two terms

Prerequisite: WOMEN ST 1A06, or permission of the instructor

Cross-list: INDIG ST 3F06

WOMEN ST 3X03 CANADIAN AND AMERICAN WOMEN'S HISTORY

An examination of the history of Canadian and American women primarily in the nineteenth and twentieth centuries. This includes investigation of paid and unpaid labour, sexuality, child-rearing, formal education and religion.

Three lecture; one term

Prerequisite: WOMEN ST 2A06, or permission of the Director of Women's Studies

Cross-list: HISTORY 3X03

Offered in alternate years.

258 WOMEN'S STUDIES

WOMEN ST 4A06 INDEPENDENT RESEARCH

Students develop and execute their own research projects, in regular consultation with a faculty supervisor. In March, students present the results of their work at a one-day forum in which all students and faculty of Women's Studies are encouraged to participate. A formal written report is submitted to the supervisor shortly afterwards.

Prerequisite: Registration in Level IV of the Women's Studies Programme

WOMEN ST 4B06 TOPICS IN WOMEN, THE ECONOMY AND THE STATE

The purpose of this course is to encourage critical gender-based analysis of Canadian "social" welfare policies and programmes. The focus will be on understanding the role of the Canadian state in influencing social and economic outcomes for women.

Three hours; two terms

Prerequisite: Registration in Level III or IV of the Women's Studies Programme, or permission of the Director of Women's Studies

WOMEN ST 4B06 may be repeated, if on a different topic, to a total of 12 units.

Enrolment is limited.

Not offered in 1999-2000.

WOMEN ST 4BJ3 WOMEN IN BUSINESS

This course discusses the successes and challenges of women in business in an international context, across various professions and as entrepreneurs and business owners.

Prerequisite: WOMEN ST 2A06

Cross-list: COMMERCE 4BJ3

Enrolment is limited.

Not open to students with credit in COMMERCE 4SX3, SPECIAL TOPICS IN BUSINESS, if taken in January 1998.

WOMEN ST 4C06 TOPICS IN FEMINIST SCHOLARSHIP

1999-2000: Women in an International Context

This course offers intensive study in a specific field as defined by the instructor's own special research interests. It allows the students to benefit from up-to-date scholarship and provides insight into research methods that might be different from or complementary to those being used in WOMEN'S ST 4A06. Three hours; two terms

Prerequisite: Registration in Level III or IV of the Women's Studies Programme, or permission of the Director of Women's Studies

Enrolment is limited.

The following courses, offered by other departments, may be used as Women's Studies electives, provided that the prerequisite requirements of the home department are fulfilled.

ANTHROP 2R03	Religion, Magic and Witchcraft
ANTHROP 3RR3	Topics in the Anthropology of Gender
HISTORY 4H06	Canadian Women's History
HUMAN 2F03	Selected Interdisciplinary Topics in Medieval Life and Culture (Aspects of Gender)
KINESIOL 4T03	Gender, Sport and Leisure
LABR ST 3E03	Women, Work and Trade Unionism
RELIG ST 2B03	Women in the Biblical Tradition
RELIG ST 2BB3	Images of the Divine Feminine
RELIG ST 2SS3	Women and Religion
SOC WORK 4C03	Racism and Social Marginalization in Canadian Society
SOC WORK 4R03	Social Work with Women
SOCIOL 2Q06	Sociology of Gender
SOCIOL 2U06	Sociology of the Family
SOCIOL 3D03	Special Topics in the Sociology of the Family
SOCIOL 3E03	Selected Topics in the Sociology of Women
SOCIOL 3X03	Sociology of Aging
SOCIOL 4U03	Special Topics in the Sociology of Women

ACADEMIC FACILITIES, STUDENT SERVICES AND ORGANIZATIONS

ACADEMIC FACILITIES

THE UNIVERSITY LIBRARY

Web Address

<http://www.mcmaster.ca/library/>

E-mail Address

libinfo@mcmaster.ca (Humanities, Social Sciences, Science and Engineering)

library@fhs.mcmaster.ca (Health Sciences)

University Librarian

Graham R. Hill, B.A., M.A., M.L.S.

Systems Development

Marju Drynan, B.A., M.S./Associate University Librarian

Health Sciences Library

Dorothy Fitzgerald, B.A., M.L.S./Director

Reader Services

Sheila Pepper, B.A., M.A., B.L.S./Assistant University Librarian

Thode Library of Science and Engineering

Cathryn Ball, B.A., M.L.S./Librarian

Innis Library

Vivien Lewis, B.A., M.L.S./Librarian

Collections Management and Development

Charlotte Stewart, B.A., M.A., M.L.S./Assistant University Librarian

Processing Services

Carol Rachefer, B.A., M.L.S./Director

Administrative Services

Mary Ruth Linkert/Manager

The University Library System consists of Mills Memorial Library (Humanities and Social Sciences), the 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 on-line catalogue covering the holdings of all libraries is available and stacks are open to all library users.

The collection in 1998 contained more than 1,787,208 volumes, 1,423,102 microform items, 174,956 non-print items and 11,041 linear feet of archival material. Current periodical titles number about 11,880.

To help readers, service is maintained at key Reference points in the various libraries. Introductory library tours, subject-related seminars and instructional sessions in electronic tools are conducted. Pamphlets describing the hours and services of the different areas are available in each library and on the library's website.

Mills Library has several collections - Reference, Periodicals, Government Publications, Music and Maps, which contain materials of significance for both Undergraduates and Researchers; and Reserve, which is used mainly by Undergraduates.

The William Ready Division of Archives and Research Collections in Mills Library contains rare books, manuscripts and special book and archival collections, which afford many opportunities for original research. Of outstanding interest are the Bertrand Russell Archives, a massive collection of correspondence and manuscripts supported by books, journal articles, secondary literature, tapes, films and personal memorabilia.

The Eighteenth-Century Collection of British material numbers over 34,000 volumes and is the major Canadian collection in the field. Library fellowships in Eighteenth-Century Studies are offered annually. Among more modern materials are the papers of Vera Brittain, Marian Engel, Robert Fulford, Pierre Berton, Farley Mowat, Peter Newman, Matt Cohen and many others.

Business interests are reflected in such files as the General Steel Wares Archives, the Macmillan of Canada Archives, the Clarke Irwin Archives, and the McClelland and Stewart Archives. Canadian social and political interests are documented in papers from the Canadian Union of Students, the Canadian Youth Congress, the 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 University Library Research News
- > Monographs with the imprint of the McMaster University Library Press

COMPUTING AND INFORMATION SERVICES (CIS)

Web Address

<http://www.mcmaster.ca/cis>

E-mail Address

helpline@mcmaster.ca

Assistant Vice-President, IST

Marvin Ryder, B.A., B.Sc., M.B.A.

Director, CIS

Pat O'Day, B.A.

Client Services-Research

Robin Griffin, B.Sc., Ph.D./Senior Manager

Data Services

Eric Matthews, B.A., B.Ed./Senior Manager

System Support

Doug Fraser, B.Sc./Senior Manager

Client Services

Heather Grigg/Senior Manager

Administration

Barb Campbell, B.A./Senior Manager, Departmental

CIS provides computing services in support of both academic (instruction and research) and administrative activities. The facilities available for academic use include several microcomputer and workstation laboratories. CIS manages a campus-wide Ethernet which is linked to the Internet, allowing access to resources throughout the world. Administrative computing is run on an IBM S/390 system and several SUN UNIX systems. MUGSI provides students access to their academic and personal data via the WWW.

Student computer laboratories for academic use, equipped with Pentiums, are located in the Burke Sciences Building, Rooms 240-245, the John Hodgins Engineering Building, Room 234, the Arthur Bourns Building, Room 166, Kenneth Taylor Hall, Rooms B110, B111, B120 and B123 and the Health Sciences Library. All labs provide access to the world wide web, popular wordprocessing and spreadsheet packages as well as various computing languages, statistical applications and specialized course software provided by instructors. Several email rooms have been set up to enable students to view their email. Student consultants are available to assist customers in most of these computer labs. Assistance is also available in the Main CIS Office located in Arthur Bourns Building, Room 132. Each Faculty has a Service Coordinator, who is familiar with that Faculty's particular requirements, to assist faculty and student members and to undertake projects of interest to the Faculty. CIS provides seminars and short non-credit courses.

Every undergraduate and graduate student can register for an email account, free of charge, with full access to the Internet. Students may dial in from home using the enhanced modem pool. Rates are currently \$0.50 per hour for 56k access and \$0.40 for 33k access with full access to the WWW and email provided. A limited modem pool is also available free of charge. Cable modem access is available from the residences and off campus in the Weslink Service area for a monthly fee.

In addition to the facilities operated by CIS, there is computer equipment located in Departments to support academic programmes.

THE INSTRUCTIONAL DEVELOPMENT CENTRE

➤ General Sciences Building, Room 217, ext. 24540

Web Address

<http://www.science.mcmaster.ca/idc>

E-mail Address

riselays@mcmaster.ca

Director (Acting)

Dale Roy, B.A., M.A.

Educational Consultant

To be announced

Administrative Assistant

Sylvia Riselay

The Instructional Development Centre (IDC) is a resource centre for people who teach at McMaster University. The Centre serves individual instructors, teaching assistants, departments and other groups directly affecting teaching and learning.

The Centre works closely with the University Committee on Teaching and Learning. Its main goals are

1. to support the encouragement and reward of good teaching;
2. to orient new teachers to their role at McMaster;
3. to enable the circulation of teaching and learning insights;
4. to support the development of the next generation of university teachers;
5. to encourage and support innovation in teaching and learning.

The Centre's activities include:

Teaching and Learning Grants: The IDC consults with applicants on their proposals and assists them with projects. It also provides administrative services for the Grants programme. Groups or individual McMaster instructors, teaching assistants, students or departments may apply. Detailed criteria are available on request.

Programmes for Teaching Assistants: The Centre plans and organizes T.A. Day, a campus-wide welcome and orientation programme for teaching assistants. It also 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 non-academic professional. In the spring, 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.

Workshops, Seminars and Conferences: A wide variety of events are offered, conducted by McMaster faculty, visiting resource people and IDC staff. Generally, the topics are ones requested by instructors or departments 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.

Consultation: A major part of the Centre's work is discussing current courses with instructors. The instructor or department provides the expertise in the course content. The Centre provides information on ways for instructors to evaluate and refine courses. It also arranges contacts with other experienced people and assistance in trying new approaches.

Teaching Dossiers The IDC has had considerable experience in helping individual faculty members develop their teaching dossiers. The method of collecting together activities and accomplishments in teaching is often a demanding task. The IDC has the resources and assistance to help simplify this process. For example, the library contains several recent publications which are helpful in getting started with a teaching portfolio. As well, there are also a number of dossiers representing a wide variety of academic disciplines available for viewing by interested faculty members.

Resources: The IDC Library has a collection of over 3,500 books, articles and journals on university teaching and learning. Students, especially those working as teaching assistants, are invited to visit the Centre. The IDC Library is located in the General Sciences Building, Room 217 and is open between the hours of 9:00 a.m. to 12:00 noon and 2:00 p.m. to 5:00 p.m. Alternatively, the library database can be accessed from the website listed below.

IDC Home Page: A selection of teaching tips and other information about the IDC are available at the following website: <http://www.science.mcmaster.ca/idc>

MCMASTER MEDIA PRODUCTION SERVICES**Web Address**

<http://www.media.mcmaster.ca>

E-mail Address

knowles@mcmaster.ca

AUDIO VISUAL DIVISION

➤ Health Sciences Centre, Room 1G1, ext. 22301 or Burke Sciences Building, Room B231, ext. 22761

McMaster Audio Visual Services provides a complete media service to faculty, staff and students at McMaster. These services include: television production, analog and digital editing and tape duplication; audio recording, tape and cassette editing, and high-speed tape duplication; A/V equipment distribution (all kinds of projectors, audio and video tape recorders, video/data projectors, etc.); film reservations; A/V equipment repair; creative services - for design, charts and graphs for publication, display or poster presentations, and digital imaging and CD production, colour laser prints and high-resolution 35mm colour slides; full line of desktop publishing services offered; photographic services, including location and studio photography, black-and-white and colour photofinishing, 35mm slides, film processing and slide duplication, and a wide range of film and supply sales. Full Videoconferencing services are now available.

PRINTING SERVICES DIVISION

➤ Michael G. DeGroote School of Business, Room B111, ext. 24447 or Health Sciences Centre, Room 1T5, ext. 22348

Printing is staffed and equipped to provide a comprehensive, efficient service to the university at low cost. The service includes: creative design and typesetting; full range of high speed digital photocopying and offset printing; bindery (folding, collating, stitching, drilling).

Printing Services will reproduce a wide range of printed matter from business cards to a multi-page brochure and will provide technical assistance for any printing jobs.

GERONTOLOGICAL STUDIES

There are three Gerontology components at McMaster: the Office of Gerontological Studies; the Interdisciplinary Aging and Health Programme (including The R. Samuel McLaughlin Centre for Gerontological Health Research); and Undergraduate Degree Studies in Gerontology. (Further information concerning the two Centres mentioned above can be obtained by contacting Carolyn Rosenthal in Divinity College, Room 229, ext 27227.)

Office of Gerontological Studies

➤ Divinity College, Room 229, ext. 27227

Director

Carolyn J. Rosenthal, B.A., M.A., Ph.D.

The Office of Gerontological Studies (OGS) is involved in the promotion and development of multidisciplinary research and educational programmes within the University and the local community. OGS also provides a forum for collaboration on education, research, and service projects with other community organizations.

The Office's activities are supported by University funding, while specific projects are funded by public agencies, private foundations, or user fees. The Undergraduate Degree Studies in Gerontology programme is administered by this Office. The various degree options are described in this Calendar in the Faculty of Social Sciences section, Gerontological Studies.

The Office mandate is as follows:

1. to serve as the communication centre regarding gerontological education and research activities at McMaster University. Regular information about gerontological activities is provided through the newsletter *Aging, Health and Society: News and Views* and the *Inventory of Gerontological Research*;
2. to coordinate and plan multidisciplinary initiatives in gerontology education and research across all Faculties of the University. (Social Sciences, Health Sciences, Humanities, Science, Business, Engineering);

3. to organize multidisciplinary educational events in gerontology for professionals and the general public, e.g. the McMaster Summer Institute On Gerontology;
4. to actively participate in provincial and national gerontological organizations and initiatives;
5. to initiate and support the development of new gerontological projects with older adults, community agencies, students, staff and faculty;
6. to promote educational opportunities for older adults at McMaster and the Hamilton-Wentworth region.

OFFICE OF INTERNATIONAL AFFAIRS

➤ Kenneth Taylor Hall, Room 241, ext. 24700

Web Address

<http://www.mcmaster.ca/oia>

General E-mail Address

oia@mcmaster.ca

International Admissions Inquiries E-mail Address

inadin@mcmaster.ca

Executive Director

Luke Chan

Senior Project/International Liaison Officer

Ni Jadon

Project Officer

May Zhai

Administrative Coordinator

Laurine Mollinga

McMaster University has become increasingly involved around the world in exchange agreements, institutional linkages and externally funded international programmes concerned with collaborative research, education and human resource development, and with improving the delivery of services in such sectors as business, environmental protection, community health, 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 will be participating in four broad areas including international student recruitment, development of international projects, international programmes 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, Dr. Gerhard Gerber.

MCMASTER MUSEUM OF ART

➤ University Avenue, ext. 23081

Director and Curator

K.G. Ness, B.A., M.Litt., MMST

E-mail: nesskg@mcmaster.ca

Special Programmes Officer/Assistant to the Director

Appointment Pending

Collections and Operations Manager

G. Loveys, B.A.

E-mail: loveys@mcmaster.ca

Installations/Preservation Officer

J. Petteplace, B.A.

E-mail: jpette@mcmaster.ca

Secretary

Z. McLachlan, B.A., B.Ed.

E-mail: museum@mcmaster.ca

Exhibitions Assistant

C. Wiginton, B.A., MMST

E-mail: wiginton@mcmaster.ca

Head of Information

R.A. Prevec, B.A.

E-mail: prevecr@mcmaster.ca

Information Staff

D. Hammond

K. Hogue, B.A.

E-mail: hoguek@mcmaster.ca

C. Hullenaar, B.A.

E-mail: hullenaar@mcmaster.ca

A new facility was officially opened to the public in June 1994. Located at the west end of Mills Library on University Avenue, the new Museum contains five Exhibition Galleries, a Paper Centre and an Educational Access Gallery. The Museum offers a year-round programme of exhibitions ranging from the historical past to present-day artistic investigations either organized by the McMaster Museum or loaned by such institutions as the Art Gallery of Ontario or the National Gallery of Canada, as well as a regular programme of public events including lunchtime talks, Visiting Artist talks, seminars and concerts.

McMaster's permanent art collection contains close to 6,000 Canadian, American and European art works with a specialized collection of over 250 German Expressionist prints and the Levy Collection of Impressionist and Post Impressionist paintings as a teaching collection. The central emphasis is on collections access and use of the collection as a cultural learning resource.

Contact the Museum for exhibition listings. Hours: Tuesday to Friday, 11:00 a.m. - 6:00 p.m.; Thursday evening, 7:00 p.m. - 9:00 p.m.; Sunday, 12:00 p.m. - 5:00 p.m. Voluntary admission fee of \$2.00; free for students and seniors. Museum Memberships available. Wheelchair accessible.

STUDENT SERVICES

Student Affairs Web Address

<http://www.access.mcmaster.ca>

ASSOCIATE VICE-PRESIDENT (STUDENT AFFAIRS)

➤ Gilmour Hall, Room 207, ext. 27455.

Mary E. Keyes, Ph.D.

The Associate Vice-President (Student Affairs) leads a variety of specialized student service offices and is happy to meet with individuals and representatives of student organizations with problems, concerns, questions or suggestions on any matter relating to student life and services on campus.

CENTRE FOR STUDENT DEVELOPMENT

➤ Hamilton Hall, Room 409, ext. 24711

Web Address

<http://csd.mcmaster.ca/>

Staff

Programme Coordinator, Learning Specialist

Caroline Cayuga

Counsellor

Beverly Dullaert

Administrative Assistant

Noreen Myers

Psychologist

Debbie Nifakis

Programme Coordinators, Disability Specialists

Marge Marriott

Tim Nolan

Academic Skills Counsellor/Coordinator

David Palmer

Psychologist

Bill Wilkinson

The Centre provides services to McMaster students to promote their academic effectiveness and personal well-being. It also provides specific kinds of assistance to students with disabilities. (For more details see *Students with Disabilities* below.)

Students are encouraged to seek assistance from the Centre if they experience any of the following:

- Personal, emotional, social, family or relationship concerns.
- Feelings of stress, anxiety, loneliness, depression, low self-esteem or loss of motivation.
- Concerns about academic performance, study habits, time management, effective learning, reading, remembering, concentration, tests and exams, writing essays, making class presentations.
- The need for disability-related support services.

The Centre also provides services to international students wishing to improve their English.

Counselling, individual help, skill-development workshops and short courses are available. Peer helpers (trained and experienced students) provide some services, under staff supervision. Contacts between students and counsellors are voluntary and confidential. Students in urgent situations are given priority and seen as soon as possible. Students are given assistance in locating other specialized help on or off campus when required. All personal, health or disability-related information will be treated as confidential.

Students with Disabilities

All students are expected to satisfy the normal requirements for courses and programmes (including final examinations), but the Associate Deans (Studies) may authorize special arrangements to assist students with disabilities in the completion of assignments, tests, examinations and other course requirements.

The Centre for Student Development can provide advice to potential students and applicants with disabilities. Once admitted to the University, students with disabilities are encouraged to contact the Centre at an early date (two or three months prior to registration) to ensure sufficient time to make arrangements regarding special needs. Even if accommodation or assistance is not immediately required, students are encouraged to maintain contact with the Centre in case a need for assistance should arise at a later date.

The Centre assists students with issues concerning the accessibility of campus facilities, the provision of special equipment and alternative media formats, screening/assessment for suspected learning disabilities and attention deficit disorders, and referral to professional services or community resources. It provides counselling, advice, support and workshops to help students meet their educational objectives.

SEXUAL HARASSMENT/ANTI-DISCRIMINATION OFFICE (S.H.A.D.O.)

➤ Kenneth Taylor Hall, Room 118, ext. 23641

Web Address

<http://www.mcmaster.ca/shado>

E-mail Address

shado@mcmaster.ca

Officer

Cindy Player
ext. 23641

E-mail: playerc@mcmaster.ca

Administrative Assistant

Elaine Hay
ext. 27581

E-mail: hayelain@mcmaster.ca

This office administers the Sexual Harassment and Anti-Discrimination policies for McMaster University. The goal of this office is to ensure that students, staff and faculty can learn and work in an environment free from all forms of harassment and discrimination.

Cindy Player (Sexual Harassment/Anti-Discrimination Officer) is available to any member of the university community with questions or concerns regarding situations that may involve sexual harassment or human rights. In addition, there are two liaisons within the Faculty of Health Sciences: Dr. John Morse ((905) 522-1155, ext. 3140) and Dr. Anne Niec ((905) 521-2100, ext. 3268). Assistance is provided for complaint resolution and the design and facilitation of workshops concerning all forms of harassment and discrimination.

The *Safer Space* Programme is also run out of the S.H.A.D.O. Office and offers a number of services including a network of First Contacts, an After Hours Help Line and an Off-Campus Shelter. The Safer Space Programme is available to all women of the McMaster community—students, staff, faculty and their partners. The help Line is accessible during working hours by calling (905) 525-9140, ext. 23641. After hours and weekends call (905) 719-7786. The fax number for the office is 905-522-7102 and TTY is 905-521-8709. Wheelchair accessible.

ATHLETICS AND RECREATION

Web Address

<http://www.athrec.mcmaster.ca>

E-mail Address

iwynne@mcmaster.ca (Customer Service Line)

Director of Athletics and Recreation

Thérèse A. Quigley

The Department of Athletics and Recreation provides a wide variety of opportunities for students involved in high performance athletic competition, intramural and club competition as well as recreation, fitness and instructional and outdoor recreation programmes. A diverse programme of recreational activities is available for those who wish to keep fit, compete in active pursuits at their own level, and enjoy sports and active living opportunities of their choice. Access to the various facilities on campus is open to all McMaster students.

The facilities include a 50-metre pool, an outdoor 400-metre chevron track, eight tennis courts, several gyms, dance studio and a fitness centre, covering 7,700 square feet, known as *The Pulse*. It features computerized cardiovascular equipment, circuit training, aerobic floor and a comprehensive strength training area. Many different club activities are available, along with instructional assistance. Off-campus field trips in canoeing, rock climbing, horse-back riding, hiking and many other opportunities are offered.

A highly developed intramural programme is a very popular outlet for student activity. Intramurals run from early fall until late spring and provide students with a competitive environment that still fosters social interaction.

The varsity programme at McMaster fields 31 teams competing at the provincial (OUA) and national (CIAU) level. There are also eight inter-university club teams competing at various levels. Highly skilled coaches help McMaster athletes achieve their potential while competing against other universities in Ontario and across Canada. The outstanding efforts of McMaster's student-athletes and the social involvement of student supporters are focal points of student life on campus. Varsity events are a major source of school spirit for competitors and spectators alike. The Department of Athletics and Recreation takes pride in the quality programmes and services provided to the McMaster Community, and invites you to be A Part of the Action.

BOOKSTORE

Web Address

<http://www.bookstore.services.mcmaster.ca>

E-mail Address

bookstr@mcmaster.ca

The University Bookstore is owned and operated by the University. First and second year textbooks are located in the auxiliary store located in Togo Salmon Hall, Room B203. Third and fourth year, and grad textbooks are located in the lower level of Gilmour Hall. A Microcomputer Centre and a Post Office are located within the Bookstore. A Health Sciences Branch is located in the McMaster University Medical Centre. In addition to course books, the Bookstore maintains a wide range of supplementary reading materials, both academic and general. Stationery and computer supplies and other items are also stocked. Charge accounts may be opened after registration.

POST OFFICE

The McMaster University Sub-Post Office is located in the Bookstore. The Post Office offers full postal service, Monday to Friday, from 9:00 a.m. to 4:00 p.m. Post Office boxes may be rented by faculty, staff, and students for the duration of their stay at McMaster.

CAREER PLANNING AND EMPLOYMENT CENTRE

➤ Hamilton Hall, Room 302, ext. 24253

Web Address

<http://careers.mcmaster.ca>

E-mail Address

cpec@mcmaster.ca

Career Counsellors

David Lawson
Laurie Barlow Cash
Anne Markey

Career Information Coordinator

Cate Walker Hammond

Employment Services Coordinator

Arlene Fajutrab

Employment and Student Development Coordinator

Steven Beierl

Intake/Office Manager

Susan Collard

The Career Planning and Employment Centre (CPEC) offers a wide range of programmes and services to meet the needs of McMaster students and alumni. For a virtual CPEC tour, please visit our web site (<http://careers.mcmaster.ca>). There you will find a full introduction to our services, our staff and our many available resources. Our state-of-the-art on-line job posting service offers some 3,500 plus job opportunities a year.

CPEC offers assistance in all aspects of career planning, educational planning and the employment search process. Our staff are experienced, knowledgeable professionals with a strong track record of assisting students in pursuing their career and educational goals. Our services and programmes include:

- help in identifying and choosing career and educational goals; interest and personality type testing to help students make educational and career plans;
- workshops on applying to graduate and professional schools such as teaching, law and medicine;
- individual, confidential counselling;
- web-based on-line job postings, available from any internet connection, on-campus or off, 24 hours a day, 365 days a year;
- help in applying to full-time, summer and part-time jobs;
- workshops and assistance with resume writing, job search and interview skills;
- a resource centre with career, educational and job search information;
- information about government employment programmes.

We also offer help and resources for students to get connected with what is out there in the world of work including:

- MAC - Making Alumni Connections, a network organization that connects students with recent McMaster graduates;
- referrals to volunteer opportunities both on-and-off-campus;
- our Peer Programme, which offers opportunities to gain training and hands-on experience working directly with CPEC in service roles like Career Information, Work Search and Student Coordinator.

The office is open 8:30 a.m. to 4:30 p.m. Monday, Tuesday, Thursday and Friday, and 8:30 a.m. to 7:00 p.m. on Wednesday (September - May). The phone number is (905) 525-9140, ext. 24253 and the fax number is (905) 529-8972.

OFFICE OF THE INTERNATIONAL STUDENTS' ADVISOR/STUDENT EXCHANGES/WORK AND STUDY ABROAD

Web Address

<http://www.access.mcmaster.ca/international>

Office of the International Students' Advisor

➤ Hamilton Hall, Room 405, ext. 24748

The major purpose of the Office is to assist international students, visiting scholars, post-doctoral fellows and faculty. The Office provides a number of services such as:

- reception and orientation for newly arriving students
- preliminary information concerning immigration matters
- liaison with sponsoring agencies, foreign governments, consulates and embassies
- general advising and counselling regarding personal, financial and academic problems

The Office produces an *International Students' Handbook* which provide basic information for international students in preparation for their life in Canada. The International Students' Advisor is also the Plan Administrator for the University Health Insurance Plan (UHIP) which is mandatory for all international students.

Student Exchanges/Work and Study Abroad

➤ Hamilton Hall, Room 405, ext. 24748

The Office provides information on a range of options from independent study and externally sponsored programmes, to summer session and McMaster's formal student exchanges. As well, information concerning opportunities for working and volunteering abroad is provided.

McMaster University has formal student exchanges with universities in 26 countries abroad and participates in the Group of Ten Student Exchange Programme (GOTSEP) This programme includes the following 10 Canadian universities:

- | | |
|--------------------------|----------------------------------|
| ★ McMaster University | ★ University of Alberta |
| ★ McGill University | ★ University of British Columbia |
| ★ Queen's University | ★ University of Toronto |
| ★ Université Laval | ★ University of Waterloo |
| ★ Université de Montreal | ★ University of Western Ontario |

In addition, the University participates in two government-sponsored multi-institution exchange programmes:

- ★ Ontario/Rhone-Alpes Exchange (France)
- ★ Ontario/Baden-Wuerttemberg Exchange (Germany)

STUDENT FINANCIAL AID AND SCHOLARSHIPS

➤ Hamilton Hall, Room 404, ext. 24319

Manager

E. Seymour

The office administers a variety of programmes which are accessed by over half of all full-time students as well as a large number of part-time students attending University. These programmes include the Ontario Student Loan Programme, Canada Student Loan Programmes, Undergraduate Scholarships Programme, Ontario Work Study Programme, Ontario Special Bursary Programme, University Bursary and Emergency Loan Programme. In addition, the office provides administrative support to outside agencies providing scholarships and bursaries to students attending McMaster.

The office offers financial and budget counselling, assessment and information service to current and potential students designed to help identify and address post-secondary education expenses. All discussions with students are voluntary, private and confidential. Drop-in style counselling is available.

For more detailed profiles of programme offerings, please refer to *Undergraduate Academic Awards and Student Financial Aid* sections in this Calendar.

STUDENT HEALTH SERVICE

➤ McKay Hall, ext. 27700

Web Address

<http://www.access.mcmaster.ca/shs>

Medical Director

Jan Young

Nurse Director

Julie Fairservice

Health care is available to all university students year-round at the Student Health Service (SHS), located on the ground floor of McKay Hall Residence. The health service is open Monday, Tues-

day and Wednesday from 8:00 a.m. to 8:00 p.m.; Thursday and Friday from 8:00 a.m. to 4:30 p.m.; and Saturday from 9:00 a.m. to 4:30 p.m. Appointments can be made by calling 525-9140 ext. 27700.

Staffed by family physicians and nurses, the Student Health Service provides comprehensive primary medical care. Services include medical assessment and treatment; annual health examinations (physicals); birth-control counselling; assessment and treatment of depression, eating disorders, anxiety and other mental or emotional health problems; allergy injections; immunization; on-site laboratory; pregnancy tests; and information or counselling for any personal health concerns. A specialist in sports medicine is available for sports related injuries. Physiotherapy for sports injuries is also available at Ivor Wynne Centre on referral from one of the physicians. Chiropractic services are also available on self or physician referral. A staff psychiatrist is available to students on referral from one of the physicians.

The SHS nutritionist and Health Educator are located in the Health and Wellness Centre in the Commons Building. The nutritionist sees students, individually, and both are available for educational events on campus.

Contraceptive supplies and most travel vaccines are dispensed at a reduced cost to patients of SHS who have a current prescription from a SHS staff physician. OHIP no longer covers pre-travel assessments regarding vaccines and illness prevention. SHS continues to offer this service through visits with a specially trained nurse.

A computerized health profile can be taken by students. This programme estimates a person's current level of health and their chances of developing serious health problems in the future. An individual health summary with recommendations is provided.

Staff are available for lectures, seminars, or small group discussions on health-related issues, on request by students. A smoking cessation group is offered a few times each year. As well, an education and support group for students with eating disorders is conducted for six weeks during either or both the fall and winter terms. Further information can be obtained by calling the Student Health Service office at (905) 525-9140, ext. 27700.

HOSPITALITY SERVICES

Commons Building, Room B101B, ext. 24836

Director, Hospitality Services

Albert Y. Ng

McMaster University provides many dining areas on campus offering a wide variety of nutritious food at reasonable prices. Students living in residence (except the Bates apartment-style building) are required to purchase a meal plan. Off-campus students and other members of the University community may purchase an off-campus meal plan for any amount over \$100 at the MAC Express Centre, located in the Commons Building, Room B101B.

McMaster has a self-operated food service that includes five full-service cafeterias with dining rooms located strategically around campus in Togo Salmon Hall, Kenneth Taylor Hall, A.N. Bourns Building, Commons Building, and the Refectory. All dining facilities accept meal cards and cash. Students can obtain meals anytime from 7 a.m. to midnight.

MAC Express Coffee Shops are located in the Chester New Hall basement, the John Hodgins Engineering Building foyer, and the Burke Science Building—2nd floor. Vending machines at many locations around campus supplement these facilities. Inquiries are welcomed by Hospitality Services at ext. 24836.

Campus Dining Locations as follows:

- **Commons Marketplace** (Located in the Commons Building);
- **Arts Quad Cafe** (Located in the basement of Togo Salmon Hall, formerly TSH Cafeteria);
- **The Wokery** (Located in the basement of Kenneth Taylor Hall, formerly KTH Cafeteria);
- **Refectory Dining Hall;**
- **Rathskeller** (located in the lower level of Refectory)

Hours of operation vary among locations.

Hospitality Services is also pleased to provide its meal plan patrons (except for those residence students selecting the Light Meal Plan) with the convenience of dining off-campus (delivery is available for Pizza Pizza only).

Our 1998/99 off-campus vendors included the local East Side Mario's, Kelsey's, Pizza Pizza and Swiss Chalet.

HOUSING AND CONFERENCE SERVICES

Web Address

<http://www.housing.mcmaster.ca/housing/housing.htm>

E-mail Address

housing@mcmaster.ca

Director, Housing and Conference Services

Catherine Miller

RESIDENCES

The University owns and operates ten on-campus residence buildings, accommodating a total of 2,781 students. The nine traditional-style residences consist of two women's residences (248), one men's residence (101), five co-educational residences (1,692), and Matthews Hall, a co-educational hall comprised of three theme residences, Halcyon House (131), International House and La Maison Francaise (109).

Seventy percent of the spaces in traditional residences are reserved for incoming first-year students. In past years, admission offers to residence have been based on a student's admission average to his/her academic programme. The average has typically ranged from the high 70s to low 80s.

First-year students will receive a residence application and a letter of instruction regarding application procedures with their letter of acceptance from the University. To accept the offer of residence, students must return their completed Residence Application form and a deposit before the specified deadline which will then be applied to the student's residence fees if they remain in residence for the full year. Students who do not receive an offer of residence with their offer of admission to the University, but wish to be placed on a waiting list, must return the completed Residence Application form before the specified deadline. No deposit is required from students who apply to be on the waiting list. If a student is assigned a residence space but no longer requires it, the student is responsible for advising Housing Services in writing by the specified deadline. Failure to do so will result in forfeiture of the full amount of the deposit.

All students in the traditional-style residences are required to purchase one of the following meal plans: light, small, regular and large. Students receive a meal card which is debited only for food purchased and which may be used at all Hospitality Services locations on campus. (Note: Residence fees and meal plans do not include the Christmas vacation period.)

In addition, an apartment-style residence (Bates Residence) accommodates approximately 500 male and female students. The apartments are unfurnished (except for a stove, refrigerator, carpeting and drapes) and are set aside for students above first year, including a limited number of graduate, transfer, exchange students and special cases. A limited number of furnished rooms are reserved for exchange students. Bates students can purchase an off-campus meal plan directly from the Express Centre, Commons Bldg., room B101B.

The responsibility for policy, budget and the overall administration of the University residence system lies with the Director of Housing and Conference Services. The department has four distinct functional units: Admissions, Residence Life, Facilities and Conferences.

RESIDENCE ADMISSIONS

This area is responsible for admission systems and policies, withdrawals, room assignments, medical and grade appeals, waiting lists and housing publications. Enquiries about residence information should be directed to the Manager, Residence Admissions, Housing Services, Commons Building 101, extension 24070, email: housing@mcmaster.ca.

RESIDENCE LIFE

This area is responsible for programmes 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 option to participate in educational and

personal development interest sessions, and positive and inclusive social activities. Residence Life also provides leadership opportunities in the way of student staff positions and elected student council positions.

The Residence Life Staff team is made up of 127 student peer helpers called Community Advisors and Hall Coordinators and five full-time live in staff called Residence Managers. The staff are there to answer questions, ensure community standards are followed and coordinate programmes and activities.

All students living in residence are responsible for upholding the community standards as outlined in the Residence Discipline Code.

RESIDENCE FACILITIES

The Residence Facilities Team is responsible for maintenance, renovations, student damages, safety and security needs, work orders, repairs, furnishings, cleaning, residence recreational facilities, and the 24-hour Quad Service Desks located in Moulton Hall (west campus, ext. 24898) and the Commons Building (north campus, ext. 27222). Visit our website via the Housing homepage.

OFF-CAMPUS HOUSING

The Off-campus Housing office is a listing service provided jointly by Housing Services and the McMaster Students Union. This office maintains updated lists of available accommodation in Hamilton and the surrounding area. It also provides area maps, transit maps, free telephones for local calling and personal assistance with the housing search. The Off-Campus Housing Office is operated by student staff on a year-round basis and is located in Wentworth House, Room 118, (905) 525-9140 ext. 24086. Visit our website at www.housing.mcmaster.ca/housing/.

CONFERENCE OFFICE

During the summer months, accommodation, food and meeting facilities are available on campus for conferences, conventions, and touring groups, in addition to residence for summer students and casual visitors.

The Conference Office is located in the Commons Building, Room 129B, (905) 525-9140, ext. 24781. Non-academic room reservations and summer guest accommodation reservations can be made by email at confs@mcmaster.ca

PARKING

➤ E.T. Clarke Centre, ext. 24232 or 24921

Web Address

<http://www.parking.mcmaster.ca>

Campus parking facilities are limited and the availability of spaces cannot be assured.

Travel to and from the University on foot, by public transportation and in car pools is encouraged.

Students wishing to park a motor vehicle or motorcycle on campus are required to complete and submit a parking application. Applications are accepted between June 1 and the last business day of July. Completed application forms, accompanied by cheque or money order, payable to McMaster University, in the amount required for the full period must be forwarded to: Parking and Transit Services E.T. Clarke Centre, McMaster University Hamilton, Ontario L8S 4K1

If any applicable zone is oversubscribed, there will be a lottery draw.

Undergraduate students not in residence may apply for available spaces in Zones 1 and 6 only. The procedure for allocation of these spaces will be developed in consultation with the MSU Executive. Students in residence requiring parking can apply for Zone 7 only, and may apply at any time of the year.

Special arrangements can be made for disabled parking privileges. Copies of the complete rules and regulations concerning parking at McMaster University are available at the Parking and Transit Services Office.

The Parking and Transit Office has the overall responsibility for dealing with parking matters. If you have a problem, parking personnel will assist you. The office is located in the E.T. Clarke Centre and is open Monday to Friday from 9:00 a.m. to 4:00 p.m.

UNIVERSITY CHAPLAINS

➤ Wentworth House, Room 108, ext. 24207

Web Address:

<http://www.mcmaster.ca/chaplain>

E-mail Address:

chaplain@mcmaster.ca

The McMaster Chaplaincy Centre, located in Wentworth House, Room 108 is open to all students and the campus community. The Chaplaincy Centre is staffed by Carol Wood, Ecumenical Chaplain; Michael Fallon, Christian Reformed Chaplain; Father Jack Hurley, Roman Catholic Chaplain and Donna White, Assistant to the Chaplains. The Office is usually open between 9:00 a.m. and 5:00 p.m., Monday through Friday and appointments outside of these hours 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 marriage preparation; and an experience of community through cost suppers, worship and discussion groups. In addition, the Chaplaincy Centre provides advocacy for students in need; works cooperatively with a variety of student groups; and promotes interfaith events and dialogue on campus.

STUDENT GOVERNMENT AND ORGANIZATIONS

MCMASTER STUDENTS UNION

➤ Hamilton Hall, Room 203, ext. 21000

Web Address

<http://www-msu.mcmaster.ca>

Purpose: The McMaster Students Union is a student-operated corporation with a cash flow exceeding 3.5 million dollars and extensive operations spanning over 30 unique departments. Over 12,000 full-time undergraduate students (enrolled in 18 units or more) belong to the MSU by virtue of their supplementary fees paid at registration.

Services of the MSU: Considered as one of the most extensive student unions in Canada, the MSU offers an array of services and volunteer opportunities for students at McMaster. These services include two campus bars (The Downstairs John and The Rathskeller), a convenience store (Mac's Snack Shack), a games room, a Design & Copy Centre and advertising department (CAB), an Information Centre, a Day Care Centre, the Gay, Lesbian, Bisexual and Transgendered Centre, a yearbook (The Marmor), the Student Health Insurance Plan, a Programming Department (which organizes Welcome Week, Homecoming and other special events), 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, and over 100 clubs, including academic, political, religious, cultural and general interest.

Student Government: The Student Representative Assembly (SRA) consists of 35 elected individuals who represent student needs in crucial matters. It meets bi-weekly to discuss issues varying from the fate of the campus radio station to the amount of study space on campus. The President is elected by the entire student body while the Vice-President and Treasurer are elected by the SRA.

Committees: Hundreds of energetic and ambitious volunteers from committees are the powerhouse of the Students Union. Established committees include Elections, Environment, Events, External Affairs, Finance, Gender Equity, Human Rights, Promotions, Teaching Awards, University Affairs, and Constitution, By-laws and Policies.

Hamilton Hall: Currently this building is the Student Centre and the headquarters of the MSU. Most of the mentioned services are located here, including the President and student representatives. For further information, visit the MSU Info Centre located in Hamilton Hall Room 203, or call (905) 525-9140, ext. 21000.

OMBUDS OFFICE

➤ Hamilton Hall, Room 212, ext. 24151

E-mail Address

ombuds@mcmaster.ca

Ombuds

Shelley Lancaster

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 such as parking, accommodation, security and financial aid.

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)

➤ Kenneth Taylor Hall, Room 102, ext 22021

Web Address

<http://www.mcmaster.ca/maps/index.html>

E-mail Address

maps@mcmaster.ca

MAPS exists to look after the special interests of part-time degree (taking less than 18 units) and certificate students, who have a different educational experience than full-time students. University fees for these students include an assessment to support the Association.

The Association's lounge and office are open all year, Monday to Thursday, from 10:00 a.m. to 8:55 p.m., and Friday, from 10:00 a.m. to 2:00 p.m., when classes are in session. During exams, the office hours are Monday to Thursday, from 10:00 a.m. to 7:00 p.m., and Friday from 10:00 a.m. to 2:00 p.m. All other times, the office hours are Monday to Thursday, from 10:00 a.m. to 5:30 p.m., and Friday from 10:00 a.m. to 2:00 p.m.

MAPS Executive Director Sheila Smith is available to help students. If you have a question pertaining to university procedure or a problem of any kind, Sheila or the MAPS staff, can either supply the answer or put you in touch with someone who can. A handbook is published annually to help guide you through the University system and will be mailed to you.

The part-time student newsletter, *The Link*, is published on a regular basis, and will be sent to your professor or class representative for distribution to you. If you do not receive a copy, call or drop by the office. Essay writing, exam preparation and research seminars are offered through MAPS. Watch the newsletter, *The Link*, for classes and times.

MAPS provides the opportunities and methods for part-time students to communicate their needs and ideas to university officials, by ensuring representation on university governing bodies and committees, and by the Association's direct contact with university administrators on matters such as course availability, evening services, tuition and ancillary fees.

MAPS is also pleased to offer four awards: two Centennial Awards, the Martin W. Johns Award and a Gold Medal. MAPS has also established bursaries to assist students who have demonstrated financial need.

In addition, there is a MAPS Work Study Programme available to part-time students who have demonstrated financial need. This programme allows part-time students to work for eight to ten hours a week for ten weeks. Contact Student Financial Aid and Scholarship Office, ext. 24319, for information.

There are two computers in the office for your use where you can access your student record, use email or WordPerfect.

If you are a part-time student, MAPS is for you. It is a way to bridge the gap between you and the University, by helping you feel a part of McMaster's student body. We urge you to participate as often as possible in the academic and social events which will be available to you at McMaster.

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.

MCMASTER UNIVERSITY ALUMNI ASSOCIATION

➤ Gilmour Hall, Room 110, ext 23900

Web Address

<http://www.mcmaster.ca/ua/alumni>

E-mail Address

alumni@mcmaster.ca

Following convocation, all graduates of McMaster University automatically become members of the McMaster Alumni Association (MAA) and join our over 93,000 alumni living in over 120 countries. The Association's mission statement addresses a number of goals: support of McMaster University, involvement of alumni, recognition of alumni achievements, alumni services and benefits, alumni communication, and involvement of current students.

Our alumni branch programme creates connections in geographic areas like Brantford, Vancouver, Ottawa, Toronto and Hong Kong Branches also connect alumni to their faculty or department through groups like the Nursing Alumni Branch, MBA Alumni Association, Engineering Alumni Branch, or Social Work Alumni Branch. Still other branches create connections among Mac grads who share a common interest or affinity, like the MSU Alumni Branch or Lettermen's Alumni Association, just to name a few.

The MAA also offers programmes in the greater Hamilton community. The McMaster Alumni Connection Luncheon Series brings high profile speakers to downtown Hamilton to talk with McMaster alumni and friends, and the Albert Lager Lecture Series expands your educational relationship with Mac into a lifelong affair by providing fun and unique opportunities to enjoy lectures, trips and seminars. Alumni Weekend occurs every year in June and is the largest single alumni event. It incorporates class reunions and dozens of events designed to attract alumni, family, friends, students and the community to the McMaster campus.

The Association also gives its members the chance to obtain unique or discounted products or services through its Services and Benefits portfolio. Alumni can experience fantastic trips, obtain unique McMaster merchandise, use their McMaster Mastercard to help benefit the Association, receive high-quality home and auto insurance at group rates, or investigate the other services offered through the MAA.

The McMaster Alumni Association also acts as your advocate, with representatives on the University Senate and Board of Governors. These representatives, along with other elected alumni, compose the MAA Board of Directors which, along with hundreds of other alumni volunteers, provides alumni programming in conjunction with the Office of Alumni Advancement. Both the Office and the Association can be contacted in Gilmour Hall 110, or by phone at (905) 525-9140 ext 23900, or by fax at (905) 524-1733.

CAMPUS NAMES

The University's Board of Governors has made provision for naming buildings, facilities, spaces and streets after individuals or organizations who have some connection with the University. Recommendations made according to the criteria outlined below are considered by the Advisory Committee on Campus Names. Policy of the Board of Governors on Campus Names

1. The names of distinguished members of the McMaster University community who are no longer actively involved in the affairs of the University.
2. Others in the following groups:
 - a) Outstanding scholars outside the University who have had a close relationship with McMaster and whose academic disciplines relate to the structure or area being named.
 - b) Major benefactors of the University, including foundations and corporations.
 - c) Names that bear a special relationship to McMaster University, Hamilton or district.

(Board of Governors, December 9, 1993) Information concerning the nomination can be obtained via the Vice-President (Administration), Chair, Advisory Committee on Campus Names, Gilmour Hall, Room 202.

STUDENT FINANCIAL AID

WEB ADDRESS: <http://access.mcmaster.ca>

E-MAIL ADDRESS: awards@mcmaster.ca

For information on any of the programmes which follow, contact:

Office of Student Financial Aid and Scholarships

Hamilton Hall, Room 404

McMaster University

Hamilton, Ontario, L8S 4K1

Telephone: (905) 525-9140, ext. 24319

ONTARIO STUDENT ASSISTANCE PROGRAMME

Financial aid to help students meet the costs of post-secondary education is available from the federal and provincial governments through the Ontario Student Assistance Program (OSAP) which consists of four plans:

- Canada Student Loans Plan
- Ontario Student Loans Plan
- Ontario Special Bursary Plan
- Ontario Work-Study Plan

To be eligible for assistance under each of these plans, a student must be a Canadian citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario. The amount of financial aid awarded is determined by a need-testing procedure.

It is strongly recommended that students apply by June 30 to ensure that their applications are processed by September. Currently, it takes six to eight weeks to process a regular OSAP application.

All of the government programmes 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 Loans and Awards Officer in the Student Financial Aid and Scholarships Office as early as possible.

Canada Student Loans Plan

This is a federal government plan, administered by the provincial government, which provides loans to students who can demonstrate financial need for completion of any level of study. Loans are available to full-time students enrolled at recognized post-secondary institutions anywhere in the world. The federal government also provides Canada Student Loans for part-time students who can demonstrate financial need. These loans cover a student's costs for tuition, books, transportation, day care and incidentals and are interest-bearing after 30 days.

Ontario Student Loans Plan

This plan provides loans to full-time students whose financial needs are not fully covered by the Canada Student Loans Plan.

Ontario Special Bursary Plan

This plan helps exceptionally needy students who are unable to attend school full-time but need post-secondary training to improve their job prospects. Bursaries are available to such part-time students enrolled at recognized post-secondary institutions in Ontario only.

Work-Study Programme

The Work-Study Programme complements the original plans in the OSAP package. It offers part-time jobs to students who can demonstrate financial need during the school year to help them meet exceptional costs, often unexpected, not recognized under OSAP. It also helps students who lack the resources expected under OSAP criteria or, whose assessed need under OSAP is not met because of loan maximums or, who do not wish to borrow further due to high debt load. Costs of this plan are shared by the provincial government and a local sponsoring agency which must be a non-profit organization, such as the University.

McMASTER WORK STUDY PROGRAMMES

McMaster Work Study Programmes offer part-time jobs to students demonstrating financial need during the school year to help them meet costs not recognized under regular federal and provincial financial aid programmes. In particular, programmes are intended to assist students who lack resources relative to their assessed financial need and those who do not wish to borrow further due to a high debt load.

To apply for the McMaster Work Study Programmes identified below, students should obtain a Student Employment Application from the Office of Student Financial Aid and Scholarships.

THE HAMLIN FAMILY FOUNDATION WORK-STUDY PROGRAMME

Established in 1996 by the Hamlin Family Foundation. A variable number of employment opportunities made available in disciplines related to the fields of Health Sciences and Engineering to assist students who demonstrate financial need. To be eligible for consideration, students must be approved for Work-Study through the Office of Student Financial Aid and Scholarships. (90656)

THE SALLY HORSFALL EATON WORK STUDY PROGRAMME

Established in 1996, the Centre for Studies of Children at Risk, McMaster University has a variable number of employment opportunities made available to students demonstrating financial need. These jobs will provide an opportunity for students to pursue research and/or assist with activities sponsored by the Centre. To be eligible for consideration, students must be approved for Work-Study through the Office of Student Financial Aid and Scholarships. (90657)

THE HUMANITIES COMMUNICATIONS CENTRE WORK-STUDY ENDOWMENT

Established in 1997 by Edward and Margaret Lyons, McMaster alumni of the Class of '49 and later augmented by friends of the Centre. A variable number of employment opportunities will be made available in The Edward and Margaret Lyons Humanities Communications Centre to assist students demonstrating financial need. These jobs will provide an opportunity for students to pursue research in the fields of computing and human communication. To be eligible for consideration, students must be approved for the Work-Study Programme through the Office of Student Financial Aid and Scholarships. (90658)

THE McMASTER "McWORK" STUDY PROGRAMME

Established in 1996 by the University with the goal of creating meaningful employment opportunities for current full-time students who demonstrate financial need. (90659)

THE McMASTER ASSOCIATION OF PART-TIME STUDENTS WORK STUDY PROGRAMME

Established in 1996 by the McMaster Association of Part-time Students and the university to provide meaningful employment opportunities for current part-time students who demonstrate financial need. (90660)

SHORT-TERM EMERGENCY LOANS

Assistance in the form of short-term loans is sometimes available to graduate or undergraduate students. Such loans cannot be given to pay tuition, bookstore, residence or other university expenses. Repayment of any loan is expected within 90 days or before the end of the academic year.

Any student interested in obtaining a short-term loan must complete an application which is available in the Student Financial Aid and Scholarships Office. Once completed, the student will meet with a representative from this office to discuss the possibility of receiving a loan.

THE IODE LOAN FUNDS

Through the generosity of a number of the local Chapters, Imperial Order Daughters of the Empire, funds are provided to assist female students in any programme or as specified.

EDITH M. GRIFFEN LOAN FUND

Established in 1957 by Paardeburg Chapter, IODE, in honour of Mrs. H.S. Griffen.

PRINCESS MARINA CHAPTER, IODE, LOAN FUND

Established in 1975.

EMMA FRANCES PRATT CHAPTER, IODE, LOAN FUND

Established in 1958. To assist female students in Levels III or IV of any programme.

MURIEL CLARK RIDDELL LOAN FUND

Established in 1964 by the Right Honourable Stanley Baldwin Chapter, IODE.

SOVEREIGN CHAPTER, IODE, LOAN FUND

Established in 1960. To assist female students in the final level of any programme.

MARGARET B. SUTTERBY MEMORIAL FUND

Established in 1955 by the 67th University Battery Chapter, IODE.

WENTWORTH CHAPTER, IODE, LOAN FUND

Established in 1953.

THE McILROY LOAN FUND

Established in 1956 by the University Women's Club of Hamilton. To assist female students in the final level of any programme.

THE McMASTER ENGINEERING SOCIETY LOAN FUND

Established in 1971 by the McMaster Engineering Society for the provision of loans to Engineering students.

THE IVOR WYNNE MEMORIAL LOAN FUND

Established in 1971 in memory of Ivor Wynne, Dean of Students. To assist students in any programme.

THE UNIVERSITY LOAN FUNDS

Small short-term emergency loans from the University funds are available to assist students in any programme.

BURSARIES

Most bursaries are granted by the University Bursary Selection Committee on the basis of a general bursary application. Application forms are available from the Office of Student Financial Aid and Scholarships, Hamilton Hall, Room 404. Any person who is registered and in good standing as a student of McMaster University is eligible to apply.

Bursaries have been grouped according to category and/or Faculty.

GENERAL BURSARIES

THE 4 WINDS BURSARIES

Established in 1997 by John F. Evans 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 670)

THE AINSWORTH BURSARIES

Established in 1996. To be granted to undergraduate students in any programme who demonstrate financial need. Preference to be given to female students. (90578 402)

THE PHYLLIS MAY AITKEN BURSARY FUND

Established in 1997 by the bequest of Phyllis May Aitken. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90653 620)

THE AMEX CANADA BURSARY

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 programme who demonstrates financial need. (90805 622)

THE JOY BÂBY BURSARY

Established in 1997 by Joy Bâby under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any programme who demonstrates financial need. (90809 627)

THE CHARLES MURRAY BALL BURSARIES

Established in 1993 by bequest of May Alexandra Ball in memory of her brother Charles Murray Ball. To assist students in any programme who demonstrate financial need. (90560 332)

THE BETZNER FAMILY MEMORIAL BURSARIES

Established in 1996 by the Betzner Family of Dundas, Ontario. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90580 404)

THE BOWES FAMILY BURSARIES

Established in 1996 by Eleanor and Terrence Aurini of Cambridge. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. Preference to be given to female students. (90581 405)

BURSARIES FOR IN-COURSE VISA STUDENTS

Established in 1982 by the University to assist visa students in any programme. (90547)

THE BUSINESS MANAGEMENT SERVICES BURSARIES

Established in 1996 by staff of McMaster's Business Management Services who through their leadership, guidance and support, enable the University community to deploy its financial resources to the greatest advantage. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90584 408)

THE JAMES CALVIN BURSARIES

Established in 1997 by bequest of James Calvin. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90831 803)

THE CAMCO INC. BURSARIES

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 programme who demonstrate financial need. (90817 638)

THE BETTY TAYLOR CAMPBELL BURSARIES

Established in 1998 by William F. Campbell of Ottawa, Ontario in memory of his wife Betty Taylor Campbell, a 1937 McMaster graduate, an Olympic medalist in 1936 and a 1990 inductee to the Athletics Hall of Fame. To be granted to students who demonstrate financial need. Preference will be given to the recipient of the Betty Taylor Campbell Scholarship. (90832 804)

THE ANNE AND HAROLD CHALK MEMORIAL BURSARIES

Established by bequest of Anne Maria Luise Chalk and Harold Henry Chalk of Ottawa. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90586 410)

THE CHAWKERS FOUNDATION BURSARIES

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 411)

THE CIBC BURSARIES

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 programme who demonstrate financial need. (90683 645)

THE SAM M. CINO BURSARY

Established in 1997 by Sam Cino in support of McMaster students. To be granted to a student enrolled in any programme who demonstrates financial need. (90684 646)

THE HUGH CLARK BURSARIES

Established in 1997 by Hugh Clark in support of McMaster students. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. Preference will be given to the recipient of the Hugh Clark Scholarship. (90685 647)

THE CLASS OF '35 BURSARIES

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 180)

THE CLASS OF '46 GOLDEN ANNIVERSARY BURSARIES

Established by the Year '46 in honour of their fiftieth reunion on June 1, 1996. A variable number of bursaries to be granted to students enrolled in any programme at McMaster who demonstrate financial need and are in good academic standing. (90564 337)

THE CLASS OF '47 GOLDEN ANNIVERSARY BURSARIES

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 programme who demonstrate financial need. (90590 414)

THE CLASS OF '49 GOLDEN ANNIVERSARY BURSARIES

Established by the Class of '49 in honour of their 50th Anniversary Reunion in 1999. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90591 415)

THE CLASS OF '51 GOLDEN ANNIVERSARY BURSARIES

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 programme who demonstrate financial need. (90686 648)

THE CLASS OF '57 BURSARIES

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 programme who demonstrate financial need. (90687 649)

THE DORIS PARTRIDGE COLE BURSARY

Established in 1981, this bursary is to be granted to a worthy student in memory of Doris Partridge Cole (Class of '45). (90508 002)

THE CONNOR, CLARK & LUNN BURSARY

Established in 1996 by Connor, Clark & Lunn in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a McMaster student in any programme who demonstrates financial need. (90666 463)

THE IAN AND JILL COWAN BURSARY

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 programme who demonstrates financial need. (90693 655)

THE THOMAS DALY BURSARIES

Established in 1996 by family, friends and colleagues of Thomas Daly. A variable number of bursaries to be granted to students in any undergraduate programme who demonstrate financial need. (90592 416)

THE JOHN DEERE BURSARIES

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 programme who demonstrate financial need. (90698 660)

THE PATRICIA DETENBECK BURSARIES

Established in 1996 by Patricia Detenbeck (Class of '32). A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90850 829)

THE DOFASCO INC. BURSARIES

Established in 1996 by Hamilton-based Dofasco Inc., one of Canada's and North America's leading steelmakers in support of students pursuing their post-secondary studies at McMaster. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90598 422)

THE EVANS, PHILP BURSARIES

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 programme who demonstrate financial need. (90671 468)

THE ELEANOR EWING BURSARY

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 programme who demonstrates financial need. Preference to be given to a mature female student. (90704 666)

THE EILEEN GRAY FARLEY BURSARY

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 programme who demonstrate financial need. (90833 805)

THE EDITH E. FERRIE BURSARIES

Established in 1965 by the late Edith E. Ferrie. To be granted to students in any programme who demonstrate financial need. (90511 289)

THE FORRESTER/GREGORY BURSARY

Established in 1997 by Shelley Forrester and Douglas Gregory in support of McMaster students. To be granted to a student in any programme who demonstrates financial need. (90707 669)

THE JOHN C. FORSTER BURSARIES

Established by bequest of John Clifton Henry Forster of Windsor, Ontario. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90600 424)

THE EMMA FOX BURSARIES

Established in 1961 by the Wallingford Hall Committee of which Emma Fox was treasurer from 1918 to 1958. To assist female students in any programme. (90512 830)

THE GENERAL ELECTRIC CANADA INC. BURSARY

Established in 1997 by General Electric Canada Inc. under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any programme who demonstrates financial need. (90711 673)

THE GRAND & TOY BURSARIES

Established in 1996 by Grand & Toy in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90602 426)

THE LELAND GREGORY BURSARIES

Established in 1997 by the bequest of Leland Andrew Gregory. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90719 681)

THE GUARDIAN CAPITAL INC. BURSARIES

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 programme who demonstrate financial need. (90674 471)

THE HAMILTON PORCELAINS BURSARY

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 programme who demonstrates financial need. (90727 689)

THE HAMILTON SPECTATOR BURSARY

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 programme who demonstrates financial need. (90728 690)

THE MIKE AND MURIEL HEDDEN BURSARIES

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 programme who demonstrate financial need. (90603 427)

THE RUDY HEINZL BURSARY

Established in 1996 by family, friends and colleagues upon his retirement as Dean of Student Affairs in recognition of 32 years of dedicated service to students and to the McMaster University Community. To be granted to students in any programme who demonstrate financial need. (90577 396)

THE EDWIN W. HILBORN BURSARY

Established in 1965 by bequest of Edwin W. Hilborn. To be granted to a student in any programme. (90520 831)

THE LLOYD ANDREW HILLGARTNER BURSARIES

Established in 1997 by bequest of Lloyd Andrew Hillgartner. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90834 806)

THE INTER-RESIDENCE COUNCIL BURSARY

Established in 1996 by the Inter-Residence Council in support of McMaster students. To be granted to a student in any programme who demonstrates financial need. (90680 480)

THE JADDCO ANDERSON BURSARY

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 programme who demonstrates financial need. (90738 700)

THE JONES-TURNER BURSARY

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 programme who demonstrates financial need. (90743 705)

THE MURIEL MCBRIEN KAUFFMAN BURSARIES

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 programme who demonstrate financial need. (90744 706)

THE ROBERT A. KENNEDY BURSARIES

Established in 1997 by Robert A. Kennedy under the McMaster Student Opportunity Fund initiative. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90746 708)

THE KHAKI UNIVERSITY AND YOUNG MEN'S CHRISTIAN ASSOCIATION MEMORIAL BURSARIES

Established in 1921 by the Khaki University of Canada and the Young Men's Christian Association. To assist students in any programme, preference to be given to children of war veterans. (90523 284)

THE ALBERT ABRUM LAGER BURSARIES

Established in 1995 by the Albert Abrum Lager Foundation in memory of Albert Lager, former University Senator and McMaster Alumni Association Director. Two awards to be granted to students enrolled in any programme who demonstrate financial need. Preference to be given to women students who are single parents.

Value: \$600 (90575)

THE LAIDLAW INC. BURSARIES

Established in 1996 by Laidlaw Inc. a major provider of environment and transportation services to municipalities and industries throughout Canada and the United States, in support of students pursuing their post-secondary studies at McMaster. A variable number of bursaries to assist students in any programme who demonstrate financial need. (90608 432)

THE BETTY MAY LAMB MEMORIAL BURSARY

Established in 1991 by family, friends, colleagues in memory of Betty May Lamb, an employee at McMaster University for 22 years, most recently as Executive Assistant to the Faculty Association from 1988-91. To assist students in any programme who demonstrate financial need. (90555 301)

THE LANCASTER SHEET METAL LIMITED BURSARY

Established in 1997 under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in any programme who demonstrate financial need. (90751 713)

THE LANDMARK CONSULTING GROUP BURSARIES

Established in 1996 by The LANDMARK Consulting Group Inc. in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90609 433)

THE LANG FAMILY BURSARIES

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 programme who demonstrate financial need. (90611 435)

THE GARY LAUTENS MEMORIAL BURSARIES

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 programme who demonstrate financial need. (90613 437)

THE BERTRAM LEGGAT MEMORIAL BURSARIES

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 438)

THE LINCLUDEN MANAGEMENT BURSARIES

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 programme who demonstrate financial need. (90755 717)

THE LONDON GUARANTEE BURSARIES

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 719)

THE MAKSTEEL BURSARY

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 programme who demonstrate financial need. (90761 723)

THE LINDA MATTHEWS BURSARIES

Established in 1996 by Linda Matthews (Class of '69). A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. Preference to be given to female students. (90664 461)

THE ANDREW MCFARLANE BURSARIES

Established in 1988 by bequest of Andrew McFarlane of Hamilton. To be granted to a student or students who are in good standing and have demonstrated financial need. (90526 832)

THE McMASTER 1980 BURSARIES

Established in 1980 by the University to assist undergraduate students in any programme. (90527)

THE McMASTER 1996 BURSARIES

Established in 1996 by the University to assist undergraduate students in any programme who demonstrate financial need. (90624)

THE McMASTER ALUMNAE CENTENNIAL BURSARY

Established in 1988 by the McMaster Women's Alumni, Hamilton Branch, to be granted to a mature student in his or her graduating year, who is a Canadian citizen or permanent resident and who exhibits financial need. Preference will be given to a single parent. (90528 214)

THE McMASTER ASSOCIATION OF PART-TIME STUDENTS BURSARIES

Established in 1988 in celebration of McMaster's Centennial celebration to assist students currently enrolled in a degree or certificate programme who, without such assistance, would be unable to continue their studies. Consideration may also be given to students who would not otherwise enrol without such assistance. Applications will be reviewed by the MAPS Centennial Bursary Selection Committee. (90529 290)

THE McMASTER ASSOCIATION OF PART-TIME STUDENTS 20TH ANNIVERSARY BURSARY

Established in 1999 in honour of the 20th anniversary of the McMaster Association of Part-Time students. To be granted to students currently enrolled, on a part-time basis, in a degree, diploma or certificate programme, who demonstrate financial need. Applications will be reviewed by the MAPS Bursary Selection Committee. (90835 807)

THE McMASTER SAVINGS AND CREDIT UNION LIMITED BURSARY

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 programme who demonstrate financial need. (90822 767)

THE McMASTER STUDENT OPPORTUNITY FUND BURSARIES

Established in 1996 by McMaster University from general donations to the University bursary programme and matching funding provided through the Ontario Student Opportunity Trust Fund initiative. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90627 451)

THE McMASTER STUDENTS' UNION BURSARIES

Established in 1982 by the McMaster Students' Union. To assist those undergraduate MSU members who demonstrate financial need. (90530 292)

THE McMASTER UNIVERSITY FACULTY ASSOCIATION BURSARY

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 programme who demonstrates financial need. (90768 730)

THE A.J. MELLONI MEMORIAL FUND

To be granted to a student in any programme. (90532 833)

THE MELOCHE MONNEX INC. BURSARY

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 programme who demonstrates financial need. (90776 738)

THE EDNA C. AND FRANK CHARLES MILLER BURSARY

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 programme who demonstrates financial need. (90778 741)

THE WALLACE R. MORRIS BURSARY FUND

Established in 1997 by bequest of Wallace Ronald Morris. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90780 743)

THE JOHN DOUGLAS MOYER BURSARY

Established in 1986 by bequest of John Douglas Moyer to assist needy students. (90534 834)

THE MARJORIE AND BILL NELSON BURSARY

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 programme who demonstrates financial need. (90781 744)

THE NELSON STEEL BURSARY

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 programme who demonstrate financial need. (90782 745)

THE PETRO-CANADA BURSARIES

Established in 1996 by Petro-Canada, the largest Canadian-owned oil and gas company and one of the country's leading refiners and marketers of petroleum products, in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90634 483)

THE ROBERT AND RUTH PHILIP STUDENT BURSARIES

Established in 1996 by Robert and Ruth Philip of Hamilton, Ontario. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. (90635 484)

THE GORD RAYMOND BURSARIES

Established in 1996 by the McMaster Association of Part-time Students and other friends and colleagues in honour of Gord Raymond in recognition of his 27 years of service to McMaster University, including 15 years as Coordinator of Part-time Studies. A variable number of bursaries to assist part-time students enrolled in any programme who demonstrate financial need. (90638 487)

THE REDPATH SUGARS BURSARY

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 programme who demonstrates financial need. (90824 769)

THE JAMES AND ELIZABETH ROBERTS BURSARIES

Established in 1957 by R.H. Roberts in memory of his parents to assist any male student of good academic standing. (90538 835)

THE HUGH AND ALICE ROBERTSON MEMORIAL BURSARIES

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 programme who demonstrate financial need. (90795 758)

THE ROYAL BANK BURSARY FUND

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 760)

THE ROYAL INSURANCE COMPANY OF CANADA BURSARIES

Established in 1997 by Royal Insurance 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 762)

THE HELEN SANSONE BURSARIES

Established in 1996 by bequest of Helen Sansone of Hamilton, Ontario. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need. (90641 490)

THE MYKOLA SEMENIUK BURSARIES

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 295)

THE ALBERT EDWARD SMITH AND JEAN MCTAVISH SMITH BURSARY

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 programme who demonstrates financial need. (90836 808)

THE SAM SMURLICK BURSARY

Established in 1978 by the Smurlick family in memory of Sam Smurlick (Class of '35). To be granted to a student in any programme who demonstrates financial need. (90541 836)

THE TARBUTT CONSTRUCTION LTD. BURSARY

Established in 1997 by Tarbutt Construction Ltd. under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any programme who demonstrates financial need. (90732 694)

THE RAY AND JOYCE TRULL BURSARY

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 programme who demonstrates financial need. (90837 809)

THE EDITH H. TURNER FOUNDATION BURSARIES

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 programme who demonstrate financial need. (90648 497)

THE VALLEY CITY BURSARY

Established in 1996 by Valley City in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to a student in any programme who demonstrates financial need. (90662 459)

THE WALLINGFORD HALL BURSARIES

Established through anonymous donations to assist students in any programme who demonstrate financial need. (90548)

THE G.S. WARK LTD. BURSARY

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 programme who demonstrates financial need. (90589 413)

THE LLOYD WERDEN MEMORIAL BURSARIES

Established in 1996 by bequest of Lloyd Werden of *Bonavista* in the Township of Louth in the County of Lincoln, former Physician. To be granted to students enrolled in any programme who demonstrate financial need. (90651 500)

THE YATES BURSARIES

Established in 1963 by bequest of William Henry Yates of Hamilton. To assist students in any programme. (90549)

ABILITY AND ACCESS BURSARIES**THE AUBREY DALGLEISH BURSARY**

Established in 1985. To be granted to a student in any programme who demonstrate financial need with special preference given to handicapped students and/or students in the Faculty of Business. (90509)

THE JAMES R. (JAMIE) GREILICH MEMORIAL BURSARY

Established in 1991 in memory of Jamie Greulich (Class of '88) by the Operating Committee on the Disabled through its Awareness Week Activities. To be granted to a disabled student in any programme who demonstrates financial need. Students should have registered with the Office for Ability and Access. (90553 287)

THE INTER-RESIDENCE COUNCIL BURSARY

Established in 1995 by the McMaster Inter-Residence Council in recognition of the IRC's continued support of the University and its students. One or more bursaries to assist students with disabilities who demonstrate financial need and currently reside in one of McMaster's residences or someone who has made a significant contribution to the University life of residence students with disabilities. In a year that a suitable candidate is not found, the bursary will be awarded to a student without a disability demonstrating financial need who currently resides in one of McMaster's residences. Students with disabilities must have registered with the Office for Ability and Access. (90572 480)

THE DIANNE MACISAAC MEMORIAL BURSARY

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 programme in Sociology who demonstrate financial need. Preference to be given to students with disabilities. (90571 721)

THE RICHARD KONRAD BURSARIES

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:

- The Richard Konrad Bursaries for students enrolled in any programme.
- The Richard Konrad Bursaries for physically challenged students registered with the Centre for Student Development, who are enrolled in any programme. (90750 712)

THE SERTOMA CLUB BURSARY

Established in 1989 by the Sertoma Club of Hamilton. To be granted to a hearing disabled student in any programme who demonstrates financial need. In a year that a suitable candidate is not found, the bursary will be granted to a student with another disability provided they demonstrate financial need. Students must have registered with the Office for Ability and Access. (90540 221)

THE LILLIAN R. STEGNE MEMORIAL BURSARIES

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 programme who demonstrate financial need. (90543 137)

ATHLETIC BURSARIES

All athletic bursaries are only applicable to students in Level II or higher who meet the OUA and the CIAU regulations for Athletic Bursaries. Verification of eligibility will be done in consultation with the Department of Athletics.

THE CROSS COUNTRY BURSARY

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 657)

THE SAM DARRAGH GENERAL ATHLETIC BURSARY

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 programme who demonstrates financial need and who is a member of any interuniversity team at McMaster. (90827 783)

THE SAM DARRAGH MEMORIAL BURSARY

Established in 1997 by friends of Sam Darragh under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in any programme who demonstrates financial need and who has demonstrated outstanding athletic achievement in intervarsity football. (90697 659)

THE SADIE LUDLOW BURSARIES

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 Intersarsity football or Intersarsity Women's tennis. (90615 439)

McMASTER MEN'S ATHLETICS BURSARY

Established by past and present student-athletes and friends of McMaster Interuniversity Athletics to assist students in any academic programme who demonstrate financial need and who demonstrate outstanding athletic participation in Men's Interuniversity Athletics. (90625 449)

McMASTER MEN'S BASKETBALL BURSARY

Established by past and present student-athletes and friends of McMaster Men's Basketball to assist students in any academic programme who demonstrate financial need and who demonstrate outstanding athletic participation in the sport of men's basketball. (90770 732)

McMASTER SQUASH AND GOLF BURSARY

Established by past and present student-athletes and friends of McMaster Golf and Squash to assist a student in any academic programme who demonstrates financial need and who demonstrates outstanding athletic participation in the sport of golf or squash. (90771 733)

McMASTER WOMEN'S BASKETBALL BURSARY

Established by past and present student-athletes and friends of McMaster Women's Basketball to assist a student in any academic programme who demonstrates financial need and who demonstrates outstanding athletic participation in the sport of women's basketball. (90772 734)

McMASTER WOMEN'S VOLLEYBALL BURSARY

Established by past and present student-athletes and friends of McMaster Women's Volleyball to assist a student in any academic programme who demonstrates financial need and who demonstrates outstanding athletic participation in the sport of women's volleyball. (90773 735)

THE THOMAS ALEXANDER PAIN BURSARY

Established by past and present student-athletes and friends of McMaster Football to assist students in any academic programme who demonstrate financial need and who demonstrate outstanding participation in the sport of football. (90777 739)

THE LES PRINCE BURSARIES

Established in 1996 in memory of Leslie A. Prince, dedicated teacher, coach and administrator at McMaster University remembered for his outstanding leadership and service in Athletics and Recreation, Student Life as well as the community-at-large. To assist student-athletes who demonstrate financial need. Preference to be given to students who demonstrate qualities of leadership and service to the community through programmes such as *Athletes helping Athletes*. (90637 486)

COMMUNITY SERVICE BURSARIES**THE ERIC JOHN BRETZLER BURSARY**

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 programme who demonstrates financial need. Preference will be given to students associated with the McMaster Students Union. (90814 634)

THE ARCHIBALD R. CROZIER BURSARIES

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 338)

THE GWEN GEORGE UNDERGRADUATE BURSARIES

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 programme who have demon-

strated 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 675)

THE LYNDEN LIONS CLUB BURSARY

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 programme 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 720)

THE RAYMOND C. LABARGE MEMORIAL BURSARIES

Established in 1973 by friends and associates in memory of Raymond C. Labarge (Class of '36) of Ottawa. Four bursaries are available for senior undergraduate students. Applicants should have a record of academic performance that has normally been at the upper second-class level or higher. They should also have demonstrated a sense of social awareness, shown interest in and concern for others and been an active participant in University or general community affairs. Students should describe their qualifications for this bursary in the covering letter. (90524 212)

REGIONAL BURSARIES**THE JAMES N. ALLAN FOUNDATION BURSARY**

Established in 1996 from funds donated by the James N. Allan Foundation, Dunville, 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 621)

THE ANCASTER LIONS CLUB BURSARY

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 programme who demonstrates financial need. Preference to be given to students who currently reside in the town of Ancaster. (90804 623)

THE AVESTEL CREDIT UNION LIMITED BURSARIES

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 programme 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 199)

THE BRANTFORD ALUMNI BRANCH BURSARIES

Established in 1997 by the Brantford Alumni Branch of the McMaster Alumni Association under the Student Opportunity Trust Fund initiative. A variable number of bursaries to be awarded to students demonstrating financial need. Preference to be given to a Level I student from Brant County high schools. (90813 633)

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN (HAMILTON) BURSARY

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 programme who demonstrates financial need. (90828 784)

THE CITY OF HAMILTON BURSARIES

Established in 1959 by the City of Hamilton to commemorate the visit of Her Majesty Queen Elizabeth II and His Royal Highness Prince Philip to Hamilton in July 1959. To assist Hamilton students who demonstrate financial need. (90515)

THE WILLIAM A. DETENBECK BURSARIES

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 421)

THE DUNDAS BURSARIES

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 423)

THE HAMILTON ALUMNI BRANCH BURSARIES

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 programme who demonstrate financial need. Preference will be given to students graduating from a high school in the Hamilton-Wentworth Region. (90725 687)

THE HAMILTON CITIZENS' MEMORIAL BURSARIES

Established in 1947 by the Hamilton Citizens' Committee for War Services. Proceeds to be used to assist undergraduate students who are residents of the Hamilton-Wentworth Region. (90516 207)

HAMILTON COMMUNITY FOUNDATION BURSARIES

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 programme, 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 685)

THE MARY A. HILL BURSARY

Established in 1976 by bequest of Mary A. Hill. To be granted to a female student in any programme who demonstrates financial need. Preference to be given to one who has graduated from a secondary school in Hamilton. (90521 837)

THE CLIFFORD JACKSON MEMORIAL BURSARIES

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 programme who demonstrate financial need. Preference will be given to children and grandchildren of employees and retirees of The Hamilton-Wentworth Regional Police. (90737 699)

THE KIWANIS CLUB OF HAMILTON EAST BURSARY

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 programme who demonstrates financial need. Preference to be given to members and former members of the Hamilton East Kiwanis Boys' and Girls' Club. (90749 711)

THE LEFLAR FOUNDATION BURSARY

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 programme who demonstrate financial need. Preference to be given to students who are from the Owen Sound area. (90753 715)

THE PAUL R. MACPHERSON BURSARY

Established in 1998 by Paul R. MacPherson (Class of '57) in support of his belief that all students should be able to pursue their educational goals. To be granted to full-time students enrolled in any Level I programme who demonstrate financial need. Preference to be given to students from Muskoka Lakes Secondary School. (90838 810)

THE MALLOCH FOUNDATION BURSARIES

Established in 1996 by the Malloch Foundation, Hamilton, in the belief that all students should be able to achieve their educational goals. A variable number of bursaries to be granted to students in any programme who demonstrate financial need. Preference to be given to students from the Hamilton area. (90618 442)

THE McMASTER SAVINGS AND CREDIT UNION LTD. BURSARIES

Established in 1993 by the McMaster Credit Union Limited. To assist students in any programme. Preference to be given to students who are members of the McMaster Savings and Credit Union or, in the absence of such members, children of employees of McMaster University or Chedoke-McMaster Hospitals. (90561 334)

THE LILLIAN AND LEROY PAGE BURSARIES

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 749)

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH BURSARIES

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 programme who demonstrate financial need. Preference will be given to students who permanently reside in the Hamilton-Wentworth Region. (90794 757)

FACULTY-SPECIFIC BURSARIES**ARTS AND SCIENCE PROGRAMME****THE ARTS AND SCIENCE CLASS OF '97 LEGACY BURSARY**

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 Programme who demonstrates financial need. (90808 626)

THE BIRGIT AND ROBERT BATEMAN BURSARY

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 Programme, 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 629)

THE LOUILA BRAYFORD MEMORIAL BURSARY

Established in 1998 by Mrs. Janet Leemaars 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 Programme who demonstrates financial need. Preference will be given to a student enrolled in a course in Mathematics. (90839 811)

THE GORDON H. DEAN BURSARIES

Established in 1996 by Gordon H. Dean of Stoney Creek. Two or more bursaries to be granted based upon financial need: a) one to a student enrolled in Level III of a programme in Arts and Science and b) one to a student enrolled in Level III of a programme in the Faculty of Humanities. Preference given to students currently on the Deans' Honour List. (90594 418)

THE HAMILTON INTERNATIONAL AIRPORT BURSARY

Established in 1997 by the Hamilton International Airport. To be granted to a student who has demonstrated financial need and is enrolled in a programme in Engineering, Geography, Business or Economics and has demonstrated an interest in a career in transportation. Preference to be given to a student who elects to undertake a fourth year thesis on a topic related to the study of transportation. (90646 495)

THE GEORGE P. GILMOUR MEMORIAL BURSARY

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 Programme who has demonstrated financial need. Preference will be given to the student who wins the George P. Gilmour Memorial Scholarship. (90714 676)

THE JOHNS FAMILY BURSARIES

Established by Martin W. Johns and family. A variable number of bursaries to be granted to students enrolled in the Arts and Science programme who demonstrate financial need. (90568 432)

THE SAM AND IRENE WATSON BURSARY FUND

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 Programme or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences.

Value: \$2,000 (90840 812)

FACULTY OF BUSINESS**THE GARY ALLEN MEMORIAL BURSARY**

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 234)

THE MATT CASEY BURSARY

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 MBA Programme in the Finance stream. (90681 643)

THE CHAN YIN CHAK BURSARY

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 MBA students, who demonstrate financial need, and are participating in one of the international exchange programmes at the Michael G. DeGroote School of Business. (90682 644)

THE DAVID CLARK BURSARIES

Established in 1996 by David I. Clark and Marilyn D. Eustace. A variable number of bursaries to be granted to students enrolled in a programme in Commerce who demonstrate financial need. Preference to be given to students demonstrating interest in Asian Studies. (90588 412)

THE AUBREY DALGLEISH BURSARY

Established in 1985. To be granted to a student in any programme who demonstrate financial need with special preference given to handicapped students and/or students in the Faculty of Business. (90509)

THE DAUGHTERS OF THE EMPIRE CLUB, HAMILTON LTD. BURSARIES

Established in 1996 in honour of The Daughters of the Empire Club, Hamilton, Limited (1911-1996) in support of its belief that all students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students in financial need. Preference to be given to women enrolled in the Faculty of Business. (90593 417)

THE MICHAEL G. DeGROOTE SCHOOL OF BUSINESS BUSINESS ADVISORY COUNCIL BURSARY

Established in 1997 by the Michael G. DeGroot 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 MBA Programme at the Michael G. DeGroot School of Business. (90699 661)

THE GEORGE AND MARGARET EDRUPT BURSARY

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 programme in the Faculty of Science. (90701 663)

THE FACULTY OF BUSINESS BURSARIES

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 667)

THE FINANCIAL EXECUTIVES INSTITUTE BURSARY

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 programme 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 programme. (90829 785)

THE ALLEN AND MILLI GOULD FAMILY FOUNDATION BURSARIES

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 MBA Co-op students. (90716 678)

THE GARY GRAHAM BURSARY

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 MBA Programme at the Michael G. DeGroot School of Business. (90717 679)

THE HAMILTON INTERNATIONAL AIRPORT BURSARY

Established in 1997 by the Hamilton International Airport. To be granted to a student who has demonstrated financial need and is enrolled in a programme in Engineering, Geography, Business or Economics and has demonstrated an interest in a career in transportation. Preference to be given to a student who elects to undertake a fourth year thesis on a topic related to the study of transportation. (90646 495)

THE M.A. (JACK) HASSAL BURSARY

Established by the Hamilton and District Chartered Accountants' Discussion Group in 1982 in memory of M.A. (Jack) Hassal. To assist a student in Commerce who is a Canadian citizen or permanent resident of Canada. It is hoped that recipients, after graduation, will reimburse the fund to the extent of their award so that the fund may assist increasing numbers of students. (90518 297)

THE HAWKRIGG FOUNDATION BURSARIES

Established in 1988 and augmented by the Hawkrigg Family in 1997 in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to outstanding students in Business I or Kinesiology I who demonstrate financial need. (90514 693)

THE HARISH JAIN HUMAN RIGHTS IN EMPLOYMENT BURSARIES

Established in 1996 by Professor Harish C. Jain. A variable number of bursaries to be granted to students enrolled in the Faculty of Business or the Faculty of Social Sciences who demonstrate financial need. Preference to be given to students enrolled in Level III of a programme in Commerce. (90739 701)

THE IVISON FAMILY BURSARY FUND

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 813)

THE KELLEY ADVERTISING BURSARY

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 MBA Programme at the Michael G. DeGroot School of Business who demonstrates financial need. (90745 707)

THE KPMG BURSARIES

Established in 1996 by KPMG in support of its belief that students should have the opportunity to pursue their educational aspirations. A variable number of bursaries to be granted to students enrolled in the Faculty of Business who demonstrate financial need. (90607 431)

THE MANULIFE FINANCIAL BURSARIES

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 724)

THE 3M CANADA INC. BURSARIES

Established in 1980, two bursaries to be granted annually; one to an M.B.A. student and one to a student in Business or Science. (90525 220)

THE McMASTER MBA ALUMNI ASSOCIATION BURSARIES

Established in 1996 by the McMaster MBA Alumni Association. A variable number of bursaries to be granted to students enrolled in the first year of the Michael G. DeGroot School of Business MBA programme who demonstrate financial need. (90626 450)

THE MINICH FAMILY BURSARIES

Established in 1996 by E. A. Minich and family. A variable number of bursaries to be granted to students enrolled in Business I who demonstrate financial need. Preference to be given to students who demonstrate a lively interest in the University and community through their involvement in extracurricular activities. (90628 452)

THE CLAIRE AND JOHN NOVAK BURSARY

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 747)

THE ALFRED AND LAURA OAKIE BURSARIES

Established in 1996 by Dr. Alfred U. Oakie. A variable number of bursaries to be granted to students enrolled in Business I who demonstrate financial need. (90631 455)

THE PROCOR BURSARIES

Established in 1997 by Procor Ltd. in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in Engineering or Commerce who demonstrate financial need and undertake service to McMaster University and the community-at-large. (90669 466)

THE RICOH CANADA INC. BURSARIES

Established in 1996 by Ricoh Canada Inc. in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need and are enrolled in the Faculty of Business or the Faculty of Engineering. (90639 488)

THE ROBERTSON-YATES CORPORATION BURSARIES

Established in 1996 by the Robertson-Yates Corporation of Hamilton in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in a programme in Business or Engineering who demonstrate financial need. (90640 489)

THE CARMEN AND DOROTHY RYDER BURSARY

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 763)

THE REBECKAH SCHNURR BURSARY

Established in 1998 by Rebeckah Schnurr, Financial Advisor for the Berkshire Group, in the belief that all students should be able to realize their educational goals. To be granted to a student who demonstrates financial need. Preference to be given to a female student pursuing her studies in the the Faculty of Business or the Faculty of Health Sciences who, because of extenuating family or personal circumstances, would be unable to continue her studies without such assistance. (90843 815)

THE SCOTIAMCLEOD BURSARIES

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 programme who demonstrate financial need. Preference to be given to students enrolled in the Faculty of Business. (90802 765)

THE TERRY SEAWRIGHT BURSARY

Established in 1996 by Terry Seawright, Lecturer in the Faculty of Business. To be granted to a student in the Commerce Programme who demonstrates financial need. Preference to be given to the student who has completed COMMERCE 2MA3 and attained a grade of at least B. (90643 492)

THE STELCO UNDERGRADUATE BURSARIES

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 Faculty of Business, Engineering or Science. Preference will be given to students who are enrolled in the Department of Materials Science and Engineering: (90644 493)

THE G.S. (SANDY) WATT MEMORIAL BURSARY

Established in 1993 by Zeton Inc. of Burlington in memory of G.S. (Sandy) Watt. To be granted to a student in financial need enrolled in the Commerce programme who is a Canadian citizen or permanent resident. Value: \$500 (90562 335)

THE SAM AND IRENE WATSON BURSARY FUND

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 Programme or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences. Value: \$2,000 (90840 812)

THE WESTINGHOUSE CANADA INC. BURSARIES

Established in 1996 by Westinghouse Canada Inc. in support of students who, without financial support, would be unable to pursue their educational goals. A variable number of bursaries to be granted to students in a programme in the Faculty of Business and the Faculty of Engineering who demonstrate financial need. (90652 501)

THE ZONTA CLUB OF HAMILTON I BURSARIES

Established in 1988 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 097)

FACULTY OF ENGINEERING**THE ANDREW FOUNDATION BURSARIES**

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 programme in Engineering who demonstrate financial need. Preference to be given to students who are studying Electrical Engineering or Mechanical Engineering. (90806 624)

THE A.H. ATKINSON BURSARIES

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 programme in Engineering who demonstrate financial need. Value: \$700 each (90500 282)

THE BARTEK BURSARIES

Established in 1996 by Bartek Ingredients Inc. of Stoney Creek in support of McMaster students. A variable number of bursaries to be granted to students enrolled in the Faculty of Engineering who demonstrate financial need. Preference to be given to students currently on the Dean's Honour List. (90672 469)

THE CANADA TRUST BURSARIES

Established in 1996 by Canada Trust in support of its belief that students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in the Environmental Science Programme, the Environmental Studies Programme or the Engineering and Society Programme. (90667 464)

THE CANADIAN SOCIETY FOR**MECHANICAL ENGINEERING BURSARY**

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 641)

THE CANON CANADA INC. - OE DIVISION BURSARIES

Established in 1997 by Canon Canada Inc. - OE Division 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 the Environmental Science Programme, the Environmental Studies Programme or an Engineering and Society Programme. (90820 642)

THE CRS ROBOTICS CORPORATION BURSARIES

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 658)

THE ENGINEERING CLASS OF '97 LEGACY BURSARY

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 650)

THE GENERAL CONTRACTORS ASSOCIATION OF HAMILTON BURSARIES

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 672)

THE GENNUM CORPORATION BURSARIES

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 674)

THE GRAY FAMILY BURSARY

Established in 1997 by Donald Gray (Class of '70) and Glenn Gray (Class of '73) and Kerry Gray (Class of '77 and '82 (MBA)) under the McMaster Student Opportunity Fund initiative. To be granted to a third year student enrolled in the Engineering and Management programme who demonstrates financial need. Preference to be given to students who permanently reside in the Hamilton-Wentworth Region. (90718 680)

THE HAMILTON INTERNATIONAL AIRPORT BURSARY

Established in 1997 by the Hamilton International Airport. To be granted to a student who has demonstrated financial need and is enrolled in a programme in Engineering, Geography, Business or Economics and has demonstrated an interest in a career in transportation. Preference to be given to a student who elects to undertake a fourth year thesis on a topic related to the study of transportation. (90646 495)

THE HATCH ASSOCIATES BURSARY

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 692)

THE INGLIS BURSARIES

Established in 1996 by Paul F. Inglis of Mississauga. A variable number of bursaries to be granted to students enrolled in a programme in Commerce or Engineering Management who demonstrate financial need. Preference to be given to students enrolled in Engineering Management. (90606 430)

THE IVISON FAMILY BURSARY FUND

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 813)

THE JMG COMPUSHOPPE BURSARY

Established in 1997 by JMG Compushoppe 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 programme in Computer Science or Computer Engineering. (90741 703)

THE SZE-WAI LEE MEMORIAL BURSARY

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 714)

THE LIBURDI ENGINEERING LIMITED BURSARY

Established in 1997 by Liburdi Engineering Limited under the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in an Engineering programme who demonstrates financial need. (90754 716)

THE NEIL D. McARTHUR BURSARIES

Established in 1997 by the Anne and Neil McArthur Foundation in memory of Mrs. McArthur's parents, Joseph and Josephine Hrynyszak. To be granted to students in any programme who demonstrate financial need. Preference to be given to students enrolled in either the Faculty of Science or the Faculty of Engineering. (90765 727)

THE RONALD E. MATERICK BURSARY

Established in 1996 by Ronald E. Materick (Class of '70). To be granted to a student enrolled in the Faculty of Engineering who demonstrates financial need. Preference to be given to a student enrolled in Civil Engineering. (90665 462)

THE ROBERT JOHN MORRIS BURSARIES

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 454)

THE ARCHIE MOUGHALIAN BURSARIES

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 841)

THE NCR (WATERLOO) BURSARY

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 programme who demonstrates financial need. (90842 814)

THE ORLICK INDUSTRIES LIMITED BURSARIES

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 programme who demonstrate financial need. (90785 748)

THE OTIS CANADA BURSARIES IN ENGINEERING AND MANAGEMENT

Established in 1996 by OTIS Canada Inc., the world's largest elevator company with over 50,000 employees and more than 1,700 worldwide locations. A variable number of bursaries to be granted to students enrolled in Level II of a programme in Engineering and Management who demonstrate financial need. Preference to be given to students who demonstrate a lively interest in the university and community through their involvement in extracurricular activities. (90632 481)

THE MARC ANDRE ADRIEN PINEAULT BURSARY

Established in 1995 by family and friends in memory of Marc Pineault and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to a student enrolled in a programme in Engineering who has demonstrated financial need and involvement in University activities including the McMaster Choir, varsity wrestling, karate club and issues related to the environment and social justice. (90576 822)

THE PATRIOT FORGE INC. BURSARY

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 751)

THE PROCOR BURSARIES

Established in 1997 by Procor Ltd. in support of its belief that all students should have the opportunity to pursue their educational goals. To be granted to students enrolled in Engineering or Commerce who demonstrate financial need and undertake service to McMaster University and the community-at-large. (90669 466)

THE RICOH CANADA INC. BURSARIES

Established in 1996 by Ricoh Canada Inc. in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in any programme who demonstrate financial need and are enrolled in the Faculty of Business or the Faculty of Engineering. (90639 488)

THE ROBERTSON-YATES CORPORATION BURSARIES

Established in 1996 by the Robertson-Yates Corporation of Hamilton in support of its belief that all students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students enrolled in a programme in Business or Engineering who demonstrate financial need. (90640 489)

THE LESLIE W. AND ELIZABETH SHEMILT BURSARY

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 programme. (90663 460)

THE STELCO UNDERGRADUATE BURSARIES

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 Faculty of Business, Engineering or Science. Preference will be given to students who are enrolled in the Department of Materials Science and Engineering. (90644 493)

THE SUNCOR INC. 1988 BURSARIES

Established in 1988, this bursary is granted to a student who is a member of the federally designated groups for employment equity (women, native students, handicapped and the visible minorities) who is registered in a Chemical, Mechanical, Manufacturing or Materials Engineering programme. (90544 222)

THE TURKSTRA LUMBER CO. LTD. BURSARIES

Established in 1996 by the Turkstra Lumber Company Limited. A variable number of bursaries to be granted to students enrolled in either the Faculty of Engineering or the Faculty of Humanities who demonstrate financial need. Preference to be given to students attaining a Sessional Average of at least 7.0 at the most recent review. (90647 496)

THE SAM AND IRENE WATSON BURSARY FUND

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 Programme or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences.

Value: \$2,000 (90840 812)

THE WESTINGHOUSE CANADA INC. BURSARIES

Established in 1996 by Westinghouse Canada Inc. in support of students who, without financial support, would be unable to pursue their educational goals. A variable number of bursaries to be granted to students in a programme in the Faculty of Business and the Faculty of Engineering who demonstrate financial need. (90652 501)

THE ZONTA CLUB OF HAMILTON I BURSARIES

Established in 1988 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 097)

FACULTY OF HEALTH SCIENCES

THE DOUGLAS IAN BROWN BURSARY

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 635)

THE ED BUFFETT BURSARY

Established in 1997 under the McMaster Student Opportunity Fund initiative. To be granted to students enrolled in a programme in Health Sciences who demonstrate financial need. Preference will be given to students who have demonstrated leadership in their school and community. (90816 636)

THE JEAN, MARTHA AND LAURIE DOUCET MEMORIAL BURSARIES

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 840)

THE JACK AND THELMA HEATH MEMORIAL BURSARIES

Established in 1985 by Norton Canada Inc. in memory of Jack and Thelma Heath, former employees of the Company, who were tragically killed in a boating accident. The fund provides up to four awards to assist students, with demonstrated financial need, in Level III or IV of the B.Sc.N. programme (basic and/or post-diploma stream). (90519 838)

THE HAZEL MAY HINKS BURSARIES

Established in 1996 by bequest of Hazel May Hinks of Burlington, Ontario. A variable number of bursaries to be granted to students enrolled in a programme in Nursing who demonstrate financial need. Recipients must have graduated from a high school located in the City of Burlington. (90604 428)

THE IVISON FAMILY BURSARY FUND

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 813)

THE KENTS FAMILY BURSARY

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 709)

THE PHILLIP GORDON KETTLE BURSARY

Established in 1996 in memory of Phillip Gordon Kettle. To be granted to a student enrolled in a Nursing programme who demonstrates financial need. Preference to be given to a student studying herbal medicine as alternative therapies. (90678 475)

THE MANULIFE FINANCIAL BURSARIES

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 724)

THE JANET MCKNIGHT MEMORIAL BURSARIES

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 programme who demonstrate financial need. (90623 447)

THE KATHERINE M. COLLYER MCNALLY BURSARY

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 programme. (90774 736)

THE MDS INCORPORATED BURSARY

Established in 1997 by MDS Incorporated, 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 737)

THE McMASTER WOMEN'S CLUB BURSARY

Established in 1983 by the McMaster Women's Club and augmented in 1996 in conjunction with the McMaster Student Opportunity Fund initiative to assist a student beyond Level I in the University's B.Sc.N. programme. (90531 291)

THE O'SHAUGHNESSY BURSARY

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 218)

THE PASSI FAMILY BURSARY

Established in 1997 by Chitra and Narendar Passi 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 to a student who demonstrates financial need and is enrolled in the Faculty of Health Sciences. Preference to be given to students enrolled in the Diploma in Child Life Studies programme. (90787 750)

THE DR. SUSAN BEVERLEY PLANK MEMORIAL BURSARY

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 754)

THE SALENA FAMILY BURSARY

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 764)

THE REBECKAH SCHNURR BURSARY

Established in 1998 by Rebeckah Schnurr, Financial Advisor for the Berkshire Group, in the belief that all students should be able to realize their educational goals. To be granted to a student who demonstrates financial need. Preference to be given to a female student pursuing her studies in the the Faculty of Business or the Faculty of Health Sciences who, because of extenuating family or personal circumstances, would be unable to continue her studies without such assistance. (90843 815)

THE SYLVIA AND BRIAN WALKER BURSARIES

Established in 1996 by Sylvia (Hunt) and Brian Walker. Two bursaries to be granted to students demonstrating financial need: a) one to a student enrolled in Humanities I and; b) one to a student enrolled in Nursing I. Preference to be given to students who have demonstrated leadership and involvement in university and community activities. (90650 499)

THE AUDREY AND BOB WAUGH BURSARY

Established in 1997 by Audrey and Bob Waugh under the Ontario 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 759)

FACULTY OF HUMANITIES**THE JENNIFER AND THEODORE ARCAD ENGLISH BURSARY**

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 programme in English, who demonstrates financial need. (90807 625)

THE MARJORIE E. (WATSON) BEATTIE BURSARY

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 programme who demonstrates financial need. Preference to be given to students enrolled in the Faculty of Humanities. (90811 631)

THE MARIE IRELAND BUSH MEMORIAL BURSARIES

Established in 1996 by Helen Ireland Caldwell in memory of Marie Ireland Bush, Class of '48 and dedicated teacher, who instilled in her students a love of learning. A variable number of bursaries to be granted to students enrolled in a programme in English who demonstrate financial need. (90583 407)

THE NORMAN NATHANIEL CASKEY BURSARIES

Established in 1996 by June Caskey of Hamilton in memory of her father. A variable number of bursaries to be granted to students enrolled in a programme in Music who demonstrate financial need. (90585 409)

THE SUZANNE E. CRAVEN BURSARY

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 656)

THE GORDON H. DEAN BURSARIES

Established in 1996 by Gordon H. Dean of Stoney Creek. Two or more bursaries to be granted based upon financial need: a) one to a student enrolled in Level III of a programme in Arts and Science and b) one to a student enrolled in Level III of a programme in the Faculty of Humanities. Preference given to students currently on the Deans' Honour List. (90594 418)

THE ENERSYSTEM INSULATION LTD. BURSARY

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 the Faculty of Humanities who demonstrates financial need. (90702 664)

THE FESTITALIA CORPORATION BURSARY

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 Modern Languages, specializing in Italian, or is enrolled in the School of Art, Drama and Music. (90706 668)

THE HAMILTON PERFORMING ARTS BURSARY

Established in 1997 by the Hamilton Performing Arts Foundation Inc. under the McMaster Student Opportunity Fund initiative. To be granted to a full-time student who has completed at least 30 units of a programme in Art, Drama and Music, 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 Dean's Honour list. (90724 686)

THE MARGARET HARGREAVES BURSARIES

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 691)

THE HARWOOD BURSARIES

Established in 1990 by bequest of Dr. William Harwood of Hamilton in memory of his beloved wife Grace and devoted daughter Willa Ruth Laurie (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 058)

THE KARL W. HEINZ MEMORIAL AWARD

Established in 1992 by his wife in memory of Karl Walter Heinz, remembered for his compassion and love for people. To be granted to a student in a programme in Modern Languages who is a Canadian citizen or permanent resident of Canada.

Value: \$500 (90557 113)

THE GENERAL HUMANITIES BURSARY FUND

The General Humanities Bursary Fund, established in 1997 by Humanities alumni, will be granted to undergraduate students at McMaster registered in any Humanities programme who demonstrate financial need. (90734 696)

THE JULIA HURTIG BURSARY

Established by family and friends of the late Julia Hurtig in 1985. This bursary will be granted to a student entering Level II of the Faculty of Humanities, in good standing, who has made a special contribution to the McMaster community through involvement in University affairs. Preference will be given to a female student. (90522 211)

THE STUART AND MARJORIE IVISON BURSARIES

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 bursaries to be granted to students who demonstrate financial need. Preference will be given to students enrolled in a programme in the Department of English who demonstrate a lively interest in English studies and involvement in extra-curricular activities. (90736 698)

THE JAMES R.A. LANGS BURSARIES IN THE ARTS

Established by family in memory of James R.A. Langs (Class of '37), a Hamilton business leader and great supporter of the Hamilton Community. A variable number of bursaries to be granted to students enrolled in a programme in Art, Drama or Music who demonstrate financial need. (90612 436)

THE DR. ALBERT MARTIN BURSARIES

Established in 1996 by Joyce Beverly Krugel, a former student of Dr. Albert Martin who was a Professor of German in the Faculty of Arts and Science from 1939 to 1961. A variable number of bursaries to be granted to students enrolled in a programme in Modern Languages who demonstrate financial need. (90620 444)

THE DR. HOLLAND AND MRS. ELVIRA PETERSON BURSARY

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 programme in the Department of Modern Languages. (90789 752)

THE JAMES C. MOORE MEMORIAL BURSARY

Established in 1989 by family and friends in memory of James C. Moore. To be granted to a student in Humanities or Social Sciences who demonstrates financial need and involvement in student government. (90566 339)

THE LILLIAN PLUMB BURSARY

Established in 1998 by David Plumb in honour of his mother, Lillian Plumb. To be granted to a student enrolled in a programme in the Department of English and who demonstrates financial need (90853 842)

THE MARY ROMEO BURSARY IN ART HISTORY

Established in 1997 by Mary Romeo, a lifelong patron of the arts. To be granted to undergraduate and graduate students who have demonstrated financial need and are enrolled in a programme in Art History. (90668 465)

THE SMYRNIW BURSARY

Established in 1996 by Dr. and Mrs. W. Smyrniw. To be granted to students who are Canadian citizens or permanent residents who demonstrate financial need and are in good academic standing in any undergraduate programme of the Faculty of Humanities above Level I. (90661 458)

THE SALVATORE SPITALE MEMORIAL BURSARY

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 Modern Languages, Level II or higher, 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 665)

THE DONALD W. THOMAS BURSARIES

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 494)

THE ROBERTA GRAY TROXEL BURSARY

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 programme. (90735 697)

THE TRESSILA TRUBY MEMORIAL BURSARY

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 programme in Music. (90556 200)

THE TURKSTRA LUMBER CO. LTD. BURSARIES

Established in 1996 by the Turkstra Lumber Company Limited. A variable number of bursaries to be granted to students enrolled in either the Faculty of Engineering or the Faculty of Humanities who demonstrate financial need. Preference to be given to students attaining a Sessional Average of at least 7.0 at the most recent review. (90647 496)

THE CATHERINE VASAS-BROWN BURSARIES

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 498)

THE SYLVIA AND BRIAN WALKER BURSARIES

Established in 1996 by Sylvia (Hunt) and Brian Walker. Two bursaries to be granted to students demonstrating financial need: a) one to a student enrolled in Humanities I and; b) one to a student enrolled in Nursing I. Preference to be given to students who have demonstrated leadership and involvement in university and community activities. (90650 499)

THE SAM AND IRENE WATSON BURSARY FUND

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 Programme or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences.

Value: \$2,000 (90840 812)

THE CLIFFORD JOHNSTON WEBSTER MEMORIAL BURSARIES

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 programme 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 programme, the bursaries are available, under similar conditions, to students in the Honours French programme. (90559 336)

THE SHEILA ZACK MEMORIAL BURSARY

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 programme in Drama at McMaster University. (90764 726)

FACULTY OF SCIENCE**THE BIRGIT AND ROBERT BATEMAN BURSARY**

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 Programme, 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 629)

THE J.P. BICKELL BURSARIES

The J.P. Bickell Foundation provides a sum of money to assist students specializing in Geology. Recommendations are made by the Department of Geology. (90505 285)

THE CANADA TRUST BURSARIES

Established in 1996 by Canada Trust in support of its belief that students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in the Environmental Science Programme, the Environmental Studies Programme or the Engineering and Society Programme. (90667 464)

THE CANON CANADA INC. - OE DIVISION BURSARIES

Established in 1997 by Canon Canada Inc. - OE Division 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 the Environmental Science Programme, the Environmental Studies Programme or an Engineering and Society Programme. (90820 642)

THE GEORGE AND MARGARET EDRUPT BURSARY

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 programme in the Faculty of Science. (90701 663)

THE ASMAHAN HAFEZ MEMORIAL BURSARY

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 683)

THE JAMES EDWARD GRADER MEMORIAL BURSARY

Established in 1964 by his sister. To be granted to a student specializing in Geology. Application should be made to the Department of Geology. (90513 839)

THE HAMILTON INTERNATIONAL AIRPORT BURSARY

Established in 1997 by the Hamilton International Airport. To be granted to a student who has demonstrated financial need and is enrolled in a programme in Engineering, Geography, Business or Economics and has demonstrated an interest in a career in transportation. Preference to be given to a student who elects to undertake a fourth year thesis on a topic related to the study of transportation. (90646 495)

THE JENSEN BURSARY

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 programme in the Faculty of Science. (90740 702)

THE JMG COMPUSHOPPE BURSARY

Established in 1997 by JMG Compushoppe 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 programme in Computer Science or Computer Engineering. (90741 703)

THE NORMAN D. LANE BURSARIES

Established in 1996 by family and friends in honour of Dr. Norman D. Lane, distinguished geometer and member of the Department of Mathematics and Statistics from 1952 to 1987 and now Professor Emeritus. A variable number of bursaries to be granted to students enrolled in a programme in Mathematics who demonstrate financial need. (90610 434)

THE JOHN AND HELEN MAXWELL BURSARIES

Established in 1996 by John and Helen Maxwell of Ottawa. A variable number of bursaries to be granted to students enrolled in the Faculty of Science who demonstrate financial need. Preference to be given to students enrolled in a programme in Geology or Chemistry. (90621 445)

THE NEIL D. MCARTHUR BURSARIES

Established in 1997 by the Anne and Neil McArthur Foundation in memory of Mrs. McArthur's parents, Joseph and Josephine Hrynyszak. To be granted to students in any programme who demonstrate financial need. Preference to be given to students enrolled in either the Faculty of Science or the Faculty of Engineering. (90765 727)

THE 3M CANADA INC. BURSARIES

Established in 1980, two bursaries to be granted annually; one to an M.B.A. student and one to a student in Business or Science. (90525 220)

THE STELCO UNDERGRADUATE BURSARIES

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 Faculty of Business, Engineering or Science. Preference will be given to students who are enrolled in the Department of Materials Science and Engineering. (90644 493)

THE ERIC SCHLICHTING MEMORIAL BURSARY

Established in 1966 by his family, classmates and friends. To assist a student in a programme in Geology or other field of Science, in that order of preference. Application should be made to the Department of Geology. (90539 219)

THE BROOKE P. TOWNSEND BURSARY

Established in 1996 by Brooke P. Townsend. To be granted to a student in any programme who has demonstrated financial need. Preference to be given to a female student enrolled in the Faculty of Science. (90670 467)

THE SAM AND IRENE WATSON BURSARY FUND

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 Programme or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences.

Value: \$2,000 (90840 812)

THE JOHN YARWOOD MEMORIAL BURSARY

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 programme who demonstrates financial need. (90844 816)

FACULTY OF SOCIAL SCIENCES**THE ANTHROPOLOGY BURSARY**

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 programme in Anthropology and who demonstrate financial need. Preference will be given to students entering Level III. (90579 403)

THE BIRGIT AND ROBERT BATEMAN BURSARY

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 Programme, 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 629)

THE NORMA BERTI BURSARY

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 programme in Labour Studies. (90812 632)

THE SIDNEY L. BLUM BURSARY

Established in 1989 by friends and associates in memory of Sidney L. Blum. To be granted on the recommendation of the Director of the School of Social Work to any student in good standing in Levels III or IV of the Bachelors of Arts/Social Work programme or Level II of the Bachelors of Social Work programme. (90506 286)

THE DR. RICHARD A. BRYMER MEMORIAL BURSARY

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 programme in Sociology or Anthropology who demonstrates financial need. (90845 817)

THE JODIE ANNE BULL MEMORIAL BURSARIES

Established in 1996 by her family in memory of Jodie Anne Bull. A variable number of bursaries to be granted to students enrolled in the Faculty of Social Sciences who demonstrate financial need. At least one bursary to be granted to a student enrolled in Labour Studies. (90673 470)

THE CANADA TRUST BURSARIES

Established in 1996 by Canada Trust in support of its belief that students should have the opportunity to pursue their educational goals. A variable number of bursaries to be granted to students who demonstrate financial need and are enrolled in the Environmental Science Programme, the Environmental Studies Programme or the Engineering and Society Programme. (90667 464)

THE CANON CANADA INC. - OE DIVISION BURSARIES

Established in 1997 by Canon Canada Inc. - OE Division 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 the Environmental Science Programme, the Environmental Studies Programme or an Engineering and Society Programme. (90820 642)

THE CLASS OF '46 BURSARIES

Established by the Year '46 in honour of their 40th class reunion. To be granted to a student in a programme in Gerontology. (90821 765)

THE STEWART COOKE BURSARY

Established in 1997 by the United Steelworkers of America in honour of Stewart Cooke, Hamilton staff representative from 1948-70, for his contributions to the labour movement which included appointments as Vice-President of the Ontario Federation of Labour, Treasurer of the New Democratic Party and Director of the Steelworkers, District 6 from 1977-81. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90691 653)

THE GERALDINE LORETTA COSFORD BURSARIES

Established in 1997 by Geraldine Loretta Cosford under the McMaster Student Opportunity Fund initiative. To be granted to students who demonstrate financial need and are enrolled in Level II or higher of a programme in Women's Studies. (90692 654)

THE BEN F. DesROCHES BURSARIES

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 programme in Labour Studies who demonstrate financial need. The value of this award shall be not less than \$300. (90595 419)

PATRICIA ANNE DICICCO MEMORIAL BURSARY

Established in 1988 this bursary is to be granted to a student or students enrolled in a programme which includes Gerontology as a major, who is a Canadian citizen or permanent resident and who exhibits financial need. (90510 204)

THE GERARD DOCQUIER BURSARY

Established in 1997 by the United Steelworkers of America in honour of E. Gerard Docquier, former National Director of the United Steelworkers in Canada, and founder of the Steelworkers' Humanity Fund in response to the famine in sub-Saharan Africa in 1984. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90700 662)

THE MARGARET E. DUNCAN BURSARY

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 Programme 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 818)

THE MICHAEL EARL MEMORIAL BURSARY

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 programme who demonstrates financial need. (90563 391)

THE BILL FULLER BURSARY

Established in 1996 in commemoration of the 50th anniversary of the historic 1946 Stelco strike by William E. (Bill) Fuller, recognized by the City of Hamilton for his volunteer work which included serving as Vice-President of Labour Community Services of the United Way for six years, member of The Hamilton 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 a programme in Labour Studies who demonstrate financial need. The value of this award shall be not less than \$300. (90601 425)

THE REG GARDINER BURSARY

Established in 1997 by the United Steelworkers of America in honour of Reg Gardiner, long-time Stelco employee, active union member and President of Local 1005 for eight years. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90709 671)

THE REG GISBORN BURSARIES

Established in 1997 as a tribute to Reg Gisborn, valued Stelco employee, President of Local 1005 from 1961-62 and New Democratic Party Hamilton East M.P.P. for twenty years until 1975. A variable number of bursaries to be granted to McMaster students enrolled in a programme in Labour Studies who demonstrate financial need. (90715 677)

THE HAMILTON AND DISTRICT LABOUR COUNCIL BURSARY

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 Programme who demonstrates financial need. (90726 688)

THE HAMILTON FOLLIES INC. (GERITOL FOLLIES) BURSARY

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 programme who demonstrates financial need. Preference to be given to a student who has completed at least 30 units in the Gerontology programme. (90722 684)

THE HAMILTON INTERNATIONAL AIRPORT BURSARY

Established in 1997 by the Hamilton International Airport. To be granted to a student who has demonstrated financial need and is enrolled in a programme in Engineering, Geography, Business or Economics and has demonstrated an interest in a career in transportation. Preference to be given to a student who elects to undertake a fourth year thesis on a topic related to the study of transportation. (90646 495)

THE MARGARET HARGREAVES BURSARIES

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 691)

THE HAWKRIGG FOUNDATION BURSARIES

Established in 1988 and augmented by the Hawkrigg Family in 1997 in conjunction with the McMaster Student Opportunity Fund initiative. To be granted to outstanding students in Business I or Kinesiology I who demonstrate financial need. (90514 693)

THE GORDON HOLSEY BURSARY

Established in 1996 under the McMaster Student Opportunity Fund initiative as a tribute to Gordon Holsey, founding member of Local Union 1005 and valued member of the Union's Negotiations Committee. To be granted to a student enrolled in a Labour Studies programme who demonstrates financial need. (90733 695)

THE JOHN B. ISBISTER BURSARY

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 programme in Labour Studies who demonstrates financial need. (90605 429)

THE HARISH JAIN HUMAN RIGHTS IN EMPLOYMENT BURSARIES

Established in 1996 by Professor Harish C. Jain. A variable number of bursaries to be granted to students enrolled in the Faculty of Business or the Faculty of Social Sciences who demonstrate financial need. Preference to be given to students enrolled in Level III of a programme in Commerce. (90739 701)

THE JAMES A. JOHNSON CLASS OF '97 BURSARIES

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 programme in Economics who demonstrate financial need. (90742 704)

THE LABOUR STUDIES CLASS OF '97 LEGACY BURSARY

Established in 1997 by the Labour Studies Class of '97 under the McMaster Student Opportunity Fund initiative. To be granted to a student in a Labour Studies programme who demonstrates financial need. (90689 651)

THE KELLY DAWN LAPP MEMORIAL BURSARY

Established in 1997 by family and friends under the McMaster Student Opportunity Fund initiative in memory of Kelly Dawn Lapp who received her BA/BSW degree from McMaster University in 1996. To be granted to a student enrolled in the Social Work programme who demonstrates financial need. Preference will be given to a student who has volunteered or worked in programmes 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 819)

THE LISSON BROTHERS BURSARY

Established in 1997 under the McMaster Student Opportunity Fund as a tribute to Brian, Bill and John Lisson, valued Stelco employees and members of the United Steelworkers of America. To be granted to a student enrolled in the Labour Studies programme who demonstrates financial need. (90756 718)

THE JOHN A. 'JACK' MacDONALD BURSARIES

Established in 1996 as part of the Hamilton Sesquicentennial Celebrations in honour of John A. 'Jack' MacDonald for his 45 years of outstanding service and leadership to Hamilton and the region. A variable number of bursaries to be granted to students enrolled in a Political Science programme who demonstrate financial need and interest in extracurricular or community activities. (90616 440)

THE BOB MacKENZIE BURSARY

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 programme in Labour Studies who demonstrates financial need. (90617 441)

THE BOB MacKENZIE - UNITED STEELWORKERS OF AMERICA BURSARY

Established in 1997 by the United Steelworkers of America in honour of Robert W. (Bob) MacKenzie, former Minister of Labour, former member of the Hamilton Social Planning and Research Council and current member of the Hamilton Philatelic Society. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90760 722)

THE ENRICO HENRY MANCINELLI BURSARIES

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 programme in Labour Studies who demonstrate financial need. Preference to be given to students attaining a Sessional Average of at least 7.0 at the most recent review. (90619 443)

THE LAWRENCE McBREARTY BURSARY

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 programme in Labour Studies who demonstrates financial need. The value of this award shall be no less than \$300. (90766 728)

THE R. CRAIG McIVOR BURSARIES

Established in 1996 as a tribute to Professor R. Craig McIvor by his family, friends, colleagues and students. A variable number of bursaries to be granted to students enrolled in an Honours programme in Economics who demonstrate financial need. Preference to be given to students in Level II. (90622 446)

THE CHARLES MILLARD BURSARY

Established in 1997 by the United Steelworkers of America in memory of Charles H. Millard, a labour pioneer who played a pivotal role in the founding and consolidation of both the Autoworkers' and Steelworkers' Unions. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90759 740)

THE JAMES C. MOORE MEMORIAL BURSARY

Established in 1989 by family and friends in memory of James C. Moore. To be granted to a student in Humanities or Social Sciences who demonstrates financial need and involvement in student government. (90566 339)

THE HONOURABLE JOHN C. MUNRO BURSARIES

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 programme in Political Science who demonstrate financial need. (90848 820)

THE NEWCASTLE CAPITAL MANAGEMENT INC. BURSARIES

Established in 1997 by Newcastle 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 programme who demonstrate financial need. Preference to be given to students who have participated in a conference or workshop on Gerontology. (90783 746)

THE MARION PEARCE BURSARIES

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 programme who have demonstrated financial need. (90536 228)

THE PEVENING BURSARIES

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 programme in Economics who demonstrate financial need. (90676 473)

THE GEORGE PLUMB MEMORIAL BURSARY

Established in 1996 by David Plumb in memory of his father George Plumb. To be granted to a student enrolled in a programme in Gerontology who demonstrates financial need. Preference to be given to a mature student. (90636 485)

THE HARRY POMEROY BURSARY

Established in 1997 by the United Steelworkers of America in memory of Harry Pomeroy, a Stelco employee for over 30 years and a Picket Captain during the historic 1946 Stelco strike. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90791 755)

THE ROYAL CANADIAN LEGION BRANCH 163 BURSARY

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 programmes in the country. To be granted to a student enrolled in a Gerontology programme who demonstrates financial need. (90798 761)

THE WILLIAM F. SCANDLAN BURSARIES

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 which included appointments as an International Representative in 1953 and Area Supervisor for the Union in the greater Hamilton area from 1976 to 1986. Two bursaries to be granted to students enrolled in a programme in Labour Studies who demonstrate financial need. The value of these bursaries shall be not less than \$300. (90642 491)

THE ALEX SHARP BURSARY

Established in 1997 by the United Steelworkers of America in memory of Alex Sharp, a Stelco employee for 25 years, founding member of Stelco Finishing Works Credit Union and board member of the Niagara College of Applied Arts & Technology from 1966-75, being instrumental in its founding. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90798 710)

THE JOHN SHIPPERBOTTOM BURSARY

Established in 1997 by the United Steelworkers of America in memory of John Shipperbottom, a Stelco employee for over forty years and active labour organizer who led Local members in the historic 1946 strike. To be granted to a student enrolled in a programme in Labour Studies who demonstrates financial need. (90690 652)

THE SOCIAL SCIENCES SOCIETY BURSARIES

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 programme involving Anthropology, Economics, Geography, Gerontology, Labour Studies, Political Science, Psychology, Religious Studies, Social Work or Sociology and who demonstrate financial need. (90542 229)

THE DR. JOHN THOMAS MEMORIAL BURSARY

Established in 1996 in memory of Dr. John Thomas by family, friends and colleagues. This bursary fund is used to assist undergraduate or graduate students who are enrolled in a Philosophy programme, show interest in the field of applied ethics and demonstrate financial need.

Undergraduate: Must have taken at least six units from applied ethics courses and have shown, in the view of the Department of Philosophy, promise in the field of applied ethics.

Graduate: Must be working on a research thesis which, in the view of the Department of Philosophy, is making or promises to make, a useful contribution to the field of applied ethics. (90675 472)

THE SAM AND IRENE WATSON BURSARY FUND

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 Programme or any of the Faculties of Business, Engineering, Humanities, Science and Social Sciences.

Value: \$2,000 (90840 812)

THE FRIDA AND JOACHIM WOLTER BURSARY

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 programme who demonstrates financial need. (90790 753)

THE LYNN R. WILLIAMS BURSARY

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 programme in Labour Studies. The value of this bursary shall be no less than \$300. (90793 756)

THE ZONTA CLUB OF HAMILTON I BURSARIES

Established in 1988 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 097)

SUPPLEMENTARY BURSARY AID FOR AWARD RECIPIENTS

The University wishes to acknowledge the generosity of several long-standing donors to McMaster's Undergraduate Scholarships Programme who, in response to the Student Opportunity Trust Fund initiative of the Ontario Government, made donations in 1996-97 for the purpose of assisting a specific scholarship or award recipient who demonstrates financial need. To qualify for additional bursary support, scholarship and award recipients are required to demonstrate financial need in accordance with that required of applicants to the regular McMaster Bursary Programme:

- The Rudolf de Buda Scholarship
- The Eleanor Turner Carment Prize
- The Hugh Clark Scholarship
- The Dundas Scholarships
- The George P. Gilmour Memorial Scholarship
- The Inter-Residence Council Scholarship
- The Ivey Scholarship
- The A.I. Johnson Scholarship
- The KPMG Scholarship
- The Gary Lautens Memorial Scholarship
- The Gerald and Verna Simpson Memorial Scholarship
- The Somerville Scholarships
- The T.H.B. Symons Scholarship In Canadian Studies
- The Graham-Ronald Toop Scholarship
- The Thomas Truman Memorial Prize
- The Tynowski Scholarship
- The Gladys A. Young Scholarship

EXCHANGE PROGRAMME BURSARIES

Bursary support may be available to students participating in McMaster approved exchange programmes. To be considered for this bursary support students must complete all application requirements for the exchange programme and, by March 31, 1999, submit a bursary application to the Office of Student Financial Aid and Scholarships, Hamilton Hall, Room 404. Final decisions regarding potential bursary support are contingent upon acceptance to participate in an exchange. For further information about exchange programmes, please refer to *International Study* in the *General Academic Regulations* section and *Student Exchanges* in the *Academic Facilities, Student Services and Organizations* section of this Calendar.

THE BEALE-LINCOLN-HALL EXCHANGE PROGRAMME BURSARIES

Established in 1996 by Arnold A. Beale in memory of his parents, F. Arnold Beale and Margaret S. Beale 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 programme in Commerce, Biochemistry, Biology, English, Chemistry, Geology, History, Material Science, Mathematics, Physics, Engineering Physics or Religious Studies who is participating in one of McMaster's formal exchange programmes. 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 474)

THE CANADIAN FRIENDS OF THE

HEBREW UNIVERSITY EXCHANGE PROGRAMME BURSARIES

Established in 1997 by the Canadian Friends of the Hebrew University 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 to students who demonstrate financial need and are participating in one of McMaster's formal exchange programmes at the Hebrew University of Jerusalem, the School for Overseas Students or other accredited Hebrew University programmes, in order to fulfill their academic requirements at McMaster. (90818 640)

THE JAMES R.A. LANGS STUDENT

EXCHANGE PROGRAMME BURSARIES

Established in 1996 by family in memory of James R.A. Langs (Class of '37), a Hamilton business leader and great supporter of the Hamilton Community. A variable number of bursaries to be granted to students enrolled in a programme in Humanities who demonstrate financial need and who are participating in a formal McMaster Exchange Programme. (90655 503)

THE McLAY BURSARY

Established in 1997 by David and Jean McLay under the McMaster Student Opportunity Fund initiative. To be granted to a student in any programme who demonstrates financial need and who is participating in one of McMaster's formal exchange programmes. Preference to be given to students who have been active in international clubs and associations. (90767 729)

THE McLEAN FAMILY EXCHANGE BURSARIES

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 programmes, who demonstrate financial need and who are enrolled in Level II or III of a programme. 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 821)

THE JAMES MASON YOUNG BURSARY

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 Programme. (90779 742)

INDEX OF BURSARIES

Legend

AA Ability and Access	E Engineering
AS Arts & Science Programme	HS Health Sciences
AT Athletic	H Humanities
B Business	R Regional
CS Community Service	S Science
	SS Social Sciences
	U University-wide

Index

4 Winds Bursaries (U)	268
Ainsworth Bursaries (U)	268
Phyllis May Aitken Bursary Fund (U)	268
Gary Allen Memorial Bursary (B)	273
James N. Allan Foundation Bursary (R)	272
Amex Canada Bursary (U)	268
Ancaster Lions Club Bursary (R)	272
Andrew Foundation Bursaries (E)	275
Anthropology Bursary (SS)	279
Jennifer and Theodore Arcand English Bursary (H)	277
Arts and Science Class of '97 Legacy Bursary (AS)	273
A.H. Atkinson Bursaries (E)	275
Avestel Credit Union Limited Bursaries (R)	272
Joy Baby Bursary (U)	268
Charles Murray Ball Bursaries (U)	268
Bartek Bursaries (E)	275
Birgit and Robert Bateman Bursary (AS, S, SS)	273, 278
Marjorie E. (Watson) Beattie Bursary (H)	277
Norma Berti Bursary (SS)	279
Betzner Family Memorial Bursaries (U)	268
J.P. Bickell Bursaries (S)	278
Sidney L. Blum Bursary (SS)	279
Bowes Family Bursaries (U)	268
Brantford Alumni Branch Bursaries (R)	272
Louila Brayford Memorial Bursary (AS)	273
Eric John Bretzler Bursary (CS)	272
Douglas Ian Brown Bursary (HS)	276
Dr. Richard A. Brymer Memorial Bursary (SS)	279
Ed Buffet Bursary (HS)	276
Jodie Ann Bull Memorial Bursary (SS)	279
Bursaries for In-course Visa Students (U)	268
Marie Ireland Bush Memorial Bursary (H)	277
Business Management Services Bursaries (U)	268
James Calvin Bursaries (U)	268
Camco Inc. Bursaries (U)	268
Betty Taylor Campbell Bursaries (U)	268
Canada Trust Bursaries (AS, E, S, SS)	275, 278
Canadian Federation of University Women's (Burlington) Bursary (R)	272
Canadian Society for Mechanical Engineering Bursary (E)	275
Canon Canada Inc. - O.E. Division Bursary (E, S, SS)	275, 278
Matt Casey Bursary (B)	273

Norman Nathaniel Caskey Bursaries (H)	277	Hamilton Community Foundation Bursaries (R)	273
Chan Yin Chak Bursary (B)	273	Hamilton and District Labour Council Bursary (SS)	280
Anne and Harold Chalk Memorial Bursary (U)	268	Hamilton Follies Inc. (Geritol Follies) Bursary (SS)	280
Chawkers Foundation Bursaries (U)	268	Hamilton International Airport Bursary (AS, B, E, S, SS)	274, 275
CIBC Bursaries (U)	268	Hamilton Performing Arts Bursary (H)	277
Sam M. Cino Bursary (U)	268	Hamilton Porcelains Bursary (U)	269
City of Hamilton Bursaries (R)	272	Hamilton Spectator Bursary (U)	269
David Clark Bursaries (B)	274	Margaret Hargreaves Bursary (H, SS)	277, 280
Hugh Clark Bursaries (U)	268	Harwood Bursaries (H)	278
Class of '35 Bursaries (U)	268	M.A. (Jack) Hassal Bursary (B)	274
Class of '46 Bursaries (SS)	279	Hatch Associates Bursary (E)	275
Class of '46 Golden Anniversary Bursaries (U)	268	Hawkrigg Foundation Bursaries (B, SS)	274, 280
Class of '47 Golden Anniversary Bursaries (U)	268	Jack and Thelma Heath Memorial Bursaries (HS)	277
Class of '51 Golden Anniversary Bursaries (U)	268	Mike and Muriel Hedden Memorial Bursaries (U)	269
Class of '57 Golden Anniversary Bursaries (U)	268	Karl W. Heinz Memorial Bursary (H)	278
Doris Partridge Cole Bursary (U)	268	Rudi Heinzl Bursary (U)	269
Connor, Clark & Lunn Bursary (U)	269	Edwin W. Hilborn Bursary (U)	269
Stewart Cooke Bursary (SS)	279	Mary A. Hill Bursary (R)	273
Geraldine Loretta Cosford Bursaries (SS)	280	Lloyd Andrew Hillgartner Bursaries (U)	269
Ian and Jill Cowan Bursary (U)	269	Hazel May Hinks Bursaries (E)	277
Suzanne E. Craven Bursary (AS, H)	277	Gordon Holsey Bursary (SS)	280
Cross Country Bursary (AT)	271	General Humanities Bursary Fund (H)	278
Archibald R. Crozier Bursaries (CS)	272	Hurtig Bursary (H)	278
CRS Robotics Corporation Bursaries (E)	275	Inglis Bursaries (E)	275
Aubrey Dagleish Bursary (AA, B)	271, 274	Inter-Residence Council Bursary (U, AA)	269, 271
Thomas Daly Bursaries (U)	269	John B. Ibister Bursary (SS)	280
Sam Darragh General Athletic Bursary (AT)	272	Ivison Family Bursary Fund (B, E, HS)	274, 275, 277
Sam Darragh Memorial Bursary (AT)	272	Stuart and Marjorie Ivison Bursaries (H)	278
Daughters of the Empire Club, Hamilton Ltd. Bursaries (B)	274	Clifford Jackson Memorial Bursaries (R)	273
Gordon H. Dean Bursaries (AS, H)	273, 277	Jaddco Anderson Bursary (U)	269
John Deere Bursaries (U)	269	Harish Jain Human Rights in Employment Bursaries (B, SS)	274, 280
Michael G. DeGroot School of Business Advisory Council Bursary (B)	274	Jensen Bursary (S)	279
Ben F. DesRoches Bursaries (SS)	280	JMG Compushoppe Bursary (E, S)	276, 279
Patricia Detenbeck Bursaries (U)	269	Johns Family Bursaries (AS)	273
William A. Detenbeck Bursaries (R)	272	James A. Johnson Class of '97 Bursaries (SS)	280
Patricia Anne Diccio Memorial Bursary (SS)	280	Jones-Turner Bursary (U)	269
Gerard Docquier Bursary (SS)	280	Muriel McBrien Kauffman Bursaries (U)	269
Dofasco Inc. Bursaries (U)	269	Kelley Advertising Bursary (B)	274
Jean, Martha and Laurie Doucet Memorial Bursaries (HS)	276	Robert A. Kennedy Bursaries (U)	269
Margaret E. Duncan Bursary (SS)	280	Kents Family Bursary (HS)	277
Dundas Bursaries (R)	272	Phillip Gordon Kettle Bursary (HS)	277
Michael Earl Memorial Bursary (SS)	280	Khaki University and Young Men's Christian Association Memorial Bursaries (U)	269
George and Margaret Edrupt Bursary (B, S)	274, 279	Kiwanis Club of Hamilton East Bursary (R)	273
Energysystem Insulation Ltd. Bursary (H)	277	Richard Konrad Bursaries (AA)	271
Engineering Class of '97 Legacy Bursary (E)	275	KPMG Bursaries (B)	274
Evans, Philip Bursaries (U)	269	Raymond C. Labarge Memorial Bursaries (CS)	272
Eleanor Ewing Bursary (U)	269	Labour Studies Class of '97 Legacy Bursary (SS)	280
Faculty of Business Bursaries (B)	274	Albert Abram Lager Bursaries (U)	269
Eileen Gray Farley Bursary (U)	269	Laidlaw Inc. Bursaries (U)	270
Edith E. Ferrie Bursaries (U)	269	Betty May Lamb Memorial Bursary (U)	270
Festitalia Corporation Bursary (H)	277	Lancaster Sheet Metal Limited Bursary (U)	270
Financial Executives Institute Bursary (B)	274	Landmark Consulting Group Bursaries (U)	270
Forrester/Gregory Bursary (U)	269	Norman D. Lane Bursaries (S)	279
John C. Forster Bursaries (U)	269	Lang Family Bursaries (U)	270
Emma Fox Bursaries (U)	269	James R.A. Langs Bursaries in the Arts (H)	278
Bill Fuller Bursary (SS)	280	Kelly Dawn Lapp Memorial Bursary (SS)	280
Reg Gardiner Bursary (SS)	280	Gary Lautens Memorial Bursaries (U)	270
Reg Gisborn Bursaries (SS)	280	Sze-Wai Lee Memorial Bursary (E)	276
General Contractors Association of Hamilton Bursary (E)	275	Leflar Foundation Bursary (R)	273
General Electric Canada Inc. Bursary (U)	269	Bertram Leggat Memorial Bursaries	270
Gennum Corporation Bursaries (E)	275	Liburdi Engineering Limited Bursary (E)	276
Gwen George Undergraduate Bursaries (CS)	272	Lincluden Management Bursaries (U)	270
George P. Gilmour Memorial Bursary (AS)	273	Lisson Brothers Bursary (SS)	280
Allen and Milli Gould Family Foundation Bursaries (B)	274	London Guarantee Bursaries (U)	270
James Edward Grader Memorial Bursary (S)	279	Sadie Ludlow Bursaries (AT)	272
Gary Graham Bursary (B)	274	Lynden Lions Club Bursary (CS)	272
Grand and Toy Bursaries (U)	269	John A. (Jack) MacDonald Bursaries (SS)	280
Gray Family Bursary (E)	275	Dianne MacIsaac Memorial Bursary (AA)	271
Leland Gregory Bursaries (U)	269	Bob MacKenzie Bursary (SS)	280
James R. (Jaime) Greilich Memorial Bursary (AA)	271	Bob MacKenzie - United Steelworkers of America Bursary (SS)	280
Guardian Capital Inc. Bursaries (U)	269	Paul R. MacPherson Bursary (R)	273
Asmahan Hafez Memorial Bursary (S)	279	Maksteel Bursary (U)	270
Hamilton Alumni Branch Bursaries (R)	273	Malloch Foundation Bursaries (R)	273
Hamilton Citizens' Memorial Bursaries (R)	273		

284 STUDENT FINANCIAL AID

Enrico Henry Mancinelli Bursaries (SS)	281	Romeo Bursary in Art History (H)	278
Manulife Financial Bursaries (B, HS)	274, 277	Royal Bank Bursary Fund (U)	271
Dr. Albert Martin Bursary (H)	278	Royal Canadian Legion Branch 163 Bursary (SS)	281
Ronald E. Materick Bursaries (E)	276	Royal Insurance Company of Canada Bursaries (U)	271
Linda Matthews Bursaries (U)	270	Carmen and Dorothy Ryder Bursary (B)	274
John and Helen Maxwell Bursaries (S)	279	Salena Family Bursary (HS)	277
3M Canada Inc. Bursaries (B, S)	274, 279	Helen Sansone Bursaries (U)	271
Neil D. McArthur Bursaries (E, S)	276, 279	William F. Scandlan Bursaries (SS)	281
Lawrence McBrearty Bursary (SS)	281	Eric Schlichting Memorial Bursary (S)	279
Andrew McFarlane Bursaries (U)	270	Rebeckah Schnurr Bursary (HS)	275, 277
R. Craig McIvor Bursaries (SS)	281	ScotiaMcLeod Bursaries (B)	275
Janet McKnight Memorial Bursaries (HS)	277	Terry Seawright Bursary (B)	275
McMaster 1980 Bursaries (U)	270	Mykola Semeniuk Bursaries (U)	271
McMaster 1996 Bursaries (U)	270	Sertoma Club Bursary (AA)	271
McMaster Alumnae Centennial Bursary (U)	270	Alex Sharp Bursary (SS)	281
McMaster Association of Part-Time Students Bursaries (U)	270	Leslie W. and Elizabeth Shemilt Bursary (E)	276
McMaster Association of Part-Time Students 20th Anniversary Bursary (U)	270	John Shipperbottom Bursary (SS)	281
McMaster MBA Alumni Association Bursaries (B)	274	Albert Edward Smith and Jean McTavish Smith Bursary (U)	271
McMaster Men's Athletics Bursary (AT)	272	Sam Smurlick Bursary (U)	271
McMaster Men's Basketball Bursary (AT)	272	Smyrniw Bursary (H)	278
McMaster Savings and Credit Union Limited Bursary (U, R)	270, 273	Social Science Society Bursaries (SS)	281
McMaster Squash and Golf Bursary (AT)	272	Salvatore Spitale Memorial Bursary (H)	278
McMaster Student Opportunity Fund Bursaries (U)	270	Lillian R. Stegne Memorial Bursaries (AA)	271
McMaster Student Union Bursaries (U)	270	Stelco Undergraduate Bursaries (B, E, S)	275, 276, 279
McMaster University Faculty Association Bursary (U)	270	Suncor Inc. 1988 Bursaries (E)	276
McMaster Women's Basketball Bursary (AT)	272	Tarbutt Construction Ltd. Bursary (U)	271
McMaster Women's Club Bursary (HS)	277	Donald W. Thomas Bursary (H)	278
McMaster Women's Volleyball Bursary (AT)	272	Dr. John Thomas Memorial Bursary (SS)	281
Katherine M. Collyer McNally Bursary (HS)	277	Brooke P. Townsend Bursary (S)	279
MDS Incorporated Bursary (HS)	277	Ray and Joyce Trull Bursary (U)	271
A.J. Melloni Memorial Fund (U)	270	Robert Gray Troxel Bursary (H)	278
Meloche Monnex Inc. Bursary (U)	270	Tressila Truby Memorial Bursary (H)	278
Charles Millard Bursary (SS)	281	Turkstra Lumber Co. Ltd. Bursaries (E, H)	276, 278
Edna C. and Frank Charles Miller Bursary (U)	270	Edith H. Turner Foundation Bursaries (U)	271
Minich Family Bursaries (B)	274	Valley City Bursary (U)	271
James C. Moore Memorial Bursary (H, SS)	278, 281	Catherine Vasas-Brown Bursary (HS)	278
Robert John Morris Bursaries (E)	270	Wallingford Hall Bursaries (U)	271
Wallace R. Morris Bursary Fund (U)	276	Sylvia and Brian Walker Bursaries (HS)	277, 278
Archie Moughalian Bursaries	276	G. S. Wark Ltd. Bursary (U)	271
John Douglas Moyer Bursary (U)	270	Sam and Irene Watson Bursary Fund (AS, B, E, S, SS)	273, 275, 276, 278, 279, 281
Honourable John C. Munro Bursaries (SS)	281	G.S. (Sandy) Watt Memorial Bursary (B)	275
NCR (Waterloo) Bursary (E)	276	Audrey and Bob Waugh Bursary (HS)	277
Marjorie and Bill Nelson Bursary (U)	270	Clifford Johnson Webster Memorial Bursary (HS)	278
Nelson Steel Bursary (U)	270	Lloyd Werden Memorial Bursary (U)	271
Newcastle Capital Management Inc. Bursaries (SS)	281	Westinghouse Canada Inc. Bursaries (B, E)	275, 276
Claire and John Novak Bursary (B)	274	Lynn R. Williams Bursary (SS)	281
Alfred and Laura Oakie Bursaries (B)	274	Frida and Joachim Wolter Bursary (SS)	281
O'Shaughnessy Bursary (HS)	277	John Yarwood Memorial Bursary (S)	279
Orlick Industries Limited Bursaries (E)	276	Yates Bursary (U)	271
Otis Canada Bursaries in Engineering and Management (E)	276	Sheila Zack Memorial Bursary (HS)	278
Lillian and Leroy Page Bursaries (R)	273	Zonta Club of Hamilton I Bursaries (B, E, SS)	275, 276, 281
Thomas Alexander Pain Bursary (AT)	272		
Passi Family Bursary (HS)	277		
Patriot Forge, Inc. Bursary (E)	276		
Marion Pearce Bursaries (SS)	281		
Dr. Holland and Mrs. Elvira Peterson Bursary (H)	278		
Petro-Canada Bursary (U)	270		
Pevening Bursaries (SS)	281		
Robert and Ruth Phillip Student Bursaries (U)	271		
Marc Andre Adrien Pineault Bursary (E)	276		
Dr. Susan Beverly Plank Memorial Bursary (HS)	277		
George Plumb Memorial Bursary (SS)	278, 281		
Lillian Plumb Bursary	278		
Harry Pomeroy Bursary (SS)	281		
Les Prince Bursaries (AT)	272		
Procor Bursaries (B, E)	274, 276		
Gord Raymond Bursaries (U)	271		
Redpath Sugars Bursary (U)	271		
Regional Municipality of Hamilton-Wentworth Bursaries (R)	273		
Ricoh Canada Inc. Bursaries (B, E)	274, 276		
James and Elizabeth Roberts Bursaries (U)	271		
Hugh and Alice Robertson Memorial Bursaries (U)	271		
Robertson-Yates Corporation Bursaries (B, E)	274, 276		

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 the Community Contribution Awards, full-time and part-time students must be registered in Level II, III, IV or V of a first baccalaureate programme. Eligible candidates must be registered and in good standing as a student of McMaster University.

These awards have a corresponding bursary for which students may apply by demonstrating financial need. In both cases, funds will be provided directly to the student.

A student may receive a maximum of one Community Contribution Award per year, but may be considered for the same or other awards the following year.

The Community Contribution Awards are awarded by a Selection Committee based on a Community Contribution Award application form. Application forms are available from The Student Financial Aid and Scholarships Office, Hamilton Hall, Room 404. The deadline date each year is April 30.

THE ATKINSON CHARITABLE FOUNDATION AWARD

Established in 1996 by The Atkinson Charitable Foundation. To be awarded to a student enrolled in any programme 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 541)

THE AUBURN INDUSTRIAL SERVICES LTD. AWARDS

Established in 1997 by Auburn Industrial Services Ltd. To be awarded to students enrolled in any programme who display superior leadership or innovative skills. (80037 563)

THE BRINSON PARTNERS INC. AWARDS

Established in 1997 by Brinson Partners Inc. under the McMaster Student Opportunity Fund initiative. To be awarded to a student enrolled in any programme 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 555)

THE ELVA CARROL AWARD

Established in 1996 by Elva Carrol. To be awarded to a student enrolled in any programme 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 547)

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 programme who have shown commitment and contribution to their community through volunteer work. (80060 619)

THE KEN DRYDEN ACHIEVEMENT AWARDS

Established in 1997 by individual supporters of The Ken Dryden Achievement Awards Programme at McMaster. This award will be granted to students who have shown remarkable achievement in their communities. Preference will be given to students who have demonstrated high academic achievement and who have had significant experience in the Child Welfare System, having lived in foster homes or group homes. (80039 565)

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 programme 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 576)

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 programme who, in the judgment of a selection committee, has made a significant contribution to the university life of his/her fellow students. (80004 520)

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 programme 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 542)

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 programme who has demonstrated service to the community-at-large. (80032 551)

THE MAC/WIAC 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 programme 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 552)

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 programme; 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 programmes including athletics. (80012 531)

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 programme in Engineering, and three to be granted to students upon completion of Level II or higher of a programme 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 543)

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 528)

THE ONCOLOGY NURSING PROGRAMME AWARDS

Established in 1997 in recognition of the contribution of McMaster students. To be awarded to students enrolled in the Oncology Nursing programme 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 programme. (80040 566)

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 programme who, in the judgment of a selection committee, have demonstrated leadership and community service. (80025 544)

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 programme 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 574)

286 COMMUNITY CONTRIBUTION AWARDS

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 530)

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 programme who demonstrates commendable service to the community-at-large. Preference to be given to a student enrolled in an Environmental Science Programme. (80044 570)

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 programme who demonstrates involvement in extra-curricular or community activities. Preference will be given to a student from the Burlington area. (80041 567)

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 programme who demonstrates outstanding service to the community-at-large. (80042 568)

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 programme who demonstrates outstanding service to the community-at-large. (80043 569)

THE ROTARY CLUB OF HAMILTON MOUNTAIN "SUNRISE" COMMUNITY CONTRIBUTION AWARD

Established in 1997 by the Rotary Club of Hamilton Mountain "Sunrise" in keeping with Rotary's mission to foster the ideal of service. To be awarded to a student enrolled in any programme who demonstrates commendable service to the community-at-large. (80045 571)

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 539)

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 549)

THE ROSA MAUDE SHEARDOWN AWARDS

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. This award will be granted to students in any faculty. Preference will be given to students from single-parent families, foster or group homes, disadvantaged backgrounds, or King Township. (80038 564)

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 533)

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 550)

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 Programme at McMaster who, in the judgment of the School of Art, Drama and Music, 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 580)

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 programme 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 545)

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 572)

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 579)

THE VAUGHN CUSTOM SPORTS CANADA LTD. ACHIEVEMENT AWARD

Established in 1997 by Vaughn Custom Sports Canada Ltd. in support of its belief that all students should have the opportunity to pursue their educational goals. This award will be granted to McMaster students who have shown remarkable achievement in their communities. Preference will be given to students who have demonstrated high academic achievement and who have had significant experience in the Child Welfare System, having lived in foster homes or group homes. (80035 554)

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 programme in Arts and Science who, in the judgment of the Arts and Science Programme Admissions, Awards and Review Committee, have made a notable contribution in the community-at-large through participation in extra-curricular activities. (80002 546)

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 573)

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 programme who, in the judgment of the Department of English, has made a notable contribution to campus and community life and demonstrates a lively interest in English studies. (80019 538)

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. Preference to be given to students enrolled in the Manufacturing Engineering and Society programme. (80051 577)

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 programme 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 548)

UNDERGRADUATE ACADEMIC AWARDS

WEB ADDRESS: <http://access.mcmaster.ca>

E-MAIL ADDRESS: awards@mcmaster.ca

Manager, Scholarships and Bursaries

Elizabeth Seymour

For information, please contact:

Office of Student Financial Aid and Scholarships

Hamilton Hall, Room 404

McMaster University

Hamilton, Ontario, L8S 4K1

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.

TERMINOLOGY

An explanation of the terminology used to describe Academic Awards is provided in the sections of the Calendar described below. Please refer to the *Glossary* section of this Calendar for definitions of **Continuing Students, Cumulative Average (CA), Level, Full-time Students, Post-Degree Students, Review and Reviewing Period.**

Baccalaureate Degrees are those listed in the Degrees and Programmes section of this calendar, the abbreviations of which start with the letter B, such as B.A., B.Com.

Failures are determined by reviewing period, not by session. They include failures in Extra courses.

Full Load is calculated for Undergraduate In-Course Academic Awards and is the number of units specified in the Calendar for an individual level of a programme (e.g. Astrophysics, Level II: 31 units). If the Calendar does not specify the programme requirements by individual levels, divide the total units for all levels by the number of levels, discarding the remainder. Full-time students must carry a full load of McMaster courses to be eligible for Undergraduate In-Course Academic Awards. A full load is not required to be eligible for graduand awards.

Graduand Awards are granted to eligible students on the completion of their graduating session.

In-Course Awards are granted to eligible students, based on academic achievement in other than their graduating session.

Part-time Studies Awards are referred to under Section 2, Category C. To be eligible for these awards, students must have been registered in at least 50% of all units attempted at McMaster, while fulfilling the University's definition of a part-time student as described in the *Glossary* section of this Calendar.

Session, for scholarship purposes, refers to the Fall/Winter session. The Fall/Winter session is the period from September to April as defined in the *Sessional Dates* section of this Calendar.

Full-load Average (FA) is the weighted average computed for Undergraduate In-Course Academic Awards. It is based on the successful completion of a full load of course units, as defined by programme and level. It includes only those courses taken in the Fall/Winter session. Overload courses (courses over and above full load) and Extra courses taken during the Fall/Winter session are included in the Full-load Average.

Reviewing Period for scholarship purposes, normally refers to work completed during the Fall/Winter session. Please refer to the *Glossary* section of this Calendar.

SECTION 1. GENERAL CONDITIONS FOR ACADEMIC AWARDS

- The University Academic Awards listed below are provided exclusively for students entering, registered in, or graduating from baccalaureate degree programmes at McMaster University. Continuing Students, Post-degree Students, and students registered in the McMaster Medical programme are not eligible for these awards.
- To ensure a wide distribution of the limited number of awards, there are restrictions on the number of awards that a student may receive. An eligible student may be granted:
 - travel scholarships and awards such as books and medals; and
 - awards continued from a previous year (including entrance scholarships), except as provided by the particular terms of an award; and
 - either one award greater than or equal to the value of a Senate Scholarship (\$800 in 1998-99) and one award of less than the value of a Senate Scholarship, or two awards of less than the value of a Senate Scholarship.

When a student is named the winner of an award but may not retain it because of the conditions listed above, the next eligible student will be granted the award.

- The monetary benefits of travel scholarships, awards won by part-time students and graduating students, and awards such as books and medals will be disbursed directly to the student.
- The monetary benefits of other awards will be disbursed only if the recipient is registered in a baccalaureate degree programme, or a specific programme when explicitly required by terms of award, at McMaster University in the next Fall/Winter session after the award was earned and will be allocated in the following manner:
 - the monetary benefits of award(s) will be credited to the student's academic fees account up to the value of the academic fees prescribed for a full load of work as specified in the Calendar for the level and programme in which the student is registered.
 - the monetary benefits of award(s) which exceed the value of academic fees as prescribed for a full load of work for the level and programme in which the student is registered will be credited to one or more of the student's other University accounts (e.g. residence, and/or bookstore, etc.).

Amounts in excess of the student's monetary obligation to the University will be disbursed directly to the student in November or December.

- Awards credited to the student's academic fees account are not refundable in cash under any circumstances.
- Awards credited to the student's academic fees account may be used only to defray academic fees for baccalaureate degree courses taken during the Fall/Winter session in which the account is credited with the awards. Students wishing to defer the benefits of an award to a later session should apply to the Office of Student Financial Aid and Scholarships. Approval of applications is not automatic, and deferrals are not normally granted for more than one calendar year.
- Students holding four-year, full-fee scholarships who choose to accelerate their programme 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 and Scholarships. Approval of applications is not automatic.
- 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.
- The particular terms for University Academic Awards are listed in Section 2.

SECTION 2. CATEGORIES OF AWARDS

A. Awards for Entering Students (page 288)

- McMaster Scholars Programme (Application required.)
- Merit Awards Open to Ontario Students (Application required.)
- National Scholarships (No application required.)
- Scholarships Open to Ontario Students (No application required.)

B. Awards for Full-time, In-Course Students (Full Load) (page 292)

- Medal
- Senate Scholarships
- Residence Scholarships
- Travel Scholarships

- C. Awards for Part-time, In-Course Students (page 301)**
D. Specific Achievement Awards for Full-time and Part-time Students (page 302)
E. Awards for Graduating Students (page 305)
F. Awards for Second Baccalaureate Degree Students (page 308)

SECTION 3. INDEX OF ACADEMIC AWARDS (page 309)

To find a specific award, use the Index for Academic Awards.

SECTION 2. CATEGORIES OF AWARDS

A. Awards for Entering Students

1. These awards are provided exclusively for students qualifying for admission to Level I of a first baccalaureate degree programme.
2. To be considered for an entrance award, students must obtain at least a first-class average in the secondary school credits required for University admission. All students who meet this requirement and who apply for early admission to the University not more than two years after completion of their secondary school studies will automatically be considered as applicants for entrance awards, unless a separate application is explicitly required by the particular terms of the award.
3. Where explicitly required by the particular terms of an award, recipients must register and remain registered in the Faculty/ Programme specified. Registration in, or transfer to, another programme of study at any time will result in forfeiture of the award. Students are advised to consult with the Office of Student Financial Aid and Scholarships about making changes to their programme of study.
4. In addition to meeting the General Conditions listed in Section 1, 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 Student Financial Aid and Scholarships. Approval of applications is not automatic, and deferments are not normally granted for more than one calendar year.
5. Unless otherwise specified, recipients may retain an entrance award which provides for awards beyond Level I while registered in a first baccalaureate degree programme and until graduation or for four years (five years if registered in a five-level programme), whichever is less. In order to retain such awards, students must complete during each successive Fall/Winter session at the University a full load corresponding at least to:
 - a) either the minimum number of units specified in the Calendar for their level and programme;
 - b) or, if the Calendar does not specify the programme work by individual levels, the average number of units per level; and must maintain a Full-load Average of at least 9.5 and obtain no failures.

AWARDS REQUIRING APPLICATION

1. The McMaster Scholars Programme

Each year, up to twelve students entering from a secondary school may be awarded the title McMaster Scholar. Applications are required and must be submitted not later than January 15, 1999. Applicants will be asked to provide a resume, an essay, a full high school transcript and the name of a person to contact for a personal reference. Details may be obtained from the Office of Student Financial Aid and Scholarships.

McMASTER SCHOLARS (UNIVERSITY-WIDE)

Up to five scholarships, each valued at \$25,000 over four years, to be awarded to students entering any programme of study at McMaster University.

THE ASHBAUGH SCHOLARSHIPS

Established in 1989 by bequest of Frederick K. Ashbaugh of St. Petersburg, Florida, in memory of Mary Eliza Kingston. (20026)

THE GEORGE AND NORA ELWIN SCHOLARSHIPS

Established in 1979 by bequest of George and Nora Elwin of Hamilton. (20029)

THE DR. HARRY LYMAN HOOKER ENTRANCE SCHOLARSHIPS

Established in 1981, and resulting from the bequest of Dr. H.L. Hooker. (20001)

THE EILEEN GRAY FARLEY SCHOLARSHIP - (FACULTY-SPECIFIC)

Established in 1998 by Eileen Gray Farley (Class of '43 and winner of the D.E. Thompson Scholarship) in memory of Mr. D. E. Thompson who exemplified a generous spirit of giving throughout his life and established the D.E. Thompson Scholarship in 1909. To be awarded **every four years** to a student entering the Faculty of Humanities.

Value: \$25,000 (\$6,250 per year for up to four years) (20102 824)

McMASTER SCHOLARS (FACULTY OR PROGRAMME-SPECIFIC)

Up to seven scholarships, each valued at \$15,000 over four years, to be awarded to students registered in a specific Faculty or Programme of study.

- McMaster Scholars in Arts & Science
- McMaster Scholars in Business
- McMaster Scholars in Engineering
- McMaster Scholars in Health Sciences
- McMaster Scholars in Humanities
- McMaster Scholars in Science
- McMaster Scholars in Social Sciences

THE LILLIAN AND LEROY PAGE SCHOLARSHIPS (FACULTY-SPECIFIC)

Established in 1982 by donation of the Lillian and Leroy Page Foundation for a student from the Hamilton area entering the Faculty of Science. (20030)

2. Merit Awards Open to Ontario Students

Each year, allotments of Merit Awards are established for Arts & Science I, Business I, Engineering I, Humanities I (including Music I), Science I, Midwifery I, Nursing I and Social Sciences I (including Kinesiology I) in proportion to full-time undergraduate students enrolled in these Level I programmes. Applications from students completing OACs in the current school year are required by January 15, 1999. Applications must include a resume, and school's assessment. Details may be obtained from the Office of Student Financial Aid and Scholarships.

THE MURRAY BALL ENTRANCE SCHOLARSHIP IN EARTH SCIENCES

Established in 1990 by May Ball in memory of her brother Murray Ball. To be awarded to the outstanding student entering the Faculty of Science who, in the judgment of the Department of Geology, has demonstrated interest in the study of Earth Sciences.

Value: \$1,000 (20037 383)

THE COCA-COLA MERIT AWARDS

Established in 1998 by Coca-Cola Bottling Ltd. Two awards to be granted to students entering any programme.

Value: \$1,000 each (20101 802)

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 programme of study; and (b) one to a student entering full-time study in Science I (or Natural Sciences I) or Music I. Preference will be given to women students.

Value: \$1,000 each (20039 251)

THE HELEN EMERY ENTRANCE SCHOLARSHIP FOR ENVIRONMENTAL SCIENCE

Established in 1990 by Miss Helen Emery of Barrie, Ontario. To be awarded to the outstanding student entering the Faculty of Science who, in the judgment of the Department of Geography, has demonstrated interest in addressing environmental matters.

Value: \$1,000 (20038 382)

THE CATHRYN E. KAAKE MERIT AWARD

Established in 1988 in memory of Cathryn E. Kaake (Class of '78) by family and friends.

Value: \$1,000 (20022 010)

THE RAYMOND C. LABARGE MERIT AWARDS

Established in 1990 in memory of Raymond C. Labarge (Class of '36) of Ottawa.

Value: \$1,000 (20035 235)

THE McMASTER MERIT AWARDS

Made available from time to time by authorization of the Board of Governors of the University.

Value: \$1,000 (20025)

THE ROBERT JOHN MORRIS - McMASTER UNIVERSITY MERIT AWARDS

Established in 1996 by McMaster University in memory of Robert John Morris. Two awards to be granted to students entering Engineering I who, in the judgment of the Faculty of Engineering, have demonstrated outstanding academic achievement and an interest in the field of Engineering.

Value: \$3,000 each (20058 519)

THE LESLIE A. PRINCE MERIT AWARDS

Established in 1979 in honour of Leslie A. Prince, Dean of Students, by his friends and colleagues upon the occasion of his retirement and in recognition of his outstanding contribution to the University community. Two to be awarded.

Value: \$1,000 each (20024 139)

AWARDS NOT REQUIRING APPLICATION

1. National Scholarships

Students applying for admission within two years of completing required subjects at any secondary school in Canada will be automatically considered for these awards. Students studying abroad must submit their academic transcripts to the Office of Student Financial Aid and Scholarships by February 26, 1999 in order to be considered for these awards.

THE ALUMNI ASSOCIATION SCHOLARSHIPS

Established in 1961 by the McMaster University Alumni Association as a memorial to former members of the McMaster faculty in recognition of their contribution to higher learning. Two scholarships to be awarded on the basis of general proficiency in the subjects required for admission to students from any province or territory of Canada.

Value: \$12,000 (\$3,000 per year for up to four years) (20005)

THE CHARLES MURRAY BALL ENTRANCE SCHOLARSHIPS

Established in 1993 by bequest of May Alexandra Ball in memory of her brother. A variable number of scholarships to be awarded to students entering a full-time programme of study.

Value: \$3,000 (20044 331)

THE CHANCELLORS' SCHOLARSHIPS

Up to ten scholarships awarded to students entering a full-time programme of study.

Value: \$3,000

THE FORTINOS SCHOLARSHIP

Established in 1990 by John Fortino. To be awarded to an outstanding full-time student entering the School of Business.

Value: \$3,000 (20034 233)

THE H.P. FRID SCHOLARSHIP

Established in 1982 by the family of H.P. Frid in her memory. To be awarded to a promising student entering a full-time programme of study.

Value: \$3,000 (20020 062)

THE GOVERNORS' SCHOLARSHIPS

A variable number to be awarded to students entering a full-time programme of study.

Value: \$12,000 (\$3,000 per year for up to four years) (20007)

THE ASMAHAN HAFEZ MEMORIAL SCHOLARSHIP

Established in 1993 by her family in memory of Asmahan Hafez. To be awarded to a student entering the Faculty of Science.

Value: \$3,000 (20042 325)

THE NELLIE P. HOGG SCHOLARSHIPS

Established in 1965 by bequest of Nellie P. Hogg of Hamilton. Two scholarships to be awarded to women students entering a full-time programme of study.

Value: \$12,000 (\$3,000 per year for up to four years) (20014)

THE JOSEPHINE MAGEE SCHOLARSHIP

Established in 1959 by bequest of Josephine Magee of Hamilton. To be awarded on the basis of general proficiency in the subjects required for admission to students from any province or territory of Canada.

Value: \$12,000 (\$3,000 per year for up to four years) (20012)

THE 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 programme of study.

Value: \$12,000 (\$3,000 per year for up to four years) (20013 117)

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 programme of study.

Value: \$3,000 (20017)

THE A.G. REILLY SCHOLARSHIPS

Established in 1991 by bequest of Lois E. Reilly of Toronto. A variable number of scholarships to be awarded to students entering a full-time programme of study.

Value: \$3,000 (20040 231)

THE 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 programme of study.

Value: \$12,000 (\$3,000 per year for up to four years) (20003 296)

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 WALLINGFORD HALL ENTRANCE SCHOLARSHIP

Established in 1993. To be awarded to a student entering a full-time programme of study.

Value: \$3,000 (20043 328)

◆ MUSIC AWARDS - NATIONAL SCHOLARSHIPS

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 Art, Drama and Music, has attained outstanding musical proficiency.

Value: \$1,000 (20031)

THE FRANK THOROLFSON MEMORIAL SCHOLARSHIPS

Established in 1978 in memory of Professor Frank Thorolfson, first Chair of the Department of Music. One or two scholarships to be awarded to students entering Music I who, in the judgment of the School of Art, Drama and Music, have attained high scholastic achievement and musical proficiency.

Value: \$750 each (20028)

2. Scholarships Open To Ontario Students

The following scholarships are open to any student applying for admission from an Ontario secondary school within two years of completing the required OAC subjects. The recipients of these scholarships will be determined primarily on the basis of grades submitted for early admission in the OAC work.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS SCHOLARSHIP

Established in 1961 by the Ontario Professional Engineers Foundation for Education. Two scholarships to be awarded to students entering the Faculty of Engineering.

Value: \$1,200 (20027 232)

THE CHANCELLORS' SCHOLARSHIPS (UNIVERSITY-WIDE)

A variable number to be awarded to students entering a full-time programme of study.

Value: \$3,000 (20018)

THE CHANCELLORS' SCHOLARSHIPS (FACULTY OR PROGRAMME-SPECIFIC)

A variable number to be awarded to students entering a Level I Programme in the Faculties of Business, Health Sciences, Humanities and Social Sciences.

Value: \$3,000 (20041)

THE ANDREW FOUNDATION - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the Andrew Foundation and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20084 609)

THE A. H. ATKINSON EDUCATION FUND - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of the A. H. Atkinson Education Fund Inc. and its commitment to McMaster students. To be awarded to a student entering the Faculty of Engineering.

Value: \$3,000 (20091 616)

THE GORDON R. BAKER, Q.C. - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of Gordon R. Baker, Q.C. and his commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20094 585)

THE ARNOLD A. BEALE - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of Arnold A. Beale and his commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20095 584)

THE H. G. BERTRAM FOUNDATION - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of The H. G. Bertram Foundation and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20093 618)

THE BETZNER FAMILY - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in honour of the Betzner Family and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20061 586)

THE ED BUFFETT - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Ed Buffett and his commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20085 610)

THE JODIE ANNE BULL - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in memory of Jodie Anne Bull. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20079 604)

THE CANADA TRUST COMPANY - McMASTER SCHOLARSHIP

Established in 1996 by McMaster University in recognition of Canada Trust and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20057 518)

THE CANADIAN FRIENDS OF THE HEBREW UNIVERSITY - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the Canadian Friends of the Hebrew University and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20076 601)

THE COCA-COLA SCHOLARSHIP

Established in 1998 by Coca-Cola Bottling Ltd. To be awarded to a student entering a full-time programme of study.

Value: \$3,000 (20100 801)

THE CRS ROBOTICS CORPORATION - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of the CRS Robotics Corporation and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20083 608)

THE GERALDINE LORETTA COSFORD - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of Geraldine Loretta Cosford and her commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 (20096 775)

THE HELEN M. CURREY SCHOLARSHIP

Established in 1941 by bequest of Helen Maud Currey of Drumbo, Ontario. To be awarded every four years; the 13th award was made in 1992.

Value: \$12,000 (\$3,000 per year for up to four years) (20009)

THE DAUGHTERS OF THE EMPIRE (HAMILTON) - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the Daughters of the Empire (Hamilton) Ltd. and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20077 602)

THE DOFASCO SCHOLARSHIP

Established in 1955 by the Dominion Foundries and Steel Company. To be awarded to a student who is a Canadian citizen or permanent resident and who is entering Engineering 1.

Value: \$12,000 (\$3,000 per year for up to four years) (20000 050)

THE DOFASCO - McMASTER SCHOLARSHIPS

Established in 1996 by McMaster University in recognition of Dofasco, one of Canada's and North America's leading steelmakers, and its ongoing commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20047 508)

THE DUNDAS SCHOLARSHIPS

Established in 1984 from funds donated anonymously. A variable number of scholarships to be awarded to students from Dundas and surrounding area entering a full-time programme of study.

Value: \$3,000 (20019)

The 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 ERNST & YOUNG - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of the Partners of Ernst & Young and their commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20082 607)

THE EILEEN GRAY FARLEY-McMASTER SCHOLARSHIP

Established in 1998 by McMaster University in recognition of Mrs. Eileen Gray Farley and her commitment to McMaster students and in grateful memory of Mr. D.E. Thompson who established the D.E. Thompson Scholarship in 1909. Three scholarships to be awarded to students entering the Faculty of Humanities.

Value: \$3,000 each (20103 825)

THE GENNUM CORPORATION - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of the Gennum Corporation and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20064 589)

THE ALLEN AND MILLI GOULD FAMILY FOUNDATION - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of the Allen and Milli Gould Family Foundation and its commitment to McMaster students. To be awarded to a student entering the Faculty of Business.

Value: \$3,000 (20086 611)

THE GUARDIAN CAPITAL INC. - McMASTER SCHOLARSHIP

Established in 1996 by McMaster University in recognition of Guardian Capital Inc. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20049 510)

THE HAMILTON COMMUNITY FOUNDATION - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the Hamilton Community Foundation and its commitment to McMaster students. A variable number of scholarships to be awarded to Hamilton-Wentworth and Burlington post-secondary students entering any programme.

Value: \$3,000 each (20089 614)

THE HAWKRIGG FAMILY - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of the Hawkrigg Family's commitment to McMaster students. To be awarded alternately to a student entering the Faculty of Business or the Faculty of Social Sciences (Kinesiology) who has demonstrated outstanding academic, community and athletic achievement.

Value: \$3,000 (20065 590)

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.

Value: \$3,000 (20021 078)

THE AMELIA MORDEN, PAARDEBURG CHAPTER, IOOE, SCHOLARSHIP

Established in 1968 by the Paardeburg Chapter, IOOE. To be awarded to a student from a secondary school in Hamilton who attains good standing in OAC subjects and who has a satisfactory record with respect to character, personality and activities. Preference to be given to children of service or ex-service personnel.

Value: \$200 (20032 082)

THE MURIEL McBRIEN KAUFFMAN FOUNDATION - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the Muriel McBrien Kauffman Foundation and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20071 596)

THE ROBERT A. KENNEDY - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Robert A. Kennedy and his commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20062 587)

THE KPMG - McMASTER SCHOLARSHIPS

Established in 1996 by McMaster University in recognition of KPMG's longstanding and increasing financial support of McMaster students. A variable number of scholarships to be awarded to students entering the Faculty of Business.

Value: \$3,000 each (20052 513)

THE J. BEVERLY KRUGEL - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Beverly Krugel and her commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20063 588)

THE LAIDLAW - McMASTER SCHOLARSHIPS

Established in 1996 by McMaster University in recognition of Laidlaw and its ongoing commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20053 514)

THE LINCLUDEN MANAGEMENT - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Lincluden Management Ltd. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20066 591)

THE LLOYD MEMORIAL SCHOLARSHIP

Established in 1956 in memory of Henry Hoyes and Lizzie Lloyd by their children. OAC subjects to be included are: Physics, Chemistry, two credits of Mathematics, and either Biology or a third credit of Mathematics.

Value: \$12,000 (\$3,000 per year for up to four years) (20015)

THE EDWARD AND MARGARET LYONS - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of Edward and Margaret Lyons and their commitment to McMaster students. A variable number of scholarships to be awarded to students entering the Faculty of Humanities.

Value: \$3,000 each (20087 612)

THE ALEC MacMILLAN - McMASTER MERIT SCHOLARSHIP

Established in 1996 in memory of Alec John Royston MacMillan of Toronto. To be awarded to a student entering Engineering I who, in the judgment of the Faculty of Engineering, demonstrates qualities of innovation, leadership and service to the community through participation in school and community programmes including athletics.

Value: \$3,000 (20050 511)

THE MAKSTEEL - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Maksteel Inc. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20067 592)

THE ALBERT MATTHEWS SCHOLARSHIP

Established in 1920. OAC subjects to be included are Latin and a language other than English.

Value: \$12,000 (\$3,000 per year for up to four years) (20004)

THE HAROLD MATTHEWS MEMORIAL SCHOLARSHIP

Established in 1917. OAC subjects to be included are French and either German or Spanish.

Value: \$12,000 (\$3,000 per year for up to four years) (20008)

THE LINDA MATTHEWS - McMASTER SCHOLARSHIP

Established in 1996 by McMaster University in recognition of Linda Matthews (Class of '69), and her commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20051 512)

THE HELEN AND JOHN MAXWELL - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Helen and John Maxwell and their commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20097 776)

THE NEIL D. McARTHUR - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Neil D. McArthur and Anne McArthur and their commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20074 599)

THE HOWARD AND JANET McLEAN-McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Howard and Janet McLean and their commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20081 575)

THE McMASTER ALUMNI ASSOCIATION - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the McMaster Alumni Association's ongoing commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20088 613)

THE ISABELLA CAMPBELL McNEE SCHOLARSHIP

Established in 1915 and augmented in 1926. OAC subjects to be included are three credits of Mathematics and Physics.

Value: \$12,000 (\$3,000 per year for up to four years) (20010)

THE MELOCHE MONNEX - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Meloche Monnex Inc. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20068 593)

THE PETRO-CANADA - McMASTER SCHOLARSHIPS

Established in 1996 by McMaster University in recognition of Petro-Canada and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20054 515)

THE PIONEER GROUP - McMASTER SCHOLARSHIP

Established in 1996 by McMaster University in recognition of The Pioneer Group's longstanding and increasing financial support of McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20056 517)

THE GORDON AND JANE PRICE - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in honour of the late Gordon and Jane Price and their commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 (20098 777)

THE PROCOR - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Procor Limited and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20069 594)

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of the Regional Municipality of Hamilton-Wentworth and its commitment to McMaster students. Six scholarships will be awarded to students entering any programme.

Value: \$3,000 each (20073 598)

THE RICOH CANADA - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of Ricoh Canada Inc. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20070 595)

THE SCOTIAMCLEOD - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of ScotiaMcLeod Inc. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20090 615)

THE STELCO - McMASTER ENGINEERING SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of Stelco and its ongoing commitment to McMaster students. Two scholarships to be awarded to students entering the Faculty of Engineering who demonstrate outstanding academic achievement.

Value: \$3,000 each (20080 605)

THE TTK INC. - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of TTK Inc. and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20072 597)

THE D.E. THOMSON SCHOLARSHIP

Established in 1909 and augmented in 1915. OAC subjects to be included are English and either Latin or French.

Value: \$12,000 (\$3,000 per year for up to four years) (20006)

THE EDITH H. TURNER FOUNDATION - McMASTER SCHOLARSHIPS

Established in 1996 by McMaster University in recognition of the Edith H. Turner Foundation and its commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20048 509)

THE UNITED STEELWORKERS OF AMERICA - McMASTER SCHOLARSHIP

Established in 1997 by McMaster University in recognition of The United Steelworkers of America and its commitment to McMaster students. To be awarded to a student entering any programme.

Value: \$3,000 (20078 603)

THE WESTINGHOUSE - McMASTER SCHOLARSHIPS

Established in 1996 by McMaster University in recognition of Westinghouse Canada Inc. and its ongoing commitment to McMaster students. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 each (20055 516)

THE WHEELER SCHOLARSHIP

Established in 1915. OAC subjects to be included are: History, English and a language other than English.

Value: \$12,000 (\$3,000 per year for up to four years) (20016)

THE ZONTA CLUB OF HAMILTON I - ROBERTA BONDAR - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of The Zonta Club of Hamilton I and its commitment to McMaster students, and in recognition of Canada's first female astronaut. A variable number of scholarships to be awarded to students entering any programme.

Value: \$3,000 (20099 778)

◆ MUSIC AWARD - SCHOLARSHIPS OPEN**TO ONTARIO STUDENTS****THE 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 Art, Drama and Music, have demonstrated excellence in classical music.

Value: \$1,800 each (20059 559)

B. Awards for Full-time, In-Course Students (Full Load)

The following awards are based on competition across the University or within a Faculty or programme.

- These awards, which are granted in June or November, are provided exclusively for first baccalaureate degree students registered for a full load qualifying on the basis of work included at the May review (or deferred examinations resulting therefrom) in other than graduating session. Students choosing to graduate at the subsequent Fall convocation forfeit any awards that they have been named to receive.
- In addition to meeting the General Conditions listed in Section 1, a student must complete, during the Fall/Winter session immediately prior to the May review, a full load of work corresponding at least to:
 - either the minimum number of units specified in the Calendar for their level and programme;
 - or, if the Calendar does not specify the programme work by individual levels, the average number of units per level; and
 - a Full-load Average of 8.0 and no failures.
- For students who complete a full load of work in the Fall/Winter session as described above a Full-load Average will be computed, which is the weighted average of the grades in all courses taken during that session. Overload courses (courses over and above a full load) and Extra courses taken during the Fall/Winter session are included in the Full-load Average. The Full-load Average will be used to determine academic standing for the awards listed below, unless otherwise stated in the terms of a particular award.
- The Full-load Average will be used to break any tie in the competition or awards which are based on another criterion.

◆ MEDAL**THE CHANCELLOR'S GOLD MEDAL**

Established in 1938. To be awarded to the student who has completed the penultimate year of any four or five-level programme at the most recent spring review, and who ranks highest in scholarship, leadership, and influence. (30022)

◆ GENERAL SCHOLARSHIPS AND PRIZES**THE AARON PRIZE**

Established in 1964 by Fannie Aaron (Class of '44). To be awarded to the student who has completed Level I and 30-45 units of the three-level English programme and who attains the highest Cumulative Average.

Value: \$25 (30004 001)

THE ACI (ONTARIO CHAPTER) SCHOLARSHIP

Established in 1992 by the American Concrete Institute (Ontario Chapter). To be awarded to a student entering Level IV of the Civil Engineering programme who, in the judgment of the Department of Civil Engineering, has demonstrated outstanding academic achievement and knowledge of concrete technology.

Value: \$300 (30215 319)

THE W.K. ALLAN MEMORIAL SCHOLARSHIP

Established in 1994 in memory of William Kellock Allan (Class of '31) by his wife. To be awarded to a student entering the final level of a programme in Mathematics or Physics who attains the highest Full-load Average.

Value: \$900 (30221 355)

THE AMOCO CANADA UNDERGRADUATE SCHOLARSHIP IN GEOLOGY

Established in 1990 by Amoco Canada Petroleum Company Limited to recognize outstanding students pursuing a programme of courses related to petroleum geology. To be awarded to a student entering Level III or IV

of a Geology programme who, in the judgment of the School of Geography and Geology, has demonstrated the greatest aptitude in such relevant areas as stratigraphy, sedimentology, structural geology, exploration geophysics, palaeontology and geologically oriented computer applications.

Value: \$1,500 (30181 230)

THE ANDERSEN CONSULTING 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 801)

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 Geology, has achieved notable academic standing and who has made a significant contribution to university life through extra-curricular activities.

Value: \$75 for books (30234 558)

THE ASM INTERNATIONAL (ONTARIO CHAPTER) SCHOLARSHIP

Established in 1971 by the local Chapter of the American Society for Metals. To be awarded to the student who has completed Level I and 30-85 units of the Honours Materials Science or Materials Engineering programme and who attains the highest Full-load Average (at least 9.5).

Value: \$1,500 (30003 003)

THE ASSOCIATION OF PROFESSIONAL ENGINEERS UNDERGRADUATE SCHOLARSHIPS

Established in 1961 by the Ontario Professional Engineers Foundation for Education. Four scholarships: two to be awarded to students with the highest Full-load Average after completion of Engineering I, and two to be awarded to students with the highest Full-load Average in Engineering programmes after completion of Engineering I and 35-90 units.

Value: \$600 each (30006 379)

THE A.H. ATKINSON PRIZE

Established in 1980 by Atkinson Engineering Consultants Limited. To be awarded to the student in a Civil Engineering programme who achieves the highest average in CIV ENG 3G03 and 3J04, taken in one session.

Value: \$200 (30001 009)

THE MURRAY BALL SCHOLARSHIPS IN GEOLOGY

Established in 1991 by May A. Ball in memory of her brother Murray Ball. Seven scholarships to be awarded to students entering Level II or III of a programme in Geology who, in the judgment of the School of Geography and Geology, have attained notable standing. Ordinarily, not more than one scholarship will be awarded in any one programme.

Value: \$800 each (30182)

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 60-75 units of a programme in Commerce and who attains the highest Full-load Average.

Value: \$350 (30102 257)

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 programme in the Department of Mathematics and Statistics, who attains the highest Full-load Average and who in that session achieves a grade of at least B in STATS 3D06.

Value: \$300 (30076)

THE SCOTT BARTLETT MEMORIAL PRIZE

Established in 1985 in memory of Scott N. Bartlett by his family and friends. To be awarded to a student who has completed Level I and 60-75 units of the Honours Commerce Programme and who, in the judgment of the Faculty of Business, has achieved high standing in COMMERCE 3FA3 and 3FB3, taken in one session.

Value: \$100 (30134 012)

THE BEAUTY COUNSELORS OF CANADA SCHOLARSHIP

Established in 1956 by Beauty Counselors of Canada Limited. To be awarded to the student who has completed Science I (or Natural Sciences I) with the highest Full-load Average and who is entering Level II of the Honours Biochemistry, Honours Chemistry or Honours Biochemistry and Chemistry programme.

Value: \$300 (30008 014)

THE LOUISE E. BETTGER SCHOLARSHIPS IN MUSIC

Established in 1982 in memory of Louise E. Bettger of New Hamburg, Ontario, by her nieces and nephews. Three scholarships to be awarded to students in an Honours programme in Music who, in the judgment of the School of Art, Drama and Music, are outstanding: (a) one in the area of choral or vocal music to a student who has completed Music I or an additional 30-75 units; (b) one to a keyboard student who has completed Level I and 30-75 units; and (c) one to a student who has completed Music I and who has demonstrated overall musical excellence.

Value: \$400 each (30097 015)

THE J.P. BICKELL SCHOLARSHIPS

Established in 1955 by the J.P. Bickell Foundation to encourage interest in the study of geology and metallurgy. Two scholarships to be awarded, normally one to the student entering Level II of Honours Geology or Honours Materials Science, and the other to the student entering Level II of Chemical Engineering, Materials Engineering or Metallurgical Engineering, who attain the highest average in at least nine units in chemistry and physics in Level I and a Full-load Average of at least 9.5. A scholarship is tenable for three years provided the recipient maintains a Cumulative Average of at least 10.0.

Value: \$3,000 each (\$1,000 each year) (30078 016)

THE BRIAN BLAKEY MEMORIAL SCHOLARSHIP

Established in 1979 in memory of Dr. Brian Blakey, Professor of French, by his friends, colleagues and former students, on behalf of his wife, Dorothy. To be awarded to the student who attains the highest Full-load Average on completion of Level I and 60 to 75 units of an Honours programme in Classical Studies or Classics, Drama, English, French, or Modern Languages. Students in all programmes except Drama must have taken at some point LINGUIST 1A06 and achieved in it a grade of at least B-.

Value: \$600 (30013 018)

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 Art, Drama and Music, has attained high academic standing.

Value: \$1250 (30245 795)

THE FRANCES BOWLING SCHOLARSHIPS

Established in 1997 from the estate of Marie Bowling in memory of her daughter, Joan Frances Bowling. Three scholarships to be awarded to outstanding classical music scholars registered in Level II and above of a Music programme and who, in the judgment of the School of Art, Drama and Music, have demonstrated excellence in Music.

Value: \$1800 each (30235 559)

THE BRIEN SCHOLARSHIP IN PHILOSOPHY

Established in 1944 by Dr. J.W. Brien of Windsor. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Philosophy and who, in the judgment of the Department of Philosophy, shows the most academic promise.

Value: \$450 (30014)

THE JOSEPHINE STAPLES BRIEN SCHOLARSHIP

Established in 1936 by Dr. J.W. Brien of Windsor. To be awarded to a woman student who is entering her graduating session and who qualifies on the basis of academic standing and interest in undergraduate activities.

Value: \$300 for books (30091)

THE DR. AND MRS. F.R. BRITTON SCHOLARSHIP IN MATHEMATICS

Established in 1962 by Dr. and Mrs. F.R. Britton and augmented by Mrs. Britton's bequest in 1982. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Mathematical Sciences who attains the highest Full-load Average and is not the holder of an award of greater monetary value than this scholarship. Tenable in Levels III and IV provided that the recipient maintains satisfactory standing in an Honours programme in which mathematics, pure or applied, is the major subject of study.

Value: \$1,500 (\$750 each year) (30051 019)

THE TEN BROEKE-BENSEN MEMORIAL SCHOLARSHIP

Established in 1990 in memory of Dr. James Ten Broeke and Dr. Roy C. Bensen, former Heads of the Department of Philosophy and Psychology. To be awarded to a student who has completed Level I and 30 to 75 units of an Honours Programme in Philosophy who, in the judgment of the Department of Philosophy, has demonstrated outstanding academic achievement.

Value: \$1,100 (30195)

THE CRISPIN CALVO PRIZE

Established in 1978 in memory of Professor C. Calvo by his family and friends. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise in thermodynamics.

Value: \$200 (30031)

THE 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 medalist in 1936 and 1990 inductee into the Athletics Hall of Fame. To be awarded to a student who has completed Level I in a programme 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: \$5,000 (\$1,250 each year) (30246 796)

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 Art, Drama and Music.

Value: \$200 (30048 023)

THE CFUW (HAMILTON) PAST PRESIDENT'S PRIZE

Established in 1976 by the Past Presidents of the University Women's Club of Hamilton which became the CFUW (Hamilton) on the occasion of the Club's 50th anniversary. To be awarded to the woman student who has completed Level I and 70 to 90 units of a programme in Engineering with the highest Cumulative Average.

Value: \$200 (30149 020)

THE CFUW (HAMILTON) SCHOLARSHIP

Established in 1945 by the University Women's Club of Hamilton, now the Canadian Federation of University Women. To be awarded to the woman student who attains the highest Full-load Average in the penultimate level of any programme.

Value: \$800 (30150 373)

THE CANADIAN SOCIETY FOR CHEMICAL ENGINEERING PRIZE

Established in 1947 by the Chemical Institute of Canada. To be awarded to the student who has completed Level I and 70 to 85 units of a programme in Chemical Engineering and who attains the highest Full-load Average.

Value: \$50, medal and certificate (30016 027)

THE CANADIAN SOCIETY FOR CHEMISTRY PRIZES

Established in 1947 by the Chemical Institute of Canada. Two awards to be made to students who have completed Level I and 60 to 80 units: (a) one to a student in an Honours programme in Chemistry or Honours Applied Chemistry who attains high standing in chemistry; (b) one to a student in the Honours Biochemistry or Honours Biochemistry and Chemistry programmes who attains high standing in biochemistry and organic chemistry.

Value: Medal and certificate (30017 028)

THE CANADIAN SOCIETY OF CIVIL ENGINEERS

(HAMILTON SECTION) PRIZE

Established in 1987. To be awarded to a student entering the final level of a programme in Civil Engineering who, in the judgment of the Department of Civil Engineering and Engineering Mechanics, has demonstrated participation in extracurricular activities and has attained high academic standing.

Value: Plaque (30018 029)

THE NORMAN N. CASKEY MEMORIAL PRIZE

Established in 1983 by Mrs. 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 30 to 75 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has demonstrated musical excellence.

Value: \$100 (30115)

THE CERTIFIED GENERAL ACCOUNTANTS ASSOCIATION PRIZE

Established in 1983 by the Hamilton Chapter of the Certified General Accountants Association of Ontario. To be awarded to a student who has completed Level I and 30 to 45 units of a programme in Commerce and who, in the judgment of the School of Business, has attained an outstanding Full-load Average and a high standing (a grade of at least A-) in COMMERCE 2AA3.

Value: \$150 (30021 034)

THE CHEMICAL INSTITUTE OF CANADA

(HAMILTON SECTION) PRIZES

Established in 1984 by the Hamilton Section. Two prizes to be awarded to students who have completed Level I and 30 to 50 units: (a) one to a student in an Honours programme in Chemistry who, in the judgment of the Department, shows particular promise in Chemistry; and (b) one to a student in a programme in Chemical Engineering who, in the judgment of the Department, shows particular promise in Chemical Engineering.

Value: \$50 each (30023 035)

THE 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 60 to 75 units of an Honours programme in Social Sciences and attains the highest Full-load Average.

Value: \$1,200 (30068 239)

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 CLASS OF '37 SCHOLARSHIP

Established in 1987 by the Graduating Class of 1937. To be awarded alternately to the student who has completed Level I and 30 to 45 units of an Honours programme in Humanities and of an Honours programme in Science, and who has attained an outstanding Full-load Average.

Value: \$750 (30026 375)

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 60 units of an Honours programme in Drama who, in the judgment of the School of Art, Drama and Music, has achieved notable academic standing and has made a significant contribution to theatre on campus.

Value: \$600 (30214 329)

THE CLASS OF '44 SCHOLARSHIP

Established by the Class of '44 in celebration of their 50th anniversary. To be awarded to the student entering the penultimate year of any programme who has attained the highest Full-load Average.

Value: \$700 (30224 361)

THE CLASS OF '50 SCHOLARSHIP IN HONOURS ECONOMICS

Established in 1982 by the Graduating Class of 1950 in Honours Economics. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Economics, and who, in the judgment of the Department of Economics, has attained a high Full-load Average and has demonstrated leadership in undergraduate extracurricular activities.

Value: \$400 and book (30027 038)

THE CLASSICS PRIZE

Established in 1978 by Professor D.M. Shepherd. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Classics and who, in the judgment of the Department of Classics, shows most promise.

Value: \$100 (30028 040)

THE CONSULTING ENGINEERS OF ONTARIO (CEO) SCHOLARSHIP

Established in 1990 by the Consulting Engineers of Ontario. To be awarded to a student who has completed Level III of a programme in Engineering who, in the judgment of the Faculty of Engineering, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in extracurricular activities.

Value: \$500 (30183 252)

THE CONSUMERS GLASS SCHOLARSHIP

Established in 1988. To be awarded to a student entering Level V of the Ceramic Engineering and Management programme who, in the judgment of the Department of Materials Science and Engineering, has attained notable academic standing.

Value: \$1,000 (30029 345)

THE DR. RUDOLF DE BUDA SCHOLARSHIP

Established in 1989 in memory of Professor de Buda by family, friends and colleagues. To be awarded to a student who has achieved high standing after completion of Level I and 71 to 73 units of Electrical or Computer Engineering programme and who elects to do a fourth-year thesis on a topic in the field of Information Theory.

Value: \$1,000 (30041 240)

The 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 JOHN DEERE LIMITED SCHOLARSHIP

Established in 1992 by John Deere Limited. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Commerce programme who, in the judgment of the School of Business, has demonstrated outstanding academic achievement in courses offered by the Human Resource/Labour Relations Area and has displayed leadership and self-motivation in extracurricular activities.

Value: \$2,000 (30207 305)

THE DELOITTE & TOUCHE SCHOLARSHIP

Established in 1962. To be awarded to the student who has completed Level I and 60 to 75 units of a programme in Commerce and who attains a high Full-load Average and in that session attains an average of at least 10.0 in COMMERCE 2AB3 and 3AB3.

Value: \$500 (30148 177)

THE ROSEMARY DOUGLAS-MERCER MEMORIAL PRIZE

Established in 1989. To be awarded to a student who has completed Level I and 30 to 45 units of an Honours programme in French and who has attained the highest average in FRENCH 2BB3 and one of 2J03 or 2JJ3 and one of 2W03 or 2WW3.

Value: \$225 (30124)

THE HORACE A. DULMAGE PRIZE IN PHILOSOPHY

Established in 1976 in honour of Professor Horace A. Dulmage by his colleagues and friends upon the occasion of his retirement from McMaster University. To be awarded to the full-time student in Level II of an Honours programme in Philosophy who attained the most notable standing in his or her Level I programme.

Value: \$150 (30066)

THE HELEN EMERY SCHOLARSHIPS IN ENVIRONMENTAL SCIENCE

Established in 1990 by Miss Helen Emery of Barrie, Ontario. Two scholarships to be awarded: (a) one to a student entering the Honours Environmental Science Programme; and (b) one to a student entering Level III of the Honours Geography and Environmental Sciences or Honours Environmental Science Programmes who, in the judgment of the School of Geography and Geology, demonstrates leadership and influence in addressing environmental matters. Recipients must have attained a Full-load Average of 9.5 or greater.

Value: \$1,400 each (30184 380)

THE ENERGYRADIO SCHOLARSHIP

Established in 1998 by Shaw Radio Ltd. To be awarded in alternate years to students who, in the judgment of the School of Art, Drama & Music, have demonstrated excellence in Music.

Value: \$5,000 (30247 797)

THE ERNST & YOUNG SCHOLARSHIP

Established in 1952 by Clarkson Gordon. Renamed in 1989. To be awarded to the student who has completed Level I and 30 to 45 units of a programme in Commerce and who attains the highest Full-load Average and in the session attains a grade of at least A- in COMMERCE 2AA3.

Value: \$350 (30050 241)

THE L.F. EULL PRIZE

Established in 1980 by Group Eight Engineering Limited. To be awarded to the student in a programme in Electrical Engineering who attains the highest average in ELEC ENG 3PI4.

Value: \$200 (30098 057)

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 30 units of an Arts and Science programme and who has demonstrated outstanding achievement in both arts and science.

Value: \$350 (30007 372)

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 Programme and entering the final session of an Honours programme in French who, in the judgment of the Department of French, has attained the highest level of accomplishment in knowledge of French language, literature and culture. The recipient must obtain a Cumulative Average of at least 8.0 and no failures in the review at the end of the Fall/Winter session immediately prior to entering the *Humanities Study Abroad Programme*.

Value: \$1,200 (30054 059)

THE KLAUS FRITZE MEMORIAL PRIZE

Established in 1980 by friends of Professor K. Fritze. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours Chemistry programme with the highest Full-load Average.

Value: \$150 (30096 063)

THE MERRILL FRANCIS GAGE SCHOLARSHIP

Established in 1982 from the estate of Merrill Francis Gage of Hamilton. To be awarded to a student who has completed Level I and 30 to 75 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has demonstrated excellence in performance on a keyboard or orchestral instrument.

Value: \$500 (30110)

THE GWEN GEORGE AWARD

Established in 1997 in loving memory of Gwen George by her family and friends. To be awarded to a student who has completed any Level I programme who, in the judgment of a Selection Committee, has achieved notable academic standing and has demonstrated qualities of leadership and service to McMaster University and/or the Hamilton-Wentworth, surrounding or world communities. The scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 8.0.

Value: \$4,500 (\$1500 each year) (30240 773)

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 60 to 75 units of Honours B.Sc. programmes. Ordinarily, not more than one scholarship will be awarded in any one discipline.

Value: \$300 each (30079)

THE GEORGE P. GILMOUR MEMORIAL SCHOLARSHIP

Established in 1987 by the Graduating Class of 1962 in honour of Dr. G.P. Gilmour (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 60 to 75 units of an Honours programme in the Arts and Science Programme and who, in the judgment of the Arts and Science Programme Admissions, Awards, and Review Committee, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in extracurricular activities.

Value: \$300 (30058 067)

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 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: \$1,000 (30034 242)

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 18 units of History, all taken in the same session, with an average of at least A-.

Value: \$1,000 (30231 556)

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 30 to 45 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has demonstrated excellence in music.

Value: \$100 for books (30062 069)

THE RUTH AND JACK HALL PRIZE

Established in 1983 by Jackie MacDonald in memory of her parents. To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in Computer Science, or Level I and 70 to 90 units of a programme in Computer Engineering, and who attains the highest Full-load Average.

Value: \$200 (30131)

THE RONALD K. HAM MEMORIAL PRIZE

Established in 1971 in memory of Professor R.K. Ham by his friends and former colleagues. Awarded to the student who has completed Level I and at least 60 units and who, in the judgment of the Department of Materials Science and Engineering, shows most promise as a materials scientist or engineer.

Value: \$100 (30128)

THE HAMILTON CHEMICAL ASSOCIATION PRIZE

Established in 1953 by the Trustees of the Hamilton Chemical Association in memory of Dean C.E. Burke. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Chemistry and who attains the highest Cumulative Average.

Value: \$200 (30063)

THE HAMILTON ECONOMIC DEVELOPMENT COMMISSION SCHOLARSHIPS

Established in 1976. (a) Two scholarships to be awarded on the basis of Full-load Average to students entering Level II of a Commerce programme; (b) Four scholarships to be awarded on the basis of Full-load Average: two to students who have completed Level I and 30 to 45 units, and two to students who have completed Level I and 60 to 75 units of a programme in Commerce. Recipients must have obtained all their secondary school education in the Hamilton-Wentworth Region.

Value: \$800 each (six awards) (30064 072)

THE HAMILTON HARBOUR COMMISSIONERS SCHOLARSHIP

Established in 1994 by the Commissioners in recognition of outstanding Canadian students who continue their studies at McMaster University. To be awarded to a student who has completed Level I and 60-75 units of a programme in Commerce who, in the judgment of the Faculty of Business, has demonstrated outstanding academic achievement and involvement in the local community.

Value: \$1,500 (30227 389)

THE 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 30 to 45 units of a programme in Commerce and who, in the judgment of the School of Business, has achieved high standing in the required Level II Commerce courses, taken in one session.

Value: \$350 (30037 075)

THE HELLENIC PRIZE

Established in 1995 by the Greek communities of Hamilton and Burlington. To be awarded to a student entering Level IV who has completed at least 12 units in subjects pertaining to Greek studies and who, in the judgment of the Faculty of Humanities, demonstrates outstanding academic achievement in Greek studies.

Value: \$1,000 (30226 386)

THE ANNA MARIE HIBBARD SCHOLARSHIP

Established in 1992 from the bequest of Anna Marie Hibbard. To be awarded to the student completing Level I who attains the highest Full-load Average. The recipient may not hold another scholarship of equal or greater value.

Value: \$1,600 (30208 300)

THE ROSE HILL SCHOLARSHIP

Established in 1985 by the alumni, faculty and staff of the School of Physical Education and Athletics as a tribute to Professor Rose Hill, long-time teacher, coach and administrator in the School. To be awarded to a student who has completed 60 units of the Kinesiology programme and who, in the judgment of the Department of Kinesiology, best demonstrates the philosophy of physical education espoused by Professor Hill throughout her career, namely, excellence in scholarship and leadership and participation in sport, dance or fitness.

Value: \$1,200 (30130 077)

THE DR. THOMAS HOBLEY PRIZE

Established in 1936 by bequest of Mrs. A. McNee of Windsor. To be awarded to a woman student on the basis of the Full-load Average obtained in the penultimate level of a programme in Economics or Political Science.

Value: \$200 (30042)

THE DR. HARRY LYMAN HOOKER SCHOLARSHIPS

Established in 1981, and resulting from the bequest of Dr. H.L. Hooker. Awarded for overall academic excellence (Full-load Average of at least 9.5) to students in undergraduate programmes, with the exception of those in their graduating session and those retaining scholarships of \$1,000 or greater. Each year quotas are established for each Faculty and other academic units in proportion to the number of full-time undergraduate students who obtain a Full-load Average of 9.5 or greater.

Value: \$1,500 each (30043)

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (HAMILTON SECTION) PRIZES

Established in 1961. Two prizes to be awarded to students entering the final level who qualify on the basis of high academic standing and, in the judgment of selection committees, demonstrate interest in university activities: a) one to a student in an Electrical Engineering Programme; b) one to a student in a Computer Engineering Programme.

Value: \$200 and a book (30071 083)

THE INTERMETCO LIMITED SCHOLARSHIP

Established in 1977. To be awarded to the student who has completed Level I and 70 to 90 units of a programme in Mechanical Engineering and who, in the judgment of the Department of Mechanical Engineering, has attained notable standing.

Value: \$500 (30072 084)

THE INTER-RESIDENCE COUNCIL SCHOLARSHIP

Established in 1995 by the McMaster Inter-Residence Council in recognition of the IRC's continued support of the University and its students. To be awarded to a student who has completed at least Level I of any programme who, in the judgment of an Awards Selection Committee of Undergraduate Council, has demonstrated notable academic achievement and has made a significant contribution to the University life of resident students with disabilities.

Value: \$600 (30228 392)

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 ITCA COMMUNITY INVOLVEMENT PRIZE

Established in 1982 by Italian Canadian Community Involvement Incorporated. To be awarded to the student who has completed at least 30 units beyond Level I of a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in at least 9 units of Italian courses above Level I. The recipient must have graduated from a secondary school in the Hamilton area.

Value: \$150 (30070 086)

THE IVEY SCHOLARSHIP

Established in 1971 by Professor and Mrs. G.S. French in memory of Mr. and Mrs. I.E. Ivey, the parents of Mrs. French. To be awarded to the student who has completed Level I and 60-75 units of an Honours programme in Music and who, in the judgment of the School of Art, Drama and Music, has attained notable standing.

Value: \$125 (30074 087)

The 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 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 I and 110 to 130 units of a programme in Engineering and Management. Award to be based on distinguished academic performance during the student's undergraduate career. Consideration will also be given to noteworthy contribution in extracurricular activities.

Value: \$600 and certificate (30002 259)

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 KATHLEEN MARY JOHNSTON MEMORIAL PRIZE

Established in 1963 by Lawrence D. Johnston in memory of his wife. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Religious Studies and who attains the highest Full-load Average.

Value: \$125 (30094 090)

THE JURY PRIZE

Established in 1941 by bequest of J.H. Jury of Bowmanville. To be awarded to the student who has completed Level I and 30-45 units of the Honours History programme and who attains the highest Full-load Average.

Value: \$150 (30093)

THE STANFORD N. KATAMBALA GEOLOGY PRIZE

Established in 1965 by contributions from friends and associates of Stanford N. Katambala, a Year III Honours Geology student from Tanzania, killed in a mine accident in Northern Ontario in September 1964. To be awarded to a student who has completed Level I and 60 to 75 units of the Honours Geology programme and who attains high standing in Geology.

Value: \$50 (30143)

THE ROBERT A. KENNEDY SCHOLARSHIP

Established in 1998 by Robert A. Kennedy. To be awarded to any student entering a Level II, III or IV programme in the Faculty of Business who, in the judgment of the Faculty, demonstrates outstanding academic achievement.

Value: \$250 (30243 788)

THE GEORGE P. AND LEATHA M. KEYS SCHOLARSHIPS

Established in 1982 by Mrs. Leatha Keys. Three scholarships to be awarded to students who, in the judgment of the Departments of Computing and Software, and of Mathematics and Statistics, have demonstrated outstanding achievement in Honours programmes in those Departments: (a) one to a student who has completed Level I and 30 to 75 units of the Computer Science programme; (b) one to a student who has completed Level I and 60 to 75 units of a programme in Mathematics; and (c) one to a student who has completed Level I and 60 to 75 units of a programme in Statistics.

Value: \$350 each (30057 091)

THE KIT MEMORIAL SCHOLARSHIP

Established in 1936 by the Hamilton Branch of the Canadian Women's Press Club (now the Media Club of Canada, Hamilton Branch) in memory of the brilliant journalist and writer, the first president of the Canadian Women's Press Club, Kathleen Blake Coleman, widely known on this continent as Kit. To be awarded to a woman student either on completion of Level I and at least 30 units on the basis of journalistic ability or on completion of Level I and 60 to 75 units of an Honours programme in English on the basis of Full-load Average.

Value: \$175 (30095 092)

THE KPMG SCHOLARSHIP

Established in 1956 by Pettit, Hill and Bertram, Toronto, and continued after amalgamation of firms. To be awarded to an outstanding student on the basis of qualifications and academic record after the completion of Level I and 60 to 75 units of a programme in Commerce. Preference will be given to students who plan to continue their studies after graduation with a practising firm of chartered accountants.

Value: \$350 (30146 175)

The 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 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 programme who, in the judgment of a Selection Committee, has achieved notable academic standing and has demonstrated journalistic skills in the written media. The scholarship is tenable for up to three years provided the recipient maintains a Cumulative Average of 8.0. Students who wish to be considered for this award should consult the Office of Student Financial Aid and Scholarships.

Value: \$3,600 (\$1,200 each year) (30212 321)

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 HOWARD O. LAWRENCE SCHOLARSHIP

Established in 1988 by Industrial Ceramics Limited. To be awarded to a student entering Level IV of the Ceramic Engineering and Management programme and who, in the judgment of the Department of Materials Science and Engineering, has achieved high standing in Level III of the programme.

Value: \$500 (30067)

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 programme 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 376)

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 Full-load Averages in an Engineering and Management programme: (a) one to a student who has completed Level I and 70 to 90 units, and (b) one to a student who has completed Level I and at least 109 units beyond Level I.

Value: \$400 each (30126 099)

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 60 to 75 units in an Honours programme in Sociology and who, in the judgment of the Department of Sociology, is the most promising student.

Value: \$100 (30010)

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 60 to 75 units of an Honours programme in Sociology and who, in the judgment of the Department of Sociology, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in activities other than sports.

Value: \$700 (30100 102)

THE RONALD E. MATERICK SCHOLARSHIP

Established in 1987 by Ronald E. Materick (Class of '70). To be awarded to a student who has completed Level I and 70 to 85 units of a programme in Civil Engineering and who, in the judgment of the Department of Civil Engineering, has attained notable academic standing.

Value: \$1,000 (30127 106)

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 60 to 75 units of the Honours English and History programme and who has the highest Full-load Average.

Value: \$425 (30105)

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 60 to 75 units of an Honours Classics programme and who, in the judgment of the Department of Classics, has attained high academic standing. Preference will be given to students from the Regional Municipality of Hamilton-Wentworth.

Value: \$350 (30180 260)

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 30 to 45 units of an Honours programme in Physics and who, in the judgment of the Department of Physics and Astronomy, has attained notable standing.

Value: \$450 (30186 254)

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 60 to 75 units of an Honours programme in Physics with a high Full-load Average.

Value: \$350 (30011 109)

THE McMASTER HUMANITIES SOCIETY SCHOLARSHIP

Established in 1998 by the McMaster Humanities Society. Two scholarships to be awarded to students who have completed Level I and 30 units and who, in the judgment of the Faculty of Humanities, have demonstrated an enthusiastic interest in the University through their involvement in extra-curricular activities.

Value: \$250 each for books (30244 798)

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 30 units of a programme in Gerontology and who attains the highest Full-load Average. The student must enrol in a programme in Gerontology in the subsequent Fall/Winter session.

Value: \$300 (30187 271)

THE 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 programme 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: \$1,000 (30108 243)

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 35 to 50 units of a programme in Civil Engineering. Awards are based on scholarship and evidence of practical engineering experience and background.

Value: \$650 each (30139 112)

THE PETER McPATER MEMORIAL SCHOLARSHIP

Established in 1988 by Peter McPater's friends in recognition of his art, craftsmanship and humanitarianism. To be awarded to a student who has completed Level I and 60 to 75 units of a programme in Honours Art or Honours Art History and who, in the judgment of the School of Art, Drama and Music, is outstanding.

Value: \$500 (30119 114)

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 entering Level IV of the Honours Biology programme with an outstanding Full-load Average and a grade of at least A- in BIOLOGY 3E03 in Level III.

Value: \$350 (30077 115)

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 programme in Geography and Environmental Studies, Geography and Environmental Science, Environmental Science, or Engineering and Society, who attains the highest Full-load Average.

Value: \$700 (30213 181)

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 60 to 75 units in an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, is outstanding in the field of inorganic chemistry.

Value: \$150 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 sons of members of Her Majesty's Canadian Armed Forces on the basis of Full-load Average.

Value: \$800 (30047)

THE MOULTON COLLEGE SCHOLARSHIP

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 Full-load Averages: (a) one after completion of Level I and 30 to 45 units, and (b) one after completion of Level I and 60 to 75 units.

Value: \$1,000 each (30112 377)

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 programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in at least 9 units of German courses above Level I.

Value: \$300 (30005 119)

THE NCR (WATERLOO) DIVERSITY SCHOLARSHIP

Established in 1999 by NCR (Waterloo). To be awarded to a student entering Level II in the Engineering and Management programme who, in the judgment of the programme has achieved outstanding academic standing. The scholarship is tenable for up to four years provided the student maintains a 9.5 Sessional Average.

Value: \$26,000 (\$6,500 per year) (30250 826)

THE NIEMEIER SCHOLARSHIP

Established in 1938 and augmented in 1952 by Dr. O.W. Niemeier. To be awarded to the student who attains the highest Full-load Average at the completion of Level I and 31 to 55 units of the Nursing programme.

Value: \$600 (30114 244)

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: \$650 (30203 144)

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 60 to 75 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise as an experimental scientist.

Value: \$100 for books (30053)

THE ONTARIO HYDRO SCHOLARSHIP IN ELECTRICAL ENGINEERING

Established in 1986. To be awarded to the student who has completed Level I and 35 to 55 units of a programme in Electrical Engineering and who, in the judgment of the Department of Electrical and Computer Engineering, has achieved notable standing (Full-load Average of at least 9.5), displayed strong communication skills, and demonstrated leadership ability and involvement in extracurricular activities.

Value: \$2,400 (30116 127)

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 programme in Classics who, in the judgment of the Department of Classics, demonstrates outstanding achievement in Greek or Latin.

Value: \$50 (30060 133)

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 70 to 85 units of the Civil Engineering programme, or Level I and 110 to 130 units of the Civil Engineering and Management programme. Award is based on scholarship Full-load Average of at least 9.5 and evidence of leadership, self-motivation, and practical aptitude appropriate for a future in the construction industry.

Value: \$1,100 (30052 134)

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 Programme who, in the judgment of the School of Art, Drama and Music, has attained notable academic standing and demonstrated excellence in keyboard performance.

Value: \$300 (30222 356)

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 60 to 75 units of an Honours programme in Economics and who, in the judgment of the Department of Economics, has attained notable academic standing.

Value: \$500 (30120 135)

THE PIONEER GROUP LIMITED SCHOLARSHIP

Established in 1988. To be awarded to a student who has completed Level I and at least 30 units of a programme in Gerontology and who, in the judgment of the Gerontology Committee on Instruction, achieves high standing in 12 units of Gerontology courses (excluding GERONTOL 1A06) and who, demonstrates leadership in the field of Gerontology.

Value: \$350 (30121 371)

THE PRICE WATERHOUSE COOPERS SCHOLARSHIP

Established in 1959 by Price Waterhouse and Co. To be awarded to the outstanding student on the basis of qualifications and academic record after completion of Level I and 60 to 75 units of a programme in Commerce. Preference will be given to students who plan to continue their studies after graduation with a practising firm of chartered accountants.

Value: \$350 (30122 138)

THE PSYCHOLOGY SOCIETY PRIZES

Established in 1985 by the Psychology Society and the Faculty and Alumni of the Department of Psychology. Three prizes to be awarded to students who have completed Level I and 60 to 75 units with the highest Full-load Average: (a) one in the Honours Psychology B.A. programme; (b) one in the Honours Psychology B.Sc. programme; and (c) one in a combined Honours programme in Psychology.

Value: \$50 each (30123 141)

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 I and 30 to 45 units of an Honours programme in History with the highest Full-load Average and who in that session achieves a grade of at least A- in HISTORY 2J06 (Canadian History).

Value: \$600 (30039 142)

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 programme in Music (Education) and who, in the judgment of the School of Art, Drama and Music, has attained notable standing.

Value: \$350 (30135 143)

THE ELLA JULIA REYNOLDS SCHOLARSHIP

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 30 to 75 units of the Honours English or the Honours English and History programmes with a Full-load Average of at least 9.5. The recipients must not be holders of another scholarship.

Value: \$900 each (30044)

THE HERBERT A. RICKER SCHOLARSHIP

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 (Full-load Average of at least 9.5) and character to: (a) two to students who have completed

Engineering I, or Level I and 35 to 90 units of a programme in Engineering, and (b) two to students who have completed Science I (or Natural Sciences I), or Level I and 30 to 75 units of a programme in Science. The recipients must not be holders of another scholarship.

Value: \$1,500 each (30065 145)

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 60 to 75 units of an Honours programme in Geography and who, in the judgment of the School of Geography and Geology, has attained high academic standing.

Value: \$325 (30129 146)

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 30-75 units of an Honours programme in Music or Art who, in the judgment of the School of Art, Drama and Music has demonstrated outstanding achievement.

Value: \$600 (30229 393)

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 60 to 75 units and who, in the judgment of the Department of History, attains notable standing in an Honours programme in History.

Value: \$100 for books (30045 245)

THE SCHOOL OF ART, DRAMA AND MUSIC SCHOLARSHIP IN MUSIC

Established in 1993 by the Department of Music which later became part of the School of Art, Drama and Music. To be awarded to a student who, in the judgment of the School of Art, Drama and Music, has demonstrated academic excellence in Music.

Value: \$1,000 (30216 324)

THE 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 60 to 75 units of the Honours English programme, and who attains the highest Full-load Average.

Value: \$400 (30136 150)

THE CHARLOTTE E. SEIDEL SCHOLARSHIP

Established in 1994 by Genevieve J. Heinz in memory of Charlotte E. Seidel. To be awarded to a student in a programme in Music who, in the judgment of the School of Art, Drama and Music, has attained high academic standing and has made significant contributions to the campus or community.

Value: \$500 (30223 357)

THE LOUIS J. SHEIN SCHOLARSHIP

Established in 1990 by family and friends in memory of Dr. L.J. Shein, founding chair of the Russian Studies programme and faculty member from 1958 to 1980. To be awarded to the student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department has attained notable standing in at least nine units of Russian courses above Level I.

Value: \$400 (30189 255)

THE SHELL CANADA SCHOLARSHIPS**IN ENGINEERING AND MANAGEMENT**

Established in 1983. Three scholarships to be awarded to students who have completed Level I and at least 110 units of a programme in Engineering and Management. Awards will be based on scholarship and on the quality of and creativity shown in written and oral reports.

Value: \$800 each (30137 384)

THE SHENSTONE PRIZE

Established in 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 (or Natural Sciences I) and who attains the highest average in any four of the Level I courses in Chemistry, Physics and Biology.

Value: \$125 (30138)

THE GERALD AND 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 30 to 45 units of the Honours Physics or the Honours Chemistry and Physics programme with highest Full-load Average.

Value: \$300 (30059 156)

The recipient of this award is eligible to receive additional aid through the corresponding Supplementary Bursary Aid Fund if he/she demonstrates financial need. Please see the section on *Supplementary Bursary Aid for Award Recipients* in the *Student Financial Aid* section of this Calendar.

THE PATRICIA L. 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 30 to 45 units and who attain the highest Full-load Average: (a) one in the three-level English programme and (b) one in the three-level Psychology B.A. programme. Value: \$250 each (30118)

THE SOCIETY OF MANAGEMENT ACCOUNTANTS OF ONTARIO SCHOLARSHIP

Established in 1983. To be awarded to the student who has completed Level I and 60 to 75 units of a programme in Commerce and who obtains the highest Full-load Average and in that Session attains a grade of at least A- in COMMERCE 2AB3.

Value: \$500 (30140 158)

THE SONS OF ITALY OF ONTARIO SCHOLARSHIP

Established in 1971 by the Order Sons of Italy of Ontario. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the department, has attained notable standing in at least 9 units of Italian courses above Level I.

Value: \$500 (30141 160)

THE SOUTH ONTARIO ECONOMIC

DEVELOPMENT COUNCIL SCHOLARSHIP

Established in 1973 by the South Ontario (formerly Niagara) Economic Development Council. Two scholarships to be awarded, normally one in each of the B.A. and B.Sc. programmes, to the students who have completed Level I and 60 to 75 units of the Honours Geography programme and who elect GEO 4R06 (formerly GEOG 4C06) 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: \$1,200 each (30142 161)

THE MARNIE SPEARS SCHOLARSHIP

Established in 1993 by many friends, colleagues and alumni of McMaster University as a tribute to Marnie Spears (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 30 units of an Honours programme with notable academic standing and who, in the judgment of a Selection Committee, has demonstrated leadership in public, community or University alumni relations.

Value: \$550 (30217 323)

THE SALVATORE SPITALE MEMORIAL PRIZE

Established in 1984 by the Spitale family. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in at least nine units of Italian courses above Level I and has demonstrated an active involvement in community life.

Value: \$100 (30133 162)

THE S.L. SQUIRE SCHOLARSHIP

Established in 1938 by bequest of S.L. Squire of Toronto. Four awards to be made to students in any Level I programme who attain the highest standing in any two of MATH 1AA3, 1B03, 1H05, 1NN3, and in other tests provided for this scholarship by the Department of Mathematics and Statistics.

Value: \$400 each (30132)

THE CLARENCE L. STARR PRIZE

Established in 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 Full-load Average.

Value: \$150 (30025)

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 30 to 45 units of any programme and who gives evidence of outstanding academic achievement and leadership.

Value: \$425 for books (30103)

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 60 to 75 units of an Honours programme in French and who, in the judgment of the Department of French, has achieved notable academic standing.

Value: \$400 (30104 166)

THE MARK JOHN STOJCIC SCHOLARSHIP

Established in 1997 by bequest of Mark John Stojcic. Two scholarships to be awarded to students entering the fourth year of a Materials Engineering programme who, in the judgment of the Faculty of Engineering, demonstrate outstanding academic achievement.

Value: \$1,000 each (30242 780)

THE JUANITA LEBARRE SYMINGTON SCHOLARSHIP

Established in 1981 by The Women's Art Association of Hamilton in memory of Juanita LeBarre Symington. To be awarded to the student entering the graduating session of the Honours Art programme with the highest Full-load Average. The recipient must be from the Hamilton-Wentworth Region.

Value: \$500 (30092 169)

THE T.H.B. SYMONS PRIZE IN CANADIAN STUDIES

Established in 1978. To be awarded to the student who has completed Level I and 60 to 75 units of a programme in Political Science who, in the judgment of the Department of Political Science, has achieved notable standing in at least nine units of Canadian Politics courses.

Value: \$250 (30144 170)

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 HUGH R. THOMPSON MEMORIAL PRIZE

Established in 1960 in memory of Dr. Hugh R. Thompson. To be awarded to the student who has completed Level I and 30 to 45 units of the Honours Geography or the Honours Geography and Geology programme with the highest Full-load Average.

Value: \$200 (30069 174)

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 60 to 75 units of the Honours Computer Science, Honours Computer Science and Mathematics, Honours Computer Science and Statistics, Honours Mathematics or Honours Statistics programme, and who attains a high Full-load Average.

Value: \$225 (30040)

THE GRAHAM RONALD TOOP SCHOLARSHIP

Established in 1989 in memory of Graham Toop (Class of '89) by family and friends. To be awarded to the student entering Level IV of an Honours Philosophy programme and who, in the judgment of the Department of Philosophy, has demonstrated leadership and influence in scholarly activities related to the field of philosophy.

Value: \$300 (30190 256)

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 VALLEY CITY MANUFACTURING CO. LTD. SCHOLARSHIPS

Established in 1991 by the Valley City Manufacturing Co. Ltd. of Dundas, Ontario. Two scholarships to be awarded to the students enrolled in an Honours B.Sc. programme: one to the student entering Level II and one to the student entering Level III who attain the highest Full-load Average. Recipients may not hold another scholarship of equal or greater value.

Value: \$1,500 each (30205 227)

THE VAREY SCHOLARSHIP

Established in 1978 by J.C. Varey, Dundas, in memory of Albert E. Varey. To be awarded to a student in an Honours Programme in Classics who, in the judgment of the Department of Classics has achieved notable academic standing.

Value: \$200 (30151 182)

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 Programme in Philosophy who, in the judgment of the Department of Philosophy, shows the most academic promise.

Value: \$750 (30197)

THE WEISZ FAMILY FOUNDATION SCHOLARSHIP

Established in 1982. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Commerce programme and who attains the highest Full-load Average (at least 9.5).

Value: \$1,500 (30152 184)

300 UNDERGRADUATE AWARDS — FULL LOAD

THE MARJORIE AND CHARLES WILKINSON SCHOLARSHIP

Established in 1991 by the family in honour of Marjorie Wilkinson, author of many books and addresses on religion, and co-founder of the Hamilton Lay School of Theology at McMaster in 1966, and Charles Wilkinson, religion editor and writer for the Hamilton Spectator from 1963-1985. To be awarded to the student who has completed at least 30 units beyond Level I of an Honours programme in Religious Studies and who, in the judgment of the Department of Religious Studies, has attained notable academic standing in courses in Christian thought.

Value: \$425 (30191 272)

THE EMANUEL WILLIAMS SCHOLARSHIP IN PHYSICS

Established in 1948 by Arabel M. Williams of Port Colborne as a memorial to her brother. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Physics with the highest Full-load Average.

Value: \$800 (30049)

THE JANICE WILSON MEMORIAL PRIZE

Established in 1961 in memory of Janice Mary Wilson of Stoney Creek. To be awarded to the woman student who has completed Level I and 30 to 45 units of an Honours History programme and who attains the highest Cumulative Average.

Value: \$100 (30080 378)

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 30 to 45 units of a programme in Honours Art or Honours Art History with the highest Full-load Average. The recipients must be from the Hamilton-Wentworth Region.

Value: \$250 each (30153 185)

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 I and 60 units of the Kinesiology programme and has demonstrated outstanding achievement in the programme.

Value: \$200 (30075 189)

THE GLADYS A. YOUNG SCHOLARSHIP

Established in 1991 by T.G. Harvey in honour of his wife, Gladys (B.Sc. '37, M.Sc. '38), one of a group of researchers who commenced radio astronomy research with the National Research Council of Canada. To be awarded to the student who has completed Level I and 30 to 65 units of an Honours programme in Mathematics or Physics with the highest Full-load Average. The recipient must not hold another scholarship of equal or greater value.

Value: \$1,600 (30206 303)

The 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 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 70 to 85 units of a programme in Nursing and who, in the judgment of the School of Nursing, has demonstrated achievement, initiative, and commitment to gerontological nursing through clinical practice, term papers, research interest, or community activities and who pursues these interests in Level IV.

Value: \$900 (30101 190)

◆ SENATE SCHOLARSHIPS

The following scholarships are awarded for general academic proficiency at the discretion of the Undergraduate Council.

Every full-time student who is eligible for review in May but is not graduating in any programme in any Faculty or other academic unit will be eligible for consideration for a Senate Scholarship, provided that he or she attains a Full-load Average of 9.5 in addition to meeting the conditions noted in Category B, above.

Each year, quotas of Senate Scholarships are established for each Faculty and other academic units in proportion to the number of full-time undergraduate students enrolled, all of which were funded by the donors listed below.

Value: \$800 each

THE EDGAR R. ASHALL SCHOLARSHIP

Established in 1965 by bequest of his wife, Edith M. Ashall. (30162)

THE EDWIN MARWIN DALLEY MEMORIAL SCHOLARSHIPS

Established in 1965 by bequest of Edwin Marwin Dalley of Hamilton. (30164)

THE EDUCATION FOUNDATION OF THE FEDERATION OF CHINESE CANADIAN PROFESSIONALS OF ONTARIO SCHOLARSHIPS

Established in 1988 by the Foundation. Two scholarships to be awarded: (a) one to a student in a programme in Arts and Science, and (b) one, on a rotating basis, to a student in a programme in Chemistry, Mechanical Engineering, and Physics. (30163 056)

THE HAMILTON INDUSTRIAL SCHOLARSHIPS

Established in 1958. (30165)

THE BERTRAM OSMER HOOPER SCHOLARSHIP

Established in 1957 by bequest of Isobel F. Hooper. To be awarded in Arts. (30161)

THE NINA LOUISE HOOPER SCHOLARSHIP

Established in 1959 by bequest of Bertram O. Hooper. (30200)

THE CLAUDE G. LISTER SCHOLARSHIP

Established in 1990 by bequest of Pauline Detwiler Lister in memory of her husband. To be awarded to a student in a programme in the School of Business. (30199 262)

THE TONY PICKARD MEMORIAL SCHOLARSHIP

Established in 1973 by his wife and family, in honour of Captain Antony F. Pickard, O.B.E., C.D., R.C.N. (Ret'd). (30172)

ROTARY CLUB OF HAMILTON SCHOLARSHIP

Established in 1989. (30168 263)

THE HILDA SAVAGE MEMORIAL SCHOLARSHIP

Established in 1960 by bequest of Bertha Savage. (30166)

THE SOMERVILLE SCHOLARSHIPS

Established in 1966 by bequest of William L. Somerville, architect of the McMaster University buildings of 1930. (30169 159)

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 STELCO - McMASTER SCHOLARSHIPS

Established in 1997 by McMaster University in recognition of Stelco and its ongoing commitment to McMaster students. Three scholarships will be awarded to undergraduate students who demonstrate outstanding academic achievement.

Value: \$800 each (30238 763)

THE STOBO SCHOLARSHIP

Established in 1957 by bequest of William O. Stobo. (30170)

THE UNIVERSITY SCHOLARSHIPS

Made available from time to time by authorization of the Board of Governors of the University. (30173)

THE MARGUERITE Z. YATES SCHOLARSHIP

Established in 1960 by bequest of Mrs. W.H. Yates of Hamilton. (30167)

THE YATES SCHOLARSHIPS

Established in 1963 by bequest of William Henry Yates of Hamilton. (30171)

◆ RESIDENCE SCHOLARSHIPS

Nine scholarships were established in 1982 by the University for students in residence at the University. Three were named 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.

In addition to meeting the conditions noted in Category B (above), the recipients must express intent to live in residence in the following academic year. The monetary benefits will be credited to residence fees in January.

The following scholarships are awarded to the student in each residence with the highest Full-load Average (at least 9.5) in an undergraduate programme, with the exception of those in their graduating session:

Sheila Scott Scholarships for Brandon Hall (two awards) (30202)

Sheila Scott Scholarship for Wallingford Hall (30158)

Bates Residence Scholarship (30155)

Edwards Hall Residence Scholarship (30156)

Hedden Hall Residence Scholarship (30198)

Matthews Hall Residence Scholarship (30157)

McKay Hall Residence Scholarship (30201)

Moulton Hall Residence Scholarship (30239)

Wallingford Hall Residence Scholarship (30237)

Whidden Hall Residence Scholarship (30159)

Woodstock Hall Residence Scholarship (30160)

Value: \$300 each

◆ TRAVEL SCHOLARSHIPS

Students who wish to be considered for these awards should consult the Office of Student Financial Aid and Scholarships before January 15.

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. Two scholarships to be awarded to students who have completed Level I and 60 to 75 units on the basis of excellence in a modern language or languages, English, and History (with emphasis on French). The purpose of the scholarships is to enable the winners to study abroad during the vacation before the final Fall/Winter session.

Value: \$5,500 each (30174)

THE 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 a student enrolled in a programme in Biochemistry, Biology, Chemistry, Commerce, Engineering Physics, English, French, Geology, History, Materials Science, Mathematics, Modern Languages, Physics or Religious Studies who demonstrates high academic standing and is participating in one of McMaster's formal exchange programmes. Preference will be given to students who have demonstrated a lively interest in the humanities and the human and social implications of scientific developments.

Value: \$1,000 (30236 561)

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 programme. To be awarded to a student who has completed Level I and 30 to 72 units of an Honours programme in the Arts and Science Programme. Applicants should have demonstrated a lively interest in developing countries. The purpose of this award is to enable the winner to spend the summer, immediately following its receipt, working and/or studying in a developing country.

Value: \$900 (30175 037)

THE JOAN JACKSON DUNBAR TRAVEL SCHOLARSHIP

Established in 1960 by Mayor Lloyd D. Jackson (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 60 to 75 units of an Honours programme in English for excellence in the work of the programme (with emphasis on English). The winner must have secured all her secondary school education in Canada. The award is to be used for study and travel in the United Kingdom and Continental Europe during the vacation before the final Fall/Winter session.

Value: \$3,500 (30177 053)

THE JOHN P. EVANS TRAVEL SCHOLARSHIP

Established in 1991 by many friends, colleagues, students and graduates of McMaster University as a tribute to John (Jack) P. Evans upon his retirement as Associate Vice-President, University Services and Secretary of the Board of Governors in recognition of his 25 years of outstanding contribution to the University Community. To be awarded to a student who has completed at least 30 units beyond Level I of an Honours programme with notable academic standing and has demonstrated a scholarly interest in some aspect of Asian languages, history or cultures, with preference being given to a student wishing to study in China.

Value: \$1,000 (30193 273)

THE MODERN LANGUAGES TRAVEL SCHOLARSHIP

Established in 1991 by the Department of Modern Languages. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in Modern Languages and who, in the judgment of the Department of Modern Languages, has attained notable academic standing. The purpose of the scholarship is to assist with travel expenses to study and travel abroad. Priority will be given to a student participating in the *Humanities Study Elsewhere Programme*.

Value: \$400 each (30188 274)

THE E.T. SALMON SCHOLARSHIP

Established in 1991 by Mrs. Edward Togo Salmon in memory of her husband, world-renowned Roman historian and member of the Faculty for 43 years. To be awarded to the student who has completed Level I and 30 to 45 units of any Honours Classics or Honours History programme, including at least 12 units of Ancient History and Archaeology, and who, in the judgment of 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 304)

THE ALBERT SHALOM TRAVEL SCHOLARSHIP

Established in 1994 by family, friends and colleagues in memory of Albert Shalom, Professor of Philosophy at McMaster University from 1966 to 1991. To be awarded to a student who is enrolled in a programme in Philosophy, and has, in the judgment of the Department of Philosophy, attained notable standing. The award is to be used to help defray the costs of study overseas in Level III.

Value: \$500 (30225 365)

THE 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 in his/her penultimate Level who shows ability and promise in the use of the French language. The recipient will spend some weeks of residence and study in a French-Canadian home during the summer vacation.

Value: \$500 (30176)

THE T. RUSSELL WILKINS MEMORIAL SCHOLARSHIP

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). To be awarded to a student who has completed Level I and 60 to 75 units of an Honours programme in any one of the following subject fields (singly or in combination): Biochemistry, Biology, Chemistry, Computer Science, Geology, Materials Science and Physics. Candidates for this scholarship must have attained high standing in the subjects of their programme and must, in addition, have demonstrated a lively interest in the humanities and in the human and social implications of scientific developments. The purpose of the scholarship is to enable the winner to spend the summer before the final Fall/Winter session in travel and study outside Canada.

Value: \$6,000 (30178)

C. Awards for Part-time, In-Course Students (Part-Time Studies)

The following awards are based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in November, are provided exclusively for part-time first baccalaureate degree students who qualify on the basis on work included at the most recent review in other than their graduating session.
2. In addition to meeting the General Conditions listed in Section 1, a student must obtain at the most recent review a Cumulative Average of at least 8.0 and no failures.
3. The Cumulative Average will be used to break any tie in the competition for awards.

THE ALUMNI ASSOCIATION SCHOLARSHIPS

Established in 1974 by the McMaster University Alumni Association and later augmented by bequest of Harold E. Amy. Two scholarships to be awarded to part-time students who have attained the highest Cumulative Average at the most recent review.

Value: \$350 each (60000)

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: \$125 for books (60005 258)

THE WILLIAM J. MCCALLION SCHOLARSHIPS

Five scholarships named in 1984 in honour of Professor McCallion (B.A. '43, M.A. '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. To be awarded to part-time students who have attained the highest Cumulative Average at the most recent review.

Value: \$250 each (60004)

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 programme in Gerontology who attains the highest Cumulative Average.

Value: \$100 for books. (60007 364)

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: \$100 (60001)

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 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 programme 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 782)

D. Specific Achievement Awards for Full-time and Part-time Students

The following awards are granted based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in June or November, are provided for either full-time or part-time first baccalaureate degree students qualifying on the basis of achievement during the Spring/Summer or Fall/Winter sessions immediately preceding the May review (or deferred examinations resulting therefrom). Normally, these awards will be granted to In-Course students. A number of awards under this category are also listed under Category F for Second Degree Students.
2. In addition to meeting the General Conditions listed in Section 1, a student must obtain, at the most recent review, a Cumulative Average of at least 8.0 and no failures.
3. The Cumulative Average will be used to break any tie in the competition for these awards.
4. An award name ending with an "*" indicates that the award is open to both full-time and part-time second baccalaureate degree students.

ACHIEVEMENT AWARD OF EXCELLENCE FOR STUDENTS WITH DISABILITIES

Established in 1998. A variable number of scholarships to be awarded to students who, in the judgment of the Centre for Student Development, give evidence of outstanding academic achievement. Students who wish to be considered for this award should contact the Office of Student Financial Aid and Scholarships for information and an application.
Value: \$800 (40085 794)

THE ALUMNI CANADIAN GEOGRAPHY PRIZE

Established in 1985 by the Geography Branch of the McMaster University Alumni Association in recognition of Dr. Lloyd G. Reeds for his contribution to teaching during more than 35 years of service. To be awarded to the student who attains the highest grade in GEO 2HC3 (Canada) (formerly GEOG 2E03).
Value: \$175 (40001 004)

THE ALUMNI SOCIAL WORK PRIZE*

Established in 1991 by the Social Work Branch of the McMaster Alumni Association. To be awarded to the student who attains the highest standing in SOC WORK 2BB3.
Value: \$50 for books (40056 275)

THE AMERICAN-STANDARD PRIZE

Established in 1978. To be awarded to the student in the Ceramics stream of the Materials Engineering programme who attains the highest grade in GEO 2K03 (formerly GEOLOGY 2B03).
Value: \$100 (40002 007)

THE ARTS & SCIENCE PROGRAMME BOOK AWARD

Established in 1995. To be awarded from time to time to an Arts & Science student who, in the judgment of the Arts & Science Programme Awards Committee, has demonstrated outstanding academic achievement in both arts and science.
Value: \$75 (40078 390)

THE MURRAY BALL PRIZES IN GEOLOGY

Established in 1991 by May A. Ball in memory of her brother Murray Ball. Two scholarships to be awarded to students in Science I (or Natural Sciences I) who, in the judgment of the School of Geography and Geology attained notable standing in GEO 1G03 (formerly ENVIR SC 1G03).
Value: \$200 each (40057)

THE ABE BLACK MEMORIAL PRIZE*

Established in 1982 by friends and colleagues of Dr. A.H. Black in memory of a distinguished member of the Department of Psychology from 1958 to 1978. To be awarded to the student who, in the judgment of the Department of Psychology, has demonstrated outstanding achievement in PSYCH 4D06 (Honours Thesis).
Value: \$100 (40076 381)

THE CFUW (HAMILTON) RUBY BROWN BOOK PRIZE IN ENGLISH

Established in 1970 by bequest of Mrs. Edgar Brown. To be awarded to a student in any Level I programme for the most creative essay in a Level I English course.
Value: \$100 (40046 248)

THE CANADIAN INSTITUTE OF INTERNATIONAL AFFAIRS PRIZE*

Established in 1994 by the Canadian Institute of International Affairs (Hamilton Branch). To be awarded to a student who has completed Level I and at least 30 units of a programme in Political Science who, in the judgment of the Department of Political Science, has achieved notable standing in at least six units of International Politics courses including an outstanding essay dealing with a topic related to the field of International Politics.
Value: \$300 (40071 349)

THE ELEANOR TURNER CARMENT PRIZE

Established in 1995 by Eleanor Carment. To be awarded to a student entering Level IV of a combined Honours programme in Women's Studies who, in the judgment of the Committee of Instruction for Women's Studies, has demonstrated notable academic achievement and community involvement.
Value: \$75 for books (40079 395)

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 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 2H06 (United States History).
Value: \$300 (40025 032)

THE CITIZEN ACTION GROUP PRIZE*

Established in 1984 by the Citizen Action Group, Hamilton, to honour Professor Harry L. Penny, founding Director of the School of Social Work and Board Member of Citizen Action Group. To be awarded to the student in a programme in Social Work who submits an essay or report based on the student's field work experience that best addresses the need for innovative or non-traditional social work practice.
Value: \$250 (40006 031)

THE COMPARATIVE LITERATURE PRIZE*

Established in 1988. To be awarded to a student in an Honours programme in Comparative Literature who, in the judgment of the Department of Modern Languages, has achieved notable standing in Level II courses in Comparative Literature.
Value: \$225 (40008)

THE CONSUL GENERAL OF ITALY BOOK PRIZE*

Established in 1982. To be awarded to in-course students for excellence in Italian studies. (40010 041)

THE 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 Modern Languages, has achieved notable standing in Italian.
Value: \$75 (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: (a) \$150; (b) \$100 (40011)

THE D.M. DAVIES PRIZE

Established in 1984 by friends, colleagues and former students in recognition of Professor Douglas Davies for his outstanding contribution to the Department of Biology during 34 years of service. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Biology and who attains the highest average in at least 12 units of senior level courses in whole-animal biology, taken in one session.
Value: \$300 (30032 047)

THE DRAMA BOOK PRIZE

Established in 1974 by Professor Ronald W. Vince. To be awarded to the student who attains the highest standing in DRAMA 1A06. (40014 052)

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 GEO 4R06 (formerly GEOG 4VV6).
Value: \$100 (40070 341)

THE NEIL FORSYTH PRIZE*

Established in 1992 by The Steel Founders' Society of America in honour of Neil Forsyth, president of the organization in 1990 and 1991, in recognition of his outstanding service to the steelcastings industry. To be awarded to the student who attains the highest grade in MATLS 3I05.

Value: \$100 (40067 121)

THE FRENCH GOVERNMENT BOOK PRIZES

To be awarded from time to time to in-course students for proficiency in Level I French. (40017)

THE R. LOUIS GENTILCORE PRIZE

Established in 1989 by the family and friends of Professor R. Louis Gentilcore on the occasion of his retirement from the Department of Geography. To be awarded to a student in an Honours programme in the School of Geography and Geology who, in the judgment of the School, has demonstrated exceptional achievement in historical-cultural geography.

Value: \$400 (40062 064)

THE GERMAN EMBASSY BOOK PRIZE

To be awarded from time to time for in-course students for proficiency in Level II or III German. (40018)

THE GILMOUR MEMORIAL PRIZE*

Established in 1927 by Year '27, in memory of Dr. Joseph Leeming Gilmour, Honorary President of their first year in 1923, and subsequently enlarged by his children. To be awarded to the student who attains the highest standing in RELIG ST 2GG3 or 2HH3.

Value: \$100 (40019)

THE GREEK COMMUNITY OF BURLINGTON AND DISTRICT SCHOLARSHIP

Established in 1983. To be awarded to the student who obtains the highest standing in GREEK 1Z06.

Value: \$250 (40020 068)

THE HAMILTON ENGINEERING INSTITUTE PRIZE

Established in 1962 by the Hamilton Section of the Engineering Institute of Canada and continued by the Hamilton Engineering Institute. To be awarded to the student in Engineering I who attains the highest grade in ENGINEER 1C04.

Value: \$250 (40023 073)

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 30-75 units of the Music Programme who, in the judgment of the School of Art, Drama and Music, has displayed outstanding achievement in Music Education.

Value: \$225 (40069 330)

THE 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: \$250 for books (40087 828)

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: \$200 (40080 394)

THE PAUL HYPHER PRIZE

Established in 1988 in memory of Paul F. Hypher by his friends and classmates. To be awarded to the student in a programme in Commerce who attains the highest standing in COMMERCE 2MA3.

Value: \$150 for books (40039 080)

THE INTER NATIONES (BONN) BOOK PRIZE*

To be awarded from time to time to in-course students for proficiency in German studies. (40024)

THE MUNICIPAL CHAPTER OF HAMILTON, IODE, PRIZE

Established in 1944 by the Municipal Chapter of Hamilton, Imperial Order Daughters of the Empire. To be awarded to the student who attains the highest standing in a Level I History course.

Value: \$150 (40036 081)

THE H.L. JACKSON MEMORIAL SCHOLARSHIP

Established in 1989 in memory of Professor H.L. Jackson by his friends and colleagues. To be awarded to the student who has completed Level I and at least 60 units of an Honours programme in the Department of Mathematics and Statistics, who in the judgment of the department has demonstrated achievement in MATH 3AA3.

Value: \$400 (40021 311)

THE HERBERT M. JENKINS PRIZE

Established in 1990 as a tribute to Dr. Herbert M. Jenkins, first Director of the Arts and Science Programme; by his many friends, colleagues and students on the occasion of his retirement from McMaster University. To be awarded to a student in an Arts and Science Programme whose work, in the judgment of the Arts and Science Programme Awards and Review Committee, best reflects scholarship and the spirit of inquiry.

Value: \$175 (30185 249)

THE JEAN JONES PRIZE*

Established in 1989 in recognition of the distinguished service of Professor Jones to the School of Social Work. To be awarded to the student who attains the highest grade in SOC WORK 2B03.

Value: \$50 (40026 098)

THE KINESIOLOGY PRIZES

Established in 1982. Two prizes to be awarded to students who have completed the courses in Level III of the Kinesiology programme: (a) one to a student who, in the judgment of the Department of Kinesiology, has submitted an outstanding paper or project, and (b) one to the student who, in the judgment of the Department of Kinesiology, has demonstrated outstanding improvement in academic standing throughout the programme.

Value: \$50 each (40041)

THE LATIN PRIZE

Established in 1987 by Dr. John B. Clinard. To be awarded to a student who, in the judgment of the Department of Classics, has demonstrated notable achievement in LATIN 1Z06.

Value: \$100 (40031 096)

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: \$150 (40048)

THE LINGUISTICS PRIZE*

Established in 1988. To be awarded to a student in an Honours programme in Modern Languages and Linguistics who, in the judgment of the Department of Modern Languages, has achieved notable standing in Level II courses in Linguistics.

Value: \$225 (40032)

THE MacGIBBON SCHOLARSHIP*

Established in 1970 by bequest of Professor Duncan A. MacGibbon (Class of '08). To be awarded to the student in a programme in Economics who, in the judgment of the Department of Economics, stands highest in courses in economic history.

Value: \$350 (40034 101)

THE WILLIAM MacKENZIE MEMORIAL PRIZE*

Established in 1977 in memory of Professor William MacKenzie by his friends and colleagues. To be awarded to the student who, in the judgment of the Department of Economics, has demonstrated outstanding academic achievement in either ECON 3T03 (Economic Development: Agriculture and Population) or ECON 2F03 (Globalization and Economic Development) or, in exceptional circumstances, for work in a related area.

Value: \$200 (40053 312)

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 Art, Drama and Music, has demonstrated outstanding achievement.

Value: \$100 (40015 103)

THE ELEANOR DORNBUSH MARPLES PRIZE IN DRAMA*

Established in 1987 by Vaughan W. Marples in memory of his wife. To be awarded to the student who attains the highest grade in DRAMA 2D06.

Value: \$100 (40016 104)

THE H.W. McCREADY PRIZE IN BRITISH HISTORY*

Established in 1981 in memory of Professor H.W. McCready, a member of the Department of History from 1943 to 1975, by former students, colleagues, and friends. To be awarded to the Level II student who, in the judgment of the Department of History, attains notable standing in HISTORY 2N06.

Value: \$100 (40022)

THE JANET McKNIGHT AWARD*

Established in 1994 by faculty, friends and students in memory of Janet McKnight, beloved colleague and teacher, a recognized expert in educational methodology and small-group, problem-based learning. To be awarded to a student entering Level IV of a programme in Nursing who, in the judgment of the Department of Nursing, has demonstrated outstanding achievement in the programme.

304 UNDERGRADUATE AWARDS — SPECIFIC ACHIEVEMENT

ment of the School of Nursing has demonstrated notable academic achievement and leadership in clinical and educational aspects of gerontology or, problem-based, self-directed learning in nursing education.

Value: \$400 (40077 385)

THE McMASTER NURSING ALUMNI PRIZE*

Established in 1984 by the Nursing Chapter of the McMaster University Alumni Association. To be awarded to a student who has completed Level I and 70 to 85 units of the Nursing programme and who, in the judgment of the School of Nursing, has demonstrated leadership while participating in undergraduate activities.

Value: \$200 and book (30107 111)

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 Level II of the Nursing Programme 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 799)

THE DR. F.A. MIRZA SCHOLARSHIP

Established in 1997 in memory of Farooque Mizra by family, friends and colleagues. To be awarded to a student enrolled in a Civil Engineering programme who achieves the highest average in CIV ENG 2C04 and ENGINEER 2P04 taken in one session.

Value: \$400 (60009 781)

THE MOFFAT KINOSHITA ARCHITECTS INC. PRIZES

Established in 1990 by Moffat Kinoshita Associates Inc. Two prizes to be awarded to: (a) the student who attains the highest grade in GEO 4HY3 (formerly GEOG 4F03); and (b) the student who attains the highest grade in GEO 4HZ3 (formerly GEOG 4Z03).

Value: \$175 each (40060 250)

THE JOHN F. MOORE PRIZE

Established in 1990 by the Steel Founders' Society of America in honour of John Moore's contributions to the Society over the past 25 years. To be awarded to the student who attains the highest grade in MATLS 4C03.

Value: \$100 (40061 264)

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 programme who, in the judgment of the Department of French, has shown a strong interest in computer skills as applied to the Humanities.

Value: \$250 (30249 827)

THE NEOSID CERAMIC ENGINEERING PRIZE

Established in 1978 by Neosid (Canada) Limited. To be awarded to the student who has completed Level I and at least 75 units of the Ceramic Engineering Stream of the Materials Engineering programme and who attains the highest standing in MATLS 3B03.

Value: \$50 (40037 122)

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 and member of the Faculty from 1955-1990, in recognition of his outstanding contributions to the Department and the University. To be awarded to the student entering Level II of an Honours programme in Psychology who has attained the highest average in PSYCH 1A03 and 1AA3.

Value: \$300 (40072 363)

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: \$200 (40064 308)

THE DERRY NOVAK SCHOLARSHIP

Established in 1984 by the Political Science alumni and colleagues in honour of Professor Derry Novak. To be awarded to the student in a programme in Political Science who, in the judgment of the Department of Political Science, has achieved high standing in Level III courses in political theory or political philosophy.

Value: \$350 (40012 125)

THE CONNIE O'SHAUGHNESSY MEMORIAL PRIZE*

Established in 1988 by family, friends and associates of Connie O'Shaughnessy (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 Level I and 30 to 60 units who, in the judgment of the Selection Committee for Part-Time Awards, has made a significant contribution to the University life of part-time students.

Value: \$375 (40009 265)

THE PIONEER GROUP LTD. PRIZE*

Established in 1990. To be awarded to a student in a Gerontology programme who, in the judgment of the Gerontology Committee of Instruction, has achieved notable academic standing, and demonstrates practical aptitude for a career in health care of the elderly.

Value: \$400 (40058 270)

THE RAND MEMORIAL PRIZE OF CLASS '98

Established by the Class of '98 in Arts, on the occasion of the 25th anniversary of graduation, 1923, in memory of Chancellor Theodore Harding Rand, to encourage original literary work. To be awarded to the student who has completed Level I and 60 to 75 units and who, in the judgment of the Department of English, has made the most notable original contribution to student publications.

Value: \$200 (40045)

THE ABRAHAM ROSENBERG MEMORIAL PRIZE*

Established in 1986 by bequest of Abraham I. Rosenberg (Class of '34) of Hamilton and Kitchener. To be awarded to the student who attains the highest standing in ENGLISH 3B03 or SOCIOL 2X03.

Value: \$150 (40000 147)

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 1D06.

Value: \$150 (40033 152)

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 30-45 units of a programme 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 359)

THE LARRY SAYERS PRIZE IN CHINESE 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 Chinese history.

Value: \$250 (40030 149)

THE REBECKAH SCHNURR AWARD

Established in 1998 by Rebeckah Schnurr to provide support to McMaster students. To be awarded to a student registered in a Bachelor of Commerce programme who, in the judgment of the Faculty of Business, has demonstrated outstanding academic achievement and leadership through community involvement.

Value: \$500 (40084 793)

THE LARRY SEFTON SCHOLARSHIP*

Established in 1985 by the Hamilton Steelworkers Area Council in memory of Larry Sefton, area supervisor (1946-53) and director of District 6 (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 programme who, in the judgment of the Committee of Instruction for Labour Studies, have achieved notable standing in any level.

Value: \$500 each (30099 151)

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 who has completed Level I and 70 to 85 units of the Nursing programme and who, in the judgment of the School of Nursing, best demonstrates excellence in scholarship and leadership, and has served as a valuable role model for those qualities deemed important to success in a nursing career.

Value: \$250 (30061 246)

THE MARGARET A. SERVICE BOOK PRIZE

Established in 1990 by friends, colleagues and former students in memory of Margaret A. Service. To be awarded to the student who upon completion of Level I attains the highest average in BIOLOGY 1A03 and 1AA3.

Value: \$125 (40059 277)

THE SOCIAL WORK PRIZE

Established in 1982. To be awarded to the student who attains the highest grade in SOC WORK 2A06.

Value: \$50 (40050)

THE ANNE STEIN MEMORIAL PRIZE*

Established in 1971 by friends and colleagues of Anne Stein. To be awarded to the student who successfully completes SOC WORK 3DD6 and attains the highest grade in SOC WORK 3D06 in the same session.

Value: \$100 (40003)

THE STO PRIZE IN GERONTOLOGY

Established in 1987 by the Superannuated Teachers of Ontario, District 13. To be awarded to the student who attains the highest standing in GERONTOL 1A06.

Value: \$100 (40047 163)

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 area(s) of monetary economics and financial institutions and of public finance.

Value: \$100 (40029 171)

THE MICHAEL THOMSON MEMORIAL BOOK PRIZES

Established in 1975 by the members of the Departments of German and Russian in memory of Michael Thomson, Supervisor of the McMaster University language laboratories from 1961 to 1975. Two prizes to be awarded: (a) one to the student who attains the highest standing in GERMAN 1Z06 and (b) one to the student who attains the highest standing in RUSSIAN 2C06.

Value: \$50 each (40035 266)

THE CORELENE HELEN TOSTEVIN SCHOLARSHIPS

Established in 1998 by bequest of Corelene Tostevin. Three awards to be granted to students who are registered in a Post-RN Degree programme and who, in the judgment of the School of Nursing, have demonstrated notable academic achievement.

Value: \$250 each (40083 791)

THE JOHN TOTH MEMORIAL PRIZE*

Established in 1983 in memory of John Toth by his friends. To be awarded to the student who attains the highest average in any six units of Level III or IV Latin courses.

Value: \$50 (40028 176)

THE JOHN H. TRUEMAN SCHOLARSHIP*

Established in 1989 as a tribute to Professor John H. Trueman by his many friends, colleagues and students on the occasion of his retirement from McMaster University. To be awarded to the student who has completed Level I and who, in the judgment of the Department of History, has achieved notable academic standing in medieval history.

Value: \$300 (30081 179)

THE THOMAS TRUMAN MEMORIAL PRIZE*

Established in 1992 by friends and colleagues in memory of Professor Thomas Truman, a member of the Department of Political Science from 1966 to 1990. To be awarded to the student entering the final level of an Honours programme in Political Science who, in the judgment of the Department of Political Science, has achieved notable academic standing in at least nine units of Comparative Politics courses.

Value: \$75 (40068 313)

The recipient of this award is eligible to receive additional aid through the corresponding Supplementary Bursary Aid Fund if he/she demonstrates financial need. Please see the section on *Supplementary Bursary Aid for Award Recipients* in the *Student Financial Aid* section of this Calendar.

THE UNIVERSITY PRIZES FOR SPECIAL ACHIEVEMENT*

Established in 1973. Two prizes to be awarded in each Faculty and other academic units to students who exhibit exceptional skill and originality in a creative project (such as an essay, poem, sculpture, mathematical or scientific problem, engineering design) or a related series of such projects.

Value: \$150 each (40052)

THE MELINDA WAPSHAW ACHIEVEMENT AWARD*

Established in 1993 by the Labour Studies Student Association and the Labour Studies Programme. To be awarded to a student who has completed Level I and 60-75 units of an Honours Programme in Labour Studies and who, in the judgment of the Committee of Instruction, demonstrates outstanding achievement.

Value: \$100 (40074 358)

THE RALPH WEEKES SCHOLARSHIP*

Established in 1994 by the Investors Group Financial Services to recognize the accomplishments of Ralph Weekes (Class of '73). To be awarded to a student enrolled in a programme in Economics who, in the judgment of the Department of Economics, has attained notable standing. Preference to be given to a student pursuing studies on a part-time basis.

Value: \$300 (40073 360)

THE WIDMAIER PRIZES FOR PROFICIENCY IN GERMAN

Established in 1990 by Dr. and Mrs. F. Widmaier. Two prizes to be awarded to students of GERMAN 1Z06 who, in the judgment of the Department of Modern Languages, have achieved notable proficiency in German.

Value: \$250 each (40054 278)

THE R.M. WILES MEMORIAL BOOK PRIZE*

Established in 1975 in memory of Professor Roy McKeen Wiles by his friends and colleagues. To be awarded to the student who, in the judgment of the Department of English, has written the best essay on a topic relating to English literature of the period 1660-1800.

Value: \$200 for books (40044)

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 Modern Languages departments, has demonstrated excellence in German studies.

Value: \$250 (40082 772)

NOTE: An award name ending with an "*" indicates that the award is open to both full-time and part-time second baccalaureate degree students.

E. Awards for Graduating Students

The following awards are based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in May, are provided exclusively for graduating students qualifying on the basis of achievement in their first baccalaureate degree programme.
2. In addition to meeting the general conditions listed in Section 1, a student must obtain:
 - a) Cumulative Average of at least 8.0;
 - b) no failures in the courses last taken equal to:
 - i) either the number of units specified in the Calendar for the final level of their programme;
 - ii) or, if the Calendar does not specify the programme work by individual levels, the final 30 units of work.

◆ **MEDALS**

THE GOVERNOR GENERAL'S ACADEMIC MEDAL

Given by His Excellency the Governor General of Canada. To be awarded to the student graduating from a first baccalaureate degree programme who, in the judgment of the selection committee, has attained the highest standing throughout the programme. (50022)

THE E.H. AMBROSE GOLD MEDAL

Established in 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 programme in Commerce who, on the basis of scholarship and leadership, is judged to be the outstanding member of the class. (50014 006)

THE ASSOCIATION OF PROFESSIONAL ENGINEERS GOLD MEDAL

Established in 1961 by the Ontario Professional Engineers Foundation for Education. To be awarded to the graduand of a programme in Engineering who attains the highest Cumulative Average. (50005 008)

THE BASU MEDAL

Established in 1984 in memory of Professor Sanjoy Basu by friends, colleagues and accounting organizations. To be awarded to the graduating student who, in the judgment of the School of Business, has displayed outstanding achievement in accounting and has attained an average of at least 10.0 in any four of COMMERCE 4AA3, 4AC3, 4AD3, 4AE3, 4AF3. (50006 013)

THE EZIO CAPPADOCIA MEDAL

Established in 1986 by Professor E. Cappadocia on the occasion of his retirement from the Department of History. To be awarded to a student graduating from an Honours programme in History who, in the judgment of the Department of History, has displayed outstanding achievement and has contributed to the Department's activities. (50018 030)

THE J.E.L. GRAHAM MEDAL

Established by the Faculty of Social Sciences in 1982 in recognition of Professor J.E.L. Graham for his outstanding contributions to the Faculty and the University during 32 years of service. To be awarded 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 programme primarily on a part-time basis. (50029)

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 Art, Drama and Music, has made a significant contribution to drama during the student's University career. (50003 070)

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. (50026)

THE HURD MEDAL

Established in 1955 by Donald W. Hurd (Class of '49) in memory of his father, Dean William Burton Hurd. To be awarded to a student at graduation for distinguished achievement in an Honours programme in which economics is a major field of study. (50027 079)

THE JENSEN MEDAL

Established in 1995 by friends and colleagues as a tribute to Dr. Doris E.N. Jensen in recognition of her contribution in developing Cooperative Education Programmes in the Faculty of Science and her 31 years of service in the wider university community. To be awarded to a student graduating from the Honours Biology and Pharmacology (Co-op) Programme who, in the judgment of the Committee of Instruction, demonstrates outstanding academic achievement and excellence in co-op placements. (50075 387)

THE GERALD L. KEECH MEDAL

Established in 1994 by his friends and colleagues as a tribute to Gerald L. Keech in recognition of his outstanding contributions to McMaster University during his 33 years of service in Computer Science and computer services. To be awarded to the graduating student from a programme in Computer Science who attains the highest Cumulative Average. (50069 344)

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 397)

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)

◆ RING**THE BURKE MEMORIAL RING**

Presented by science graduates of the University in memory of Dean C.E. Burke. To be awarded to a graduate of a B.Sc. programme who is named to the Deans' Honour List and who has made the most outstanding contribution to undergraduate activities. (50007)

◆ SCHOLARSHIPS AND PRIZES**THE CAMERON D. ALLEN BOOK PRIZE**

Established in 1978 in memory of Cameron D. Allen. To be awarded to a student graduating from an Honours programme in Geography who, in the judgment of the School of Geography and Geology, shows outstanding achievement in studies in climatology. Value: \$150 for books (50009 267)

THE AMBASSADOR OF SPAIN BOOK PRIZE

Established in 1982. To be awarded to a graduating student in a programme in the Department of Modern Languages who, in the judgment of the Department, has achieved notable proficiency in Spanish. (50002 005)

THE ANTHROPOLOGY PRIZE

Established in 1982. To be awarded to the graduating student who has completed a programme in Anthropology primarily on a part-time basis and who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement. Value: \$50 (50004)

THE WILLIAM AND LIDA BARNES MEMORIAL PRIZE IN HISTORY

Established in 1969 by their son, William D. Barnes, 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 programme. Value: \$200 (50050)

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 programme in History who, in the judgment of the Department of History, has displayed outstanding achievement in Canadian history courses consistently throughout the degree programme. Value: \$50 for books (50034)

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 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. programme in Psychology; (b) one to the student who attains the highest Cumulative Average in the Honours B.Sc. programme in Psychology; (c) one to the student who attains the highest Cumulative Average in the Honours Biology and Psychology (Life Sciences) programme. Value: (a) \$75; (b) \$75; (c) \$75 (50000 017)

THE RUTH BURKE MEMORIAL PRIZE

Established in 1963 by Dr. and Mrs. Herbert S. Armstrong in memory of Mrs. Charles E. Burke. To be awarded to the student in the Nursing programme who attains the highest Cumulative Average. The Prize is a set of engraved sterling silver coffee spoons. (50047 268)

THE CERTIFIED GENERAL ACCOUNTANTS ASSOCIATION PRIZE

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 033)

THE CFUW (HAMILTON) MEMORIAL PRIZE IN WOMEN'S STUDIES

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 programme 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 programme. Value: \$175 and book ends (50062 132)

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: \$225 (50013)

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 programme who, in the judgment of the Department of Kinesiology, shows high standing in KINESIOL 2C06 (Physiology of Exercise) and either KINESIOL 4C03 or 4CC3. Value: Medal and Certificate (50068 342)

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 programme who has displayed outstanding achievement in both arts and science. Value: \$150 (50031 049)

THE HELEN EMERY PRIZE IN ENVIRONMENTAL SCIENCE

Established in 1990 by Miss Helen Emery of Barrie, Ontario. To be awarded to a student graduating from the Honours Geography and Environmental Sciences or the Honours Environmental Science programme who has displayed outstanding achievement. Value: \$250 (50053 237)

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 programme in History who, in the judgment of the Department of History, has displayed outstanding achievement in European history courses consistently throughout the degree programme. Value: \$100 (50017 368)

THE GERONTOLOGY PRIZES

Established in 1988 by the Pioneer Group Limited. Two prizes to be awarded (a) one to a full-time student and (b) one to a part-time student, both of whom are graduating from a programme in Gerontology who, in the judgment of the Gerontology Committee of Instruction, have demonstrated high academic achievement and leadership in extracurricular activities.

Value: \$100 each (50021 066)

THE IROQUOIS TROPHY

Established in 1970 by the Department of Mechanical Engineering. To be presented to a graduating mechanical engineer on the basis of academic excellence, participation in campus societies, clubs, or other activities, and general leadership. A replica of the Trophy is permanently held by each winner. (50028)

THE BURTON R. JAMES MEMORIAL PRIZE

Established in 1974 by his friends and colleagues in honour of Burton R. James (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 programme in Commerce.

Value: \$150 (50008)

THE W. NORMAN JEEVES SCHOLARSHIP

Established in 1987 by the French Section, Department of Romance Languages, in honour of W. Norman Jeeves, Professor of French from 1965 to 1987. To be awarded to a graduand of an Honours programme in French who, in the judgment of the Department of French, has demonstrated outstanding academic achievement in the French component of the programme.

Value: \$400 (50052 088)

THE FRANK E. JONES PRIZE

Established in 1982 in honour of Professor F.E. Jones for his outstanding contributions to the Department of Sociology. To be awarded to the full-time student with the highest Cumulative Average in an Honours programme in Sociology.

Value: \$50 (50020)

THE KINESIOLOGY PRIZE

Established in 1982. To be awarded to the graduating student who, in the judgment of the Department of Kinesiology, has submitted an outstanding paper or project.

Value: \$50 (50058)

THE RUTH LANDES PRIZE

Established in 1982 in honour of Professor Ruth Landes for her outstanding contributions to the Department of Anthropology. To be awarded to the graduating full-time student in a three-Level programme in Anthropology who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement.

Value: \$50 (50048)

THE FELIKS LITKOWSKI 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 programme in Political Science who, in the judgment of the Department of Political Science, has demonstrated outstanding academic achievement.

Value: \$400 (50032 100)

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 or two scholarships to be awarded to graduating students who enrol in a Bachelor of Laws degree programme in the academic session immediately following graduation. Students selected will have demonstrated high academic achievement and leadership in extracurricular activities. Applications and the name of two referees should be submitted to the Office of Student Financial Aid and Scholarships by the first Friday in April.

Value: \$700 each (50061 298)

THE AGNES AND JOHN MacNEILL MEMORIAL PRIZE

Established in 1946 by bequest of Annie May MacNeill (Class of '03). To be awarded to the student graduating from an Honours programme in English who has attained the most notable standing in English throughout the degree programme.

Value: \$150 (50001)

THE CATHERINE MacNEILL PRIZE

Established in 1946 by bequest of Annie May MacNeill (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: \$150 (50011)

THE ESTHER McCANDLESS MEMORIAL PRIZE

Established in 1984 by friends and colleagues in memory of Professor E.L. McCandless, a humanitarian and distinguished member of the Department of Biology from 1964 to 1983. To be awarded to a student who achieves an outstanding Cumulative Average in an Honours programme in Biology.

Value: \$225 (50016)

THE JOHN R. McCARTHY SCHOLARSHIP

Established in 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 programme in Arts and Science, Humanities, Science, or Social Sciences who enrolls in the Faculty of Education of an Ontario university in the academic session immediately following graduation. The student selected will have made a contribution to the life of the University by displaying leadership in student government or student affairs and leadership and sportsmanship in athletic endeavours. Applications and the name of two referees should be submitted to the Office of Student Financial Aid and Scholarships by April 2.

Value: \$700 (50030 107)

THE A.G. McKAY PRIZE IN CLASSICAL STUDIES

Established in 1990 by Professor Emeritus A.G. McKay. To be awarded to a graduating student from an Honours programme in Classics who, in the judgment of the Department of Classics, has demonstrated outstanding academic achievement and leadership.

Value: \$100 (50054 269)

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 programme in English.

Value: \$250 (50057 279)

THE E.S. MOORE PRIZE IN GEOLOGY

Established in 1956 by Elwood S. Moore, LL.D. (Class of '55). To be awarded to the student graduating in an Honours programme in Geology who, in the judgment of the School of Geography and Geology, has attained the most notable standing in Geo.

Value: \$150 (50015 116)

THE NATIONAL ASSOCIATION OF CORROSION ENGINEERS PRIZE

Established in 1989 by the Toronto Section of the National Association of Corrosion Engineers. To be awarded to the graduand, who, in the judgment of the Department of Materials Science and Engineering, has submitted an outstanding thesis in the area of Corrosion Science and Engineering. In the absence of a qualified candidate, the award will be made to the student who attains the highest standing in MATLS 4D03 (Corrosion).

Value: \$100 (50036 120)

THE P.L. NEWBIGGING PRIZES

Established in 1982 in recognition of Dr. Lynn Newbigging for his outstanding contributions to the Department of Psychology. Four prizes to be awarded to students with the highest Cumulative Average: (a) one to a full-time student in the three-level B.A. programme in Psychology; (b) one to a student in a B.A. programme in Psychology who has completed the programme primarily on a part-time basis; (c) one to a full-time student in the three-level B.Sc. programme in Life Sciences with a concentration in Psychology; and (d) one to a student in a B.Sc. programme in Life Sciences with a concentration in Psychology who has completed the programme primarily on a part-time basis.

Value: \$50 each (50040 280)

THE ONTARIO ASSOCIATION OF PROFESSIONAL SOCIAL WORKERS PRIZE

Established in 1986 by the Hamilton Branch. To be awarded to the graduating student who successfully completes SOC WORK 4DD6 and attains the highest grade in SOC WORK 4D06 in the same session.

Value: \$125 (50037 126)

THE HARRY L. PENNY PRIZE

Established in 1984 in recognition of Professor Harry L. Penny, founding Director of the School of Social Work, for his outstanding contribution to the School. To be awarded to the student with the highest Cumulative Average in a Social Work programme.

Value: \$50 (50023)

THE PIONEER GROUP PRIZE IN NURSING

Established in 1989 by the Pioneer Group Limited in conjunction with the R. Samuel McLaughlin Centre for Gerontological Health Research. Two prizes to be awarded to students graduating from the Nursing programme who, in the judgment of the School of Nursing, have achieved notable standing and demonstrated practical aptitude for a career in the health care of the elderly.

Value: \$150 (50056 370)

THE POLITICAL SCIENCE PRIZE

Established in 1982. To be awarded to a graduating student who has completed a programme in Political Science primarily on a part-time basis and who, in the judgment of the Department of Political Science, has demonstrated outstanding academic achievement.

Value: \$200 (50042)

THE POLITICAL SCIENCE HONOURS ESSAY PRIZE

Established in 1982. To be awarded to the student who, in the judgment of the Department of Political Science, has demonstrated outstanding achievement in POL SCI 4Z06.

Value: \$50 (50059)

THE LLOYD REEDS PRIZES

Established in 1983 in recognition of Dr. Lloyd G. Reeds for his outstanding contributions to the Department of Geography during 35 years of service. Four prizes to be awarded: (a) one to the student who attains the highest Cumulative Average in an Honours B.A. programme in Geography; (b) one to the student who attains the highest Cumulative Average in an Honours B.Sc. programme in Geography; (c) one to the student who attains the highest Cumulative Average in a three-level B.A. programme in Geography or B.Sc. programme in Geoscience (formerly Earth Sciences) with a concentration in Geo; and (d) one to the student who, in the judgment of the School of Geography and Geology, has demonstrated outstanding achievement in GEO 4R06 (formerly GEOG 4C06).

Value: \$50 each (50033)

THE RELIGIOUS STUDIES PRIZES

Established in 1982. Two prizes to be awarded to students who attain the highest Cumulative Average in a three- or four-level programme in Religious Studies: (a) one to a student who has completed the programme on a full-time basis, and (b) one to a student who has completed the programme primarily on a part-time basis.

Value: \$50 each (50045)

THE RELIGIOUS STUDIES HONOURS ESSAY PRIZE

Established in 1982. To be awarded to the student who, in the judgment of the Department of Religious Studies, has demonstrated outstanding achievement in RELIG ST 4J06.

Value: \$50 (50044)

THE SHELL CANADA PRIZES IN ENGINEERING AND MANAGEMENT

Established in 1983. Three prizes to be awarded to students graduating from an Engineering and Management programme. Awards will be based on scholarship and on the quality of and creativity shown in written communication.

Value: \$225 each (50049 154)

THE RICHARD SLOBODIN PRIZE

Established in 1982 in honour of Professor Richard Slobodin for his outstanding contributions to the Department of Anthropology. To be awarded to the graduating full-time student in an Honours Anthropology programme who, in the judgment of the Department, has demonstrated outstanding academic achievement.

Value: \$50 (50046)

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 Applied Chemistry, Honours Chemistry or Honours Chemistry and Physics graduand, who have attained the highest Cumulative Average (at least 9.5) and have completed the programme in the normal number of years. (50060 369)

THE SOCIOLOGY PRIZES

Established in 1982. Two prizes to be awarded to students with the highest Cumulative Averages: (a) one to a student who has completed the three-level programme in Sociology on a full-time basis; and (b) one to a student who has completed a programme in Sociology primarily on a part-time basis.

Value: \$50 each (50051)

THE JOHN H. TRUEMAN PRIZE

Established in 1989 as a tribute to Professor John H. Trueman by his many friends, colleagues and students on the occasion of his retirement from McMaster University. To be awarded to the graduating student who demonstrates the most outstanding ability in medieval history based on achievement in HISTORY 4Q06 or 4S06.

Value: \$300 (50067 367)

THE HARRY WAISGLASS BOOK PRIZE

Established in 1988 in honour of Harry Waisglass, the first Director of the Labour Studies Education Programme at McMaster. To be awarded to a student graduating from a programme in Labour Studies who, in the judgment of the Committee of Instruction for Labour Studies, has demonstrated outstanding achievement.

Value: \$50 (50024)

THE MARK WATSON MEMORIAL PRIZE IN HISTORY

Established in 1987 by friends in the Department of History in memory of Mark A. Watson (Class of '86). To be awarded to a student graduating from a three-level programme in History who, in the judgment of the Department of History, has displayed outstanding achievement consistently throughout the degree programme.

Value: \$100 (50035 183)

F. Awards for Second Baccalaureate Degree Students

The following awards are granted based on competition across the University or within a Faculty or programme.

1. These awards, which are granted in June or November, are provided for either full-time or part-time second baccalaureate degree students qualifying on the basis of achievement during the Spring/Summer or Fall/Winter sessions immediately preceding the May review (or deferred examinations resulting therefrom).
2. In addition to meeting the General Conditions listed in Section 1, a student must obtain, at the most recent review, a Cumulative Average of at least 8.0 and no failures.
3. The Cumulative Average will be used to break any tie in the competition for these awards.

THE CANADIAN ASSOCIATION OF OCCUPATIONAL THERAPISTS BOOK PRIZE

Established in 1992 by the Canadian Association of Occupational Therapists. To be awarded to a graduating student who, in the judgment of the School of Rehabilitation Science, is most outstanding in the theory component of the Occupational Therapy programme.

Value: \$75 (50065 316)

THE FIELDWORK PRIZE

Established originally at Mohawk College as the Muriel Westmorland Prize, and transferred to McMaster University in 1993. To be awarded to a graduating student who, in the judgment of the School of Rehabilitation Science, demonstrates excellence in clinical fieldwork throughout the Occupational Therapy programme.

Value: \$60 (50078 770)

THE HAMILTON DISTRICT ONTARIO PHYSIOTHERAPY ASSOCIATION BOOK PRIZE

Established by the Hamilton District of the Ontario Physiotherapy Association. To be awarded to a graduating student who is active in the OPA/CPA and who, in the judgment of the selection committee, contributes to the involvement of others in the OPA/CPA, while maintaining a good academic standing.

Value: \$100 (50074 362)

THE KARL KINANEN ALUMNI PRIZE IN GERONTOLOGY

Established in 1992 by the Gerontology Alumni of McMaster University in recognition of Karl Kinanen for his leadership in the development of Gerontological Studies at the University. To be awarded to a student graduating from a programme in Gerontology who, in the judgment of the Gerontology Committee of Instruction, has demonstrated high academic achievement and leadership in community activities.

Value: \$100 (50064 317)

THE ELEANOR LEES BOOK PRIZE

Established in 1994 in memory of Eleanor Lees by friends in Physiotherapy. To be awarded to a student graduating from the Physiotherapy programme who, in the judgment of the School of Rehabilitation Science, has demonstrated notable academic achievement and excellence in clinical fieldwork related to neurology. (50073 354)

THE ONTARIO ASSOCIATION OF PROFESSIONAL SOCIAL WORKERS PRIZE

Established in 1992 by the Hamilton Branch. To be awarded to the graduating student from the second baccalaureate degree programme in Social Work who has attained the highest average in SOC WORK 4D06 and 4DD6.

Value: \$125

(The above award is offered in addition to the award in Category E with the same name and terms.)

THE PHYSIOTHERAPY SECTION OF THE CANADIAN LUNG ASSOCIATION BOOK PRIZE

Established in 1992 by the Canadian Physiotherapy Cardio-Respiratory Society. To be awarded to a graduating Physiotherapy student who, in the judgment of the School of Rehabilitation Science, has demonstrated notable academic achievement and excellence in clinical fieldwork related to cardio-respiratory physiotherapy.

Value: \$150 (50063 315)

THE SMITH AND NEPHEW INC. PHYSICAL HEALTH AWARD

Established in 1991. To be awarded to an Occupational Therapy student who, in the judgment of the School of Rehabilitation Science, has demonstrated outstanding academic achievement and excellence in clinical field-work related to adult physical health.

Value: \$75 (40066 307)

THE SMITH AND NEPHEW PROFESSIONAL ADVANCEMENT AWARD

Established in 1994. To be awarded to a graduating student in Occupational Therapy who, in the judgment of the School of Rehabilitation Science, has shown the most promise in the advancement of the profession of Occupational Therapy by his/her innovative and creative contributions as well as academic performance.

Value: \$500 (50080 771)

THE CORELENE HELEN TOSTEVIN SECOND DEGREE SCHOLARSHIPS

Established in 1998 by bequest of Corelene Tostevin. Two awards to be granted to students who are registered in a second degree Nursing programme and who, in the judgment of the School of Nursing, have demonstrated notable academic achievement.

Value: \$250 each (50079 792)

SECTION 3. INDEX OF AWARDS

Legend

B Business	N Nursing
E Engineering	AS Arts & Science Programme
H Humanities	HS Health Sciences
S Science	U University-wide
SS Social Sciences	OT/PT Occupational Therapy/Physiotherapy

Index

Aaron Prize (H) 292

Achievement Award of Excellence for Students with Disabilities (U) 302

ACI (Ontario Chapter) Scholarship (E) 292

A.G. Alexander Scholarships (H) 301

W.K. Allan Memorial Scholarship (S) 292

Cameron D. Allen Book Prize (S, SS) 306

Alumni Association Scholarships (U) 289

Alumni Association Scholarships (Part-time) (U) 301

Alumni Canadian Geography Prize (U) 302

Alumni Social Work Prize (SS) 302

Ambassador of Spain Book Prizes (H) 306

E.H. Ambrose Gold Medal (B) 305

American - Standard Prize (E) 302

Amoco Canada Undergraduate Scholarship (S) 292

Andersen Consulting Scholarship (E,S,B) 292

Andrew Foundation - McMaster Scholarships (U) 289

Anthropology Prize (SS) 306

Herbert M. Armstrong Memorial Fund (U) 292

Arts & Science Programme Book Award (AS) 302

Edgar R. Ashall Scholarship (U) 300

Ashbaugh Scholarships (U) 288

ASM International (Ontario Chapter) Scholarship (E,S) 292

Association of Professional Engineers Gold Medal (E) 305

Association of Professional Engineers Scholarship (E) 289

Association of Professional Engineers Undergraduate Scholarships (E) 292

A.H. Atkinson Education Fund - McMaster Scholarship (E) 289

A.H. Atkinson Prize (E) 292

Gordon R. Baker, Q. C. - McMaster Scholarships (U) 289

Charles Murray Ball Entrance Scholarship (U) 289

Murray Ball Entrance Scholarship in Earth Sciences (S) 288

Murray Ball Prizes in Geology (S) 302

Murray Ball Scholarships in Geology (S) 292

M. Banker Bates Scholarship (B) 292

J. Douglas Bankier Memorial Scholarship (S) 292

William and Lida Barns Memorial Prize in History (H) 306

Scott Bartlett Memorial Prize (B) 292

Basu Medal (B) 305

Marion Bates Book Prize (H) 306

Bates Residence Scholarship (U) 300

Arnold A. Beale - McMaster Scholarships (U) 289

Beale - Lincoln - Hall Travel Scholarship (U) 301

Beauty Counselors of Canada Scholarship (S) 292

H. G. Bertram Foundation - McMaster Scholarships (U) 289

Louise E. Bettger Scholarships in Music (H) 293

Betzner Family - McMaster Scholarship (U) 289

J. P. Bickell Scholarships (E,S) 293

Abe Black Memorial Prize (Essay) (S, SS) 302

Abe Black Memorial Prizes (S,SS) 306

Brian Blakey Memorial Scholarship (H) 293

Hilda Borman Scholarship (H) 293

Frances Bowling Entrance Scholarships (H) 292

Frances Bowling Scholarships (U) 293

Brien Scholarship in Philosophy (H) 293

Josephine Staples Brien Scholarship (U) 293

Dr. and Mrs. F.R. Britton Scholarship in Mathematics (S) 293

Ten Broeke-Bensen Memorial Scholarship (H) 293

Ed Buffet - McMaster Scholarship (U) 290

Jodie Anne Bull - McMaster Scholarship (U) 290

Burke Memorial Ring (S) 306

Ruth Burke Memorial Prize (N) 306

Crispin Calvo Prize (S) 293

Betty Taylor Campbell Scholarship (SS) 293

Ella Halstead Campbell Prize (H) 293

Canada Trust Company - McMaster Scholarship (U) 290

Canadian Association of Occupational Therapists Book Prize (OT/PT) 308

Canadian Friends of the Hebrew University - McMaster Scholarship (U) 290

Canadian Institute of International Affairs Prize (AS, H, SS) 302

Canadian Society For Chemical Engineering Prize (E) 293

Canadian Society For Chemistry Prizes (S) 293

Canadian Society of Civil Engineers (Hamilton Section) Prize (E) 293

Ezio Cappadocia Medal (H) 305

Eleanor Turner Carment Prize (SS) 302

James Robertson Carruthers Memorial Prize (U) 302

Norman N. Caskey Memorial Prize (H) 293

Certified General Accountants Association Prize (B) 293

Certified General Accountants Association Prize (B) 306

CFUW (Hamilton) Past President's Prize (E) 293

CFUW (Hamilton) Memorial Prize In Women's Studies (U) 306

CFUW Ruby Brown Book Prize in English (U) 302

CFUW (Hamilton) Scholarship (U) 293

Chancellors' Scholarships (U) 289

Chancellors' Scholarships (Specified Level I) 289

Chancellor's Gold Medal (U) 292

Chancellors' Scholarships (U) 289

Chemical Institute of Canada (Hamilton Section) Prizes (E,S) 293

Citizen Action Group Prize (SS) 302

Hugh Clark Scholarship (SS) 294

Class of '37 Scholarship (H,S) 294

Class of '37 Travel Scholarship in Arts and Science (AS) 301

Class of '43 Golden Anniversary Scholarship (H) 294

Class of '44 Scholarship (U) 294

Class of '50 Scholarship in Honours Economics (SS) 294

Classics Prize (H) 294

Coca - Cola Merit Awards (U) 288

Coca - Cola Scholarship (U) 290

Denton Coates Memorial Scholarship (E,S) 306

Comparative Literature Prize (H) 302

Consul General of Italy Book Prize (H) 302

Consulting Engineers of Ontario (CEO) Scholarship (E) 294

Consumers Glass Scholarship (E) 294

Beatrice Corrigan Memorial Book Prize (U) 302

Geraldine Loretta Cosford - McMaster Scholarship (U) 290

Cranston Prizes (H) 302

CRS Robotics Corporation - McMaster Scholarship (U) 290

CSEP/SCPE Undergraduate Student Award (SS) 306

Helen M. Currey Scholarship (U) 290

Edwin Marwin Dalley Memorial Scholarships (U) 300

Daughters of the Empire (Hamilton) - McMaster Scholarships (U) 290

D. M. Davies Prize (S) 302

Dr. Rudolf de Buda Scholarship (E) 294

John Deere Limited Scholarship (B) 294

DeVilliers-Mahaffy Merit Awards (U, S, H) 288

Deloitte & Touche Scholarship (B) 294

Audrey Diemert Memorial Book Prize (H) 301

Laura Dodson Prize (AS) 306

310 UNDERGRADUATE AWARDS — INDEX

Dofasco - McMaster Scholarship (U)	290	Hughes Scholarship (H)	303
Dofasco Scholarships (E)	290	Human Rights Award (SS)	303
Rosemary Douglas -Mercer Memorial Prize (H)	294	Humanities Medals for Special Achievement (H)	306
Drama Book Prize (U)	302	William D.G. Hunter Prize (SS)	303
Horace A. Dulmage Prize in Philosophy (H)	294	Hurd Medal (SS)	306
Joan-Jackson Dunbar Travel Scholarship (H)	301	Paul Hypher Prize (B)	303
Dundas Scholarships (U)	290	Municipal Chapter of Hamilton, IODE , Prize (U)	303
Education Foundation of the Federation of Chinese Canadian Professionals of Ontario Scholarships (AS, E, S)	300	Amelia Morden, Paardeburg Chapter, IODE , Scholarship (U)	290
Edwards Hall Residence Scholarship (U)	300	Institute of Electrical and Electronics Engineers (Hamilton Section) Prizes (E)	295
George and Nora Elwin Scholarships (U)	288	Intermetco Limited Scholarship (E)	295
Helen Emery Entrance Scholarship for Environmental Science (S) ..	288	Inter Naciones (Bonn) Book Prize (H)	303
Helen Emery Scholarships in Environmental Science (S)	294	Inter-Residence Council Scholarship (U)	296
Helen Emery Prize in Environmental Science (S)	306	Iroquois Trophy (E)	307
Energys Scholarship (H)	294	ITCA Community Involvement Prize (H)	296
Environmental Issues Prize (S, SS)	302	Ivey Scholarship (H)	296
Ernst & Young - McMaster Scholarship (U)	290	H.L. Jackson Memorial Scholarship (S)	303
Ernst & Young Scholarship (B)	294	Burton R. James Memorial Prize (B)	307
L.F. Full Prize (E)	294	W. Norman Jeeves Scholarship (H)	307
European History Prize (H)	306	Herbert M. Jenkins Prize (AS)	303
John P. Evans Travel Scholarship (H)	301	Jensen Medal (S)	306
Eileen Gray Farley Scholarship (H)	288	A.I. Johnson Scholarship (E)	296
Eileen Gray Farley - McMaster Scholarship (H)	290	Kathleen Mary Johnston Memorial Prize (SS)	296
Fieldwork Prize (OT/PT)	308	Frank E. Jones Prize (SS)	307
Neil Forsyth Prize (E, S)	303	Jean Jones Prize (SS)	303
Fortinos Scholarship (B)	289	Jury Prize (H)	296
Barbara Francis Scholarship (AS)	294	Cathryn E. Kaake Merit Award (U)	288
Harold and Gertrude Freeman Scholarship in French (H)	294	Stanford N. Katambala Geology Prize (S)	296
French Government Book Prizes (H)	303	Muriel McBrien Kauffman Foundation - McMaster Scholarships (U)	290
H.P. Frid Scholarship (U)	289	Gerald L. Keech Medal (S)	306
Klaus Fritze Memorial Prize (S)	294	Robert A. Kennedy Scholarship (B)	296
Merrill Francis Gage Entrance Scholarship (H)	289	Robert A. Kennedy - McMaster Scholarship (U)	290
Merrill Francis Gage Scholarship (H)	294	George P. and Leatha M. Keys Scholarships (S)	296
Gennum Corporation - McMaster University Scholarship (U)	290	Karl Kinanen Alumni Prize in Gerontology (SS)	308
R. Louis Gentilcore Prize (S,SS)	303	Kinesiology Prizes (SS)	303
Gwen George Award (U)	295	Kinesiology Prize (SS)	307
German Embassy Book Prize (H)	303	Kit Memorial Scholarship (H)	296
Gerontology Prizes (SS)	307	KPMG - McMaster Scholarship (B)	290
J.L.W. Gill Prizes (S)	295	KPMG Scholarship (B)	296
Gilmour Memorial Prize (U)	303	J. Beverly Krugel - McMaster Scholarship (U)	290
George P. Gilmour Memorial Scholarship (AS)	295	Raymond C. Labarge Merit Awards (U)	288
Allen and Milli Gould Family Foundation - McMaster Scholarship (B)	290	Laidlaw - McMaster Scholarships (U)	291
Governor General's Academic Medal (U)	305	Ruth Landes Prize (SS)	307
Governors' Scholarships (U)	289	Latin Prize (U)	303
Daphne Etherington Graham Memorial Scholarship in English (H) ...	295	Gary Lautens Memorial Scholarship (U)	296
Daphne Etherington Graham Memorial Scholarship in History (H) ...	295	Howard O. Lawrence Scholarship (E)	296
J.E.L. Graham Medal (SS)	306	Megan Lawrence Scholarship (SS)	296
Greek Community of Burlington and District Scholarship (U)	303	Sam Lawrence Prize (SS)	303
H.B. Greening Book Prize (H)	295	Ray Lawson Scholarships (E)	296
Guardian Capital Inc. - McMaster Scholarship (U)	290	Eleanor Lees Book Prize (OT/PT)	308
Asmahan Hafez Memorial Scholarship (S)	289	Lincluden Management - McMaster Scholarship (U)	291
Amelia Hall Gold Medal (H)	306	Linguistics Prize (H)	303
Ruth and Jack Hall Prize (E,S)	295	Claude C. Lister Scholarship (B)	300
Ronald K. Ham Memorial Prize (E,S)	295	Feliks Litkowski Prize in Political Science (SS)	307
Hamilton Chemical Association Prize (S)	295	Lloyd Memorial Scholarship (U)	291
Hamilton Community Foundation - McMaster Scholarships (U)	290	Edward and Margaret Lyons - McMaster Scholarships (H)	291
Hamilton District Ontario Physiotherapy Association Book Prize (OT/PT)	308	MacGibbon Scholarship (SS)	303
Hamilton Economic Development Commission Scholarships (B)	295	Bert MacKinnon Memorial Scholarship (U)	307
Hamilton Engineering Institute Prize (E)	303	William Mackenzie Memorial Prize (SS)	303
Hamilton Harbour Commissioners' Scholarship	295	Alec MacMillan - McMaster Scholarship (E)	291
Hamilton Industrial Scholarships (U)	300	Betty MacMillan Prize (SS)	296
Donald Hart Scholarship (B)	295	Agnes and John MacNeill Memorial Prize (H)	307
Hawkrigg Family - McMaster Scholarship (SS)	290	Catherine MacNeill Prize (U)	307
Hedden Hall Residence Scholarship (U)	300	Josephine Magee Scholarship (U)	289
Hellenic Prize (H)	295	Maksteel - McMaster Scholarship (U)	291
Anna Marie Hibbard Scholarship (U)	295	MAPS Gold Medal (U)	306
Rose Hill Scholarship (SS)	295	Lianne Marks Scholarship (SS)	296
Dr. Thomas Hobley Prize (SS)	295	Eleanor Dornbush Marples Prize in Art History (H)	303
John Hodgins Memorial Scholarship (E)	290	Eleanor Dornbush Marples Prize in Drama (H)	303
Nellie P. Hogg Scholarships (U)	289	Ronald E. Materick Scholarship (E)	297
Dr. Harry Lyman Hooker Entrance Scholarships (U)	288	Matthews Hall Residence Scholarship (U)	300
Dr. Harry Lyman Hooker Scholarships (U)	295	Albert Matthews Scholarship (U)	291
Bertram Osmer Hooper Scholarship (B,H,SS)	300	Harold Matthews Memorial Scholarship (U)	291
Nina Louise Hooper Scholarship (U)	300	Linda Matthews - McMaster Scholarship (U)	291
		Heleen and John Maxwell - McMaster Scholarship (U)	291
		Neil McArthur - McMaster Scholarship (U)	291

William J. McCallion Scholarships (Part-time) (U)	301	Dr. John A. Pylypiuk Scholarship (H)	298
Esther McCandless Memorial Prize (S)	307	Rand Memorial Prize of Class '98 (H)	304
John R. McCarthy Scholarship (AS,H,S,SS)	307	Lloyd Reeds Prizes (S,SS)	308
H.W. McCready Prize in British History (H)	303	Sharon Reeves Scholarship (H)	298
McGregor-Smith-Burr Memorial Scholarship (H)	297	Regional Municipality of Hamilton-Wentworth -	
R.C. McIvor Medal (SS)	306	McMaster Scholarships (U)	291
McKay Hall Residence Scholarship (U)	300	A.G. Reilly Scholarship (U)	289
A.G. McKay Prize in Classical Studies (H)	307	Religious Studies Prizes (SS)	308
Alexander Gordon McKay Scholarship (H)	297	Religious Studies Honours Essay Prize (SS)	308
Janet McKnight Award (N)	303	Ella Julia Reynolds Scholarships (H)	298
A.B. McLay Scholarship in Physics (S)	297	Herbert A. Ricker Scholarships (E, S)	298
Boyd McLay Scholarship in Physics (S)	297	Ricoh Canada - McMaster Scholarship (U)	291
Walter Scott McLay Scholarship (H)	307	Rosart Properties Inc. Scholarship (S,SS)	298
Howard and Janet McLean - McMaster Scholarship (U)	291	Abraham Rosenberg Memorial Prize (H)	304
McMaster Alumni Association - McMaster Scholarships (U)	291	Morris and Sarah Rosenhead Memorial Prize (U)	304
McMaster Humanities Society Scholarship (H)	297	Rotary Club of Hamilton Scholarship (U)	300
McMaster Merit Awards (U)	288	Leona Albertson Ryan and Gordon Henry Stevens	
McMaster Nursing Alumni Prize (N)	304	Memorial Scholarship (H)	298
McMaster Scholars (Faculty/Programme Specific) (U)	288	E.T. Salmon Scholarship (H)	301
McMaster University Retirees' Association Scholarship (SS)	297	E. Togo Salmon Prize in History (H)	298
McMaster University Retirees' Association Part-time Prize (SS)	301	Noel Sandusky Memorial Book Prize (AS, H)	304
McNabb Scholarship (S)	297	Hilda Savage Memorial Scholarship (U)	300
Simon McNally Scholarships (E)	297	Larry Sayers Prize in Chinese History (H)	304
Isabella Campbell McNee Scholarship (U)	291	Rebeckah Schnurr Award (B)	304
Peter McPhater Memorial Scholarship (H)	297	School of Art, Drama and Music Scholarship in Music (H)	298
Meloch Monnex - McMaster Scholarship (U)	291	ScotiaMcLeod - McMaster Scholarship (U)	291
Medical-Surgical Excellence in Clinical Nursing Award (N)	304	Sheila Scott Scholarship in English (H)	298
J. J. Miller Prize (S)	297	Sheila Scott Scholarship for Wallingford Hall (U)	300
Dr. F.A. Mirza Scholarship (E)	304	Sheila Scott Scholarships for Brandon Hall (U)	300
Modern Languages Travel Scholarship (H)	301	Larry Sefton Scholarships (SS)	304
Moffat Kinoshita Associates Inc. Prizes (U)	304	Charlotte E. Seidel Scholarship (H)	298
Molson Scholarship in Environmental Studies (E, S, SS)	297	Grace Senra-Fontes Memorial Prize (N)	304
E.S. Moore Prize in Geology (S)	307	Margaret A. Service Book Prize (S)	304
John F. Moore Prize (E)	304	Albert Shalom Travel Scholarship (H)	301
Robert John Morris - McMaster Merit Awards (E)	288	Louis L. Shein Scholarship (H)	298
Michael J. Morton Memorial Book Prize (S)	297	Shell Canada Prizes in Engineering and Management (E)	308
Elizabeth Mosgrove Scholarship (U)	297	Shell Canada Scholarships in Engineering and Management (E)	298
Moulton College Entrance Scholarship (U)	289	Shenstone Prize (S)	298
Moulton College Scholarships (U)	297	Gerald and Verna Simpson Memorial Scholarship (S)	298
Moulton Hall Residence Scholarships (U)	300	Richard Slobodin Prize (SS)	308
Anne Murray Scholarship (H)	297	Smith and Nephew Inc. Award (OT/PT)	309
National Association of Corrosion Engineers (E)	307	Smith and Nephew Professional Award (OT/PT)	309
NCR (Waterloo) Diversity Scholarship (E)	297	Patricia L. Smye Memorial Scholarships (H, SS)	299
Elaine Nardocho Memorial Scholarship (H)	304	Social Work Prize (SS)	305
Neosid Ceramic Engineering Prize (E)	304	Society of Chemical Industry Merit Awards (E, S)	308
P.L. Newbigging Prizes (S,SS)	307	Society of Management Accountants of Ontario Scholarship (B)	299
P.L. Newbigging Scholarship (S,SS)	304	Sociology Prizes (SS)	308
Alan G. Newcombe Prize in Peace Studies (SS)	304	Somerville Scholarships (U)	300
Niemeier Scholarship (N)	297	Sons of Italy of Ontario Scholarship (H)	299
Robert Nixon Scholarship (U)	297	South Ontario Economic Development Council Scholarships (S, SS) ...	299
Derry Novak Prize (SS)	304	Marnie Spears Scholarship (U)	299
Alvin I. Ogilvie Scholarships (U)	289	Salvatore Spitale Memorial Prize (H)	299
Fredric P. Olsen Book Prize (S)	297	S.L. Squire Scholarships (E, S)	299
Ontario Association of Professional Social Workers Prize (SS)	307	Clarence L. Starr Prize (N)	299
Ontario Hydro Scholarship in Electrical Engineering (E)	297	Anne Stein Memorial Prize (SS)	305
Connie O'Shaughnessy Memorial Prize (U)	304	Anne Stein Memorial Prize (Part-time) (SS)	301
Lillian and Leroy Page Scholarship (S)	288	Steico - McMaster Engineering Scholarships (E)	300
Gladys Ballantyne Parker Prize (H)	298	The Steico - McMaster Scholarships (U)	291
F.W. Paulin Scholarship (E)	298	STO Prize in Gerontology (U)	305
Irene Pearce Scholarship (H)	298	Mabel Stoakley Scholarship (U)	299
Harry L. Penny Prize (SS)	307	Stobo Scholarship (U)	300
Petro-Canada - McMaster Scholarships (U)	291	Marie L. Stock Scholarship (H)	299
Pevening Scholarship (SS)	298	Mark John Stojic Scholarship (E)	299
Physiotherapy Section of the Canadian Lung Association		Juanita LeBarre Symington Scholarship (H)	299
Book Prize (OT/PT)	308	T.H.B. Symons Scholarship in Canadian Studies (H,SS)	299
Tony Pickard Memorial Scholarship (U)	300	Kenneth W. Taylor Book Prize (SS)	305
Pioneer Group - McMaster Scholarship (U)	291	Hugh R. Thompson Memorial Prize (S,SS)	299
Pioneer Group Prize in Nursing (N)	307	Dr. R.A. Thompson Prize in Mathematics (S)	299
Pioneer Group Limited Prize (SS)	304	D. E. Thomson Scholarship (U)	291
Pioneer Group Limited Scholarship (SS)	298	Michael Thomson Memorial Book Prizes (U)	305
Political Science Prize (SS)	308	Frank Thorolfson Memorial Scholarship (H)	289
Political Science Honours Essay Prize (SS)	308	TKK - McMaster Scholarship (U)	291
Gordon and Jane Price - McMaster Scholarship (U)	291	Graham Ronald Toop Scholarship (H)	299
Price Waterhouse Coopers Scholarship (B)	298	Corelene Helen Tostevin Scholarships (N)	305
Leslie A. Prince Merit Awards (U)	288	Corelene Helen Tostevin Second Degree Scholarships (N)	309
Procor - McMaster Scholarship (U)	291	John Toth Memorial Prize (H)	305
Psychology Society Prizes (S,SS)	298	John H. Trueman Scholarship (H)	305

312 UNDERGRADUATE AWARDS — INDEX

John H. Trueman Prize (H)	308	Westinghouse - McMaster Scholarships (U)	291
Thomas Truman Memorial Prize (SS)	305	Wheeler Scholarship (U)	291
Edith H. Turner Foundation - McMaster Scholarships (U)	291	Howard P. Whidden Scholarship (U)	301
Tynowski Scholarship (U)	289	Whidden Hall Residence Scholarship (U)	300
United Steelworkers of America - McMaster Scholarship (U)	291	Widmaier Prizes for Proficiency in German (U)	305
University Prizes for Special Achievement (U)	305	R.M. Wiles Memorial Book Prize (H)	305
University Scholarships (U)	300	T. Russell Wilkins Memorial Scholarship (S)	301
University Scholarships (Part-time) (U)	302	Marjorie and Charles Wilkinson Scholarship (SS)	300
Valley City Manufacturing Co. Ltd. Scholarships (S)	299	T. E. Willey Scholarship (H)	305
Varey Scholarship (S)	299	Emanuel Williams Scholarship in Physics (S)	300
Harry Waisglass Book Prize (SS)	308	Janice Wilson Memorial Prize (H)	300
Wallingford Hall Entrance Scholarship (U)	289	Women's Art Association Scholarships (H)	300
Wallingford Hall Residence - Scholarship (U)	300	Woodstock Hall Residence Scholarship (U)	300
Melinda Wapshaw Achievement Award (SS)	305	Ivor Wynne Memorial Prize (SS)	300
F.W. Waters Scholarship in Philosophy (H)	299	Marguerite Z. Yates Scholarship (U)	300
F.W. Waters Scholarship in Philosophy for Part-time Students (H) ...	302	Yates Scholarships (U)	300
Mark Watson Memorial Prize in History (H)	308	Gladys A. Young Scholarship (U)	300
Ralph Weekes Scholarship (AS, S)	305	Lillian and Manuel Zack Scholarship (N)	300
Weisz Family Foundation Scholarship (B)	299	Zonta Club of Hamilton - Roberta Bondar McMaster Scholarships (U)	292

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Continued on next page

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GENERAL INDEX

- Abbott Memorial Scholarship Loan Fund (Medicine) 54
- Ability and Access Bursaries 271
- Academic Awards (Medicine) 53
- Academic Awards, General Conditions 281
- Academic Counselling at Admission 16
- Academic Ethics 23
- Academic Facilities, Student Services and Organizations 259
- Academic Probation (defined) 8
- Academic Regulations, Arts and Science Programme 18, 27
- Academic Regulations, Department of Kinesiology 19
- Academic Regulations, Faculty of Engineering 19, 39, 47
- Academic Regulations, Faculty of Health Sciences 19
(see also School of Medicine, Midwifery Education Programme, School of Nursing and School of Rehabilitation Science)
- Academic Regulations, Faculty of Humanities 19, 66
- Academic Regulations, Faculty of Science 19, 80
- Academic Regulations, Faculty of Social Sciences 19, 107
(see also Department of Kinesiology and School of Social Work)
- Academic Regulations, General 17
- Academic Regulations, Indigenous Studies (Interdisciplinary Minor) 129
- Academic Regulations, Midwifery Programme 56
- Academic Regulations, Occupational Therapy and Physiotherapy
Second Degree Programme 64
- Academic Regulations, School of Business 19, 35
- Academic Regulations, School of Nursing 59, 61
- Academic Regulations, School of Social Work 19, 125, 126
- Academic Regulations, Theme Schools 128
- Academic Standing and Programme Requirements 18
- Academic Standing Requirements, Level I Registration, and 18
- Academic User Fees 26
- Access Bursaries, Ability and 271
- Address, Mailing 2
- Admission and Registration (Health Sciences) 48
- Admission from Other Canadian Provinces 11
- Admission from Other Countries 11
- Admission from Ontario Colleges of Applied Arts and Technology 13
- Admission from Ontario Secondary Schools 9
- Admission from Grand River Polytechnic 13
- Admission Requirements 9
- Arts and Science I Admission 9
- Business I Admission 9
- Engineering I Admission 10
- Humanities I Admission 10
- Kinesiology I Admission 10
- Medical Programme Admission 52
- Midwifery I Admission 10, 55
- Music I Admission 10
- Nursing I Admission 10, 58
- Nursing, Nurse Practitioner Admission 59
- Nursing, Post Diploma Admission 58
- Occupational Therapy and Physiotherapy Second Degree
Programme Admission 63
- Science I Admission 10
- Social Sciences I Admission 10
- Social Work Admission
B.A./B.S.W. 124
B.S.W. 125
- Admission with Other Qualifications 11
- Admissions Office, enquiries 2
- Adult Oncology Courses 226
- Adult Oncology Programme 61
- Advanced credit, admission with 12
- Advanced Placement Courses, admission 12
- Advanced Standing (defined) 8
- Alcohol Policy and Residence Community Alcohol Policy 23
- Alumni Association, enquiries, description 2, 266
- Ancient History and Archaeology (Classics) 70
- Anthropology, courses 135
- Anthropology programmes (Department of) 108
- Anthropology Subfields 108
- Anti-Discrimination Policy 23
- Anti-Discrimination, Sexual Harassment/ Office (S.H.A.D.O.) 262
- Antirequisite (defined) 8
- Appeal Procedures 23
- Application, Deadlines, (all programmes, full- and part-time) 16
- Application Deadlines, Health Sciences 16, 48
- Application Procedures (see also Faculties, Programmes
and Schools sections) 15
- Applied Mathematics programme 96
- Approval of Programmes 17
- Archaeology 70, 108
- Areas of Study (English) 71
- Art and Art History courses 138
- Art and Art History programmes 67
- Art, Drama and Music, School of, programmes 67
- Art Gallery (see McMaster Museum of Art)
- Art History Programmes 67
- Art Portfolio 10, 65, 138
- Arts and Science, combined programmes 28-33
- Arts and Science courses 140
- Arts and Science Programme 27
- Arts and Science Programme Bursaries 273
- Asian Studies, (Thematic Area) 130
- Associate Vice-President (Student Affairs) 2, 261
- Astronomy Courses 233
- Astronomy Minor 101
- Astronomy, Physics and, Department of 99
- Astrophysics programme 100
- Athletic Bursaries 271
- Athletics and Recreation 262
- Audio Visual Services (see McMaster Media Production Services)
- Auditing Courses 17
- Autobiographical submission (Medicine) 52
- Awards (see Undergraduate Academic Awards and Community
Contribution Awards)
- B.A. programmes, Faculty of Humanities 68-78
- B.A. programmes, Faculty of Social Sciences 109-127
- B.A. (Honours) programmes, Faculty of Humanities 67-78
- B.A. (Honours) programmes, Faculty of Social Sciences 108-127
- B.A./B.S.W. programme 124, 126
- B.Arts Sci. programmes 27-33
- B.Com. programme 37
- B.Com. (Honours) programme 37
- B.Eng. programmes 39-46
- B.Eng.Mgt. programmes 39-47
- B.Eng. Society programmes 40-47
- B.H.Sc. programmes 54-56, 61-64
- B.Kin. programmes 118
- B.Mus. programmes 69
- B.Sc. (Honours Co-op) programmes 84, 86, 89, 93, 101
- B.Sc. (Honours) programmes 83-102
- B.Sc.N. programmes 56-61
- B.Sc. Three-Level programmes 80, 103-105
- B.S.W. programme 125, 126
- B.Tech. Degree 47
- Baccalaureate degree (defined) 287
- Basic Cardiac Life Support Training (Medicine) 52
- Bertrand Russell Archives 3, 259
- Biochemistry and Molecular Biology programme 85
- Biochemistry Co-op programme 84
- Biochemistry courses 141
- Biochemistry programmes (Department of) 83
- Biological Chemistry programme 89
- Biology courses 143
- Biology and Mathematics programme 86
- Biology and Pharmacology Co-op programme 64, 86
- Biology programmes (Department of) 85
- Biology and Psychology programme 87
- Biology, Philosophy and (B.A.), programme 77
- Biotechnology and Genetic Engineering Option (Biochemistry)
programmes 84

316 GENERAL INDEX

Board of Governors, members of	313	Comparative Literature programme	74
Book Prizes (see Undergraduate Academic Awards)		Complementary Studies Electives (Engineering)	38
Bookstore	262	Complementary Studies Option programmes (see Faculty of Science in Faculties, Programmes and Schools Sections)	
Bursaries (defined)	8	Computer Engineering and Management programme	41
Bursaries	268	Computer Engineering and Society programme	42
Bursaries Index	282	Computer Engineering (B.Eng.) programme	41
Business Bursaries	273	Computer Engineering courses	170
Business courses (see Commerce courses)		Computer Science and Mathematics programme	91
Business, School of	34	Computer Science and Statistics programme	91
CA (Cumulative Average), After Reinstatement	18	Computer Science courses	161
CA (Cumulative Average), defined	8	Computing and Software (Department of)	90
CAAT (Ontario College of Applied Arts and Technology), admission from	13	Computer Science as a Second Degree programme	91
CIS (Computing and Information Services)	259	Computer Science, Economics and, (B.A.) programme	110
CPEC (Career Planning and Employment Centre)	263	Computer Science programmes	90
CSD (Centre for Student Development)	261	Computing and Information Services (CIS)	259
Calculation of Cumulative Average Following Reinstatement After Poor Academic Performance	18	Conference Office	265
Campus Map	322	Conference Services, Housing, and (Residences) enquiries, description	2, 264
Campus Names	266	Confidentiality of Student Records	23
Canada Student Loans Plan	261	Continuance at the University, minimum requirements	18
Canadian Citizens and Landed Immigrant Students' Fees	24	Continuing Students, admission	12, 15, 34
Canadian Resident Matching Service (CaRMS)	52	Continuing Education, Centre for, enquiries, description	2, 133
Canadian Studies (Thematic Area)	131	Continuing Students (defined)	8, 12
Cancelling (Dropping) a Course	5	Convocation dates	4
Cardiac Life Support Training, Basic	52	Cooperative Internship Options (Social Sciences)	106, 108, 111, 114, 118, 119, 121
Career Planning and Employment Centre, enquiries, description	2, 263	Cooperative Internships (Science)	80
Categories of Awards	288	Cooperative Programmes (Science)	79
Cayuga (Indigenous Studies) courses	196	Co-op Fees	25
Centre for Continuing Education, enquiries, description	2, 133	Corequisite (defined)	8
Centre for Student Development, enquiries, description	2, 261	Counselling, Academic	16
Ceramics Stream (Materials Engineering and Management programme)	45	Course Enrolment Limits	4
Ceramics Stream (Materials Engineering and Society programme)	46	Course Groupings (Social Work)	124, 125
Ceramics Stream (Materials Engineering programme)	45	Course Numbers (defined)	8
Certificate and Diploma Programmes	133	Course Listings	135
Certificate Programmes, Graduates of, Admission	13	Courses, Selection of	17
Challenge Examinations	12	Credit at Another University	14
Changes to Registration	17	Credit in Courses by Special Assessment	12
Chaplains	265	Cross-listed Course (defined)	8
Chemical Engineering and Management programme	39	Cumulative Average (CA), After Reinstatement	18
Chemical Engineering and Society programme	40	Cumulative Average (CA) (defined)	8
Chemical Engineering (B.Eng.) programme	39	Curriculum Plan (Medicine)	51
Chemical Engineering courses	147	Curriculum Plan (Midwifery)	54
Chemistry, Biological, programme	89	Curriculum Plans (Nursing)	60
Chemistry Co-op programme	89	Curriculum Plan (OT/PT)	62, 64
Chemistry courses	149	Dates, Sessional	4, 5
Chemistry programmes (Department of)	88	Deadlines, Application (see also Faculties, Programmes and Schools sections)	16, 48
Child Life Studies, Diploma programme in	49	Deans (see listings under Faculty sections)	
Civil Engineering and Management programme	40	Deans' Honour List	20, 56, 64
Civil Engineering and Society programme	41	Deferral of Admission (for Ontario Secondary School students)	9
Civil Engineering (B.Eng.) programme	40	Deferral of Registration (Health Sciences)	53, 55, 59, 63
Civil Engineering courses	151	Deferred Examinations	21, 35
Classical Languages and Literature (Classics)	70, 71	Deferred Examinations, dates (see Sessional Dates)	
Classics courses	153	Degree (defined)	8
Classics programmes (Department of)	70	Degrees by Programme	7
Clinical Behavioural Sciences, Diploma programme in	49	Degrees and Programmes (Summary)	6
Clinical Course Requirements (Health Sciences)	49, 59, 63	DeGroot, Michael G., School of Business	34
Clinical Education (OT/PT)	63	Department (defined)	8
Clinical Skills Laboratories (OT/PT)	63	Diploma in Music Performance	70
Code of Conduct	23	Diploma Programme in Child Life Studies	49
College of Midwives, Qualifying for Registration by	56	Diploma Programme in Clinical Behavioural Sciences	49
Colleges of Applied Arts and Technology, admission from	13	Diploma Programme in Environmental Health	49
Combined B.A./B.S.W. programme	124, 126	Diploma Programme in Occupational Health and Safety	49
Combined Honours (see programme descriptions and regulations under Faculty sections)		Diploma Programmes, Certificate and	133
Combined programmes, information	6	Directory for Correspondence and Enquiries	2
Commerce courses	156	Dishonesty (Academic)	23
Commerce electives (Engineering)	38	Divinity, College of	2, 3
Commerce Internship Programme	36	Drama and Music, School of Art, programmes	67
Commerce programmes	34	Drama courses	164
Community Contribution Awards	285	Drama programmes	68
Community Service Bursaries	272	Early Admission (from an Ontario Secondary School)	9
Comparative Literature courses	212	Earth Science programme (see Geoscience programme)	

Economics courses	166	Fall/Winter Session, dates	5
Economics programmes (Department of)	109	Field Courses (Science)	82
Economics and Computer Science (B.A.) programme	110	Field Placements, Non-Credit (Kinesiology)	200
Economics and Mathematics (B.A.) programme	110	Fields of Study (Religious Studies)	33, 123, 242
Eighteenth Century Collection	3, 259	Film Minor	69
Elective Courses (defined)	6	Final Admission (from Ontario Secondary Schools)	9
Elective Courses Available to Level I Students	8	Financial/Administrative User Fees	26
Electives, (Medicine)	51	Financial Aid, enquiries, description	2, 263, 267
Electrical and Computer Engineering courses	169	Financial Information	24-26
Electrical Engineering and Management programme	42	Financial Information, Medicine	53
Electrical Engineering and Society programme	43	Financial Information, Midwifery	56
Electrical Engineering (B.Eng.) programme	42	Financial Information, Occupational Therapy and Physiotherapy	64
Electrical Engineering Courses	170	Focus Electives, Engineering and Society	38
E-mail Addresses (see Faculties, Programmes and Schools sections)		For Credit at Another University	14, 15
Emergency Loans, Short Term	267	Foundation for Social Work	125
Employment Centre, Career Planning and, enquiries, description	2, 263	French courses	180
Engineering and Management courses	173	French programmes (Department of)	72
Engineering and Society courses	173	French, Summer Immersion Programmes in	66
Engineering and Society Focus Electives	38	Full load (defined)	8, 287
Engineering Bursaries	275	Full-load Average (FA) (defined)	8, 287
Engineering, Faculty of	38	Full-time Student (defined)	8
Engineering (General) courses	172	Full-time, In-course Students, Academic Awards for	292
Engineering, Material Science and, courses	203	Full-time Students, fees	24, 25
Engineering Physics and Management programme	43	GOTSEP (Group of Ten Student Exchange Programme)	263
Engineering Physics and Society programme	43	General Academic Regulations	17
Engineering Physics (B.Eng.) programme	43	General Bursaries	268
Engineering Physics courses	174	General Certificate of Education, (G.C.E.)-admission from,	12
Engineering Technology (General) courses	175	General Conditions for Academic Awards	287
English courses	176	General Objectives (Medicine)	50
English Language Proficiency Requirement	9	General Policy on Transfer of Course Credits	12
English programmes (Department of)	71	General Scholarships and Prizes (Full Load)	292
Enrichment Programme, admission	14	Genetic Engineering Option, Biotechnology and, (Biochemistry) programmes	84
Entering Students, Academic Awards for	288	Geo courses	183
Environmental Health, Diploma programme in	49	Geographic Information Systems Specialist Option	93, 111, 112
Environmental Science Co-op programme	93	Geographical Consideration (Medicine)	52
Environmental Science courses	180	Geography courses	183
Environmental Science Minor	95	Geography (B.A.) programmes	111
Environmental Science programme	92	Geography (B.Sc.) programmes	92, 95
Environmental Sciences, Geography and, (B.Sc.) programme	95	Geography and Environmental Sciences (B.Sc.) programme	95
Environmental Sciences, Geography and, (B.Sc.) Co-op programme	95	Geography and Environmental Sciences (B.Sc.) Co-op programme	95
Environmental Studies, Geography and, (B.A.) programme	112, 114	Geography and Environmental Studies (B.A.) programme	111, 114
Evaluation methods, Student (Medicine, OT/PT)	50, 63	Geography and Geology (B.A.) programme	114
Evening courses, explained (see Sessional Dates and Part-time Degree Studies)		Geography and Geology, School of	92
Evening Session, dates (see Sessional Dates)		Geology courses	188
Examinations, dates (see Sessional Dates)		Geology, Geography and, (B.A.) programme	114
Examinations, Schedules and Reservations, enquiries	2	Geology programmes	94
Examinations regulations	20	Geology, School of Geography and	92
Exchange Programme Bursaries	282	Geoscience programme	103
Exchange Programmes	18, 27, 36, 38, 66, 80, 108	German courses	214
Exchange Students, Overseas and, enquiries	2	German Minor	76
Exchanges Office	263	Gerontological Studies, Office of	260
Expenses (see Financial Information)		Gerontological Studies programmes	114
Extra Courses (defined)	8	Gerontology and Sociology programme	115
Extra Work, (see also regulations under Faculties, Programmes and Schools sections)	17	Gerontology as a Second Degree programmes	115, 116, 117
Faculties, Programmes and Schools Sections		Gerontology courses	188
Arts and Science Programme	27-33	Globalization, Social Change and the Human Experience, Theme School on	128
Faculty of Engineering	38-47	Globalization, Social Change and the Human Experience courses	254
Faculty of Health Sciences	48-64	Glossary	8
Faculty of Humanities	65-78	Governing Bodies	313
Faculty of Science	79-105	Grading System	21
Faculty of Social Sciences	106-127	Graduand Awards (defined)	287
School of Business	34-37	Graduate Studies, School of, enquiries	2
Theme Schools	128	Graduating Students, Academic Awards for	305
Faculty (defined)	8	Graduation, regulations	21, 56, 81
Faculty of Business Bursaries	273	Graduates Applying for a Second Bachelor's Degree	12
Faculty of Engineering Bursaries	275	Graduates of McMaster Certificate Programmes	13
Faculty of Health Science Bursaries	276	Grand River Polytechnic, Admission from	13
Faculty of Humanities Bursaries	277	Greek courses	155
Faculty of Science Bursaries	278	Greek Minor	71
Faculty of Social Sciences Bursaries	279	Grievances, enquiries, description	2, 23
Faculty Specific Bursaries	273	Group of Ten Student Exchange Programme (GOTSEP)	263
Failures (defined for Awards)	287	H.G. Thode Library of Science and Engineering	259
Fees (see Financial information)			

318 GENERAL INDEX

Health and Society (Interdisciplinary Minor)	129	Kinesiology (B.Kin.) programmes (Department of)	118
Health Physics Co-op, Medical and, programme	101	Kinesiology (B.Sc.) programme (Department of)	95
Health Physics, Medical and, programme	100	Labour Studies courses	201
Health Regulations (Health Sciences)	44	Labour Studies programmes	119
Health Requirements (Nursing)	10	Landed Immigrant Students, Canadian Citizens and, fees	24
Health Sciences Bursaries	276	Language, Linguistics and Translation (French) programme	72
Health Sciences courses	190	Language and Literature (French) programme	72
Health Sciences, Faculty of	48	Latin courses	155
Health Sciences Library	259	Latin Minor	71
Health Service, Student	263	Learning Methods (Medicine)	50
Health Services, Student, fees	25	Letter of Permission (defined)	8
Hebrew courses	245	Letter of Permission	14, 15, 17, 81, 108
Hispanic Studies courses	215	Level (defined)	8
Hispanic Studies Minor	76	Level I, admission requirements	9
History courses	191	Level I Courses, Limit on	17
History programmes (Department of)	73	Level I Programmes (see Faculties, Programmes and Schools sections)	
History Subfields	73	Level I Registration/Academic Standing Requirements	18
Hong Kong, admission from	12	Level I Science Course Lists	79
Honours Programmes (see descriptions and regulations under the Faculties, Programmes and Schools sections)		Liability, Release From	4
Hospitality Services, enquiries, description	2, 264	Libraries	3, 259
Housing, Off-campus, enquiries, description	2, 265	Licence to Practise (Health Sciences)	49, 51, 259
Housing and Conference Services (Residences) enquiries, description	2, 264	Life Science programme	103
Housing, Residence fees	25	Limit on Level I Courses	17
Human Experience, Theme School on Globalization, Social Change and the	128	Limited Enrolment Courses (Science)	83
Human Experience, Theme School on Globalization, Social Change and the, courses	254	Limited Enrolment Programmes (Science)	80
Human Rights, Statement on	23	Linguistics courses	217
Humanities Bursaries	277	Linguistics programmes	75
Humanities, Faculty of	65	Listener, admission	14
Humanities (General) courses	195	Listeners, fees	25
Humanities/Religious Studies Requirement	107	Loan Funds (Medicine)	54
Humanities Study Abroad	66	Loans (defined)	8
IDC (Instructional Development Centre)	260	Loans (see Student Financial Aid)	
Immersion Programmes in French, Summer	66	M-Opportunity Plan (Engineering)	39
Immunization (Medicine)	52	MAPS (McMaster Association of Part-time Students)	132, 266
In-course Awards (defined)	287	MD programme	50
In-course Students Awards	292, 301	MSU (McMaster Students Union)	265
Index of Academic Awards	309	Mailing Address	2
Index of Bursaries	282	Management, Engineering and, courses	173
Indigenous Studies courses	195	Manufacturing Engineering and Management programme	44
Indigenous Studies (Interdisciplinary Minor)	129	Manufacturing Engineering and Society programme	44
Industrial Internships (Engineering)	38	Manufacturing Engineering (B. Eng.) programme	44
Information Centre, Mohawk/McMaster Education	132	Manufacturing Engineering courses	209
Information Services, Computing and	259	Manufacturing Engineering Technology (B. Tech.) programme	47
Innis Library	259	Manufacturing Technology courses	202
Inquiry Course List (Science)	82	Map	322
Inquiry courses	197	March Counselling (Science)	82
Inquiry Seminars (Arts & Science Programme, OT/PT)	27, 63	Materials courses	203
Instructional Development Centre (IDC)	260	Materials Engineering and Management (Ceramic Stream)	45
Insurance	26	Materials Engineering and Management programme	45
Interdisciplinary Minors and Thematic Areas	129	Materials Engineering and Society (Ceramic Stream)	46
International Affairs, Office of	261	Materials Engineering and Society programme	45
International Baccalaureate (IB) Diploma, Admission	12	Materials Engineering (B. Eng.) programme	45
International/Cross-Cultural/Language Menu	34	Materials Engineering (Ceramic Stream) programme	45
International Students' Advisor, enquiries, description	2, 263	Materials Processing Minor	96
International Study	18, 27, 36, 38, 66, 80, 108, 263	Materials Properties Minor	96
Internships, Industrial (Engineering)	38	Materials Science (B.Sc.) programme	95
Internship Options (Social Sciences)	106, 108, 111, 114, 118, 119, 121	Materials Science and Engineering courses	203
Internship Programme (Commerce)	36	Mathematical Science programme	104
Internship Programme (Cooperative-Science)	80	Mathematics and Physics programme	97
Internship, Research (OT/PT)	63	Mathematics and Statistics courses	204
Interviews (Medicine)	53	Mathematics and Statistics programmes	97
Irregular status	18, 19	Mathematics and Statistics programmes (Department of)	96
Italian courses	215	Mathematics, Applied, programme	96
Italian Minor	76	Mathematics, Biology and, programme	86
Japanese courses	216	Mathematics, Computer Science and, programme	91
Japanese Studies courses	217	Mathematics, Economics and, (B.A.) programme	110
Japanese Studies programme	74	Mathematics programmes	96
Jewish Studies (Interdisciplinary Minor)	130	Mathematics, Philosophy and, programme (B.A.)	77
Kinesiology as a Second Degree Programme	118, 119	Mature Student (defined)	8
Kinesiology courses	197	Mature Students, admission	13, 55
		McMaster Association of Part-time Students (MAPS)	132, 266
		McMaster Certificate Programmes Graduates, admission from	13
		McMaster International (See Office of International Affairs)	
		McMaster Media Production Services	260

- McMaster Museum of Art 261
 McMaster Scholars Programme 288
 McMaster Students Union (MSU) 265
 McMaster University Alumni Association 266
 McMaster University, Overview 3
 McMaster Work-Study Programmes 267
 Meal Plan Fees, Residence and, 25
 Mechanical Engineering and Management programme 46
 Mechanical Engineering and Society programme 46
 Mechanical Engineering (B.Eng.) programme 46
 Mechanical Engineering courses 208
 Medals 292, 305
 Media Production Services 260
 Medical and Health Physics programme 100
 Medical and Health Physics Co-op programme 101
 Medical Curriculum Plan 51
 Medical Officer Training Plan 53
 Medical Programme 49
 Merit Awards for Ontario Students 288
 Michael G. DeGroot School of Business 34
 Midwifery courses 210
 Midwifery Curriculum Plan 54
 Midwifery programme 54
 Mills Memorial Library 259
 Minimum Final Average 9
 Minimum Requirements to Continue at the University 18
 Minor (defined) 8
 Minors and Thematic Areas (see Interdisciplinary Minors and Thematic Areas)
 Minors (regulations) 19
 Minors (see Faculties, Programmes and Schools sections)
 Miscellaneous Fees 26
 Modern Languages courses 211, 218
 Modern Languages programmes (Department of) 74
 Mohawk (Indigenous Studies) courses 197
 Mohawk/McMaster Education Information Centre 132
 Molecular Biology, Biochemistry and, programme 85
 Molecular Biology courses 219
 Molecular Biology programme 98
 Multimedia courses 219
 Multimedia Studies programme 69, 76
 Museum of Art 261
 Music courses 221
 Music Performance, Diploma in 70
 Music programmes 69
 Music, School of Art, Drama and, programmes 67
 National Scholarships 289
 Neural Computation courses 223
 Neural Computation programme 99
 Non-credit Field Placements (Kinesiology) 200
 Northern Studies Stream (OT/PT) 62
 Nurse Practitioner courses 226
 Nurse Practitioner programme (see description in School of Nursing)
 Nursing courses 224
 Nursing Curriculum 60
 Nursing Leadership/Management courses 227
 Nursing Leadership/Management programme 61
 Nursing Occasional Category 14
 Nursing programmes 60-61
 Nursing, School of 56
 OAC Course Equivalents for Students from Other Canadian Provinces
 (Chart) 11
 OAC Student admission procedures 15
 OIA (Office of International Affairs) 261
 OSAP (Ontario Student Assistance Programme) 267
 Occupational Health and Safety, Diploma programme in 49
 Occupational Therapy and Physiotherapy courses 227
 Occupational Therapy and Physiotherapy Second Degree
 Programmes 61
 Off-Campus Housing, enquiries, description 2, 265
 Office of Associate Vice-President (Student Affairs) 2, 261
 Office of Gerontological Studies 260
 Office of International Affairs 261
 Office of the International Students' Advisor/Student Exchanges/
 Work and Study Abroad 263
 Officers of the University 314
 Ojibwe (Indigenous Studies) courses 197
 Ombuds Office, enquiries, description 2, 266
 On-Campus Housing, enquiries, description 2, 264
 Oncology courses 226
 Oncology programmes 61
 Ontario Colleges of Applied Arts and Technology, admission from 13
 Ontario Primary Health Care Nurse Practitioner Programme (C) Stream
 (See description in School of Nursing)
 Ontario Secondary Schools, admission from 9
 Ontario Special Bursary Plan 267
 Ontario Student Assistance Programme (OSAP) 267
 Ontario Student Loans Plan 267
 Ontario Students' Scholarships 289
 Organizations, Student Government and 265
 Other Canadian Provinces, Admission from 11
 Other Canadian Provinces, OAC Course Equivalency Chart 11
 Other Countries, Admission from 11
 Other Universities, Transfers from 12
 Overload Work 17
 Overseas and Exchange Students, enquiries, description 2, 263
 Paediatric Oncology, courses 226
 Paediatric Oncology programme 61
 Parking, services described 265
 Part-time Degree Studies 132
 Part-time Degree Programmes available (Summary) 7
 Part-time Student, admission 15
 Part-time Student (defined) 8
 Part-time Student, fees 24
 Part-time, In-course Students, Academic Awards for 301
 Part-time Students, McMaster Association of, (MAPS) 132, 266
 Part-time Studies Awards (defined) 287
 Payment of Fees 25
 Peace Studies (Interdisciplinary Minor) 130
 Pharmacology courses 230
 Pharmacology, Biology and, Co-op programme 64, 86
 Philosophy courses 230
 Philosophy programmes (Department of) 77
 Philosophy and Biology (B.A.) programme 77
 Philosophy and Mathematics (B.A.) programme 78
 Physical Education activities (see Academic Facilities, Student Services
 and Organizations -- Athletics and Recreation)
 Physical Education courses (see Department of Kinesiology)
 Physical Education programme (see Kinesiology Programmes, Department of)
 Physical Science programme 104
 Physics and Astronomy courses 232
 Physics and Astronomy programmes (Department of) 99
 Physics, Engineering courses 174
 Physics, Mathematics and, programme 97
 Physics, Medical and Health Option, programme 100
 Physics, Medical and Health Option, Co-op programme 101
 Physiotherapy courses 228
 Physiotherapy, Occupational Therapy and,
 Second Degree Programme 61
 Policies, University 5
 Polish courses 218
 Political Science courses 235
 Political Science programmes (Department of) 121
 Portfolio Requirement (Art 1F06) 10, 65, 138
 Post-Degree Student (defined) 8
 Post-Degree Students, admission 13, 15
 Post Diploma (B) Stream (Nursing)
 (See description in School of Nursing)
 Post Office 262
 Post-Professional Health Sciences Education Programmes 49
 Prepayment of Fees 26
 Prerequisite (defined) 8
 Primary Health Care Nurse Practitioner Programme (see School of Nursing)
 Printing Services (see McMaster Media Production Services)
 Prizes (see Undergraduate Academic Awards)
 Probation, Academic (defined) 8
 Probation, Programme (defined) 8
 Professional Certification (see programme descriptions in Business,
 Engineering, Health Sciences and Science)

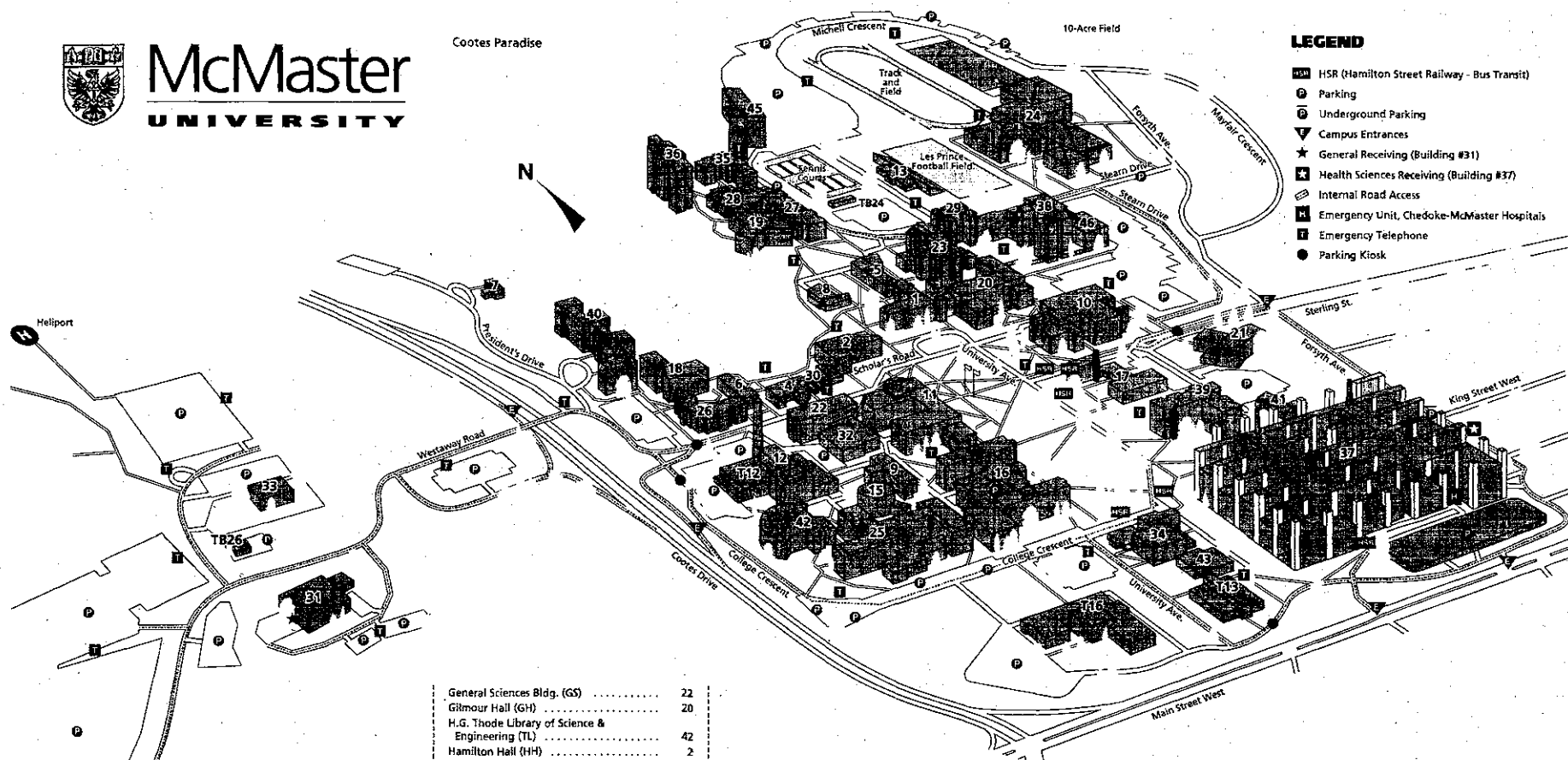
320 GENERAL INDEX

Professional Degrees, summary	7	School of Nursing, described	56
Professors (see Course Listings by Departments)		School of Nursing, admission	57
Programme (defined)	8	School of Occupational Therapy and Physiotherapy (see School of Rehabilitation Science)	
Programme Approval	17	School of Rehabilitation Science	61
Programme Probation (defined)	8	School of Social Work, programmes	124
Programme Requirements, and Academic Standing	18	Science Bursaries	278
Programme Requirements (see regulations under the Faculties, Programmes and Schools sections)		Science courses	246
Programme (Academic) Standing	18	Science Inquiry Course List	82
Programme Transfer	19	Science (Complementary Studies Option) programme	102
Programme Transfer after Admission	9	Science, Faculty of	79
Psychology courses	238	Science, Technology, and Public Policy courses	255
Psychology B.A. programmes (Department of)	121	Science, Technology, and Public Policy, Theme School on	128
Psychology B.Sc. programmes (Department of)	101	Second Baccalaureate Degree Students, Academic Awards for	308
Psychology, Biology and, programme	87	Second Bachelor's Degree, admission	12, 34
Publications, University	2	Second Bachelor's Degree, regulations	6, 20
Publications (Library)	259	Second Bachelor's Degree, regulations, Faculty of Science	82
Public Policy, Science, Technology and, courses	255	Second Language Proficiency, Humanities	66
Public Policy, Science, Technology and, Theme School on	128	Second Undergraduate Degree	6, 15, 34
Qualifying for Registration by the College of Midwives	56	Selection of Courses	17
Quebec Admission	11	Selection Procedure (Medicine, Midwifery)	52, 55
Readmission, defined	8	Senate, members of	313
Readmission, (see also Academic Regulations in the Faculties, Programmes and Schools sections)	13, 16	Senate Policy Statements	23
Ready Division of Archives and Research Collections, William	259	Senate Scholarships	300
Records Retention Policy	22	Seniors', admission	14
Recreation, Athletics and	262	Seniors' Fees	25
Refunds (Fees)	26	Service Bursaries, Community	272
Regional Bursaries	272	Services for Students with Disabilities, enquiries, description	2, 262
Registration	17	Session (defined)	8
Registration (defined)	8	Session (defined for Awards)	287
Registration by College of Midwives, Qualifying for	56	Sessional Average (SA) (defined)	8
Registration, Examinations fees (Nursing programme)	26	Sessional Dates	4, 5
Rehabilitation Science, School of	61	Sexual Harassment/Anti-Discrimination Office (S.H.A.D.O.)	262
Reinstatement (defined)	8	Sexual Harassment Policy	23
Reinstatement, (see also Academic Regulations in the Faculties, Programmes and Schools sections)	13, 16	Short-Term Emergency Loans	267
Release from Liability	4	Social and Political Context of Social Work	125
Religious Studies courses	242	Social Change and the Human Experience, Theme School on Globalizaion	128
Religious Studies Fields of Study	32, 123, 242	Social Change and the Human Experience, Theme School on Globalization, courses	254
Religious Studies, Humanities/Requirement	107	Social Sciences Bursaries	279
Religious Studies, programmes (Department of)	123	Social Sciences courses	247
Repeated Courses	35, 39	Social Sciences, Faculty of	106
Repetition of Courses	17	Social Work course groupings	124, 125
Required Courses (defined)	8	Social Work courses	247
Research Internship (OT/PT)	63	Social Work programmes (School of)	124
Residence and Meal Plan Fees	25	Society, Engineering and, courses	173
Residence Community Alcohol Policy, Alcohol Policy and	23	Society, Health and, (Interdisciplinary Minor)	129
Residence Requirements, academic	17	Sociology, Gerontology and, programme	115
Residence Scholarships	300	Sociology courses	250
Residences, enquiries, description	2, 264	Sociology programmes (Department of)	127
Residences, fees	25	Software Engineering and Management programme	47
Residences, Summer	25	Software Engineering and Society programme	47
Result of Session (defined)	8	Software Engineering courses	163
Retention of Documents	16, 22	Software Engineering (B.Eng.) programme	46
Returning Student Application	15	Spanish courses (see Hispanic Studies)	
Review (defined)	8	Special Applicants (Medicine)	53
Reviewing Period (defined)	8	Special Assessment, Credit in Courses by	12
Reviewing Period (defined for Awards)	287	Specialist Option programmes (see Faculties of Science and Social Sciences in Faculties, Programmes and Schools sections)	
Russell Archives	259	Specific Achievement Awards	302
Russian courses	218	Spring Counselling (Humanities)	67
Russian Minor	76	Spring/Summer Sessions, dates	5
SA (Sessional Average) (defined)	8	Statement on Human Rights	23
SADM courses	246	Statistics, Computer Science and, programme	91
SAT scores (Scholastic Aptitude Test)	12	Statistics courses	207
SHADO (Sexual Harassment/Anti-Discrimination Office)	262	Statistics, Mathematics and, programmes	97
Sanskrit courses	245	Statistics, Mathematics and, programmes (Department of)	96
Scholarships (see Undergraduate Academic Awards)		Statistics programme	98
Scholarships Open to Ontario Students	289	Student Affairs (Associate Vice-President), enquiries, description	2, 261
School of Art, Drama and Music, programmes, faculty listing	67, 246	Student Code of Conduct	23
School of Business	34	Student Counselling Service (see Centre for Student Development)	
School of Geography and Geology	92, 111	Student Development, Centre for, enquiries, description	2, 261
School of Graduate Studies, enquiries	2	Student Evaluation Methods (Medicine, OT/PT)	50, 63
School of Medicine, described	49	Student Exchanges/Work and Study Abroad	263
School of Medicine, admission	52		

Student Financial Aid and Scholarships, enquiries, description 2, 263, 267	19
Student Government and Organizations	265
Student Health Service	263
Student Health Services Fees	25
Student Liaison, enquiries	2
Student Records, access to	23
Student Services	261
Student Services and Organizations, Academic Facilities	259
Study Abroad, (see also Third Year Study Elsewhere)	18, 263
Subject Requirements for Specific Level I Programmes	9
Summer Immersion Programmes in French	66
Summer Residence	25
Supplementary Bursary Aid for Award Recipients	282
Supplementary Fees	24
Teaching/Learning Methods (OT/PT)	62
Technical Electives (Engineering)	38
Technology, and Public Policy, Theme School on Science,	128
Technology, and Public Policy, Science courses	255
Technology, Engineering (General) courses	175
Technology, Manufacturing courses	202
Term (defined)	8
Terminology, Academic Awards	287
Test of English as Foreign Language (TOEFL)	9
Test of Written English (TWE)	9
Thematic Areas, Interdisciplinary Minors and	129, 130
Theme School on Globalization, Social Change and the Human Experience	128
Theme School on Globalization, Social Change and the Human Experience (courses)	254
Theme School on Science, Technology, and Public Policy	128
Theme School on Science, Technology, and Public Policy (courses)	255
Theme School Participation (Engineering)	35
Theme Schools	128
Third Year Study Elsewhere (Humanities, Science)	66, 80
Thode Library of Science and Engineering	259
Three-Level B.Sc. programmes	103-105
Transcript, defined	8
Transcripts, ordering	22
Transcripts, costs	22, 26
Transcripts, where to obtain	2, 22
Transcripts and Records, enquiries	2
Transfer between programmes	19
Transfers from Other Universities, admission	12
Transfer of Course Credits, General Policy on	12
Transfer of Credit Between Faculties	17
Transfer of Programme After Admission	9
Travel Scholarships	301
Tuition (defined)	8
Tuition Fees	24, 25
Two-Tier Applications (Social Work)	123, 125
Undergraduate Academic Awards	21, 287
Undergraduate Awards Index	309
Undergraduate Fees	24
Undergraduate Health Professional Education Programmes	48
Undergraduate Medical Programme	50
Undergraduate Student (defined)	8
United States, admission from	12
Units (defined)	8
University Chaplains	265
University Library	259
University Policies	4
University Regulations	17
Unsuccessful Applicants (Health Sciences)	53, 55, 59
User Fees	26
Using the Calendar	1
Visa Students, fees	25
Web Address (University)	1, 2
Web Addresses for Faculties and Departments (See Faculties, Programmes and Schools sections)	8
Weighted Average (defined)	8
William Ready Division of Archives and Research Collections	259
Winter Session, dates	5
Withdrawal (defined)	8
Withdrawal (cancelling, dropping) from a Course (see also Sessional Dates)	17
Withdrawal from the University	17, 35, 107
Women's Studies courses	256
Women's Studies programme	78
Workload (Business)	35
Workload (Science)	81
Work and Study Abroad/Student Exchanges	263
Work-Study Programmes	267



McMaster UNIVERSITY



LEGEND

- HSR (Hamilton Street Railway - Bus Transit)
- Parking
- Underground Parking
- Campus Entrances
- General Receiving (Building #31)
- Health Sciences Receiving (Building #37)
- Internal Road Access
- Emergency Unit, Chedoke-McMaster Hospitals
- Emergency Telephone
- Parking Kiosk

INDEX

Campus Buildings

Alumni Memorial Hall (and Faculty Club) (AMH)	8
A.N. Bourns Science Bldg. (ABB)	25
Applied Dynamics Bldg. (ADL)	33
Bates Residence (BR)	40
Biology Greenhouse (G.Hs.)	30
Brandon Hall	36
Burke Science Bldg. (BSB)	11
Campus Services Bldg. (Receiving) (CSB)	31
Chester New Hall (CNH)	23
Commons Bldg. (Hospitality Services Receiving) (C)	28
Communications Research Lab (CRL)	43
Divinity College (DC)	17
Edwards Hall	5
E.T. Clarke Centre (Central Utilities Services) (CUC)	12

General Sciences Bldg. (GS)	22
Gilmour Hall (GH)	20
H.G. Thode Library of Science & Engineering (TL)	42
Hamilton Hall (HH)	2
Health Sciences Centre (HSC)	37
Hedden Hall (HEH)	45
Ivor Wynne Centre for Physical Education & Athletics (IWC)	24
John Hodgins Engineering Bldg. (JHE)	16
Kenneth Taylor Hall (KTH)	38
Life Sciences Bldg. (LS)	39
Matthews Hall (MATH)	26
McKay Hall (McKH)	27
McMaster Day Care Centre Inc. (Sheila Scott House)	41
Michael G. DeGroot School of Business (MGD)	46
Mills Memorial Library (and McMaster Museum of Art) (L)	10
Moulton Hall	18
Norman "Pinky" Lewis Field House (LFH)	13
Nuclear Reactor (REAC)	15
Nuclear Research Bldg. (NRB)	9
President's Residence	7

Psychology Bldg. (PC)	34
Refectory (REF)	4
Tandem Accelerator Building (TA)	32
Togo Salmon Hall (TSH)	29
University Hall (UH)	1
Wallingford Hall	6
Wenworth House	21
Whidden Hall	19
Woodstock Hall	35
Drill Hall	T12
Building T-13	T13
School of Rehabilitation Science	T16
Temporary Bldg.	TB24
Hamilton/Scourge Project Lab	TB26

CAMPUS INFORMATION

Campus Shuttle Bus Service

The Shuttle Bus makes three passenger stops on the West Campus and transports people to and from stops on the Central Campus near University Hall, the Health Sciences Centre and A.N. Bourns Science Building.

Security

E.T. Clarke Centre (2nd Floor)
525-9140, ext. 24281

Parking

E.T. Clarke Centre, Room 102, ext. 24232

Lost and Found

E.T. Clarke Centre (2nd Floor), ext. 23366

Medical Services

Medical Emergency, ext. 88

Community Information

Gilmour Hall, Room 121, ext. 23659

Facilities for the Disabled

Most buildings are wheelchair-accessible with suitable washroom facilities. The campus has wheelchair building entry, access curbs, tactile lettering for the elevators and wheelchair-height telephones for many elevators. Arrangements can be made for transportation on the DARTS van. For further information regarding access and facilities for the disabled, contact the Centre for Student Development, Hamilton Hall, Room 409, ext. 24711

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UNDERGRADUATE CALENDAR ORDER FORM**

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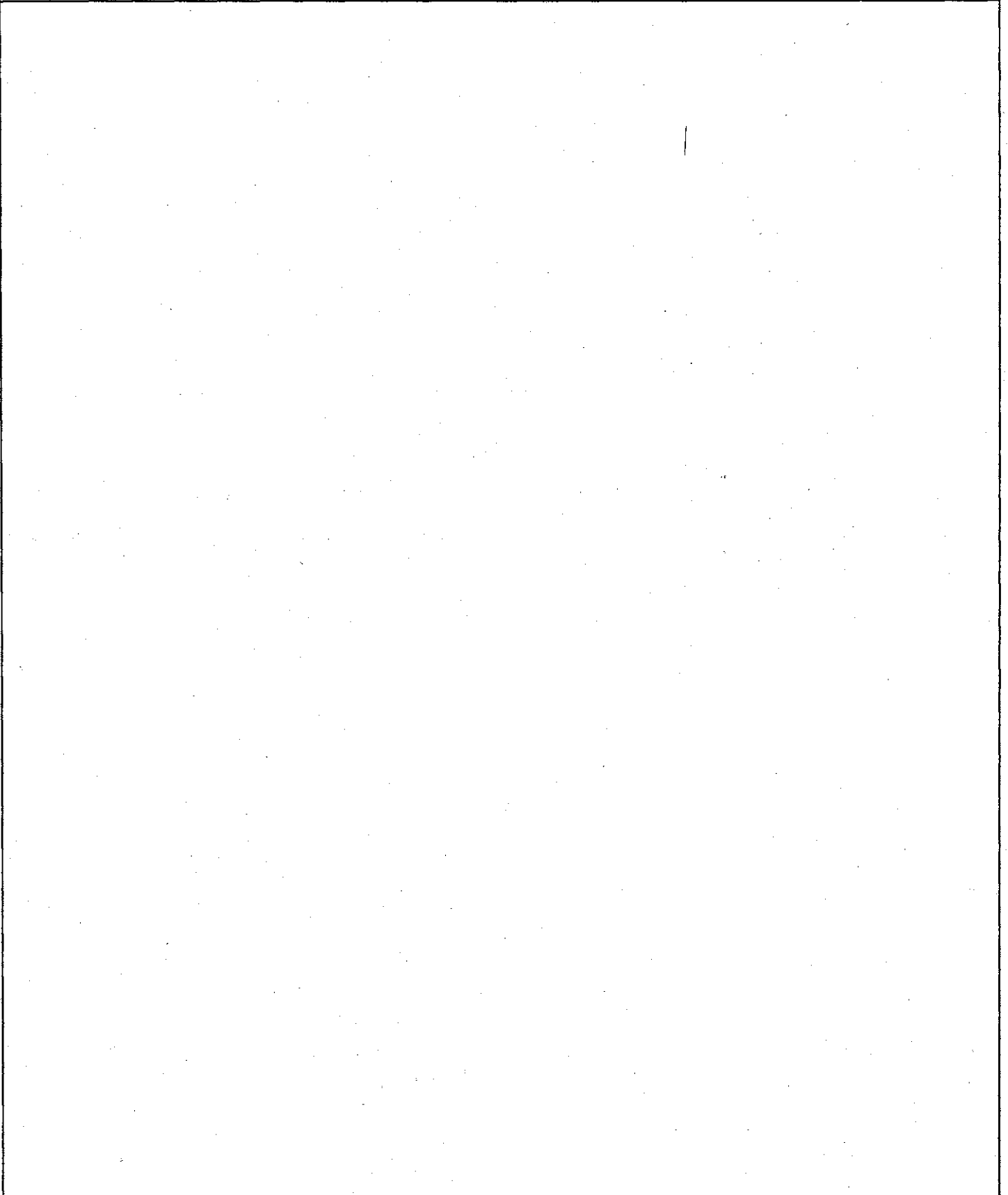
For your convenience McMaster University Undergraduate calendars are also available via the World Wide Web at <http://www.mcmaster.ca>. From our homepage, enter "Prospective and Registered Students" to access "Academic information" and the Calendars.



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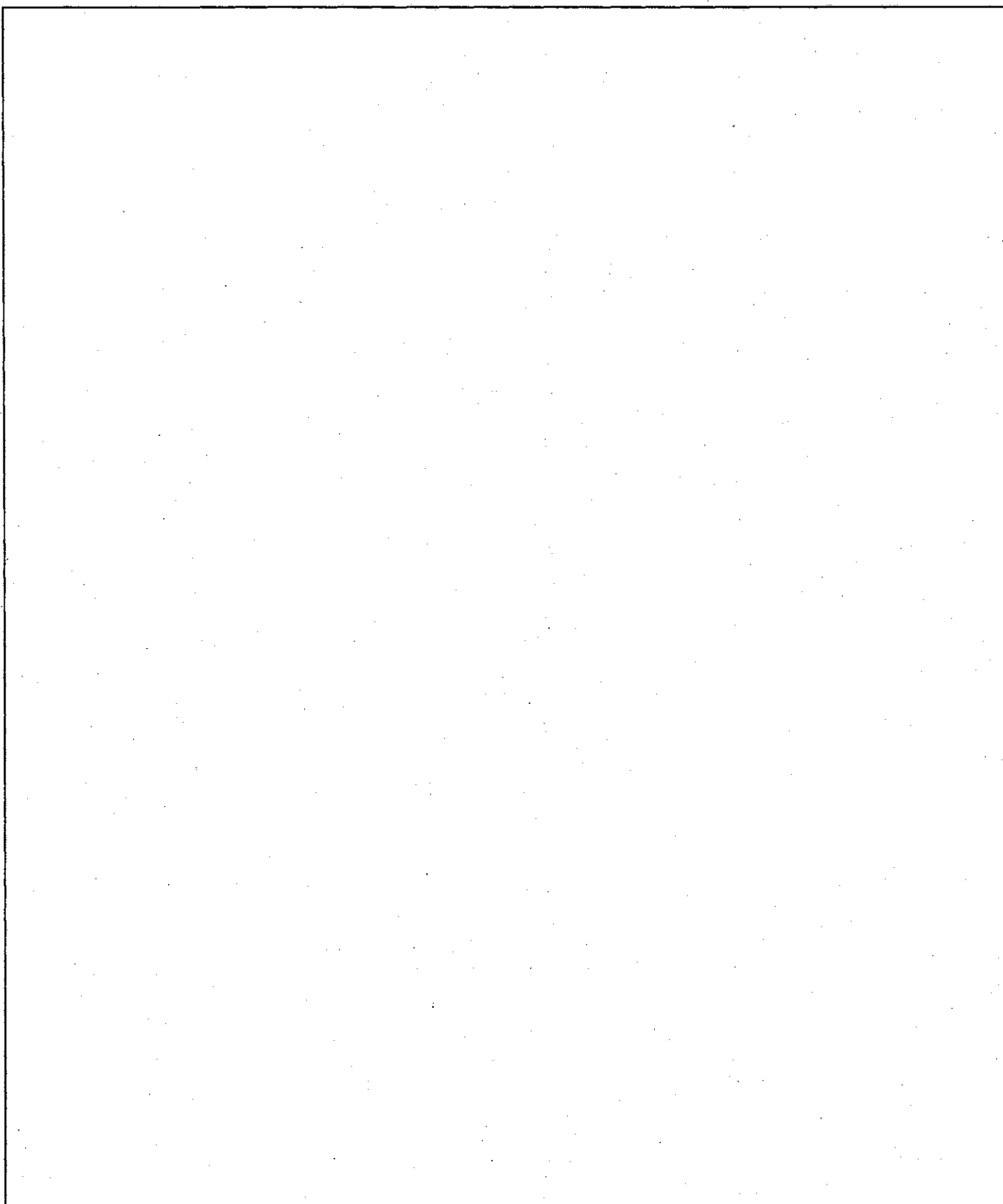
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