

# 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 more than \$76 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 in accounting, business policy, finance, management science and information systems, marketing and international business, and human resources and labour relations.

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

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

The Faculty of 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, Latin American Studies, Modern Languages (German, Hispanic Studies, Italian, Russian), Modern Languages and Linguistics, Music, and Philosophy leading to B.A. degrees, as well as a Bachelor of Music degree. Students pursuing Honours degree programmes may complete and receive credit for the third level of the programme in study abroad at a university in a country approved by the Faculty.

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

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

## THE UNIVERSITY

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

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 4,000 part-time students are registered in the Fall/Winter session, from September to April, and 3,000 in the Spring/Summer session, from May to August. The University also provides courses in centres located outside Hamilton, for which full credit is granted.

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

The University's diverse academic programmes are supported by some fine, and even unique, facilities. The University Library is a member of the Association of Research Libraries and contains

over 1.6 million volumes, and has subscriptions to nearly 14,000 periodical titles. The Library has an extensive special collections section which includes the Bertrand Russell Archives, 18th Century materials and major Canadian collections. Facilities for programmes in the Humanities include modern language laboratories, music rehearsal rooms, art studios, a museum of art and seminar rooms. The work of the Faculties of Science and Engineering is supported by sophisticated facilities, which include a nuclear reactor and Van De Graaff Accelerator. Computing facilities include mainframes, terminal clusters, and microcomputers.

The recreation, fitness and intramural programmes offer more than 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 2,782 students.

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



# Sessional Dates

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

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

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

## The 1996-97 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	5				19							
	Term 2					6				30			
	Term 3	5							30				
SPRING/ SUMMER SESSION	Term 1									5	20		
	Term 2										23	8	
	Term 3									5		8	

## 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, September 6, 1996**

- ◆ Last day to file a Graduation Information Card and declare a minor for Autumn 1996 Convocation.

**Friday, November 8, 1996**

- ◆ Autumn 1996 Convocation (all Faculties)

**Friday, February 7, 1997**

- ◆ Last day to change Programmes for Spring 1997 Convocations.

**Friday, February 7, 1997**

- ◆ Last day to file a Graduation Information Card and declare a minor for Spring 1997 Convocations.

**Friday, May 16, 1997**

- ◆ Health Sciences Convocation 1997

**Tuesday, June 3 to Thursday, June 5, 1997**

- ◆ Spring Convocations 1997

**Friday, July 18, 1997** ← *Date is earlier than in the past*

- ◆ Last day to file a Graduation Information Card and declare a minor for Autumn 1997 Convocation.

**Friday, November 7, 1997**

- ◆ Autumn 1997 Convocation (all Faculties)

## 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.

## University Policies

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

## Note:

◆ The Fall timetables and part-time degree studies brochures, which are published periodically by the University, should be used to determine:

- 1 if a course is to be offered;
- and
- 2 the term in which a course will be offered.

# 1996-1997

## McMASTER UNIVERSITY Undergraduate Calendar

◆ This Calendar covers the period from September 1996 to August 1997.

The McMaster University Undergraduate Calendar is available in alternate media format. For copies in a format other than print, contact the Office for Ability and Access, Kenneth Taylor Hall, Room 118 or ext. 24028. (As of May 1996, the office will be located in Hamilton Hall, Room 302)

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ARTS AND SCIENCE

BUSINESS

ENGINEERING

HEALTH SCIENCES

HUMANITIES

SCIENCE

SOCIAL SCIENCES

WOMEN'S STUDIES

### Using the Calendar

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

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

The next sections begin with descriptions of the Arts and Science programme, the School of Business, the Engineering, Health Sciences, Humanities, Science and Social Science Faculties, and the Women's Studies programme. The programme section concludes with a description of Theme Schools, Minors and Thematic Areas and Part-Time Degree Studies. 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.

### Admission to Undergraduate Studies

Associate Registrar (Admissions): Ann McLaughlin  
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

Director: John Edwards  
Coordinator: Denise Ellis  
Hamilton Hall, Room 404, L8S 4K1, ext. 24319, 24789

### Transcripts and Records

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

### Examinations, Schedules and Reservations

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

### Office of the Assistant Provost (Student Affairs)

Assistant Provost: Mary Keyes  
Gilmour Hall, Room 207, L8S 4L8, ext. 27455

### School of Graduate Studies

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

### Centre for Continuing Education

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

### Alumni Association

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

### On-campus Housing (Residence)

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

### Off-campus Housing

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

### Hospitality Services

General Manager: Albert Ng  
Commons Building, Room B101B, L8S 4K1, ext. 24836

### Counselling and Career Services

Director of Counselling and Career Services: Bill Wilkinson  
Hamilton Hall, Room 302, L8S 4K1, ext. 24711

### Employment Opportunities

Placement Services Manager: Donna Yates  
Placement Office  
Hamilton Hall, Room 409, 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

### Office for Ability and Access

Manager: William A. Hoch

Coordinator, Student Accommodations: Tim Nolan

Coordinator, Learning Specialist: Caroline Cayuga

Kenneth Taylor Hall, Room 118, L8S 4M4, ext. 24028

Effective May 1996: Hamilton Hall, Room 302, L8S 4K1, ext. 24028

## Other Publications for McMaster Students

### ◆ Undergraduate Studies

- Year 1 Handbook
- Part-time Degree Studies Calendar
- School of Social Work Booklet
- McMaster Divinity Collage Calendar

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

### ◆ Graduate Studies

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

- Post-Graduate Medical Programme Calendar  
(Available from the Post Graduate Medical Education  
Office in the Health Sciences Complex, Room 1B7B.)

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

### ◆ Certificate and Professional Studies

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

### ◆ General-Interest, Non-Credit Studies

Brochures about non-credit programmes and special offerings are available from the Centre for Continuing Education.

## Ombuds Office

Ombudsperson: Kerry Burke

Hamilton Hall, Room 406, L8S 4K1, ext. 24151, or (905) 528-9887; Fax: (905) 529-3208

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

For information and advice with respect to University regulations and services, and human rights procedures, see the Academic Facilities, Student Services and Organizations section of the Calendar.

# Sessional Dates for 1996-97

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

## Fall/Winter Session 1996-97

	Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>➤ Registration (All Levels)</li> <li>➤ Classes begin</li> <li>➤ Last day for registration and adding classes</li> <li>➤ Thanksgiving Day: No classes</li> <li>➤ Last day for withdrawal without failure by default</li> <li>➤ Mid-term recess</li> <li>➤ Good Friday: No classes</li> <li>➤ Test and Examination ban: No tests or examination may be held</li> <li>➤ Classes end</li> <li>➤ Mid-Session Tests (Level I)</li> <li>➤ Final Examinations</li> <li>➤ Last day to confirm intent to write deferred examinations</li> <li>➤ Deferred Examinations</li> </ul>	<p>Thursday, September 5</p> <p>Wednesday, September 18</p> <p>Monday, October 14</p> <p>Friday, November 8</p> <p>—</p> <p>—</p> <p>Thursday, November 28 to Thursday, December 5</p> <p>Wednesday, December 4</p> <p>—</p> <p>Friday, December 6 to Thursday, December 19</p> <p>Friday, February 7</p> <p>Monday, April 14 to Wednesday, April 30</p>	<p>To Be Announced</p> <p>Monday, January 6</p> <p>Friday, January 17</p> <p>—</p> <p>Friday, March 7</p> <p>Monday, February 24 to Saturday, March 1</p> <p>Friday, March 28</p> <p>Monday, April 7 to Saturday, April 12</p> <p>Friday, April 11</p> <p>—</p> <p>Monday, April 14 to Wednesday, April 30</p> <p>Friday, June 20</p> <p>Monday, July 21 to Thursday, July 24</p>	<p>Thursday, September 5</p> <p>Wednesday, September 18</p> <p>Monday, October 14</p> <p>Friday, March 7</p> <p>Monday, February 24 to Saturday, March 1</p> <p>Friday, March 28</p> <p>Monday, April 7 to Saturday, April 12</p> <p>Friday, April 11</p> <p>Friday, December 6 to Thursday, December 19</p> <p>Monday, April 14 to Wednesday, April 30</p> <p>Friday, June 20</p> <p>Monday, July 21 to Thursday, July 24</p>

## Spring/Summer Session 1997

	Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>➤ Classes begin</li> <li>➤ Last day for registration and changes in registration</li> <li>➤ Victoria Day: No classes</li> <li>➤ Last day for withdrawal from a course without failure by default</li> <li>➤ Canada Day: No classes</li> <li>➤ Civic Holiday: No classes</li> <li>➤ Classes end</li> <li>➤ Examinations</li> <li>➤ Last day to confirm intent to write deferred examinations</li> <li>➤ Deferred Examinations</li> </ul>	<p>Monday, May 5</p> <p>Friday, May 9</p> <p>Monday, May 19</p> <p>Wednesday, June 4</p> <p>—</p> <p>—</p> <p>Friday, June 20</p> <p>Friday, October 17</p> <p>December '97 Examination period</p>	<p>Monday, June 23</p> <p>Friday, June 27</p> <p>—</p> <p>Wednesday, July 23</p> <p>Tuesday, July 1</p> <p>Monday, August 4</p> <p>Friday, August 8</p> <p>During class time, as arranged by instructor</p> <p>Friday, October 17</p> <p>December '97 Examination period</p>	<p>Monday, May 5</p> <p>Friday, May 9</p> <p>Monday, May 19</p> <p>Friday, July 4</p> <p>Tuesday, July 1</p> <p>Monday, August 4</p> <p>Friday, August 8</p> <p>Friday, October 17</p> <p>December '97 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

### FACULTY OF HEALTH SCIENCES

B.H.Sc. (Midwifery) .....	*3
B.H.Sc. (Occupational Therapy/Physiotherapy) .....	*2
(*Follows completion of prior undergraduate degree)	
B.Sc.N. ....	4
B.Sc.N. (Diploma RN 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./B.P.E. ....	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 .....	1A06
* ASTRON .....	1F03
* BIOLOGY .....	1A06, 1J03
CAYUGA .....	1Z06
* CHEM .....	1A06, +1C03
CLASSICS .....	1B06, 1L06
COMP LIT .....	1A06
* COMP SCI .....	1MC3, 1MD3, 1SA3
DRAMA .....	1A06
ECON .....	1A06
ENGLISH .....	1D06
* ENVIR SCI .....	1A06
FRENCH .....	1A06, 1N06, 1Z06
* GEOG .....	1C03, 1G03
GEOG .....	1B06
* GEOLOGY .....	1C03
GERMAN .....	1B06, 1Z06
GERONTOL .....	1A06
GREEK .....	1Z06
HISPANIC .....	1A06, 1Z06
HISTORY .....	1A06, 1L06
INDIG ST .....	1A06
ITALIAN .....	1A06, 1Z06, 1ZZ6
JAPANESE .....	1Z06
LABR ST .....	1A03, 1Z03
LATIN .....	1Z06
LINGUIST .....	1A06
* MATH .....	1A03, 1AA3, 1B03, +1K03, +1M03
* MATLS .....	1A03
MOHAWK .....	1Z06
MUSIC .....	1A06
OJIBWA .....	1Z06
PHILOS .....	1B06, 1D06
* PHYSICS .....	1A06, 1B06, 1C06
POLISH .....	1Z06
POL SCI .....	1A06
PORTUGUE .....	1Z06
PSYCH .....	1A06
RELIG ST .....	1B06, 1D06, 1E06, 1H03, 1I06
RUSSIAN .....	1Z06
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 Natural Sciences 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 Chemistry		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.▲ +		
Biology & Pharmacology ●			B.Sc.; B.A.	
Chemical Engineering			B.Sc.	B.Eng.; B.Eng.Mgt.; B.Eng. Society
Chemistry ●		B.Sc.	B.Sc.	
Civil Engineering				B.Eng.; B.Eng.Mgt.; B.Eng. Society
Classics	B.A.*	B.A.	B.A.	
Commerce				B.Com.; B.Com. (Honours)
Comparative Literature		B.A.	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.*	
Earth Science	B.Sc.			
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.*	
Geography	B.A.*	B.A.▲▲; B.Sc.▲	B.A.*; B.Sc.	
Geography & Environmental Science ●		B.Sc.		
Geography & Environmental Studies		B.A.		
Geology		B.Sc.▲ +	B.A.; B.Sc.	
German Area Studies		B.A.		
Gerontology	B.A. (Combined)*			
History	B.A.*	B.A.*	B.A.*	
Japanese Studies				
Kinesiology/Physical Education				B.Kin./B.P.E.
Labour Studies	B.A.*	B.A.▲▲	B.A.*	
Latin American Studies			B.A.	
Life Science	B.Sc.*			
Linguistics		B.A.		
Manufacturing Engineering				B.Eng.; B.Eng. Mgt.; B.Eng. Society
Materials Engineering				B.Eng.; B.Eng. Mgt.; B.Eng. Society
Materials Science		B.Sc.▲ +		
Mathematical Science	B.Sc.*	B.Sc.▲ +		
Mathematics			B.Sc.; B.A.	
Mathematics (Applied Option)		B.Sc.▲ +		
Mathematics & Statistics		B.Sc.		
Mechanical Engineering		B.Sc.▲ +		B.Eng.; B.Eng.Mgt.; B.Eng. Society
Medical & Health Physics ●		B.Sc.		
Medicine				M.D.
Midwifery				B.H.Sc.
Modern Languages			B.A.	
Modern Languages & Linguistics		B.A.		
Molecular Biology & Biotechnology		B.Sc.		
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.▲ +	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.*	
Russian & East European Area Studies		B.A.		
Science		B.Sc.+		
Social Work				B.A./B.S.W.; B.S.W.*
Sociology	B.A.*	B.A.▲▲	B.A.*	
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 *Minors and Thematic Areas of Study*. Also in that section are two Minors which are not connected to a specific department of Faculty. Other Minors are found in the programme sections of most departments.

# GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Full Load** is the number of units specified in the Calendar for an individual level of a programme (e.g. Honours Biology and Psychology, Level II: 33 units). If the Calendar does not specify the programme requirements by individual levels, divide the total units for all levels by the number of levels, discarding the remainder. Full-time students must carry a full load of McMaster courses to be eligible for Undergraduate In-Course Academic Awards. A full load is not required to be eligible for 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 (page 16) in this Calendar.)

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

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

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

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

**Reviewing Period** is the time between two reviews for a student. Reviews will take place in May and August, provided the student has 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 (page 16) 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 spoken and written English. Students will be expected to write clearly and correctly in English. All application materials must be submitted in English.

If your first language is not English, you must satisfy at least one of the following conditions. You must have:

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

## ADMISSION FROM ONTARIO SECONDARY SCHOOLS

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

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

1. The Ontario Secondary School Diploma with acceptable standing; and
2. An overall (and area average, where applicable) in Ontario Academic Credits (OACs) completed, which is above the minimum specified by each programme; and
3. Satisfactory completion of the subject requirements for the appropriate programme.

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

### Early Admission from Ontario Secondary Schools

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

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

### Final Admission from Ontario Secondary Schools

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

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

## Deferral of Admission for Ontario Secondary School Students

Applicants who have been admitted to an undergraduate programme may request to defer their registration for a period of time. Normally, the University does not grant deferral of registration, except under exceptional circumstances.

## Programme Transfer After Admission

If you have been admitted to one programme and subsequently wish to transfer to another, you may be able to do so, provided you have met the subject requirements for the second programme and a place is available. If you wish to make such a transfer please contact the Office of the Registrar.

## Minimum Final Average

All secondary school applicants admitted conditionally on interim grades will be required to achieve overall averages and, where applicable, area averages, 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 average falls 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 limited enrolment and admission is made 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, Natural Sciences 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, Francais, other languages, Algebra and Geometry, Finite Mathematics, Biology, Chemistry, Physics, Geography, History, and Music.

### > BUSINESS I

0725

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

1. One of OAC English I, OAC anglais I or OAC anglais II
2. One of OAC Calculus, OAC Finite Mathematics or OAC Algebra and Geometry. (OAC Calculus and OAC Finite Mathematics are recommended.)
3. Completion of additional OACs to total six credits, with a minimum overall final average in the six required credits of 70%

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

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### > 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 with a minimum overall and area final average of 75%

Although the stated minimum is 75%, in recent years, an average in the high 70s to low 80s has been required for an offer of admission.

### > HUMANITIES I 0700

The following are the minimum requirements:

1. One of OAC English I, anglais I or anglais II, with a grade of at least 65%
2. Completion of additional OACs to total six credits with a minimum overall final average of 70%

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

The Faculty of Humanities strongly recommends that you select at least one 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 **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 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

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

**NOTE:** It is strongly recommended that you include two of Biology, Chemistry, or Physics in your OACs. The specific OAC course requirements for Kinesiology I are currently under review, with the possibility of this course recommendation becoming a requirement for entry into the programme in September 1997.

### > MIDWIFERY I 6501

As places in the Midwifery programme are very limited, the admission process is competitive. A Midwifery supplementary application including a personal questionnaire are required and **must** be received at McMaster by February 1.

The following are the minimum academic requirements:

1. One of OAC English, 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 (approximately Grade 9 level of the Royal Conservatory of Music, Toronto)
2. Performance (approximately 20 minutes duration) of two or three varied pieces of your choice (approximately Grade 9 level), including at least one from the 20th century
3. Ear test appropriate to the Grade 9 performance level
4. Written examination on rudiments of theory (Grade 2 level)
5. Interview

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

### > NATURAL SCIENCES I 0710

The following are the minimum requirements:

1. One of OAC English I, OAC 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, 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)

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

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

### > NURSING I 6390

The following are minimum requirements:

1. One of OAC English I, OAC 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

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

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

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

### > SOCIAL SCIENCES I 0720

The following are minimum requirements:

1. One of OAC English I, OAC 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 high 70s has been required for an offer of admission.

You are strongly advised to complete an OAC in Mathematics, even though it is not a requirement for most Social Science degree programmes. If you are interested in entering any of the Psychology and Economics degree programmes or Honours and Combined Honours Geography, you should complete OAC Calculus in order to prepare yourself for your first-year university courses.

## ADMISSION WITH OTHER QUALIFICATIONS

### A. Admission from Other Canadian Provinces

We welcome applications from other provinces and territories. You are required to meet the following minimum requirements:

- Quebec: CEGEP
- All other Canadian provinces: Grade 12

You also are required to present subjects appropriate to the programme. Please refer to the OAC Equivalence Chart in this section for more details.

# OAC Course Equivalents for Students from Other Canadian Provinces

	B.C./ Yukon	Alta./ N.W.T.	Sask.	Manitoba	++Que. (CÉGEP)	Nova Scotia	New Brunswick	P.E.I.	Nfld.
ENGLISH	English 12 Writing 12 English Lit 12	English 30	English 30	English 300, 40S or 40A	English 603s	English 441 or 541	English 120, 121 or 122	English 620s	English 3100s English 3200s
CALCULUS ** +	Calculus 12 (LD) (Locally Developed)	Math 31	Calculus 30	Introduction to Calculus 305 or Math 355 Calculus 45A	Math 103, 203	Math 541 or Calculus 441	Math 120	Advanced Math 621 (Locally Developed)	Math 4225 (AP) or 31.05
ALGEBRA AND GEOMETRY	Math 12	Math 30	Geom-Trig 30 Algebra 30 Math 30	Math 300, 40S	Math 105	Math 441	Math 121 or 122	Math 621	Math 3201 or 3203
FINITE MATH	Survey Math 12	Not available*	Finite Math 30L	Advanced Math 305 (Topics in Math) Stats and Probability 305, 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 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 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 are also acceptable.

++Six Grade 12 credits numbered 60-65 may be substituted

## B. Admission from Other Countries

We welcome applications from international students. We have, for convenience, indicated below our admission requirements for applicants from selected countries.

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

You are considered on an individual basis, but 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 the programme desired, (refer above to *Subject Requirements for Specific Level 1 Programmes* in this section);
3. an average of at least C in the two Advanced Level subjects.

If you are from Hong Kong, you need:

1. five subjects in the GCE or University of Hong Kong Matriculation Examinations, at least two of which must be at the Advanced Level;

## 12 ADMISSION REQUIREMENTS

2. Advanced Level subjects appropriate for the programme desired, (refer above to *Subject Requirements for Specific Level 1 Programmes* in this section);
3. an average of at least C in the two Advanced Level subjects

If you have a complete **International Baccalaureate Diploma**, you will be considered for admission to Level I, providing your programme includes the subject area requirements of the programme desired. An overall score of 28 with a minimum of four in each subject must be achieved in order to be eligible for admission. Advanced credit is determined on an individual basis.

If you are an applicant from the **United States of America**, you should have high standing from Grade 12 of an accredited high school in the U.S.A. Normally, high standing will have been demonstrated by an A (80%) standing. If you do not meet these requirements, you may qualify for admission by completing one year of college-level work with standing acceptable to the University.

### 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.

### D. Advanced Credit

As noted in sections (E), (F), (G), (I), (J), (K) and (L) 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.

### 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, normally you will receive credit only 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.

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. In addition, you may be asked to provide academic documentation for proof of further academic achievement which is both current and relevant.

### G. Graduates Applying for a Second Bachelor's Degree

Admission is by selection. If you have a first degree, you may apply to take a second degree in the same discipline or in another discipline. The requirements are set out in the *General Academic Regulations* section (page 16) in this Calendar.

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

### H. Continuing and Post-Degree 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. Students who plan to proceed to a graduate degree should apply directly to the specific department of your programme of interest.

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.

### I. 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 an A average, you are invited to apply for admission to Social Sciences I or Humanities I. Each case will be considered individually on its merits and the programme desired.

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.

New Section  
New Policy  
with required  
to credit  
by challenge

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

Advanced credit could be up to 24 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.

**J. Admission from Redeemer College**

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

**K. Admission from Grand River Polytechnic**

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

**L. 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.

**M. Mature Students (Part-time Admission)**

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

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

You are not admissible as a mature student if you plan to study Engineering. If you apply to the Natural Sciences I programme as a mature student, you will be required to present satisfactory standing in the four area OAC Mathematics and Science requirements, as described in *Admission from Ontario Secondary Schools* in this section. If you apply to Business I, you will be required to present Grade 12 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:

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

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

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

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

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

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

**N. Nursing Occasional Category**

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

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

**O. 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 about this programme, please contact the Office of the Registrar.

**P. Letter of Permission - For Credit At Another University**

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

**Q. Listener**

If you are not sure about degree courses, you may register as a listener in a degree course for half the normal fee, but not for credit. You attend all classes, but do not complete any of the essays, tests and other formal requirements.

# APPLICATION PROCEDURES

**PLEASE READ THE BOLD-FACED PORTIONS OF THESE PROCEDURES TO DETERMINE THE CATEGORY UNDER WHICH YOU FALL AND THEN FOLLOW THE GUIDELINES FOR THE APPLICATION PROCEDURE WHICH IS APPROPRIATE TO YOUR CATEGORY.**

**A** 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 follow this procedure.

Please pick up a university application form (OUAC 101) from your guidance office and follow the enclosed instructions. You will be contacted by the Admissions Office after your application has been received by McMaster.

**B** If you wish to enter Level I of a degree programme as a full-time student, but you are not currently taking one or more Ontario Academic Courses (OACs) in day school, please follow this procedure.

Please obtain an application form (OUAC 105) from the Admissions Office of any Ontario university or from the Ontario Universities' Application Centre, 650 Woodland Road West, Guelph, Ontario, Canada, N1H 7P4.

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

If you are 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 for that province.

**C** If you wish to enter any level of a degree programme as a part-time student, please follow this procedure.

Please obtain a part-time 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.

**D** If you wish to register as a post-degree student, please follow this procedure.

Please 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 can obtain the appropriate application form from the Graduate Studies Office, Toño Salmon Hall, Room 111, McMaster University, Hamilton, Ontario, L8S 4L8.

**E** If you wish to enter a degree programme above Level I as a full-time student, please follow this procedure.

**Health Sciences:** The Faculty of Health Sciences section in this Calendar provides detailed information about the curriculum and admission requirements for programmes in Medicine, Occupational Therapy and Physiotherapy, all of which require prior university studies. There are also a number of positions in the Nursing programme if you are an RN with a diploma or you have prior university work.

For information on application policies and procedures, please refer to the appropriate section in the *Health Sciences* section of this Calendar.

**Social Work:** You enter the Social Work programme in Level II. Admission to the Combined B.A. and Social Work Programme is by selection. You must have completed, or be completing, 30 units of work including PSYCH 1A06 and SOCIOL 1A06 and normally have a Cumulative Average of at least 6.0.

If you are already enrolled at McMaster, you should apply directly to the School of Social Work. If you wish to apply for transfer from another university, you are required to complete a two-tier application procedure. See Faculty of Social Sciences, School of Social Work, *Two-Tier Applications*.

**For all other programmes, please obtain an application form (OUAC 105) from the Admissions Office of any Ontario university or from the Ontario Universities' Application Centre, 650 Woodland Road West, Guelph, Ontario, Canada, N1H 7P4.**

You should choose one of the degree programmes listed in this Calendar, and complete the form. Send the form and the application fee to the Ontario Universities' Application Centre. If you have attended secondary school in another province, you may have to obtain the transcript of secondary school marks from the Ministry or Department of Education for that province.

**F** If you wish to register as a Continuing Student or on a Letter of Permission for Credit at Another University, please follow this procedure.

If you wish to apply as a part-time student, then please follow Procedure C. If you wish to apply as a full-time student, then please follow Procedure E.

**G** If you wish to register as a Listener please follow this procedure.

(You will not receive a grade for courses you attend.) Please write, visit or telephone 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.

## DEADLINES

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

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

### FALL/WINTER SESSION (SEPTEMBER ENTRY)

Undergraduate programmes which are not specified below:

- Limited Enrolment Programmes
  - Above Level I ..... February 1
- International Applications ..... May 1
- International Documentation ..... June 1
- Domestic Applications (excluding CEGEP) ..... July 15
- Domestic Documentation (excluding CEGEP) ..... July 15
- CEGEP Applications (unless stated below) ..... March 1
- Arts & Science Applications ..... March 1
  - Supplementary Applications ..... March 29
- Biochemistry (Co-op) ..... February 1
- Biology and Pharmacology (Co-op) ..... February 1
- Gerontology Applications ..... April 1
  - Supplementary Applications\* ..... May 15
- Kinesiology (Second Degree) ..... May 15
- Labour Studies ..... April 15
- Medicine ..... November 1
- Midwifery Applications ..... February 1
  - Supplementary Applications ..... February 1
- Nursing OAC ..... May 1
  - Nurse Practitioner ..... February 1
  - NP Supplementary Appl. .... February 1
  - Transfers from other university Nursing Programmes ..... July 1
  - All Other ..... February 15
    - Supplementary Applications\* ..... February 15
- Occupational Therapy/Physiotherapy\*\* ..... January 15
- Social Work McMaster Applicants ..... March 1
  - OUAC ..... December 1
  - Supplementary Applications\*\*\* ..... March 1
- Women's Studies ..... April 15

❖ University transfer and Second Degree Applicants

+ Please contact the Ontario Universities' Application Centre for a Supplementary Application

\* Non OAC students only need to complete the supplementary applications. Please contact the Office of the Registrar to obtain an application.

\*\* Please contact the Office of the Registrar to obtain an application.

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

### FALL/WINTER SESSION (JANUARY ENTRY)

- All eligible programmes ..... November 1

### SPRING/SUMMER SESSION

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

## Retention of Documents

All documentation which you submit in support of your application for admission becomes the property of the University.

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

## Readmission

If you are seeking readmission, you usually fall into one of three categories. You must adhere to the application deadlines listed above.

### 1. You were ineligible to continue at McMaster University.

You should submit a letter to the Office of the Associate Dean (Studies) of the appropriate Faculty outlining your activities since leaving McMaster University and your reason for returning to the specified Faculty. Your application will be reviewed by the Office of the Associate Dean (Studies) of the appropriate Faculty.

### 2. You voluntarily withdrew from McMaster University.

Provided the last semester attended was within five years, you will be automatically admitted to the same programme. If you have been absent more than five years, you must reapply through the Office of the Registrar.

### 3. You completed the last semester registered and are in good academic standing.

Please see (2) above.

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

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

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



■ **Calculation of Cumulative Average Following Readmission After Poor Academic Performance:** If you are readmitted, your Cumulative Average will be calculated on all courses taken that are applicable to your current degree, including those taken before you were not allowed to continue at the University. The Associate Dean (Studies) has the discretion to designate courses as Extra to your current degree when you are readmitted. If you are readmitted, you will be on academic probation.

### 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.

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. 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 Officer*.

You may also choose to study independently at a foreign university. 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, Natural Sciences 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.

\* New policy when  
 \* Now is possible for students  
 in Level III Commerce to transfer into Level IV Honours.  
 Commerce

Changes with regard to  
 \* pro probation & average  
 \* with which it applies

## > SCHOOL OF BUSINESS

### Level II

To be considered for Commerce Level II, you must have a CA of at least 5.0 on your Business I courses with no failures. When calculating your CA and checking for failures, only first attempts at Business I courses are considered. **However, enrolment in Commerce II is limited to a maximum 300 students. Up to 50 of those spaces may be given to transfer students from other universities or from other Faculties within McMaster.** Therefore, being eligible for consideration for entry to Commerce II does not guarantee you entry. In 1995-96, students with CAs of 5.0 or greater were admitted. Normally, the CA required for entry into Commerce II is between 5.0 and 6.0.

If you are not admitted to Commerce II at the end of Business I, you have the following options available to you.

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

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

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

### Levels III and IV

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

The following regulations apply to those who enter Level III before September 1996 and Level IV before September, 1997. To enter Level III or continue in Level IV of the Honours Commerce programme, you must have a CA of at least 7.0 (with no more than six units of failures). To enter Level III or continue in Level IV of the Commerce programme, you must have a CA of at least 4.0 (with no more than six units of failures). However, if you fail to achieve a CA of at least 4.0, but have a CA of at least 3.5 (with no more than six units of failure), you are permitted to continue in Commerce on programme probation for one reviewing period. If your CA is less than 3.5, you may not continue at the University.

The following regulations apply to those who enter Level III in September, 1996 or later, or Level IV in September, 1997 or later. To enter Level III or continue in Level IV of the Honours Commerce programme, you must have a CA of at least 6.0. Those who complete Level III of the Honours programme with a CA of at least 5.5 but less than 6.0 may continue in the Honours programme in Level IV on programme probation. If your CA is less than 5.5, you may transfer to the Commerce programme. You must have a CA of at least 4.0 to continue in the Commerce programme. If your CA is at least 3.5 (with no more than six units of failure), you are permitted to continue in Commerce on programme probation for one reviewing period. If your CA is less than 3.5, you may not continue at the University.

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

## > FACULTY OF ENGINEERING

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

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

## > FACULTY OF HEALTH SCIENCES

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

## > FACULTIES OF HUMANITIES and SOCIAL SCIENCES

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

■ **B.A. Major (Psychology); B.Kin; B.P.E. Programmes:** You must have a CA of at least 4.0 to continue in a four-level Major (Psychology) or a B.Kin. or a B.P.E. 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:** If you entered an Honours Science programme prior to September 1996, you must have a CA of at least 6.0 to continue in an Honours B.Sc. programme. If your CA is 5.0 to 5.9, you may remain in the Honours B.Sc. programme, but will be placed on programme probation. You may be on programme probation for only two reviewing periods. If your CA is 3.0 to 4.9, you must transfer to another programme for which you qualify. If your CA falls below 3.0 you may not continue at the University.

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

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

## Transfer Between Programmes

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

## Minors

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

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

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

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

## Second Bachelor's Degree Programmes

For admission to a second undergraduate degree programme you must hold a first undergraduate degree. The minimum admission requirements and programme of study for the second degree depend on the subject areas of the two degrees.

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

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

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

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

### Notes

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

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

## Deans' Honour List

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

## 3. EXAMINATIONS

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

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

### Examinations Conducted by the Office of the Registrar

- **McMaster student photo identification cards are required at all examinations.** If you arrive at an examination without a proper I.D. card you will be required to have a substitute card made before being seated. There is a fee for this service. No additional time is given to compensate for examination time missed.
- You may only use books, papers or instruments during an examination if they are specifically prescribed on the examination paper.
- You may leave an examination only after the first 45 minutes have elapsed.
- If you become ill during an examination, you may be excused by a presider.
- If you miss or leave an examination for medical reasons you must submit a medical certificate from Student Health Services, or a doctor, to the Office of the Associate Dean (Studies) of your Faculty before the end of the examination schedule. The certificate must indicate that you were medically unfit to write the examination.
- If you are late for an examination, report immediately to the presider in your examination location or to the Examinations Section of the Office of the Registrar.
- If you miss or leave an examination for any other reason, report immediately to the Examinations Section of the Office of the Registrar. You will be advised whether you can write your examination before the end of the examination schedule, or whether you must apply for special consideration by submitting documentation to the Office of the Associate Dean (Studies) of your Faculty.

## 20 GENERAL ACADEMIC REGULATIONS

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

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

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

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

■ **Examinations are not rescheduled for purposes of travel.** You must arrange to be 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 to the Examinations Section of the Office of the Registrar.

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. (Major) — 4.0
- 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) — 6.0
- B.Com. & Arts (Honours) — 6.0
- B.Kin. and B.P.E. — 4.0
- B.Mus. — 5.0
- B.Sc. — 3.5
- B.Sc. (Honours) — 5.0
- Engineering (All programmes) — 4.0

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 before February 9 for Spring Convocation and before September 6 for Autumn Convocation.

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.

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## 7. RECORDS POLICY

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### 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 1995-96 is \$5.00 per copy. An additional charge of \$10.00 applies to transcripts which are faxed from McMaster. 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 (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 for processing and delivery time. Transcripts will not be issued if you have outstanding accounts at the University.

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### 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 sent 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).

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## SENATE POLICY STATEMENTS

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

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

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

### Academic Ethics

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

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

Breaches of academic ethics fall into two general categories:

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

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

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

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

### Appeal Procedures

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

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

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

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

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

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

### Code of Conduct

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

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

### Statement on Human Rights

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

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

The University Senate has approved Policies on Sexual Harassment and 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. Copies of the *Policy and Procedures on Sexual Harassment* may be obtained from the Senate Secretariat, Room 104, Gilmour Hall.

### Anti-Discrimination Policy

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

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

### Student Records

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

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

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

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

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

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

# 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 1995-96. The fee schedules for 1996-97 are enclosed in the Registration Handbook sent to each student during the summer preceding registration.**

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

### Base Per Unit Tuition

#### CANADIAN CITIZEN & PERMANENT RESIDENT STATUS

The base unit fees for the Faculty of Engineering (including Engineering and Management Levels III and V) are \$80.60 per unit to a maximum of \$2,659.80. The base unit fees for all other Faculties (including Engineering and Management Levels II and IV) are \$81.70 per unit to a maximum of \$2,451.00.

#### VISA STATUS

The base unit fees for the Faculty of Engineering (including Engineering and Engineering and Management Levels III and V) are \$456.60 per unit to a maximum of \$15,067.80. The base unit fees for Nursing are \$456.60 per unit to a maximum of \$13,698.00. The base unit fees for all other Faculties are \$308.10 per unit to a maximum of \$9,243.00.

### Supplementary Fees

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

McMaster Association of Part-time Students	\$3.75
Athletics and Recreation Activity Fee	\$4.20
Total Charge per unit	\$7.95
<b>Nursing Students Add:</b>	
Learning Resource Fee (per unit)	\$5.55

#### Students Taking 18 or More Pay:

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

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

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	\$80.76
Health Plan Premium	\$40.67
Student Refugee Fee	\$ 1.07
Ancillary Fee for CFMU-FM	\$ 9.34
Ancillary Fee for MARMOR Yearbook	\$ 6.41
Placement Services Fee	\$12.00

Sub Total **\$274.35**

#### Plus:

McMaster Student Union's University Student Centre Building fee (\$2.28 per unit), to a maximum of \$68.40.

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

Arts & Science Society	\$21.00
Bachelor of Kinesiology Society	\$15.00
Commerce Society	\$57.00
Engineering Society	\$73.00
Humanities Society	\$15.00
Nursing Society	\$30.50
Science Society	\$10.00
Social Science Society	\$15.00

#### Nursing Students Add:

Learning Resource Fee (\$5.55 per unit), to a maximum of \$99.90

#### Occupational Therapy and Physiotherapy Students Add:

Occupational Therapy Learning Resource Fee	\$100.00
Physiotherapy Learning Resource Fee	\$50.00

#### Canadian Citizens and Landed Immigrant Students

(Examples of fees for full academic load.)

	Tuition Fee	Supplementary Fees	Total Fees
➤ Arts & Science	2,451.00	363.75	2,814.75
➤ Business and Commerce	2,451.00	399.75	2,850.75
➤ Engineering and Eng. Mgt. III, V	2,659.80	415.75	3,075.55
➤ Eng. Mgt. II, IV	2,451.00	415.75	2,866.75
➤ Humanities and Social Sciences	2,451.00	357.75	2,808.75
➤ Kinesiology	2,451.00	357.75	2,808.75
➤ Medicine I, II	4,678.00	334.00	5,012.00
➤ Medicine III	3,117.00	334.00	3,451.00
➤ Midwifery	3,677.00	111.00	3,788.00
➤ Nursing	2,451.00	473.15	2,924.15
➤ Occupational Therapy	2,451.00	442.75	2,893.75
➤ Physiotherapy	2,451.00	392.75	2,843.75
➤ Science	2,451.00	352.75	2,803.75

**Visa Students**

(Examples of fees for full academic load.)

	Tuition Fee	Supplementary Fees	Total Fees
➤ Arts & Science	9,243.00	363.75	9,606.75
➤ Business and Commerce	9,243.00	399.75	9,642.75
➤ Engineering, and Eng. & Mgt. II, IV	9,243.00	415.75	9,658.75
➤ Engineering, and Eng. & Mgt. III, V	15,067.80	415.75	15,483.55
➤ Humanities and Social Sciences	9,243.00	357.75	9,600.75
➤ Kinesiology	9,243.00	357.75	9,600.75
➤ Medicine I, II	22,602.00	334.00	22,936.00
➤ Medicine III	15,068.00	344.00	15,402.00
➤ Nursing	13,698.00	473.15	14,171.15
➤ Occupational Therapy	9,243.00	442.75	9,685.75
➤ Physiotherapy	9,243.00	392.75	9,635.75
➤ Science	9,243.00	352.75	9,595.75

\*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 \$40.67 includes reimbursement of expenses resulting from an accident incurred during the academic year, where such expenses are not recoverable under the Ontario Health Insurance Plan. These expenses may include X-ray, ambulance, dental treatment, prescribed drugs, wheelchairs or similar appliances. Reimbursement is not made for accident expenses to dental plates, crowns, fillings, glass frames, lenses or similar items. Accidents should be reported to Student Health Services within 10 days.

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

**Co-op Fees**

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

**Listeners** *Expanded description giving more details*

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 (page 16) 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 FOOD SERVICE FEES****Regular Session**

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

The fees below are those for 1995-96.

	Full Payment	Minimum Payment
<b>Residences</b>		
➤ Room and Board		
• Small	4,865.00	3,400.00
• Regular	5,065.00	3,540.00
• Large	5,265.00	3,680.00
Extra Large	5,465.00	3,820.00
<b>Apartments</b>		
➤ Room Only (Per person)	2,690.00	1,880.00
➤ Meal Plan Only		
• Small	2,175.00	1,520.00
• Regular	2,375.00	1,660.00
• Large	2,575.00	1,800.00
Extra Large	2,775.00	1,940.00

If you wish to change your selection of meal plans, you may do so up to September 13, 1996. Please contact Hospitality Services, ext. 27448, for details on how to change your plan.

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

**Summer Residence**

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

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

**PAYMENT OF FEES**

**Tuition fees and residence/meal plan fees** are payable in full during the registration period in August/September. Prepayment of fees will significantly simplify the registration process (see Prepayment of Fees). If you are unable to make full payment at the time of registration, you may be registered by paying the minimum first payment at the time of registration. The balance must be paid no later than January 19. Failure to make payment by January 19 will result in a late payment fee. **Interest is added monthly to the unpaid balance. (Current rate is 1.2 % per month.)**

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

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

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

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

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



**Prepayment of Fees**

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

For payment deadlines, please refer to the registration handbook.

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

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

If you are being sponsored by outside organizations, e.g. Vocational Rehabilitation Services, RCMP, Canadian Armed Forces, etc., you are required to submit copies of fee authorizations with 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 1995-96 academic year, and are over and above assessed academic fees, supplementary fees, and residence fees and meal plan fees.

**Academic User Fees**

➤ Transcript Assessment Fee .....	50.00
➤ Certification of Enrolment Fee .....	5.00
➤ Contribution to Psycho-Educational Assessment .....	200.00
➤ Deferred Examination at Another Centre .....	40.00
➤ Examination Reread (Refunded if grade is changed) .....	30.00
➤ Letter of Permission .....	30.00
➤ Notarizing Fee (plus 50 cents per page over 10) .....	10.00
➤ Photocopying of Examination Script .....	10.00
➤ Replacement of Diploma .....	25.00
➤ Replacement of Student I.D. Card .....	20.00
➤ Supervision of Examinations at Other Universities .....	35.00
➤ Transcript (per copy) .....	5.00

**Financial/Administrative User Fees**

➤ Replacement Fee	
● Income Tax Receipt/Education Credit Certificate .....	6.00
➤ Replacement Meal Card .....	20.00
➤ 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 .....	30.00
➤ Late Registration Fee	
● Full-time Students .....	50.00
● Part-time Students .....	25.00
➤ Late Payment Fee .....	31.00
➤ Deferment Fee .....	31.00
➤ Reinstatement Fee .....	75.00
➤ 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 1995) 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.*

No major changes but Arts Sci + Drawing  
& Gerontology

## ARTS & SCIENCE PROGRAMME

E-MAIL ADDRESS: ryank@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 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.

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

## ACADEMIC REGULATIONS

The Arts & Science Programme is governed by the General Academic Regulations of the University, (see the *General Academic Regulations* section (page 16) in this Calendar) and the regulations described below.

The Programme begins in Level I and leads to the degree, Bachelor of Arts & Science (B.Arts Sc.) on completion of Level III or B.Arts Sc. (Honours) on completion of Level IV. The four-level programme provides an increased opportunity for specialization through electives and through an individual study or thesis course.

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 50 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 Social Sciences, Humanities and Science. The combined programmes with Biology, Chemistry and Physics are five-level programmes. Combined programmes that are already established are described below. Students are encouraged to consult the Director of the Arts & Science Programme for consideration of other possible combinations. **An application is required for the Combined Honours Programme.**

**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 Combined Honours programmes, this requirement can be, and in some cases must be, met by a Departmental course.

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

### INTERNATIONAL STUDY AND EXCHANGE PROGRAMMES

Students interested in international study should consult the Director of the Arts & Science Programme one year before they plan to begin their study abroad. No later than the end of January, students must propose a programme of study for approval by the Programme. Credit will be confirmed only after transcripts are received and academic achievements are reviewed.

#### Eligibility for Study Abroad

- 60 units complete with a CA of at least 7.0
  - B.Arts Sc. (three-year) degree **not** granted on basis of international study
  - 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 (page 16) 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 Officer*.

## ARTS & SCIENCE PROGRAMME

**B.Arts Sc. (Honours) 2027**  
**and B.Arts Sc. 1027**

### 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 1A06 (BIOLOGY 1A06 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 1A06 (if not completed in Level I)

**LEVEL III: 30 UNITS**

- 6 units ARTS&SCI 3B03, 3BB3
- 6 units from ARTS&SCI 3A06, 3D03 and 3DD3, 3L03 and 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, 3D03 and 3DD3, 3L03 and 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 Year II for consideration of other possible combinations.

**Honours Arts & Science and Anthropology 2027010**

**ADMISSION**

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

**REQUIREMENTS**

**LEVEL I: 30 UNITS**

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units ANTHROP 1A03, 1Z03

**LEVEL II: 30 UNITS**

- 12 units ARTS&SCI 2A06, 2R06
- 6 units BIOLOGY 1A06
- 12 units from ANTHROP 2E03, 2F03, 2I03, 2PA3

**LEVEL III: 30 UNITS**

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

**LEVEL IV: 30 UNITS**

- 12 units ARTS&SCI 3B03, 3BB3, 3D03, 3DD3
- 6 units ANTHROP 4I03; three units Level IV Anthropology
- 6 units Anthropology
- 6 units Electives

**Honours Arts & Science and Biochemistry 2027040**

**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0 and an average of at least 7.0 in ARTS&SCI 1D06 and CHEM 1A06.

**REQUIREMENTS**

**LEVEL I: 30 UNITS**

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

**LEVEL II: 33 UNITS**

- 12 units ARTS&SCI 2A06, 2R06
- 6 units BIOCHEM 2A06
- 6 units BIOLOGY 1A06
- 9 units CHEM 2O06, 2R03

**LEVEL III: 33 UNITS**

- 12 units ARTS&SCI 2D06, 3A06
- 12 units BIOCHEM 3B03, 3BB3, 3L03, 3P03
- 6 units BIOLOGY 2B03 (if not completed), 2C03
- 3 units CHEM 3F03

**LEVEL IV: 33 UNITS**

- 12 units ARTS&SCI 3B03, 3BB3, 3D03, 3DD3
- 6 units Upper-level Inquiry
- 9 units BIOCHEM 4E03 and either BIOCHEM 4B06 or 4P03 and 4A03
- 6 units from BIOCHEM 3C03, 4D03, 4I03, 4M03

**Honours Arts & Science and Biology 2027050**

**ADMISSION**

Completion of Arts & Science I with a Cumulative Average of at least 6.0 and at least B- in one of ARTS&SCI 1D06 or CHEM 1A06.

**NOTES**

1. Continuation in the programme beyond Level II requires at least B- in BIOLOGY 1A06.
2. Students are advised to note carefully the prerequisites for all Level III and IV courses listed in the programme, particularly BIOCHEM 3A03, 3AA3, 3G06.

**COURSE LIST**

All Level II, III, and IV Biology courses; BIOCHEM 3A03, 3AA3, 3BB3, 3C03, 3G03, 3G06, 3GG3, 4D03, 4E03, 4M03; ENGINEER 4X03; GEOG 3P03, 4P03; GEOLOGY 2J03, 3D06, 3J03, 4D03, 4F03; MOL BIOL 4H03; PHARMAC 4B03; PSYCH 3F06, 3R03, 3S03, 3T03

**REQUIREMENTS**

**LEVEL I: 30 UNITS**

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

**LEVEL II: 30 UNITS**

- 18 units ARTS&SCI 2A06, 2D06, 2R06
- 6 units BIOLOGY 1A06
- 6 units CHEM 2O06

**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 3G03, 3GG3

**LEVEL IV: 30 UNITS**

- 6 units ARTS&SCI 3A06 or 3D03 and 3DD3
- 18-21 units from Course List
- 3-6 units Electives

**LEVEL V: 30 UNITS**

- 6 units ARTS&SCI 3A06 or 3D03 and 3DD3 (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 Cumulative Average of 6.0 and a grade of at least B- in ARTS & SCI 1D06 and in CHEM 1A06.

**NOTES**

1. Students who have completed CHEM 2O06 may substitute this for CHEM 2B06 and students who have completed ARTS & SCI 2D06 may substitute this for PHYSICS 1A06 or 1B06.
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 and 3BB3, 3D03 and 3DD3

**REQUIREMENTS**

**LEVEL I: 30 UNITS**

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

**LEVEL II: 33 UNITS**

- 12 units ARTS&SCI 2A06, 2R06
- 12 units PHYSICS 1A06 (or 1B06 or 1C06) and BIOLOGY 1A06
- 6 units CHEM 2B06
- 3 units MATH 1B03

**LEVEL III: 30 UNITS**

- 6 units from Course List
- 12 units CHEM 2A03, 2C03, 2P06
- 3 units MATH 2A03
- 9 units Electives

**LEVEL IV: 30 UNITS**

- 6 units from Course List
- 6 units Upper-level Inquiry
- 18 units CHEM 3A03, 3B06, 3D03 (or 3F03), 3E06

**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 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 either COMP SCI 1MA3, 1MB3 or 1MC3, 1MD3.

**REQUIREMENTS****LEVEL I: 30 UNITS**

- 24 units ARTS&SCI 1A06, 1B06, 1C06, 1D06
- 6 units from COMP SCI 1MC3 and 1MD3 or 1MA3 and 1MB3.

**LEVEL II: 33 UNITS**

- 12 units ARTS&SCI 2A06, 2D06
- 6 units BIOLOGY 1A06
- 6 units STATS 2D03 or 2MA3; 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 and 3BB3
- 6 units Upper-level Inquiry
- 3 units COMP SCI 2MJ3
- 9 units COMP SCI 3MG3, 3MH3, 3MI3
- 3 units from COMP SCI 3CA3, 3EA3, 3IA3

**LEVEL IV: 30 UNITS**

- 6 units ARTS&SCI 3D03, 3DD3
- 15 units COMP SCI 4MP6 and nine additional units of Level III or IV Computer Science courses, including COMP SCI 3EA3 if not already taken
- 9 units Electives

**Honours Arts & Science and Economics**

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

**ADMISSION**

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

**NOTE**

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

**REQUIREMENTS****Option A (2027151)****LEVEL I: 30 UNITS**

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

**LEVEL II: 30 UNITS**

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

**LEVEL III: 30 UNITS**

- 12 units ARTS&SCI 3A06, 3B03, 3BB3
- 6 units ECON 3O06 or ARTS&SCI 2R06
- 3 units from ECON 2K03, 3I03
- 9 units Electives

**LEVEL IV: 30 UNITS**

- 6 units ARTS&SCI 3D03, 3DD3
- 6 units Upper-level Inquiry
- 18 units ECON 3F03, 3LL3, 4A03 and nine 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 1A06

**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 3D03, 3DD3
- 3 units from ECON 2K03, 3I03
- 9 units ECON 3F03, 3LL3, 4A03
- 6 units Economics (which must be approved) to replace ARTS&SCI 4A06 or 4C06
- 6 units Electives

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

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

**NOTES**

1. With special permission of the English Department, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in the second term.
2. Six units of a language other than English are needed to complete the programme. If *Old English and Literature* (ENGLISH 3L06) is taken as a language requirement, students should register under the code: ENGLISH 3LS6.

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

ENGLISH 3C06, 3I03, 3J06, 3L06, 3T03, 3V06

**COURSE LIST 2 (SIX UNITS REQUIRED)**

ENGLISH 3G06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3

**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 1A06
- 6 units ENGLISH 2A06
- 6 units from ENGLISH 2B06, 2G06, 2H06, 2I06

**LEVEL III: 30 UNITS**

- 12 units ARTS&SCI 2D06 or 3B03 and 3BB3
- 6 units Upper-level Inquiry
- 6 units ENGLISH 3K06
- 6 units from Course List 1 or 2

**LEVEL IV: 30 UNITS**

- 6 units ARTS&SCI 3D03, 3DD3
- 6 units from Course List 1 or 2 (whichever list requirement not complete)
- 6 units Level IV English seminars
- 6 units Language requirement
- 6 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.

**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 1 (SIX UNITS REQUIRED)**

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

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

FRENCH 2G03, 3CC3, 3F03, 4BB3

**REQUIREMENTS****LEVEL I: 30 UNITS**

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

**LEVEL II: 30 UNITS**

12 units ARTS&SCI 2A06, 2R06  
6 units BIOLOGY 1A06  
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, 4U03

**LEVEL IV: 30 UNITS**

6 units ARTS&SCI 3D03, 3DD3  
12 units FRENCH 4A03; three units Level III or IV French courses (see Course List 2); two three-unit Level IV French courses from Course List 1  
3 units from FRENCH 3A03, 3SS3, 4J03  
9 units Electives

**Honours Arts & Science  
and Geography**

2027240

**ADMISSION**

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

**NOTE**

Students with interest in Human Geography should choose GEOG 1B06 in Level I. Students with interest in Physical Geography or Environmental Science, should choose GEOG 1C03 and 1G03.

**REQUIREMENTS****LEVEL I: 30 UNITS**

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

**LEVEL II: 30 UNITS**

12 units ARTS&SCI 2A06, 2D06  
6 units BIOLOGY 1A06  
6 units from ARTS&SCI 2R06, GEOG 2LL3, 2N03  
6 units Level II Geography, excluding 2C03, 2E03, 2P03

**LEVEL III: 30 UNITS**

12 units ARTS&SCI 3A06, 3B03, 3BB3  
6 units Upper-level Inquiry  
12 units GEOG 3O03; nine units Level III Geography, excluding 3JJ3, 3R03

**LEVEL IV: 30 UNITS**

6 units ARTS&SCI 3D03, 3DD3  
18 units GEOG 4CC3 and 15 units Level III/IV Geography, or GEOG 4C06 and 12 units of Level III/IV Geography  
6 units Electives

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

Enrolment in this programme is limited. Selection is based on academic achievement, but requires, as a minimum, 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**

1. In selecting courses, students must ensure that they take a minimum of three units in each of three fields of History. For this purpose the Department has established the following six fields: European, Ancient, Asian, Canadian, British, and the

Americas (excluding Canada). This requirement must be 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.

2. No Level IV seminars may be taken before completion of 12 units of History beyond Level I.

**REQUIREMENTS****LEVEL I: 30 UNITS**

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

**LEVEL II: 30 UNITS**

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

**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 3D03, 3DD3  
18 units six units Level III HISTORY; six units Level IV History; six units Level IV History approved as substitutes for ARTS&SCI 4A06 or 4C06  
6 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 1A06

**LEVEL II: 33 UNITS**

18 units ARTS&SCI 2A06, 2D06, 2R06  
12 units MATH 2A03, 2AA3, 2C03, 2R03  
3 units from MATH 2S03, 2T03

**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 3D03, 3DD3  
6 units ARTS&SCI 4A06 or 4C06  
3 units MATH 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**

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, the Associate Dean of Humanities (Studies), and the Director of the Arts & Science Programme, one or both terms of Level III may be replaced by courses of study at a designated university abroad.
4. Arts & Science students may not take PHILOS 2R03.

**REQUIREMENTS****LEVEL I: 30 UNITS**

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

**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 3D03, 3DD3  
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.

**NOTE**

Continuation in the programme beyond Level II requires at least C+ in PHYSICS 1A06 or 1B06.

**REQUIREMENTS****LEVEL I: 33 UNITS**

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

**LEVEL II: 30 UNITS**

6 units ARTS&SCI 2A06  
6 units Upper-level Inquiry  
6 units BIOLOGY 1A06, or PHYSICS 1A06 or 1B06, which ever not completed  
6 units CHEM 1A06  
3 units MATH 2A03  
3 units from MATH 2C03, 2O03

**LEVEL III: 30 UNITS**

12 units ARTS&SCI 3B03, 3BB3, and 3A06 or 3D03 and 3DD3  
18 units from PHYSICS 2B06, 2C03, 2D03, 2H03; COMP SCI 1MA3 or 1MC3

**LEVEL IV: 29 UNITS**

6 units ARTS&SCI 3A06 or 3D03 and 3DD3 (whichever not completed)  
17 units PHYSICS 3H04, 3K04, 3M03, 3MM3 and 3N03  
6 units MATH 3C03, 3D03

**LEVEL V: 32 UNITS**

6 units ARTS&SCI 4C06  
11 units PHYSICS 4B04, 4F03, 4J04  
9 units Level III or IV Physics, excluding PHYSICS 4Q04  
6 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 1A06

**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 3D03, 3DD3  
6 units Level III/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**

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

**NOTES**

- ARTS&SCI 1D06 with a grade of at least C- must be completed before entrance into Level II of the programme.
- PSYCH 2R03 and 2RR3 must be completed before entrance into Level III.
- BIOLOGY 1A06 is a prerequisite for PSYCH 2F03.
- At some time during the programme, the student must meet a laboratory requirement by completing one of PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3. Enrolment in Psychology Laboratory courses is limited. Permission of the Department is required by March 1.
- Students who are planning to do graduate studies in Psychology and who meet the prerequisites should complete PSYCH 4D06.

**COURSE LIST**

PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

**REQUIREMENTS****LEVEL I: 30 UNITS**

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

**LEVEL II: 30 UNITS**

12 units ARTS&SCI 2A06, 2D06  
6 units BIOLOGY 1A06  
6 units PSYCH 2R03 and 2RR3 (or ARTS&SCI 2R06)  
6 units from PSYCH 2E03, 2F03, 2H03, 2T03

**LEVEL III: 30 UNITS**

12 units ARTS&SCI 3A06, 3B03, 3BB3  
6 units Upper-level Inquiry  
3 units MATH 1B03  
3 units from PSYCH 2E03, 2F03, 2H03, 2T03 (whichever not taken in Level II)  
6 units Level III Psychology (See *Note 4* above.)

**LEVEL IV: 30 UNITS**

6 units ARTS&SCI 3D03, 3DD3  
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 Women's Studies

2027642

### ADMISSION

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

### NOTES

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

### COURSE LIST

All Women's Studies courses above Level I. With approval of the Director of Women's Studies, appropriate courses may be selected from Anthropology, Classics, Comparative Literature, English, French, Modern Languages, Geography, History, Labour Studies, Philosophy, Kinesiology, Religious Studies and Sociology.

#### LEVEL I: 30 UNITS

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

#### LEVEL II: 30 UNITS

12 units ARTS&SCI 2A06, 2R06  
6 units BIOLOGY 1A06  
12 units WOMEN ST 2A06; six units from Course List

#### LEVEL III: 30 UNITS

6 units ARTS&SCI 2D06  
6 units from ARTS&SCI 3A06, 3B03 and 3BB3 or 3D03 and 3DD3  
6 units Upper-Level Inquiry  
12 units WOMEN ST 3A06; six units from Course List

#### LEVEL IV: 30 UNITS

12 units from ARTS & SCI 3A06, 3B03 and 3BB3, 3D03 and 3DD3 (whichever not completed)  
12 units WOMEN ST 4A06, six units from Course List  
6 units Electives

# MICHAEL G. DEGROOTE

## SCHOOL OF BUSINESS

(FACULTY OF BUSINESS)

WEB ADDRESS: <http://www.mcmaster.ca/busdocs/sob.html>

### Dean of Business

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

### Associate Dean of Business (Academic)

T.W. Chamberlain/B.Sc., M.B.A., Ph.D., C.A.

### Administrator, Undergraduate Programmes

J. Osterman/B.A., B.Admin.

### 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 introductory business, computer science, economics, mathematics and takes additional 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 also be considered for admission to Level II (Commerce II). Such a student should consult with the Office of the Administrator, Undergraduate Programmes, 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, about one-half of the course work is in each of Commerce subjects and non-Commerce electives.

## INTERNATIONAL/CROSS-CULTURAL/LANGUAGE MENU

In the revised programmes, the School of Business is stressing the importance of breadth of knowledge. Students will be required to take courses in a variety of business disciplines, thus giving them a sound understanding of business functions and their relationships. They will also have exposure to international and cross-cultural issues. This will provide students with the knowledge needed for the world of global organizations. Prior to graduation, students who entered Business I in September 1995 or later will be required to successfully complete two courses from an International/Cross-Cultural/Language menu. The menu for 1996-97 is as follows:

ANTHROP 1A03	Introduction to Anthropology: Culture and Society
ANTHROP 2AA3	The Origin and Development of the European Language (LINGUIST 2AA3)
ANTHROP 2LL3	Languages of the World (LINGUIST 2LL3)
ANTHROP 2P03	Peoples of the Pacific
ANTHROP 3D03	Ethnology: Pacific Islands
ANTHROP 3X03	Sociolinguistics I (LINGUIST 3X03)
ANTHROP 3XX3	Sociolinguistics II (LINGUIST 3XX3)
COMP LIT 1A06	The European Literary Tradition
ECON 2C03	Asian-Pacific Economies
ECON 2F03	Globalization and Economic Development
ECON 3H03	International Monetary Economics
ECON 3HH3	International Trade
ECON 3T03	Economic Development: Agriculture and Population
ECON 3TT3	Economic Development: Trade, Foreign Investment and International Finance
ENGLISH 3P03	Modern Drama in English
FRENCH 1A06	Introduction to French Studies: Advanced Level
FRENCH 1N06	Intensive French Grammar
FRENCH 1NN6	Intensive French Grammar
FRENCH 2B03	French Language Practice I
FRENCH 2H03	Introduction to French Linguistics
FRENCH 2M06	Introduction to French Studies: Advanced Level
FRENCH 2N03	Introduction to the Civilization of France
FRENCH 2W03	20th-Century French Literature I
FRENCH 2WW3	20th-Century French Literature II
FRENCH 3Z03	African and Caribbean French Literatures
GEOG 1B06	Human Geography
GEOG 2C03	China: People and Land in Transition
GEOG 3JJ3	Geography of Japan (JAPAN ST 3JJ3)
GERMAN 1B06	Introduction to German Studies
GERMAN 2A03	Twentieth-Century Literature
GERMAN 2AA3	Introduction to German Literature
GERMAN 2Z06	Intermediate German
HEBREW 2A03	Introduction to Biblical Hebrew
HEBREW 2B03	Introduction to Biblical Hebrew II
HEBREW 3A03	Intermediate Hebrew I
HEBREW 3B03	Intermediate Hebrew II
HISPANIC 1A06	Intermediate Spanish
HISPANIC 2B03	Introduction to Spanish Literature and Civilization
HISPANIC 2Z06	Intermediate Spanish
HISTORY 2B06	China: From Late Imperial Times to the Present
HISTORY 2E06	The Islamic World, 600-1800 (RELIG ST 2E06)
HISTORY 3A03	Imperial Islam: The Ottomans
HISTORY 3AA3	The Modern Middle East
HISTORY 3B03	Modern Japan (JAPAN ST 3B03)
HISTORY 3I03	The International Relations of the Imperial Powers, 1914-1945
ITALIAN 1A06	Intermediate Italian
ITALIAN 2D03	Advanced Italian
JAPANESE 1Z06	Beginner's Intensive Japanese
JAPANESE 2Z06	Intermediate Intensive Japanese
JAPANESE 3B03	Business Japanese
JAPAN ST 2P06	Japanese Civilization (RELIG ST 2P06)
JAPAN ST 3E03	Japanese Religion (RELIG ST 3E03)
JAPAN ST 3H03	Storytelling in East Asian Religions (RELIG ST 3H03)
JAPAN ST 3P03	Esoteric Buddhism in East Asia (RELIG ST 3P03)
LINGUIST 1A06	The Study of Language



MOD LANG 2A03	Introduction to Literary Studies
MOD LANG 2B03	Survey of Italian Literature (in English)
MOD LANG 2H03	Masterworks of German Literature (in English)
MOD LANG 3G03	German Drama (in English)
MOD LANG 3KK3	Contemporary Russian Literature (in English)
MOD LANG 3P03	Literature and Politics in Spanish America (in English)
MOD LANG 3T03	Topics in National Cinemas I (in English)
MOD LANG 3W03	German Women Writers (in English)
MOD LANG 4L03	Survey of Spanish Theatre (in English)
POLISH 1Z06	Beginner's Polish
POLISH 2Z06	Intermediate Polish
POL SCI 2E06	International Politics
PORTUGUE 1Z06	Beginner's Intensive Portuguese
PORTUGUE 2Z06	Intermediate Portuguese
RELIG ST 1B06	World Religions
RELIG ST 2AA3	Mysticism in Hindu and Christian Traditions
RELIG ST 2BB3	Images of the Divine Feminine
RELIG ST 2J06	India: Its Culture, Social History, Religion and Philosophy
RELIG ST 2RR3	Introduction to Hindu Philosophy
RELIG ST 2SS3	Women and Religion
RELIG ST 2T03	Topics in Indian Philosophy
RELIG ST 2TT3	Taoism and the Search for Immortality in China
RELIG ST 2W03	Religion and Ecology
RELIG ST 3AA3	Popular Religion in India
RELIG ST 3E03	Japanese Religion
RELIG ST 3H03	Storytelling in East Asian Religions
RELIG ST 3I03	Storytelling in Indian Religion
RELIG ST 3U03	The Buddhist Tradition in India
RUSSIAN 1Z06	Beginner's Intensive Russian
RUSSIAN 2B03	20th-Century Short Story
RUSSIAN 2C06	Intermediate Language Study
SANSKRIT 3A06	Introduction to Sanskrit Grammar
SANSKRIT 4B06	Readings in Sanskrit Texts

### FULL-TIME/PART-TIME STUDIES

You 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 Level IV 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 permission of the Office of the Administrator, Undergraduate Programmes. Such permission will be given only if normal prerequisites are satisfied and if space permits after meeting the requirements of in-course students. Registrations will be approved after classes start. (See *Admission Requirements, Continuing and Post-Degree Students*.)

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

### SECOND UNDERGRADUATE DEGREE

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

### CREDIT TOWARDS PROFESSIONAL DESIGNATIONS

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

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 Office of the Administrator, Undergraduate Programmes, School of Business.

### MINOR

A minor is an option available to a student enrolled in a four- or five-level programme. A minor consists of at least 18 units of Level II, III or IV courses beyond the designated Level I course(s) that meet the requirements set out in the programme description of that minor. A student is responsible for ensuring that the courses taken fulfill these requirements. Those who have completed the necessary courses may apply for recognition of that minor when they graduate. If recognition is granted for a minor, a notation to that effect will be recorded on the student's transcript. For further information, please refer to *Minors* in the *General Academic Regulations* section (page 16) of this Calendar.

## ACADEMIC REGULATIONS

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

### CHANGE OF PROGRAMME

A student may transfer between Commerce programmes prior to entering Level IV, provided that, after consultation with the Office of the Administrator, Undergraduate Programmes, 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 work can be established. This revised programme of work must be approved by the Office of the Administrator, Undergraduate Programmes.

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

### WORKLOAD

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

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

### REPEATED COURSES

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

### EXTRA COURSES

Courses in addition to those which constitute the student's programme must be designated Extra at registration. Extra courses may be taken only upon successful completion of Level III of any of the Commerce programmes. No Extra courses may be scheduled in a manner which would delay completion of a student's programme. Commerce courses previously taken cannot be

repeated as Extras. The designation for Extra can be neither added nor removed retroactively. The last day to change the Extra designation is the last day for the Drop and Add period of the term to which it pertains.

#### 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. **Readmission is not guaranteed.**

Application for readmission must be made in writing to the Associate Dean (Academic) by April 30 of the year for which readmission is desired. This application should explain why the student would expect to succeed in the programme if readmitted.

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

#### EXCHANGE PROGRAMMES

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

Additional information may be found under *International Study* in the *General Academic Regulations* section (page 16) 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 Officer*.

Acceptance to the Ontario and University-wide Exchange Programmes is by recommendation. Application forms can be obtained from:

**The Student Exchanges Officer,  
Hamilton Hall, Room 405**

**Telephone: (905) 525-9140, extension 24748**

#### FORMER COMMERCE STUDENTS

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

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

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 Office of the Administrator, Undergraduate Programmes, Michael G. DeGroote Building, Room 104.

**THE SCHOOL OF BUSINESS HAS INTRODUCED REVISIONS TO THE HONOURS COMMERCE AND COMMERCE PROGRAMMES. STUDENTS ARE ADVISED TO CAREFULLY SELECT THE APPROPRIATE PROGRAMME REQUIREMENTS ACCORDING TO THEIR DATE OF ENTRY INTO THEIR RESPECTIVE PROGRAMMES**

## PROGRAMMES

**FOR STUDENTS WHO ENTERED LEVEL II COMMERCE PRIOR TO SEPTEMBER 1995.**

### Honours Commerce (Honours B.Com.) 2141

Requirements for continuation towards the Honours B.Com. degree are specified above in *Academic Regulations*.

#### REQUIREMENTS

##### LEVEL IV: 30 UNITS

(Last offered in 1996-97)

- 6 units COMMERCE 4PA3, 4QA3
- 15-18 units from Groups 1 to 6 below. No more than 12 units from any one Group can be taken in Level IV.
- 6-9 units Electives from non-Commerce courses

### Commerce (B.Com.) 2140

Requirements for continuation towards the B.Com. degree are specified above in *Academic Regulations*.

#### REQUIREMENTS

##### LEVEL IV: 30 UNITS

(Last offered in 1996-97)

- 6 units COMMERCE 4PA3, 4QA3
- 9 units from Groups 1 to 6 below. No more than six units from any one Group can be taken in Level IV.
- 15 units Electives from non-Commerce courses

#### COMMERCE ELECTIVE GROUPS

- > **GROUP 1 (ACCOUNTING)**  
COMMERCE 3AB3, 4AA3, 4AB3, 4AC3, 4AD3, 4AE3, 4AF3, 4AG3\*, 4AH3\*, 4AI3\*

\*Available summer sessions: 1996, 1997, subject to sufficient enrolments and availability of qualified instructors.

- > **GROUP 2 (HUMAN RESOURCES & LABOUR RELATIONS)**  
COMMERCE 3BA3, 3BB3, 3BC3, 4BA3, 4BB3, 4BC3, 4BD3, 4BE3, 4BF3, 4BG3, 4BH3, 4BI3

- > **GROUP 3 (FINANCE)**  
COMMERCE 3FB3, 3FC3, 4FA3, 4FD3, 4FE3, 4FF3, 4FG3

- > **GROUP 4 (MARKETING)**  
COMMERCE 3MB3, 4MC3, 4MD3

- > **GROUP 5 (ENVIRONMENT & INTERNATIONAL BUSINESS)**  
COMMERCE 4PB3, 4PC3, 4PD3, 4PE3

- > **GROUP 6 (PRODUCTION & MANAGEMENT SCIENCE)**  
COMMERCE 4QB3, 4QC3, 4QD3

## PROGRAMMES

**FOR STUDENTS WHO ENTERED BUSINESS I IN SEPTEMBER 1994 OR LATER OR WHO ENTERED COMMERCE LEVEL II IN SEPTEMBER 1995 OR LATER**

#### REQUIREMENTS

##### BUSINESS I: 30 UNITS

0725

- 15 units COMMERCE 1S03; COMP SCI 1BA3; ECON 1A06; MATH 1M03

- 15 units Electives. Students who do not have OAC Calculus must take MATH 1K03 as an elective before taking MATH 1M03. Students who do not have OAC Finite Mathematics must take STATS 1L03 as an elective. (See *International/Cross-Cultural/Language Menu* in this section of the Calendar.)

**Commerce 2140**

**ADMISSION TO COMMERCE II**

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

**Business Level I Students**

To be considered for Commerce Level II a student must have a CA of at least 5.0 on Business I courses with no failures. When calculating the CA and checking for failures only first attempts at Business I courses are considered. **However, enrolment in Commerce II is limited to a maximum of 300 students.** Therefore, being eligible for consideration for entry to Commerce II does not guarantee entry.

**Transfer Students**

Transfer students may be admitted to Commerce II from other universities or from other Faculties within McMaster University.

A maximum of 50 of the 300 places in Commerce Level II may be given to transfer students. Academic requirements for admission of transfer students may be more demanding than those for Business I students. See the Office of the Administrator, Undergraduate Programmes, School of Business for information.

**REQUIREMENTS**

**LEVEL II: 30 UNITS**

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

**Honours Commerce (Honours B.Com.) 2141**

Requirements for continuation in the Honours B.Com. programme are specified in the *General Academic Regulations* section (page 16) of this Calendar.

**REQUIREMENTS**

**LEVEL III: 30 UNITS**

(First offered in 1996-97)

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

**LEVEL IV: 30 UNITS**

(First offered in 1997-98)

- 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 *International/Cross-Cultural/Language Menu* 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 (page 16) of this Calendar.

**REQUIREMENTS**

**LEVEL III: 30 UNITS**

(First offered in 1996-97)

- 15 units COMMERCE 3BC3, 3FA3, 3MC3, 3QA3, 3QC3
- 15 units Electives from non-Commerce courses. (See *International/Cross-Cultural/Language Menu* in this section of the Calendar.)

**LEVEL IV: 30 UNITS**

(First offered in 1997-98)

- 6 units COMMERCE 4PA3, 4SA3.
- 24 units Electives from non-Commerce courses. (See *International/Cross-Cultural/Language Menu* in this section of the Calendar.)

**Minor in Business**

**REQUIREMENTS**

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

**NOTE:**

Enrolment is limited to 40 students from programmes other than Commerce, Engineering Management, and Labour Studies in each of the Commerce courses comprising the minor. Places in these courses will be allocated to students on a first-come, first-served basis.

# FACULTY OF ENGINEERING

WEB ADDRESSES: (Materials Science and Engineering):

<http://mse.eng.mcmaster.ca>

(Civil Engineering): <http://www.eng.mcmaster.ca>

E-MAIL ADDRESSES:

(Faculty Office): [zywina@mcmaster.ca](mailto:zywina@mcmaster.ca)

(Engineering Physics): [mascher@mcmaster.ca](mailto:mascher@mcmaster.ca)

## Dean of Engineering

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

## Associate Dean of Engineering

R.G. Drysdale/B.Sc. (C.E.), M.A.Sc., Ph.D., F.C.S.C.E., P.Eng.

## Director of Engineering I

R.C. Hudspith/B.Eng., M.Eng., 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.

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

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

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

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. Provincial Engineering Associations accept the accreditation as a major requirement for admission to the qualification Professional Engineer.

At McMaster, Engineering students take a common Level I 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 Engineering programmes.

In addition to ENGINEER 4A03 or equivalent and 4B03, 15 units of complementary studies electives is required in all B.Eng. programmes. Of these, three units must be selected from courses that are designated as being above Level I.

The Associate Dean of Engineering must authorize each student's complementary studies elective courses. An approved list is published each spring and is available from the Associate Dean's office.

**Technical Electives** are Engineering or Applied Science courses in subjects relevant to the particular Engineering 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 engineering 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. Participation in a Theme School (including course selection) will require permission from the Director of the Theme School, the Department Chair and the Associate Dean of Engineering.

## INDUSTRIAL INTERNSHIPS

The Faculty of Engineering offers 12 to 16-month full-time paid work placements in industry to provide students with the technical work experience based on their course work. Students who qualify compete for placements with participating companies through an application and interview process. 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. An administrative fee is assessed following the start of the Placement. Industrial Internships are open to all disciplines and programmes within the Faculty of Engineering.

## EXCHANGE PROGRAMMES

Formal exchange programmes with a number of universities in other countries are available for 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 (page 16) 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 Officer*.

\* Mentions "M-Opportunity" where students can repeat level I failed courses in Winter or Summer to still enter level II in Sept.

## ACADEMIC REGULATIONS

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 implemented a pilot project (called the *M-Opportunity*) that provides the opportunity to replace failed courses in second term and/or in the summer. The results of these *M-Opportunity* courses are used to calculate a new Level I CA. (Failed courses are still counted in the CA.) The Faculty has offered the *M-Opportunity* in 1994-95, 1995-96 and subject to review, may be available in 1996-97.

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 may be repeated only following failure or inability to achieve prerequisite standing for a required course or approved technical elective course.

### LEVEL OF REGISTRATION

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

### FALL/WINTER SESSION WORKLOAD

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

### READMISSION TO ENGINEERING

A student who may not continue may apply for readmission to Engineering after not less than one year of practical work experience. Application for readmission must be made in writing to the Associate Dean of Engineering in March of the year for which readmission is desired and should include a recommendation from the current employer.

#### Readmission is not guaranteed.

A student who is readmitted 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 readmission. Students who are readmitted will be placed on 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

### 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 11, 1997. 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 overall grade of C; 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.

### Ceramic Engineering (B.Eng.) 4075

Ceramic Engineering as a full programme is being phased out. In 1994 the final class entered the programme at Level II. Commencing in 1997-98, specialization in Ceramic Engineering can be achieved by completing the special Level IV programme, *Materials Engineering (Ceramic Option)*. This programme is outlined in the *Materials Engineering* programme descriptions in this section of the Calendar.

#### LEVEL IV: 36-39 UNITS (LAST OFFERED IN 1996-97)

- 8 units MATLS 4R04, MATLS 4S04
- 6 units ENGINEER 4A03 or 4H03 or equivalent; ENGINEER 4B03
- 15 units from MATLS 3P03, 4A02, 4B04, 4L02, and 4K04 or 4Z04
- 3 units approved complementary studies electives (above Level I)
- 4-7 units approved Level III or IV technical electives

### Chemical Engineering (B.Eng.) 4080

#### ADMISSION

See *Admission to Level II Engineering Programmes* above.

#### LEVEL II: 36 UNITS

- 16 units CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02
- 8 units CHEM 2D03, 2M05
- 6 units MATH 2M06
- 6 units approved complementary studies electives

#### LEVEL III: 36 UNITS

- 27 units CHEM ENG 3D03, 3E04, 3G03, 3K04, 3L02, 3M04, 3O04, 3P03
- 3 units STATS 3N03
- 6 units from BIOCHEM 2E03, CHEM ENG 3Q03, ENGINEER 2O03

#### LEVEL IV: 34 UNITS

- 13 units CHEM ENG 4L02, 4M03, 4N04, either 4W04 or 4Y04
- 6 units ENGINEER 2MM3, 4A03 or 4H03 or equivalent
- 9 units from CHEM ENG 4B03, 4C03, 4E03, 4K03, 4T03, 4X03, 4Z03, ELEC ENG 4CB3, ENGINEER 4U03; one course must be CHEM ENG 4B03 or 4K03
- 3 units complementary studies electives (above Level I)
- 3 units approved Level III or IV technical electives

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

4080325

**ADMISSION**See *Admission to Level II Engineering Programmes* above.**LEVEL II: 34 UNITS**

- 16 units CHEM ENG 2A04, 2C02, 2D04, 2F04, 2G02
- 3 units CHEM 2D03
- 3 units COMMERCE 2MA3
- 6 units ECON 1BB3, 2X03
- 6 units MATH 2M06

**LEVEL III: 36 UNITS**

- 17 units CHEM ENG 3D03, 3E04, 3L02, 3M04, 3O04
- 15 units COMMERCE 2AA3, 2AB3, 2BA3, 2FA3, 2QA3
- 3 units ENGINEER 2MM3
- 1 unit ENGN MGT 3AA1

**LEVEL IV: 37-39 UNITS**

- 15 units CHEM ENG 3G03, 3K04, 3P03, 4L02, 4M03
- 12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
- 1 unit ENGN MGT 4A01
- 3 units approved complementary studies electives (above Level I)
- 6-8 units from BIOCHEM 2E03, CHEM ENG 3Q03, CHEM 2M05, ENGINEER 2O03

**LEVEL V: 35 UNITS**

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

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

4080535

**ADMISSION**See *Admission to Level II Engineering Programmes* above.**NOTE**

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

**LEVEL II: 34-37 UNITS**

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

**LEVEL III: 34-37 UNITS**

- 17 units CHEM ENG 3D03, 3E04, 3L02, 3M04, 3O04
- 5 units CHEM 2M05
- 3 units ENGINEER 2MM3
- 6 units ENGSOCTY 3Y03, 3Z03
- 3-6 units Engineering and Society focus electives

**LEVEL IV: 33 UNITS**

- 15 units CHEM ENG 3G03, 3K04, 3P03, 4L02, 4M03
- 3 units ENGSOCTY 3X03
- 3 units STATS 3N03
- 6 units from BIOCHEM 2E03, CHEM ENG 3Q03, ENGINEER 2O03
- 6 units Engineering and Society focus electives

**LEVEL V: 32 UNITS**

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

**Civil Engineering (B.Eng.)**

4120

**ADMISSION**See *Admission to Level II Engineering Programmes* above.**NOTE**

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

**LEVEL II: 38 UNITS**

- 21 units CIV ENG 2A02, 2C04, 2D03, 2E03, 2I03, 2J03, 2O03
- 11 units ENGINEER 2C03, 2P04, 2Q04
- 6 units MATH 2M06

**LEVEL III: 36 UNITS**

- 26 units CIV ENG 3A03, 3B03, 3G03, 3J04, 3K03, 3M04, 3Q03, 3S03
- 3 units ENGINEER 3P03
- 4 units MATH 3J04
- 3 units approved complementary studies electives

**LEVEL IV: 34-36 UNITS**

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

**Civil Engineering and Management (B.Eng.Mgt.)**

4120325

**ADMISSION**See *Admission to Level II Engineering Programmes* above.**NOTE**

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

**LEVEL II: 37 UNITS**

- 15 units CIV ENG 2A02, 2C04, 2I03, 2J03, 2O03
- 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 2D03, 2E03, 3M04, 3Q03
- 9 units COMMERCE 2AB3, 2BA3, 2FA3
- 7 units ENGINEER 2C03, 2Q04
- 4 units MATH 3J04
- 3 units STATS 3Y03
- 3 units approved complementary studies electives (above Level I)

**LEVEL IV: 38 UNITS**

- 19 units CIV ENG 3A03, 3B03, 3G03, 3J04, 3K03, 3S03
- 12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
- 3 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
- 3 units ENGINEER 3P03
- 1 unit ENGN MGT 3AA1

**LEVEL V: 36-37 UNITS**

- 3 units CIV ENG 4B03
  - 21-22 units from Level IV Civil Engineering technical electives or ENGINEER 4U03
  - 3 units COMMERCE 4PA3
  - 3 units ENGN MGT 5B03
  - 3 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
  - 3 units ENGINEER 4A03, 4H03 or equivalent
- (Effective 1997-98 ENGN MGT 4A01 will be in Level V.)

**Civil Engineering and Society (B.Eng. Society) 4120535**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**NOTES**

- Level IV Civil Engineering courses must be selected in accordance with regulations which require a specified minimum content of engineering design and synthesis. Before the end of Level III, students must complete a Civil Engineering electives form, and ensure that it has been approved by the Department before completing a Level IV Registration Form.
- A minimum of 18 units of focus elective courses is required for the programme.

**LEVEL II: 34-37 UNITS**

- 15 units CIV ENG 2A02, 2C04, 2I03, 2J03, 2O03
- 4 units ENGINEER 2P04
- 6 units MATH 2M06
- 6 units ENGSOCTY 2X03, 2Y03
- 3-6 units Engineering and Society focus electives

**LEVEL III: 33-36 UNITS**

- 13 units CIV ENG 2D03, 2E03, 3M04, 3Q03
- 7 units ENGINEER 2C03, 2Q04
- 4 units MATH 3J04
- 6 units ENGSOCTY 3Y03, 3Z03
- 3-6 units Engineering and Society focus electives

**LEVEL IV: 31-34 UNITS**

- 19 units CIV ENG 3A03, 3B03, 3G03, 3J04, 3K03, 3S03
- 3 units ENGINEER 3P03
- 3 units ENGSOCTY 3X03
- 6-9 units Engineering and Society focus electives

**LEVEL V: 36-39 UNITS**

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

**Computer Engineering (B.Eng.) 4144**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 35 UNITS**

- 9 units COMP ENG 2HA3, 2KA3, 2YA3
- 9 units ELEC ENG 2BA3, 2DA3, 2FA3
- 3 units ENGINEER 2O03
- 8 units MATH 2P04, 2Q04
- 6 units approved complementary studies electives

**LEVEL III: 36 UNITS**

- 12 units COMP ENG 3HB3, 3HC3, 3KB3, 3VA3
- 18 units ELEC ENG 3AA3, 3BB3, 3CA3, 3DB3, 3FB3, 3FC3
- 3 units MATH 3K03
- 3 units STATS 3X03

**LEVEL IV: 34 UNITS**

- 16 units COMP ENG 4HD3, 4HE3, 4JA4, 4MA3, 4WA3
- 3 units ELEC ENG 4QA3
- 6 units ENGINEER 4B03, and 4A03 or 4H03 or equivalent
- 9 units from COMP SCI 3MG3, 3SD3, 4CB3, Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering

**Computer Engineering and Management (B.Eng.Mgt.) 4144325**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 37 UNITS**

- 6 units COMMERCE 2AA3, 2MA3
- 6 units COMP ENG 2HA3, 2YA3
- 6 units ECON 1BB3, 2X03
- 9 units ELEC ENG 2BA3, 2DA3, 2FA3
- 2 units ENGN MGT 2AA2
- 8 units MATH 2P04, 2Q04

**LEVEL III: 37 UNITS**

- 9 units COMMERCE 2AB3, 2BA3, 2FA3
- 12 units COMP ENG 2KA3, 3HB3, 3HC3, 3VA3
- 3 units ELEC ENG 3BB3
- 3 units ENGINEER 2O03
- 1 unit ENGN MGT 3AA1
- 3 units MATH 3K03
- 6 units STATS 3X03, 3Y03

**LEVEL IV: 37 UNITS**

- 9 units COMMERCE 3BC3, 3FA3, 3MC3
- 9 units COMP ENG 3KB3, 4HD3, 4WA3
- 15 units ELEC ENG 3AA3, 3CA3, 3DB3, 3FB3, 3FC3
- 1 unit ENGN MGT 4A01
- 3 units approved complementary studies electives (above Level I)

**Level V: 34 units**

- 6 units COMMERCE 3QC3, 4PA3
- 10 units COMP ENG 4HE3, 4JA4, 4MA3
- 3 units ENGINEER 4A03 or 4H03 or equivalent
- 3 units ENGN MGT 5B03
- 6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
- 6 units from COMP SCI 3MG3, 3SD3, 4CB3, Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering

**Computer Engineering and Society (B.Eng. Society) 4144535**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**NOTE**

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

**LEVEL II: 35 UNITS**

- 6 units COMP ENG 2HA3, 2YA3
- 9 units ELEC ENG 2BA3, 2DA3, 2FA3
- 6 units ENGSOCTY 2X03, 2Y03
- 8 units MATH 2P04, 2Q04
- 6 units Engineering and Society focus electives

**LEVEL III: 33-36 UNITS**

- 12 units COMP ENG 2KA3, 3HB3, 3HC3, 3VA3
- 3 units ELEC ENG 3BB3
- 6 units ENGSOCTY 3Y03, 3Z03
- 3 units ENGINEER 2O03
- 3 units MATH 3K03
- 3 units STATS 3X03
- 3-6 units Engineering and Society focus electives

**LEVEL IV: 30-33 UNITS**

- 9 units COMP ENG 3KB3, 4HD3, 4WA3
- 15 units ELEC ENG 3AA3, 3CA3, 3DB3, 3FB3, 3FC3
- 3 units ENGSOCTY 3X03
- 3-6 units Engineering and Society focus electives

**LEVEL V: 34 UNITS**

- 10 units COMP ENG 4HE3, 4JA4, 4MA3
- 6 units ENGSOCTY 4X03, 4Z03
- 3 units ENGINEER 4B03
- 6 units Engineering and Society focus electives
- 9 units from COMP SCI 3MG3, 3SD3, 4CB3, Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering

**Electrical Engineering (B.Eng.) 4170**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 35 UNITS**

- 6 units COMP ENG 2HA3, 2KA3
- 9 units ELEC ENG 2BA3, 2DA3, 2FA3
- 6 units ENGINEER 2O03, 2S03
- 8 units MATH 2P04, 2Q04
- 6 units approved complementary studies electives

**LEVEL III: 36 UNITS**

- 6 units COMP ENG 3HB3, 3KB3  
 24 units ELEC ENG 3AA3, 3BB3, 3CA3, 3DB3, 3FB3, 3FC3,  
 3NA3, 3SA3  
 3 units MATH 3K03  
 3 units STATS 3X03

**LEVEL IV: 34 UNITS**

- 7 units ELEC ENG 4JA4, 4QA3  
 6 units ENGINEER 4B03 and ENGINEER 4A03 or 4H03 or  
 equivalent  
 12 units Electrical Engineering Level IV or Computer  
 Engineering Level III or IV courses  
 9 units Level III or IV approved technical electives

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

4170325

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 37 UNITS**

- 6 units COMMERCE 2AA3, 2MA3  
 6 units COMP ENG 2HA3, 2KA3  
 6 units ECON 1BB3, 2X03  
 9 units ELEC ENG 2BA3, 2DA3, 2FA3  
 2 units ENGN MGT 2AA2  
 8 units MATH 2P04, 2Q04

**LEVEL III: 37 UNITS**

- 9 units COMMERCE 2AB3, 2BA3, 2FA3  
 3 units COMP ENG 3HB3  
 12 units ELEC ENG 3CA3, 3DB3, 3FB3, 3FC3  
 6 units ENGINEER 2O03, 2S03  
 1 unit ENGN MGT 3AA1  
 3 units MATH 3K03  
 3 units STATS 3X03

**LEVEL IV: 34 UNITS**

- 9 units COMMERCE 3BC3, 3FA3, 3MC3 (Term 2)  
 3 units COMP ENG 3KB3  
 12 units ELEC ENG 3AA3, 3BB3, 3NA3, 3SA3  
 3 units ENGINEER 4A03 or 4H03 or equivalent  
 1 unit ENGN MGT 4A01  
 3 units STATS 3Y03  
 3 units approved complementary studies electives (above  
 Level I)

**LEVEL V: 34 UNITS**

- 6 units COMMERCE 3QC3, 4PA3  
 4 units ELEC ENG 4JA4  
 3 units ENGN MGT 5B03  
 6 units Commerce electives selected from Level III and IV  
 Commerce courses or COMMERCE 2QB3  
 15 units Level III or IV approved technical electives, of which  
 at least nine units must be selected from Electrical  
 Engineering Level IV or Computer Engineering  
 Level III or IV courses

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

4170535

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**NOTE**

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

**LEVEL II: 35 UNITS**

- 6 units COMP ENG 2HA3, 2KA3  
 9 units ELEC ENG 2BA3, 2DA3, 2FA3  
 6 units ENGSOCTY 2X03, 2Y03  
 8 units MATH 2P04, 2Q04  
 6 units Engineering and Society focus electives

**LEVEL III: 33-36 UNITS**

- 12 units ELEC ENG 3CA3, 3DB3, 3FB3, 3FC3  
 6 units ENGSOCTY 3Y03, 3Z03  
 6 units ENGINEER 2O03, 2S03  
 3 units MATH 3K03  
 3 units STATS 3X03  
 3-6 units Engineering and Society focus electives

**LEVEL IV: 33-36 UNITS**

- 6 units COMP ENG 3HB3, 3KB3  
 12 units ELEC ENG 3AA3, 3BB3, 3NA3, 3SA3  
 3 units ENGSOCTY 3X03  
 3-6 units Engineering and Society focus electives  
 9 units approved Level III or IV technical electives

**LEVEL V: 31 UNITS**

- 4 units ELEC ENG 4JA4  
 6 units ENGSOCTY 4X03, 4Z03  
 3 units ENGINEER 4B03  
 6 units Engineering and Society focus electives  
 12 units Electrical Engineering Level IV or Computer Engineering  
 Level III or IV courses

**Engineering Physics (B.Eng.)**

4190

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**NOTE**

The following areas and courses are suggested as technical  
 electives for Level IV:

- Computer Systems PHYSICS 4D06
- Lasers and Electro-Optics ENG PHYS 4G03, 4K03, 4S04
- Nuclear Engineering ENG PHYS 4D03, 4L03, 4N03
- Solid State Electronics ENG PHYS 4E03, 4F03, 4Z03

**LEVEL II: 38 UNITS**

- 3 units COMP ENG 2HA3  
 11 units ENGINEER 2O03, 2P04, 2V04  
 7 units ENG PHYS 2A03, 2E04  
 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

**LEVEL IV: 36-40 UNITS**

- 3 units ENGINEER 4B03  
 11-13 units ENG PHYS 4C03, 4U04 and 4A04 or 4H06  
 4 units PHYSICS 4B04  
 10-12 units from ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03,  
 4S04, PHYSICS 4D06  
 8 units approved Level III or IV technical electives

**Engineering Physics and  
Management (B.Eng.Mgt.)**

4190325

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 38 UNITS**

- 6 units COMMERCE 2AA3, 2MA3  
 3 units COMP ENG 2HA3  
 3 units ECON 2X03  
 11 units ENGINEER 2O03, 2P04, 2V04  
 7 units ENG PHYS 2A03, 2E04  
 8 units MATH 2P04, 2Q04

**LEVEL III: 38 UNITS**

- 9 units COMMERCE 2AB3, 2BA3, 2FA3  
 3 units ECON 1BB3  
 2 units ENGN MGT 2AA2  
 6 units ENG PHYS 3E03, 3F03  
 6 units MATH 3C03, 3D03  
 9 units PHYSICS 2D03, 3B06  
 3 units STATS 3Y03



**LEVEL IV: 38 UNITS**

- 12 units COMMERCE 3BC3, 3FA3, 3MC3, 3QC3
- 2 units ENGN MGT 3AA1, 4A01
- 14 units ENG PHYS 3D03, 3O03, 3W04, 4U04
- 3 units MATH 4Q03
- 7 units PHYSICS 3M03, 4B04

**LEVEL V: 38-40 UNITS**

- 3 units COMMERCE 4PA3
- 3 units ENGN MGT 5B03
- 7 units ENG PHYS 4A04, 4C03
- 10-12 units from ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
- 6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3
- 6 units approved Level III or IV technical electives
- 3 units approved complementary studies electives (above Level I)

**Engineering Physics and Society (B.Eng. Society) 4190535**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**NOTE**

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

**LEVEL II: 35-38 UNITS**

- 11 units ENGINEER 2O03, 2P04, 2V04
- 7 units ENG PHYS 2A03, 2E03
- 6 units ENGSOCTY 2X03, 2Y03
- 8 units MATH 2P04, 2Q04
- 3-6 units Engineering and Society focus electives

**LEVEL III: 33-36 UNITS**

- 3 units COMP ENG 2HA3
- 6 units ENG PHYS 3E03, 3F03
- 6 units ENGSOCTY 3Y03, 3Z03
- 6 units MATH 3C03, 3D03
- 9 units PHYSICS 2D03, 3B06
- 3-6 units Engineering and Society focus electives

**LEVEL IV: 33-36 UNITS**

- 14 units ENG PHYS 3D03, 3O03, 3W04, 4U04
- 3 units ENGSOCTY 3X03
- 3 units MATH 4Q03
- 7 units PHYSICS 3M03, 4B04
- 6-9 units Engineering and Society focus electives

**LEVEL V: 35-40 UNITS**

- 3 units ENGINEER 4B03
- 7 units ENG PHYS 4A04, 4C03
- 6 units ENGSOCTY 4X03, 4Z03
- 10-12 units from ENG PHYS 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, PHYSICS 4D06
- 6-9 units Engineering and Society focus electives
- 3 units approved Level III or IV technical electives

**Manufacturing Engineering (B.Eng.) 4314**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 36 UNITS**

- 14 units ENGINEER 2MM3, 2O03, 2P04, 2Q04
- 3 units MANUFACT 2C03
- 6 units MATH 2M06
- 7 units MECH ENG 2A03, 2W04
- 6 units approved English literature

**LEVEL III: 37 UNITS**

- 3 units ENGINEER 3N03
- 2 units MANUFACT 3M02
- 3 units MATLS 3P03
- 23 units MECH ENG 3A03, 3C03, 3E04, 3F03, 3O04, 3R03, 4D03
- 3 units STATS 3Y03
- 3 units complementary studies electives (above Level I)

**LEVEL IV: 39 UNITS (1996-97 ONLY)**

- 12 units ENGINEER 4A03 or 4H03 or equivalent, 4B03, 4C03, 4J03
- 9 units MANUFACT 4A03, 4M04, 4P02
- 12 units MECH ENG 4K03, 4Q03, 4R03, 4Z03
- 3 units complementary studies electives (above Level I)
- 3 units approved technical electives

**LEVEL IV: 39 UNITS (EFFECTIVE 1997-98)**

- 12 units ENGINEER 4A03 or 4H03 or equivalent, 4B03, 4C03, 4J03
- 9 units MANUFACT 4A03, 4M04, 4P02
- 15 units MECH ENG 4C03, 4K03, 4Q03, 4R03, 4Z03
- 3 units approved technical electives

**Manufacturing Engineering and Management (B.Eng.Mgt.) 4314325**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**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, 3E04, 3O04, 3R03
- 3 units STATS 3Y03

**LEVEL IV: 37 UNITS (1997-98)**

- 9 units COMMERCE 3BC3, 3FA3, 3MC3
- 3 units ENGINEER 4C03
- 2 units ENGN MGT 3AA1, 4A01
- 2 units MANUFACT 4P02
- 3 units MATLS 3P03
- 12 units MECH ENG 3A03, 3F03, 4D03, 4R03
- 3 units complementary studies electives (above Level I)
- 3 units approved technical electives

**LEVEL V: 37 UNITS (1998-99)**

- 3 units COMMERCE 4PA3
- 6 units ENGINEER 4A03 or 4H03 or equivalent, ENGINEER 4J03
- 3 units ENGN MGT 5B03
- 7 units MANUFACT 4A03, 4M04
- 12 units MECH ENG 4C03, 4K03, 4Q03, 4Z03
- 6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3

**Manufacturing Engineering and Society (B.Eng. Society) 4314535**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**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: 35-38 UNITS (1997-98)**

- 10 units ENGINEER 2Q04, 2MM3 (Term 1), 3N03  
 3 units ENGSOCTY 3Z03  
 2 units MANUFACT 3M02  
 14 units MECH ENG 3C03, 3E04, 3O04, 3R03  
 3 units STATS 3Y03  
 3-6 units Engineering and Society focus electives

**LEVEL IV: 32-35 UNITS (1998-99)**

- 6 units ENGINEER 4C03, 4J03  
 6 units ENGSOCTY 3X03, 3Y03  
 2 units MANUFACT 4P02  
 3 units MATLS 3P03  
 12 units MECH ENG 3A03, 3F03, 4R03, 4D03  
 3-6 units Engineering and Society focus electives

**LEVEL V: 31-34 UNITS (1999-2000)**

- 3 units ENGINEER 4B03  
 6 units ENGSOCTY 4X03, 4Z03  
 7 units MANUFACT 4A03, 4M04  
 12 units MECH ENG 4C03, 4K03, 4Q03, 4Z03  
 3-6 units Engineering and Society focus electives

**Materials Engineering (B.Eng.) 4315****ADMISSION**

See Admission to Level II Engineering Programmes above.

**NOTE**

This programme is designed to permit choices of electives in Level IV which will allow indepth study of various types of modern engineering materials (e.g. electronic materials, 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 2B06, 2H03, 2X02  
 6 units MATH 2M06  
 6 units approved complementary studies electives

**LEVEL III: 34-35 UNITS**

- 3 units ENG PHYS 3F03  
 22 units MATLS 3A03, 3B03, 3E04, 3I05, 3P03, 3T04  
 3 units MATH 3I03  
 3 units STATS 3N03 or 3Y03  
 3-4 units CHEM ENG 3O04 or MECH ENG 3O04 or CHEM ENG 3Q03 or GEOLOGY 2B04

**LEVEL IV: 36-37 UNITS (1996-97 ONLY)**

- 6 units ENGINEER 4A03 or 4H03 or equivalent, 4B03  
 15 units MATLS 3P03, 4A02, 4B04, 4L02, and 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, unless already taken

**LEVEL IV (MATERIALS OPTION): 36-37 UNITS****(EFFECTIVE 1997-98)**

- 9 units ENGINEER 4A03 or 4H03 or equivalent, 4B03, 4J03  
 12 units MATLS 4A02, 4B04, 4L02, 4Z04  
 3 units approved complementary studies electives (above Level I)

- 12-13 units approved Level III or IV technical electives, which must include either CHEM ENG 3O04 or MECH ENG 3O04, unless already taken

**LEVEL IV (CERAMICS OPTION): 35-36 UNITS 4316****(EFFECTIVE 1997-98)**

This programme may be entered at Level IV by completion of Materials Engineering Level III, including GEOLOGY 2B04.

- 9 units ENGINEER 4A03 or 4H03 or equivalent, 4B03, 4J03  
 20 units MATLS 4A02, 4B04, 4L02, 4R04, 4S04, 4Z04  
 3 units approved complementary studies electives (above Level I)

- 3-4 units approved Level III or IV technical electives, which must include either CHEM ENG 3O04 or MECH ENG 3O04, unless already taken

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

4315325

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 37 UNITS**

- 4 units CHEM 2WW4  
 6 units COMMERCE 2AA3, 2MA3  
 6 units ECON 1BB3, 2X03  
 6 units ENGINEER 2MM3, 2O03  
 6 units MATH 2M06  
 9 units MATLS 2B06, 2H03

**LEVEL III: 36 UNITS**

- 6 units COMMERCE 2BA3, 2FA3  
 3 units ENGN MGT 2AA2, 3AA1  
 4 units ENGINEER 2P04  
 3 units ENGN PHYS 3F03  
 14 units MATLS 2X02, 3A03, 3E04, 3I05  
 3 units MATH 3I03  
 3 units STATS 3N03 or 3Y03

**LEVEL IV: 37 UNITS (1996-97 ONLY)**

- 4 units CHEM 2WW4  
 4 units CHEM ENG 3O04 or MECH ENG 3O04  
 12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3  
 1 unit ENGN MGT 4A01  
 13 units MATLS 3A03, 3B03, 3E04, 3P03  
 3 units approved complementary studies electives (above Level I)

**LEVEL IV: 33-34 UNITS (EFFECTIVE 1997-98)**

- 4 units CHEM ENG 3O04 or MECH ENG 3O04  
 12 units COMMERCE 2AB3, 3BC3, 3FA3, 3MC3  
 1 unit ENGN MGT 4A01  
 10 units MATLS 3B03, 3P03, 3T04  
 3 units approved complementary studies electives (above Level I)

**LEVEL V: 35-36 UNITS (1996-97 ONLY)**

- 6 units COMMERCE 3QC3, 4PA3  
 3 units ENGINEER 4A03 or 4H03 or equivalent  
 3 units ENGN MGT 5B03  
 11 units MATLS 4A02, 4E03, 4L02 and 4K04 or 4Z04  
 6 units Commerce selected from Level III and IV Commerce courses or COMMERCE 2QB3

- 6-7 units approved technical electives

**LEVEL V: 36-37 UNITS (EFFECTIVE 1997-98)**

- 6 units COMMERCE 3QC3, 4PA3  
 3 units ENGINEER 4A03 or 4H03 or equivalent  
 3 units ENGN MGT 5B03  
 12 units MATLS 4A02, 4B04, 4L02, 4Z04  
 6 units Commerce selected from Level III and IV Commerce courses or COMMERCE 2QB3

- 6-7 units approved technical electives

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

4315535

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**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 2B06, 2H03  
 6 units MATH 2M06  
 3-6 units Engineering and Society focus electives

**LEVEL III: 36-39 UNITS**

- 4 units ENGINEER 2P04
- 3 units ENG PHYS 3F03
- 6 units ENGSOCTY 3Y03, 3Z03
- 14 units MATLS 2X02, 3A03, 3E04, 3I05
- 3 units MATH 3I03
- 3 units STATS 3N03 or 3Y03
- 3-6 units Engineering and Society focus electives

**LEVEL IV: 31-33 UNITS**

- 3-4 units CHEM ENG 3O04 or 3Q03 or MECH ENG 3O04
- 3 units ENGSOCTY 3X03
- 10 units MATLS 3B03, 3P03, 3T04
- 6 units Engineering and Society focus electives
- 9-10 units approved technical electives

**LEVEL V: 32-36 UNITS (1996-97 ONLY)**

- 3 units ENGINEER 4B03
- 6 units ENGSOCTY 4X03, 4Z03
- 8 units MATLS 4A02, 4L02 and 4K04 or 4Z04
- 12-13 units approved technical electives
- 3-6 units Engineering and Society focus electives

**LEVEL V: 33-37 UNITS (EFFECTIVE 1997-98)**

- 6 units ENGINEER 4B03, 4J03
- 6 units ENGSOCTY 4X03, 4Z03
- 12 units MATLS 4A02, 4B04, 4L02, 4Z04
- 6-7 units approved technical electives
- 3-6 units Engineering and Society focus electives

**Mechanical Engineering (B.Eng.) 4330**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**LEVEL II: 36 UNITS**

- 11 units ENGINEER 2O03, 2P04, 2Q04
- 6 units MATH 2M06
- 13 units MECH ENG 2A03, 2B03, 2C03, 2W04
- 6 units approved English literature

**LEVEL III: 37 UNITS**

- 6 units ENGINEER 2MM3 (Term 1), 3N03
- 3 units MATH 3I03
- 3 units MATLS 3P03
- 22 units MECH ENG 3A03, 3C03, 3E04, 3F03, 3M02, 3O04, 3R03
- 3 units STATS 3Y03

**LEVEL IV: 33 UNITS (1996-97 ONLY)**

- 15 units MECH ENG 4M04, 4P02, 4Q03, 4R03, 4S03
- 6 units ENGINEER 4A03 or 4H03 or equivalent, 4B03
- 3 units complementary studies electives (above Level I)
- 9 units from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG 3SA3, ENGINEER 4J03, 4X03, ENG PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4C03, 4D03, 4G03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03, 4Z03 (MANUFACT 4A03 may be selected, with the permission of the Department.)

**LEVEL IV: 33 UNITS (EFFECTIVE 1997-98)**

- 18 units MECH ENG 3D03, 4M04, 4P02, 4Q03, 4R03, 4S03
- 6 units ENGINEER 4A03 or 4H03 or equivalent, 4B03
- 3 units complementary studies electives (above Level I)
- 6 units from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG 3SA3, ENGINEER 4J03, 4X03, ENG PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4C03, 4D03, 4G03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03, 4Z03 (MANUFACT 4A03 may be selected, with the permission of the Department.)

Electives must be chosen so that no more than 21 units are taken in any one term.

**Mechanical Engineering and Management (B.Eng.Mgt.) 4330325**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**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: 38 UNITS**

- 6 units COMMERCE 2AB3, 2FA3
- 7 units ENGINEER 2O03, 2Q04
- 1 unit ENGN MGT 3AA1
- 3 units MATH 3I03
- 18 units MECH ENG 2C03, 3A03, 3C03, 3M02, 3O04, 3R03
- 3 units STATS 3Y03

**LEVEL IV: 37 UNITS**

- 9 units COMMERCE 3BC3, 3FA3, 3MC3
- 3 units ENGINEER 2MM3
- 1 unit ENGN MGT 4A01
- 18 units MECH ENG 3A03, 3E04, 3F03, 4P02, 4R03, 4S03
- 3 units Level III or IV approved technical electives
- 3 units complementary studies electives (above Level I)

**LEVEL V: 34 UNITS (1996-97 ONLY)**

- 3 units COMMERCE 4PA3
- 3 units ENGN MGT 5B03
- 10 units MECH ENG 4C03, 4M04, 4Q03
- 3 units ENGINEER 4A03 or 4H03 or equivalent
- 6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3 from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG 3SA3, ENGINEER 3N03, 4J03, 4X03, ENG PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4D03, 4G03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03, 4Z03 (MANUFACT 4A03 may be selected, with the permission of the Department.)

**LEVEL V: 34 UNITS (1997-98 ONLY)**

- 3 units COMMERCE 4PA3
- 3 units ENGN MGT 5B03
- 13 units MECH ENG 3C03, 4C03, 4M04, 4Q03
- 3 units ENGINEER 4A03 or 4H03 or equivalent
- 6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3 from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG 3SA3, ENGINEER 3N03, 4J03, 4X03, ENG PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4D03, 4G03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03, 4Z03 (MANUFACT 4A03 may be selected, with the permission of the Department.)

**LEVEL V: 34 UNITS (EFFECTIVE 1998-99)**

- 3 units COMMERCE 4PA3
- 3 units ENGN MGT 5B03
- 13 units MECH ENG 3D03, 4C03, 4M04, 4Q03
- 3 units ENGINEER 4A03 or 4H03 or equivalent
- 6 units Commerce electives selected from Level III and IV Commerce courses or COMMERCE 2QB3 from CHEM ENG 4T03, CIV ENG 3K03, ELEC ENG 3SA3, ENGINEER 3N03, 4J03, 4X03, ENG PHYS 3F03, 3X03, 4D03, 4L03, MECH ENG 4D03, 4G03, 4K03, 4L03, 4T03, 4U03, 4V03, 4X03, 4Z03 (MANUFACT 4A03 may be selected, with the permission of the Department.)

**Mechanical Engineering and Society (B.Eng. Society) 4330535**

**ADMISSION**

See Admission to Level II Engineering Programmes above.

**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

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### LEVEL III: 37 UNITS

- 4 units ENGINEER 2Q04
- 6 units ENGSOCTY 3Y03, 3Z03
- 3 units MATH 3I03
- 18 units MECH ENG 2C03, 3A03, 3C03, 3M02, 3O04, 3R03
- 3 units STATS 3Y03
- 3 units Engineering and Society focus electives

### LEVEL IV: 30 UNITS

- 3 units ENGSOCTY 3X03
- 18 units MECH ENG 3A03, 3E04, 3F03, 4P02, 4R03, 4S03
- 6 units Engineering and Society focus electives
- 3 units approved Level III or Level IV technical electives

### LEVEL V: 31 UNITS (1996-97 ONLY)

- 6 units ENGINEER 2MM3, 4B03
- 6 units ENGSOCTY 4X03, 4Z03
- 10 units MECH ENG 4C03, 4M04, 4Q03
- 3 units Engineering and Society focus electives
- 6 units approved Level III or Level IV technical electives

### LEVEL V: 31 UNITS (1997-98 ONLY)

- 6 units ENGINEER 2MM3, 4B03
  - 6 units ENGSOCTY 4X03, 4Z03
  - 13 units MECH ENG 3C03, 4C03, 4M04, 4Q03
  - 3 units Engineering and Society focus electives
  - 3 units approved Level III or Level IV technical electives
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### LEVEL V: 31 UNITS (EFFECTIVE 1998-99)

- 6 units ENGINEER 2MM3, 4B03
- 6 units ENGSOCTY 4X03, 4Z03
- 13 units MECH ENG 3D03, 4C03, 4M04, 4Q03
- 3 units Engineering and Society focus electives
- 3 units approved Level III or Level IV technical electives

### Metallurgical Engineering (B.Eng.) 4340

Metallurgical Engineering as a distinct programme is being phased out. In 1994 the final class entered the programme at Level II. However, the Materials Engineering Programmes can, with the appropriate selection of electives, provide significant specialization in topics appropriate to the processing and properties of metallic materials.

### LEVEL IV: 37-40 UNITS (LAST OFFERED IN 1996-97)

- 9 units ENGINEER 3N03; 4A03 or 4H03 or equivalent; 4B03
  - 19 units MATLS 3P03, 4A02, 4C04, 4B04, 4L02 and 4K04 or 4Z04
  - 3 units complementary studies electives (above Level I)
  - 6-9 units Level III or IV approved technical electives
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# FACULTY OF HEALTH SCIENCES

WEB ADDRESS: <http://www-hsl.mcmaster.ca/fhs.html>

**Dean and Vice-President**

J. Bienenstock, M.B., B.S., F.R.C.P.C., F.R.C.P., F.R.S.C.

**Associate Vice-President**

R. Rathbone, M.D., B.S., Ph.D.

**Associate Dean (Education)**

E.K.M. Smith, B.Sc., M.D., F.R.C.P., F.R.C.P.C.

**Associate Dean (Nursing)**

A. Baumann, B.Sc.N, M.Sc.N., Ph.D.

**Associate Dean (Occupational Therapy and Physiotherapy)**

B. Cooper, Dip.P.O.T., B.A., M.H.Sc.

**Associate Dean (Health Services)**

M. Cohen, M.D., C.C.F.P.

**Associate Dean (Research)**

D. Ludwin, M.D., F.R.C.P., F.R.C.P.C.

For information concerning Health Sciences programmes and admission requirements, contact:

**Office of the Registrar  
McMaster University  
Gilmour Hall, Room 108  
Hamilton, Ontario, L8S 4L8  
Telephone (905) 525-4600**

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 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. An M.Sc. programme in Design, Measurement and Evaluation is 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 science are related to the various areas of health research.

The Health Sciences Centre at McMaster provides educational and research facilities for medicine, nursing and other health professions. It includes a teaching hospital (the McMaster Division of Chedoke-McMaster Hospitals) with extensive ambulatory clinics for primary and specialized aspects of patient care. The building has been designed to bring into close proximity the programmes for the various health professions and to integrate the facilities for education, research and patient care in the Faculty of Health Sciences.

In addition to the Health Sciences Centre, education, research and clinical programmes are based at Hamilton General Hospital, Henderson General Hospital, Hamilton Psychiatric Hospital, St. Joseph's Hospital, Chedoke Division of Chedoke-McMaster Hospitals, St. Peter's Hospital, Hamilton Regional Cancer Centre and the Health Sciences Education Centre; Mohawk College. 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.

**ADMISSION AND REGISTRATION**

Application to any programme in the Faculty of Health Sciences implies acceptance on the part of the applicant of the admission policies and procedures, and the methods by which applicants are chosen for the Health Sciences programmes.

Registration in any programme in the Faculty of Health Sciences implies acceptance on the part of the student of the objectives of that programme and the methods by which progress toward the achievement of those objectives is evaluated.

The following describes the regulations governing admission and registration in the Health Sciences programmes, and should be considered in conjunction with specific admission requirements described on the following pages for the School of Medicine (M.D.), the Midwifery programme (B.H.Sc.), the School of Nursing (B.Sc.N.) and the School of Rehabilitation Science (B.H.Sc.).

The following application deadlines are strictly enforced. Deadline dates are for consideration of admission to a programme in the following September.

Programme	Deadline
• Medicine (M.D.)	November 1
• Midwifery (B.H.Sc.)	February 1
• Nursing (B.Sc.N.)	
Applicants directly from Ontario Secondary Schools	May 1
Diploma Registered Nurses	February 15
Applicants with Other Qualifications	February 15
Transfers from other degree Nursing programmes	July 1
• Occupational Therapy and Physiotherapy: (Second Degree Programme) (B.H.Sc.)	January 15

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, immunizations and chest X-ray. More detailed medical information will be required upon acceptance into the programme.

#### **CLINICAL COURSE REQUIREMENTS**

Where, in the opinion of the Faculty, the performance of the student in clinical practice may jeopardize or endanger the welfare of the patient or the patient's family, the student may be removed from clinical experience 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**

The programme is offered through Continuing Health Sciences Education in the Faculty of Health Sciences. The programme is of eight months duration, admitting approximately eight students per academic year.

This applied professional programme is designed to enhance the knowledge and skills of individuals working with children, adolescents and families in health care settings. Courses examine a range of issues related to Child Life practice through case studies, small group and self-directed learning. Two eight-week placements in children's hospitals and community settings are a requirement of this programme.

A 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 interview format, as well as the availability of space in the programme.

Applications must be submitted by mid-April for the study period beginning in September of the same year. A letter of intent, resume, official academic transcript, two written references and identification of a referee are required components of the application process. A select number of applicants will be invited for personal and group interviews in May, based upon the strength of the written information identified above. Application information outlining specific dates and application requirements can be obtained by contacting the Child Life Studies programme office at (905) 525-9140, Ext. 22962.

#### **DIPLOMA PROGRAMME IN CLINICAL BEHAVIOURAL SCIENCES**

The Clinical Behavioural Sciences (CBS) Post-Baccalaureate Diploma and Selected Studies Programme is offered through Continuing Health Sciences Education. This part-time programme is designed to expand the knowledge and skills of allied health professionals by demonstrating a variety of approaches to understanding clinical problems. The aim is to enable health workers to more effectively carry out the mandate of their professional designations. Single courses vary from 10 to 20 weeks in length and a diploma should be completed within five years. A small group learning format is used.

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 Environmental Health Programme. The programme is of eight months duration, admitting up to 15 students per academic year. It is designed to provide new and/or upgraded skills and knowledge in the principles and practice of environmental health, suitable for public health unit professionals, physicians, community health nurses, environmental industrial professionals, and those in labour and non-governmental organizations dealing with environmental health issues. Participants must be sufficiently motivated to undertake self-directed learning.

Students will be selected to give the class a multidisciplinary character. A relevant university degree or equivalent will normally be required. Admission is based on the number of places available and on the experience of applicants. Those without environmental health experience may also be considered.

Applications must be submitted by the end of March for the study period starting in September 1996. Application can be obtained by contacting the Environmental Health Programme at (905) 525-9140, ext. 27559. Applications received after the deadline date will be notified of admission decisions by the beginning of June.

#### **DIPLOMA PROGRAMME IN OCCUPATIONAL HEALTH AND SAFETY**

The Programme in Occupational Health and Environmental Medicine offers two programmes each year for this Diploma. A full-time programme starts in September catering to those who wish to complete the course in three months. A part-time programme is designed so that students within commuting distance from Hamilton can continue their normal employment. This programme also starts in September and continues through the end of April, one day per week, but includes two extended periods of full-time study each lasting two weeks.

While special consideration will be given to those already in the occupational health field, interested individuals without such experience may also be considered. Physicians, nurses, hygienists, related professionals and others are invited to apply. A relevant university degree or equivalent is generally required.

Applications must be submitted by February 1 each year for the course beginning in September. Applications can be obtained by contacting the Programme in Occupational Health and Environmental Medicine at (905) 525-9140, ext. 22332.

### **THE SCHOOL OF MEDICINE**

The School of Medicine, established in 1965, offers major programmes in undergraduate, postgraduate and graduate medical education. The clinical programmes use not only the teaching hospital and extensive ambulatory care and research facilities at the McMaster University Medical Centre division of Chedoke-McMaster Hospitals, but also the clinical teaching units at each of the major Hamilton hospitals and community health-care centres.

The undergraduate medical programme for the M.D. degree was initiated in 1969, graduating its first students in May 1972. At present, 100 students are admitted to the programme each year. The academic programme operates on an 11 months-a-year basis and students qualify for the M.D. degree at the end of the third academic year. The curriculum has been designed to involve medical students in a broad range of human health problems throughout their education and to prepare them for effective working relationships with patients, colleagues, and society.

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

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

The 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.

Enabling objectives consisting 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 level 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 at tutorials is mandatory.

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

### 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 students, their peers, faculty preceptors, and the tutor.

Two problem-solving exercises, carried out individually with each student, 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 Evaluation Working Group, a subcommittee of the Undergraduate 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

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
								UNIT 1				CHRISTMAS BREAK
UNIT 2			UNIT 3		ELECTIVE	HOLIDAYS	UNIT 4			ELECTIVE		
UNIT 5		UNIT 6 THE CLERKSHIP Unit 6 includes 2-8 week blocks (16 weeks) of elective time										
UNIT 6 THE CLERKSHIP (CONTINUED)		REVISION	GRADUATION									

The curriculum of the Undergraduate Medical Programme comprises six units, an elective programme and revision time. The Curriculum Plan showing the relative proportion of time accorded to these units is illustrated on the chart above.

There is less of a division between the preclinical parts and the clinical parts of the M.D. programme than in more traditional schools. Patient contact and clinical skills development start in Unit 1 and increase throughout the programme. The scientific background for understanding patients' problems, while more intensively studied in earlier units, continues to be applied as it is relevant to the care of patients in clinical situations.

### PROGRAMME OUTLINE FOR UNIT 1

The goal of Unit 1 is to provide an introduction to the Undergraduate Medical Programme, emphasizing the determinants of health and illness. Factors from the molecular to the global environment will be considered. Concepts and information from three knowledge perspectives will be studied: the population perspective, the behavioural perspective and the biological perspective. Students will begin to acquire basic skills of critical appraisal, clinical skills and, in particular, learning skills. During this unit, students will become familiar with the health care system in the Hamilton region and the opportunities for learning which it offers. The three subunits are: Hurt and Healing; Growing, Gene; and Keeping an Even Keel.

This unit is the foundation for all the following units.

### PROGRAMME OUTLINE FOR UNITS 2-4

These units are concerned with the systematic study of human structure, function and behaviour and are organized around systems of the body, as follows:

- 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

This unit is designed as an integrative unit and organized on the overall theme of The Life Cycle. Health-care problems from the community are studied. Major themes include reproductive health, child and adolescent health, occupational and environmental health and health of older persons.

Students have an ongoing opportunity to consolidate their clinical, learning and critical appraisal skills. There are opportunities to make field trips to a variety of health-care settings and agencies.

### PROGRAMME OUTLINE FOR UNIT 6 — THE CLERKSHIP

In this component of the programme students participate in the direct care of patients as they learn about the management of health and illness. All prior objectives apply, but the health-care problems are real patients. Students become self-sufficient in contemporary medicine, but are able to sense when today's medicine becomes out-of-date by adopting good habits of learning and assessment.

The Clerkship programme consists of rotations in Medicine, Surgery, Family Medicine, Psychiatry, Pediatrics, Obstetrics and Gynecology, and in elective time of which one-half must be spent in clinical medicine. The compulsory components of the clerkship are carried out in teaching practices and in all the teaching hospitals in the Hamilton region. The elective experience can be spent in various activities utilizing local, regional or distant resources.

### ELECTIVES

Elective studies form an integral part of the Curriculum Plan. They may be considered the epitome of self-directed learning, since students must define goals for electives which are appropriate for their own learning objectives which represent specific areas of educational need or interest. The responsibility for planning electives rests with each student in collaboration with the student advisor.

The three types of electives in the Undergraduate Medical Programme are:

1. **Block Electives:** These are blocks of the curriculum time dedicated to full-time elective activities. Their satisfactory completion is a mandatory component of the Undergraduate Medical Programme. Block Electives occur after Unit 3 (six weeks), after Unit 4 (four weeks), and during the Clerkship (16 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 students from each class to devote longer periods of time (from six to 12 months) to the pursuit of special academic experiences. The intent is to encourage students to explore possible careers in special "frontier" areas of medicine and health care. Examples include: research training and experience; community health projects; international health opportunities. These experiences are often undertaken following Unit 5 or during the first half of Unit 6. Some 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-M.D. programme of their choice, and to help programme directors obtain the



students of their choice. It provides an orderly method for students to decide where to train and for programme directors to decide which applicants they wish to enrol. For both students and directors, it removes the factors that generate unfair pressures and premature decisions.

Further information is available from Debbie Martin, MD Programme Administrator, (905) 525-9140, ext. 22141, or from the MD Admissions and Records Office (Health Sciences).

**BASIC CARDIAC LIFE SUPPORT TRAINING**

All students are required to have taken a Basic Cardiac Life Support course prior to registration in the medical programme. Courses are readily available in most communities. Specific information will be sent to successful applicants prior to registration.

**IMMUNIZATION**

All students are required to complete a Faculty of Health Sciences Pre-Entrance Medical Certificate (distributed prior to registration) which details their medical immunization history. Students must have started the three-step immunization process for Hepatitis B before commencing any clinical work. Specific questions can be directed to Debbie Martin, MD Programme Administrator, (905) 525-9140, ext. 22141.

**Admission Policy for the Medical Programme**

The official admission policy for the Undergraduate Medical Programme for September 1997 shall be as published in the 1997 Ontario Medical School Application Booklet. Refer to the 1997 Instruction Book for deadlines. This booklet is available through:

**Ontario Medical School Application Service (OMSAS)**  
**PO Box 1328**  
**650 Woodlawn Road West**  
**Guelph, Ontario, N1H 7P4**

Please note that the admission policy is reviewed annually, and the admission requirements from the previous year may not apply.

Because of the nature of the selection procedures, deadlines are enforced strictly. All relevant documentation must be provided by the specified deadlines. Applicants must follow the instructions precisely.

**SELECTION PROCEDURE**

The intention of the McMaster Undergraduate Medical Programme is to prepare students to become physicians who have the capacity and flexibility to select any area in the broad field of medicine. The applicant is selected with this goal in mind. Faculty, medical students and members of the community are normally involved in the review of applications.

Application to the medical programme implies acceptance by the applicant of the admission policies and procedures, and the methods by which candidates are chosen for the programme.

Applications must be submitted by November 1, 1996, 4:30 p.m. EST. Approximately 400 applicants will be invited for interviews in Hamilton in March or April. Invitations for interview are determined on the basis of applicants' academic performance, and an assessment of their preparedness for a career in medicine and suitability for the McMaster Undergraduate Medical Programme. From this group a class of 100 is selected.

**TRANSCRIPT REQUIREMENTS**

It is expected that all 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 December 1, 1996; the second copy should be sent to the applicant to ensure that the request has been fulfilled. Applicants should retain all receipts and correspondence related to their transcript request. Evidence to show that applicants have requested transcripts in a timely fashion may be requested by McMaster University.

It is not normally possible to notify applicants of any outstanding transcripts before December 1, 1996. Therefore, it is totally the applicant's responsibility to ensure that all transcripts and Registrar statements are received at OMSAS by December 1, 1996. Failure to meet this requirement will result in the disqualification of the application.

All transcripts must be submitted directly to OMSAS by the post-secondary institutions attended. McMaster requires that applicants provide transcripts of all courses/programmes attended at any post-secondary institution. This includes community colleges, CEGEPs, junior colleges, pre-university programmes, etc.

Failure by the applicant to comply with the instructions or to meet the deadlines will result in disqualification of the application.

**ACADEMIC ELIGIBILITY**

Applicants must report on the Academic Record Form all grades received in the degree credit courses in which they have ever registered. Failure to report courses, programmes or grades on the Academic Record Form will result in the disqualification of the application. All grades are converted by the applicant on the Academic Record Form to a 4.0 scale according to the OMSAS Undergraduate 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, 1997, applicants must have completed a minimum of three years undergraduate work. Only degree credit courses taken at an accredited post-secondary institution will be considered.

Two of the three years must be above Level/Year I. A "year" is the full block of work specified for a year or level of the programme in the appropriate university calendar. If requested, applicants must provide evidence that the requirement has been met.

An applicant who has completed a diploma at a CEGEP must have completed by September 1, 1997, at least two additional years of degree credit work at an accredited post-secondary institution. One of those years must be a full programme of courses above Level/Year I.

Applicants who have satisfactorily completed the requirements for a baccalaureate degree in less than three years by November 1, 1996 are also eligible.

b. By November 1, 1996, applicants must have achieved an overall simple average of at least second-class (B) standing in their academic work to date. A "B" average is considered to be an OMSAS overall converted average of at least 3.0 on the 4.0 scale.

If an applicant has not achieved the overall B standing in the OMSAS converted average, but has completed a graduate degree, the graduate degree will be taken into account to assess eligibility.

Academic Assessment will be as outlined in the Ontario Medical School Application Booklet.

**AUTOBIOGRAPHICAL SUBMISSION**

Applicants must provide an Autobiographical Submission which is a description about their preparedness for medicine and suitability for the McMaster Undergraduate Medical Programme.

The Autobiographical Submission Booklet is included in the application kit provided by OMSAS.

The Autobiographical Submission Booklet includes detailed instructions with regard to the length and format of responses. Those instructions are considered to be part of the Admission Policy and Procedures for the McMaster Undergraduate Medical Programme.

Failure to comply with the instructions for the Autobiographical Submission Package will result in disqualification of the application.

**GEOGRAPHICAL CONSIDERATION**

The geographical status is determined from the Autobiographical Sketch. Applicants may be asked to provide evidence of geographical status. In selecting applicants for interview, the bona fide place of residence will be used in the following order of priority:

1. Hamilton Health Region and Northwestern Ontario (defined as west of Wawa to the Manitoba Boundary);
2. the rest of Ontario;
3. the rest of Canada; and
4. other countries.

To qualify for 1) or 2) above, an applicant must:

- a. be a Canadian citizen or permanent resident by November 1, 1996, and

b. have resided for at least three years in the area since the age of 14. Attendance at a university in the area for at least three years by the date of possible entry to the programme satisfies the second requirement.

Any other applicant who is a Canadian citizen or permanent resident qualifies for 3.

All other applicants qualify for 4.

### 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. While all applicants from Geographic Category 4 (other countries) are considered, they may be selected for interview only if they are judged on each criterion to be clearly superior to other applicants.

Because the interviews involve many other people, applicants must attend on the date and time specified. Applicants are responsible for their own travel expenses.

Each applicant participates in the two components of the interview: the Simulated Tutorial and the Personal Interview.

In the Simulated Tutorial a group of applicants discuss a health problem/situation. The applicant's group skills and problem-exploration skills are assessed.

In the Personal Interview, the applicant is interviewed by a team which is not involved in the assessment of the Simulated Tutorial. Before an applicant meets the interview team, the interviewers are given the candidate's Autobiographic Sketch.

The Autobiographic Sketch is not assessed but serves as a background for the interviewers. In making the overall assessment of the applicant, the Personal Interview team considers the following areas: problem-exploration skills, self-appraisal skills, interpersonal skills, career choice, and suitability for the McMaster programme.

### SELECTION

All the information resulting from the process described above, as well as the Confidential Assessments from referees, is reviewed and used in the final selection.

Successful applicants will be notified the last working day in May 1997.

### 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.

### APPLICATION FOR DEFERRAL OF REGISTRATION

Applications received in the fall of 1996 are for the academic year commencing in the fall of 1997. 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.

Deferred registration may be granted **only** under **exceptional** circumstances. Deferred registration applications may be requested only by those candidates offered a place in the class on the last working day in May and by those who have accepted that offer. The application must be submitted by deadlines, determined from year-to-year (normally within two weeks of the offer of admission).

### SPECIAL APPLICANTS

Candidates who wish to apply as Special Applicants must first be assessed for eligibility. Those who believe they are eligible for this category, **must** contact, in writing, the MD Admissions Chair, HSC Room 1B7, **before** making a formal application. All relevant information and documentation, including transcripts, must be provided by October 1 to be considered for eligibility for that year's selection and admission cycle.

This category is designed to provide opportunities only to those who meet **all** of the following:

1. have not attended **any** post-secondary institution, including those offering diploma or certificate programmes, as a full-time student;

2. have completed, at the time of application, at least four but not more than ten full degree credit courses, obtaining an overall average of at least "B" on the McMaster grading scale. A current university transcript must accompany the request for consideration;

3. have been employed or active in the community for at least seven years since leaving high school;

4. must be a resident of Ontario.

First Nation applicants who do not meet the criteria for application through the regular stream must meet all but the first requirement.

Only those who meet the above criteria and are assessed as having made an exceptional contribution to society will be eligible to apply to the programme. In this, candidates must have shown creativity, initiative and leadership. A letter from the candidate, outlining any activities and the contribution to society must accompany the request for assessment.

### ADVANCED STANDING/TRANSFER

The structure of the McMaster programme requires that all students begin in Unit I. There is no provision for advanced standing or transfer into the programme.

### Financial Information

Financial difficulties are among the most frequent problems experienced by students in undergraduate medical schools. At McMaster, these are intensified by the lack of opportunity for summer employment as well as by the relative scarcity of financial assistance funds.

In this situation, it is incumbent on students admitted to the M.D. programme to clarify immediately their personal financial situation and to secure or identify sufficient support to meet their financial obligations over the subsequent three years. The School of Medicine cannot assume this responsibility.

In 1995-96, the academic fees (tuition and student supplementary fees) for a student in the McMaster Undergraduate Medical Programme were:

### CANADIAN CITIZENS AND LANDED IMMIGRANTS

Year I and II .....	\$5,012
Year III .....	3,451

### VISA STUDENTS

Year I and II .....	\$22,936
Year III .....	15,402

In addition, the cost of books and diagnostic equipment for a Year I student was approximately \$1,900. It is strongly recommended that students purchase the full complement of medical equipment necessary for clinical skills. Equipment lists and special prices will be offered to medical students within the first few months of medical school. Students are also responsible for their transportation costs related to clinical study.

Financial assistance is available to Ontario residents from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). To be eligible a student must be a Canadian Citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario. Students who are legal residents of other provinces need to check with their respective provincial financial aid programmes about eligibility for support. In addition, the following sources of funding are available to undergraduate medical students.

### ABBOTT MEMORIAL SCHOLARSHIP LOAN FUND

This fund was established by the Federation of Medical Women of Canada. Small loans are available to any female medical student or first-year intern. In special cases, a loan up to \$1,000 may be made to a student for recognized postgraduate training. Loans are payable within five years of date of issue, after which time interest will be charged at a rate of 5% compounded annually.

Information regarding these loans may be obtained from the Secretariat, 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. Telephone (905) 527-2751.

#### OTHER FUNDS

The Undergraduate Medical Programme administers a small loans and bursaries programme to assist medical students with demonstrable need. Unfortunately, these funds are limited and cannot be relied on to meet a major portion of any student's financial obligations. The source of these funds includes: The Ontario Medical Association Bursaries and Loan Fund; The William Andrew Vanderburgh Sr. Memorial Fund; and the Ripley Estate Bursary and Loan Fund.

For further information, contact Robert Wakefield, (905) 525-9140, ext. 22979.

#### 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 administered by the Programme's Student Financial Aid Committee 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 Robert Wakefield, (905) 525-9140, ext. 22979.

## B.H.SC. MIDWIFERY PROGRAMME 6501

### 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. Students enrol in one of the three post-secondary institutions. 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 situations. Distance learning formats, such as teleconferencing, are used extensively. Full-time students will complete the programme in three 11-month blocks. **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 three years.**

Ryerson Polytechnic University offers the opportunity for part-time study and flexible scheduling. The part-time programme can be completed in four to seven years depending on a student's preference, course availability and on the amount, if any, of transfer credits awarded. Applicants wishing to complete the programme in three years should apply to McMaster or Laurentian University. 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 take part in intensive courses and clinical placements.**

Laurentian University offers the opportunity to study in French or English. Laurentian University applicants should be aware that the programme may be offered in sites other than Sudbury.

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 at three times during the three-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 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 full-time sequence, below, sets out the programme in a three-year timetable of full-time study. 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 1 to foster an understanding of clinical basis of the profession. In Levels 2 and 3 there are extended opportunities to acquire clinical skills and to integrate theoretical material with clinical practice 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 living costs during clinical placements.

There are three (3) 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 1

- Topics in Biological Sciences (HTH SCI 1D06)\*
- Social and Cultural Dimensions of Health (HTH SCI 1C06)\*
- Women's Studies (WOMEN ST 1A06)\*
- Elective\* (Term I, three units)
- Critical Appraisal of Research Literature (Term II, HTH SCI 3A03)\*
- Introduction to Midwifery (MIDWIF 1A06)+
- Midwifery Care I (MIDWIF 1B03, 1E09)♦

#### LEVEL 2

- Reproductive Physiology (MIDWIF 2D03)
- Social Science or Women's Studies (choice)\* (three units)
- Health, Science and Society (HTH SCI 3B03)
- Electives (2)\* (three units each)
- Midwifery Care II (MIDWIF 2B12)+♦
- Midwifery Care III (MIDWIF 2C12)♦

#### LEVEL 3

- Midwifery Care IV (MIDWIF 3B12)♦
- Principles and Methods of Research (HTH SCI 3LL4)
- Community Placements (MIDWIF 3A09)
- Health Education and Health Promotion (MIDWIF 3D03)
- Midwifery Care Clerkship (MIDWIF 3C12)♦
- Professional Issues (MIDWIF 3E03)+
- Final Synthesis Paper (MIDWIF 3F03)

✂ Section was rewritten to make it clearer

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- \* Transfer/challenge credit may be available.
- ♦ Clinical course consists of a placement in a practice and concurrent problem-based tutorials that span antenatal, intrapartum, postnatal and newborn care.
- † 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 1996/97. 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.**

A supplementary Midwifery application form including a personal questionnaire is required and must be received at McMaster by February 1.

Application to the Midwifery Education Programme implies acceptance by the applicant of the admission policies and procedures, and methods by which candidates are chosen for the programme.

#### 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 application deadline of the year in which the applicant is seeking admission. For those currently registered in required subjects, interim grades must be submitted. Courses must be completed by June 30, 1996 and final grades made available immediately thereafter.

#### Community College Applicants

Applicants with a post-secondary diploma, and lacking the six required OAC courses, must have full courses that are equivalent to the OACs in the three subject areas specified below. The average from all 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 or Current University Applicants

Applicants with at least two full years or equivalent completed at an accredited university at the time of application must present OACs or equivalent university courses in at least two of the three subject areas noted below. The applicant's overall average from the equivalent of 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. Applicants with less than two full years of university work will be considered on a combination of OAC and university work on a case by case basis.

#### Applicants from Ontario Secondary Schools or Equivalent

Given the keen competition for a limited number of places, OAC applicants should be aware that OAC preparation may not be adequate to gain admission to the Midwifery programme.

The following are the minimum academic requirements:

- A. Completion of the Ontario Secondary School Diploma or equivalent.
- B. 1. One of OAC English I, OAC anglais I or OAC anglais II  
2. One of OAC Biology or Chemistry  
3. One 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%

#### Mature Applicants

An applicant who does not fulfill the criteria outlined above may be considered as a mature applicant. A mature applicant is defined as a student who is at least 21 years old prior to his/her first day of classes, has not attended secondary school for at least two years and has not previously attended university. To qualify under this category, the applicant must have completed the three OAC courses or equivalent in the three subject areas outlined above, with a minimum overall average of 70%.

Mature applicants lacking the above academic background will be advised to upgrade by either taking OAC courses or equivalent university level courses. If a mature applicant upgrades in preparation for the Midwifery Programme, then the regulation regarding a two year absence from formal studies may be waived.

#### 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. For students entering the programme in September 1996, 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.

Further details about the availability of challenge exams or other means of obtaining credit for programme requirements will be available later in the admissions process. Applicants who wish to be considered for credit should proceed with the general application materials.

#### 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 steps:

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.

A total review of each applicant's file will help determine offers of admission at the conclusion of this three-step 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 to receive a reply.

*Main change - addition of Practitioner - students receive - open May*

*Stream C to BScN pro. → Nurse B.Sc.N degree + certificate in Primary Health Care*  
**FACULTY OF HEALTH SCIENCES** *5300 Ave. Pr.*

### 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 1995-96 the tuition fees for a student in the Midwifery Education Programme were \$3,788.00. Supplementary fees are estimated at \$400.00 per year.

A confirmation fee may be required at the time of acceptance of an offer of admission.

Financial assistance is available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). Students intending to apply for OSAP may begin their application process to OSAP once they are notified about receiving an interview. The final status of your application can be confirmed with OSAP at a later date.

Additional costs include books, supplies, and other learning resources estimated at \$500.00-\$1000.00.

Students should expect to cover their own travel and accommodation costs for the clinical components of the programme. Students are expected to cover a portion of costs for accommodation and meals when students meet together at one site three different times during the programme.

## Academic Regulations

### CONTINUATION IN THE PROGRAMME

In order to continue in the Midwifery programme students must achieve a CA of at least 4.0 in all graded courses and achieve a pass/satisfactory performance in all clinical (midwifery) courses.

Students will be placed on probation if they obtain a CA less than 4.0 but not lower than 3.5, overall in all graded courses or do not achieve a pass/satisfactory performance in all clinical (midwifery) courses.

If students fail to meet the minimum grade requirements in the required courses or a pass/satisfactory designation in the clinical courses, they may, at the discretion of the Programme Chair in consultation with a reviewing committee, be allowed to repeat the course. The minimum grade requirements must be met after repeating a course.

Students will be granted programme probation for one reviewing period if their CA is less than 4.0, but no lower than 3.5, and they have not been on probation before. If the CA fall below 3.5, students will be required to withdraw from the programme.

### GRADUATION REQUIREMENTS

In order to graduate with a Bachelor of Health Science in Midwifery, students must complete the overall programme including electives, with a CA of at least 4.0 on all graded courses as well as complete and satisfy all the requirements for clinical performance throughout the programme. In addition, all courses for the degree must be completed within five years of attempting 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

In 1942, McMaster University began its first programme in Nursing, which was operated cooperatively by 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 is available to provide opportunities for Diploma Registered Nurses to receive a B.Sc.N. degree.

McMaster University is one of ten Ontario universities collaborating with the Ontario Ministry of Health and the College of Nurses of Ontario to offer a Primary Health Care Nurse Practitioner Programme. The programme commenced in September 1995 and is currently funded for five years.

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 graduate programmes. 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-3N26, (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. Details about these sessions are available by calling (905) 525-9140, ext. 24786. Applicants not applying directly from high school who require an application package should call (905) 525-9140, ext. 24796.

## 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 in its graduates skills 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 both a process of inquiry and a skill which is developed as a life-long activity and which takes place 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 audio-visual, 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. In addition, opportunities exist for international clinical practice experiences.

Evaluation by self, peers and faculty is part of an on-going process of assessment 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, 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 on the part of the applicant of the admission policies and 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, and possession of published minimum requirements does not guarantee admission.

There are three streams of study for 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, or with qualifications equivalent to OACs, and applicants with other qualifications including mature students and university students.

The Post Diploma (B) Stream normally requires two years of full-time study and is available to Diploma Registered Nurses only.

The Diploma RN/Nurse Practitioner (C) Stream requires up to 24 months of full-time study for diploma prepared nurses. Degree prepared nurses will have up to 12 months on a full-time basis to complete a nurse practitioner programme. **For the 1996-97 academic year, baccalaureate-prepared nurses will not be admitted into the Nurse Practitioner programme at McMaster. Applications will be accepted for a very limited number of part-time certificate Nurse Practitioner students at nine other university schools of nursing throughout the province.**

The requirements and application deadlines vary depending on the applicant's background. Please note carefully the sections that follow as to procedures and requirements.

### Applicants from Ontario Secondary Schools or Equivalent

Half of the places in Level I are offered to students with OACs or equivalent. The selection method is by academic qualifications. Offers of admission are made the first part of June and may be based on interim or final grades at that time. Offers based on interim grades will be conditional upon maintaining satisfactory performance on final grades.

### Applicants with Other Qualifications and Diploma RNs

The selection method is based on academic qualifications, and a personal qualities' score comprised of ratings obtained on an autobiographical questionnaire and a personal interview. The response to the questionnaire is assessed by teams of assessors normally representing the faculty, the students or alumni, and the community. As a further selection process, applicants may be invited to a personal interview in early May.

Applicants are responsible for their travel expenses. Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

All applicants with other qualifications and Diploma RN applicants will be informed of the admission decision by mid-June. Where courses were in progress at the time of admission, the offer of admission will be conditional upon the applicant achieving a final average of B- in the required course work (i.e., 12 units for other qualifications applicants to the Basic Stream, or six units for applicants to the Post Diploma Stream).

### ADMISSION PROCEDURE

#### Applicants from Ontario Secondary Schools (A Stream)

Applicants currently completing OACs apply through the Ontario Universities' Application Centre (OUAC). Application forms are available in secondary school guidance offices. Your secondary school will forward your mid-term and final transcripts directly to OUAC in support of your application.

Applications for all studies beginning in September must be received by OUAC no later than **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 Diploma RN Applicants (A and B Stream)

Such applicants should write to the Admissions Coordinator (Nursing) for an application package. Transcripts of courses either completed or in progress and the questionnaire response must be received with the application by February 15. Diploma RN applicants must also include their Certificate of Competence. 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 Certificate of Competence prior to registration in the programme.

Applications for all studies beginning in September must be received no later than **February 15 at:**

**B.Sc.N. Programme**  
McMaster University, Room HSC-2E10  
1200 Main Street West  
Hamilton, Ontario, L8N 3Z5  
Attention: Ms. V. Lewis,  
Admissions Coordinator (Nursing)

Students enrolled in other programmes at McMaster University wishing to apply to the B.Sc.N. programme are considered applicants *with Other Qualifications* (see section B below). If you wish to apply to the B.Sc.N. programme, submit a completed application to the B.Sc.N. office at the above address by February 15.

#### Diploma RN Applicants to the Nurse Practitioner Programme (C Stream)

Applicants to the Ontario Primary Health Care Nurse Practitioner Programme should obtain an application kit from the Ontario Universities' Application Centre in Guelph. (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 five categories (A to E) described below.

### A. APPLICANTS TO THE BASIC (A)

#### STREAM FROM 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 Requirements

Applicants from other provinces and countries must achieve the equivalent to the qualifications listed above in their secondary school graduation year.

##### Early Admission Stream (Nursing)

Applicants who qualify in January for early admission may be admitted directly into the B.Sc.N. programme and may begin their elective course work in May.

Nursing courses normally start in September.

### B. APPLICANTS TO THE BASIC (A)

#### STREAM WITH OTHER QUALIFICATIONS

Applicants who do not qualify under Category A 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
- 1.b provide evidence of achievement of a minimum of B- in at least 12 units (or equivalent) of university degree credit courses. (These courses may be taken as a full-time or part-time student and university correspondence degree courses are acceptable.)

**Note:** University degree credit courses completed prior to admission will be assessed for advanced credit, by the Office of the Coordinator of Studies following admission to the programme.

2. submit a completed original and three copies of their response to the questionnaire provided in the application package; applicants will be evaluated on the basis of the material submitted above and may be invited to come to McMaster in early May for an interview. Applicants are responsible for their own travel expenses.

Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

### C. ADMISSION 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. Placement in the programme will be determined by the Level Chair. All transfer students regardless of programme placement must complete all McMaster Nursing courses including Level I Nursing.

Availability of space in the Level requested will be determined by the Level Chair. Even if no space is available, the applicant may choose to complete the admission process and be placed on a waiting list. Applicants normally should:

1. contact the Admissions Coordinator (Nursing) to discuss placement in the programme;
2. submit a completed original and three copies of their response to the questionnaire provided in the transfer application package;
3. submit 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);
4. submit a current official transcript.

The applicant may be invited to McMaster for a personal interview. Applicants are responsible for their own travel expenses.

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 July 1.

### D. DIPLOMA REGISTERED NURSES (B) STREAM

Any nurse holding, or being eligible for, nursing registration prior to the date of entry to the programme will be considered for admission to the Post Diploma (B) Stream of the Undergraduate Bachelor of Science in Nursing programme.

Applicants currently enrolled in a diploma nursing programme must be eligible to write the registration examinations no later than June in order to be eligible to apply to the Post Diploma Stream.

Advanced credit is granted for 33 units of work to nurses who graduated from an approved diploma nursing programme and who are admitted to the B.Sc.N. programme. Those offered admission to this two-year programme enter at Level III.

Applicants in this category normally should:

1. possess a current Certificate of Competence as a Registered Nurse in Ontario, or be eligible for reciprocity, or be eligible to write and subsequently pass the Registration examinations.
2. provide evidence (transcripts) of a minimum of a grade of B- in at least six units (or equivalent) of University degree credit work. University correspondence degree courses are acceptable.  
**Note:** University degree credit courses completed prior to admission will be assessed for advanced credit by the Office of the Coordinator of Studies following admission to the programme.
3. submit a completed original and three (3) copies of the response to the questionnaire provided in the application package. Applicants will be evaluated on the basis of the material submitted in 2 and 3 above. Candidates may be invited to come to McMaster in early May for an interview. Applicants are responsible for their own travel expenses. Failure to attend the interview will result in cancellation of the application. The scores awarded by the assessors are final.

### E. DIPLOMA RN/NURSE PRACTITIONER (C) STREAM

**For the 1996-97 academic year, baccalaureate-prepared nurses will not be admitted into the Nurse Practitioner programme at McMaster. Applications will be accepted for a very limited number of part-time certificate Nurse Practitioner students at nine other university schools of nursing throughout the province.**

Applicants who hold a diploma in nursing are required to:

1. provide evidence (transcripts) of a minimum grade of B- in at least six units (or equivalent) of university degree credit work. University correspondence degree courses are acceptable.  
**Note:** University degree credit courses completed prior to admission will be assessed for advanced credit by the Office of the Coordinator of Studies following admission to the programme.
2. possess a current College of Nurses of Ontario annual registration payment card.
3. have an Ontario diploma in nursing or the equivalent with a minimum overall average of 70%.
4. provide relevant professional experience form. Preference will be given to Ontario residents whose work experience in nursing has been continuous and who have practical experience in one or more of the following areas: primary health care, ambulatory care, public health, community health, long term care, emergency care or outpost nursing.
5. have the equivalent of two years full-time nursing practice within the past five years as evidenced by the employer-completed *Verification of Employment* form(s).
6. submit two clinical reference forms
7. complete personal questionnaire response
8. provide copies of any additional professional registrations, memberships or certificates listed on the relevant professional experience form (i.e., RNAO, CPR)

All of the above mentioned documentation must be sent directly to the Admissions Coordinator (Nursing) and received no later than **February 1**. (See *Admission Procedure* in this section for the appropriate address.)

**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. The 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 may be granted only under exceptional circumstances, to those candidates who have been offered a place in the class and have accepted that offer. Deferred registration applies to the subsequent year of admission and no other year. The request for deferral, outlining the reasons for the request, must be postmarked no later than July 31 of the year of admission 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, in the opinion of faculty, the performance of the student in clinical nursing practice may jeopardize or endanger the welfare of the patient, or the patient's family, the student 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**

Students will be permitted to enter, proceed through and graduate from the B.Sc.N. programme (A) (B) or (C) stream, on a part-time basis. University and programme regulations governing the full-time undergraduate students will govern the part-time student.

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.

Guidelines have been established for part-time study. Applicants are advised to seek counselling from the B.Sc.N. programme before engaging in part-time study.

**B.SC.N. PROGRAMME ACADEMIC REGULATIONS****Basic (A) and Diploma RN (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 only once in required Health Sciences courses 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 3L05, 3M05, 4S06, 4T06

All clinical courses above Level I are evaluated on a Pass/Fail basis. Areas of excellence in practice are noted in a detailed evaluation summary for each course.

(A course for which credit has not been granted may be repeated only when approval is granted by the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee.)

**\* Nurse Practitioner (C) Stream**

A student must:

1. achieve a Cumulative Average (CA) of at least 3.5;
2. achieve a grade of at least C- in the graded Nursing and required Health Sciences courses with the exception that a grade of D-, D or D+ is permissible in one Level I Health Sciences course and only once in required Health Sciences courses beyond Level I;
3. achieve a Pass designation in NURSPRAC4C10; and
4. achieve a Pass designation in the clinical component as well as a grade of B- in the theoretical component in each of NURSPRAC, 4A05, 4AA5, 4T05, 4TT5.
5. achieve a grade of B- in NURSPRAC 4P03, 4R03

The following courses are designated clinical courses:

- NURSPRAC 4A05, 4AA5, 4C10, 4T05, 4TT5

**Under existing funding, all Nurse Practitioner courses must be successfully completed by August, 1999.**

**CONTINUATION IN THE PROGRAMME**

To continue in the B.Sc.N. programme a student must obtain a CA of at least 3.5. A student whose CA is at least 3.0, at the discretion of the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee, may proceed in the programme and will be placed on programme probation. A student may be placed on programme probation only once during the total programme.

**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 1A06
- 6 units Elective



**LEVEL II: 31 UNITS**

**(Units graded: 25; Units pass/fail: 6)**

- 8 units HTH SCI 2B08
- 14 units NURSING 2L03, 2P03, 2M03, 2N03, 2Q02
- 9 units Elective

**LEVEL III: 33 UNITS**

**(Units graded: 25; Units pass/fail: 8)**

- 8 units HTH SCI 3A03, 3B03, 3L02
- 16 units NURSING 3S03, 3T03, 3X04, 3U02, 3Y04
- 9 units Elective

**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 Elective

**TOTAL UNITS: 127**

**REGISTRATION TO PRACTISE NURSING**

On receiving the B.Sc.N. degree after successful completion of the (A) Stream of the B.Sc.N. programme, graduates are eligible to write the RN Licensing Examinations which are administered by the College of Nurses of Ontario. Application to write the RN Licensing Examinations is made through the Faculty of Health Sciences.

**DIPLOMA RN (B) STREAM 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 the 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: 46 UNITS**

**(Units graded: 41; Units pass/fail: 5)**

**TERMS 1 AND 2: 34 UNITS**

- 18 units HTH SCI 1A06, 1ZZ4, 3A03, 3B03, 3L02
- 16 units NURSING 3L05, 3M05, 3S03, 3T03

**SPRING TERM: 6 UNITS**

- 6 units Electives

**SUMMER TERM: 6 UNITS**

- 6 units Electives

**LEVEL IV: 48 UNITS**

**(Units graded: 34; Units pass/fail: 14)**

**TERMS 1 AND 2: 30 UNITS**

- 10 units HTH SCI 2B08, 4L02
- 20 units NURSING 4A02, 4E03, 4F03, 4S06, 4T06

**SPRING TERM: 6 UNITS**

- 6 units Elective

**SUMMER TERM: 6 UNITS**

- 6 units Elective

**ADDITIONAL ELECTIVES (ANY TERM): 6 UNITS**

- 6 units Elective

**TOTAL UNITS: 127**

**DIPLOMA RN/NURSE PRACTITIONER (C) STREAM 6397**

This programme has been developed by a provincial consortium with all ten universities offering the same core nurse practitioner courses since 1995.

\* This programme provides registered nurses with baccalaureate education and advanced preparation to provide individuals, families and communities, with all five basic components of comprehensive health services (promotion, prevention, cure, rehabilitation and support) within the scope of nursing. At time of writing, legislation has not been finalized regarding certain controlled acts, therefore there is the possibility that graduates of the programme will practice as nurse practitioners do now, through delegation or protocol. With existing funding, all Nurse Practitioner courses must be completed by August 1999.

**ADVANCED CREDIT: 29 UNITS**

**LEVEL III: 51 UNITS**

**(Units graded: 51)**

**TERMS 1 AND 2: 36 UNITS**

- 22 units HTH SCI 1CC7, 2C07, 3A03, 3B03, 3L02
- 8 units NURSING 3S03, 3T03, 4A02
- 6 units Electives

**SUMMER TERM: 15 UNITS**

- 15 units Electives

**LEVEL IV: 47 UNITS**

**(Units graded: 47)**

**TERMS 1 AND 2: 34 Units**

- 2 units HTH SCI 4L02
- 26 units NURSPRAC 4A05, 4AA5, 4P03, 4R03, 4T05, 4TT5
- 6 units Electives

**SUMMER TERM: 13 UNITS**

**(Units graded: 3; Units pass/fail: 10)**

- 13 units NURSPRAC 4C10, 4S03

**TOTAL UNITS: 127**

**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 leadership position. Content includes theory and techniques of management, leadership, organizational development and change, motivation, change, 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.

**The Northern Nursing Programmes**

Offered by McMaster University, School of Nursing in conjunction with Health Canada, Medical Services Branch, the Northern Clinical Programme and the Northern Community Nursing Programme are designed to meet the educational needs of nurses who provide primary health care services within First Nations and Northern communities in Canada.

**ADMISSION POLICY**

Nurses for the Northern Nursing Programmes will be selected by Health Canada, Medical Services Branch and McMaster University based on the criteria of experience, education, initiative and personal suitability. Geographic diversity among participants is actively sought. All candidates must be currently registered as a nurse in a province or territory in Canada and be employed by Health Canada, Medical Services Branch or a Band Council.

**ACADEMIC REGULATIONS**

Students in the Northern Nursing Programmes shall be subject to the General Academic Regulations of the University and the regulations of the B.Sc.N. programme.

**Northern Clinical Programme 6393**

The Northern Clinical Programme has been designed as a thirteen week programme to provide educational opportunities for the integration of advanced clinical assessment skills and relevant knowledge in the physical, biological and behavioural sciences necessary for delivery of nursing care in First Nation communities in Northern Canada. These skills not only include the advanced physical assessment necessary to intervene in acute, chronic and emergency situations, but also the decision-making and problem-solving skills necessary in rapidly changing situations.

**CURRICULUM**

(Units graded: 7; Units pass/fail: 10)

8 units NURSING 3A01, 3B07 (taken concurrently)  
3 units NURSING 3C03  
6 units NURSING 3D06

**TOTAL UNITS: 17**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for the equivalent courses in the B.Sc.N. programme.

**Northern Community Nursing Programme 6392**

The programme focuses on the principles and practice of Primary Care Nursing. Students develop strategies designed to prevent disease and to promote health within the First Nations and Northern communities.

Over two terms, students come to McMaster to participate in four courses each of which comprises sixty hours of intensive classroom and group work focused on relevant community health issues. Each course is followed by a work-study practicum conducted in the student's home community. The work study practicums are linked to the course content and to each other as they build on progressively more challenging skills and concepts.

**CURRICULUM**

(Units graded: 12; Units pass/fail: 8)

3 units NURSING 3E03  
3 units NURSING 3F03  
3 units NURSING 3G03  
3 units NURSING 3H03  
8 units NURSING 3K08

**TOTAL UNITS: 20**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for the equivalent courses in the B.Sc.N. programme.

**Oncology Programmes****ADMISSION POLICY**

All candidates must reside in Ontario and be registered to practice nursing by the College of Nurses of Ontario. Selection criteria for admission to the Adult Oncology programme 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.

**ACADEMIC REGULATIONS**

Students in the Oncology programmes shall be subject to the General Academic Regulations of the University and the regulations of the B.Sc.N. programme.

**Adult Oncology Programme**

6398

This programme has been established to provide registered nurses working with adult cancer patients the opportunity to develop enhanced knowledge and skills required for the evolving challenges of their roles across the cancer consortium.

The programme has been developed within the context of the existing post diploma stream. The McMaster model of Nursing and philosophy of student-centered and problem-based learning are maintained and provide the foundation for curriculum design. Key aspects of the programme include professional role development, evidence based practice, and development of assessment, communication, supportive care and collaborative practice skills.

The Adult Oncology programme is offered to nurses within the province of Ontario and will be made accessible through a distance education format.

**CURRICULUM**

(Units graded: 11; Units pass/fail: 10)

3 units NURSING 3CC3  
3 units NURSING 3DD3  
5 units NURSING 3GG5  
5 units NURSING 3HH5  
2 units HTH SCI 3L02  
3 units HTH SCI 3A03

**TOTAL UNITS: 21**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for these courses (or their equivalent) in the B.Sc.N. programme.

**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: 11; Units pass/fail: 10)

3 units NURSING 3P03  
3 units NURSING 3Q03  
5 units NURSING 3V05  
5 units NURSING 3W05  
2 units HTH SCI 3L02  
3 units HTH SCI 3A03

**TOTAL UNITS: 21**

Students who are subsequently admitted to the Post Diploma (B) Stream of the B.Sc.N. programme will be granted credit for these courses (or their equivalent) in the B.Sc.N. programme.

**SCHOOL OF REHABILITATION SCIENCE**

McMaster University offers two Bachelor of Health Science (B.H.Sc.) second-degree programmes in Occupational Therapy and Physiotherapy. McMaster will no longer offer the B.H.Sc. degree completion programme for those who currently hold a diploma from Mohawk College in Occupational Therapy or Physiotherapy.

**B.H.Sc. (OT/PT) Second Degree Programmes**

The two second degree programmes, offered in collaboration with Lakehead University, have been designed to graduate therapists in two calendar years. These graduates will possess the knowledge, skills and professional behaviour to practice in a complete range of

settings in either urban or rural locations. The collaboration with Lakehead University will add a further dimension, that of understanding the specific health issues unique to northern Ontario, as well as an awareness of the career opportunities available in these regions.

The content of the curricula is in accordance with accreditation guidelines and the scope of practice as described by each of the professions. Students are expected to achieve a sense of the influence of family, society, and culture as they explore the 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**

**OT/PT CURRICULUM**

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			HOLIDAYS	UNIT IV Specialty Unit 8 weeks 6 weeks		HOLIDAYS	
UNIT V Specialty Unit 8 weeks 6 weeks			HOLIDAYS	UNIT VI Integration Unit 14 weeks			UNIT VII Clinical Elective 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**

UNIT	OCCUPATIONAL THERAPY	PHYSIOTHERAPY
I	INTRO TO HEALTH CARE AND PROFESSIONAL PRACTICE BASIC SKILLS	MUSCULOSKELETAL I
II	CHILD HEALTH	MUSCULOSKELETAL II
III	ADULT PHYSICAL HEALTH	MUSCULOSKELETAL III
IV	ADULT MENTAL HEALTH	CARDIOPULMONARY
V	AGING AND HEALTH	NEUROLOGY
VI	ADVANCED INTEGRATION OF SKILLS AND KNOWLEDGE IN PREPARATION FOR ENTRY INTO PRACTICE	
VII	SIX-WEEK FULL-TIME CLINICAL ELECTIVE	

**Curriculum**

The time is divided into seven units of full-time study over a period of 24 months. The content of each unit is profession specific; however, there are occasions when Occupational Therapy and Physiotherapy students study together. The total programme consists of 100 units of credit; 70 units of academic study and 30 units (30 weeks) of clinical practice. One of the unique features of the programmes is the integration of clinical education/fieldwork experiences with academic study. Within each of the specialty units, a six-week clinical placement follows eight weeks of academic study.

**NORTHERN STUDIES STREAM**

Both programmes, Occupational Therapy and Physiotherapy, offer a Northern Studies Stream option. The goal of the NSS is for students to develop an awareness and appreciation of Northern health issues. Half of the students in each programme will participate. Interested students apply for this option during the first term of the programme. Final selection of students for the Northern Studies Stream remains with the University.

The Northern Studies Stream encompasses either one 14-week specialty unit or one six-week clinical fieldwork placement. The eight weeks of academic study occurs at Health Sciences North on the Lakehead University Campus in Thunder Bay and the clinical fieldwork placements occur in various Northwestern Ontario communities.

Currently, the 14-week units offered in the NSS are Units II and III (Physiotherapy) and Unit IV (Occupational Therapy). Limited numbers of the other six-week clinical fieldwork placements are also offered in the Northern Studies Stream.

\* Previously all apps were returned  
 to you - now go through OUAU

Funded by the Ministry of Health, travel to and from McMaster and accommodation in Northwestern Ontario is provided for the Northern Studies Stream students.

### TEACHING/LEARNING METHODS

The curricula of both programmes emphasize that the process of learning is equal in importance to the content. The learning methods are, therefore, based on the philosophies of self-directed and problem-based learning:

#### Problem-Based Tutorials

Problem-based learning takes place in small groups in which a tutor acts as a facilitator of student learning. Students are presented with health-care problems that have been carefully designed and selected for each unit. These problems promote the exploration of the underlying biological, psychological, and behavioral determinants of health as well as the principles of therapy. Large group interactive resource sessions may be offered to enhance access to content experts and other resources.

Students learn and practice group skills, share knowledge, become comfortable with changing leadership positions, and give and receive feedback.

The size of tutorial groups may vary from five to seven students. Tutorial group membership is changed for each unit in the programme in order to maximize interaction among students and faculty.

Tutors are usually occupational therapists or physiotherapists who are knowledgeable in the content area of the unit, and expert in tutoring in a problem-based format. The same tutor meets regularly with the group throughout the unit. Tutors also serve as role models in the professional socialization process.

#### Clinical Skills Laboratories

Clinical skills laboratories use a variety of formats to help students learn the clinical skills of assessment, treatment and other aspects of clinical practice. Laboratory sessions are designed to complement the health-care problems used in problem-based tutorials. The clinical skills learned in the laboratory section of each unit are applied and integrated into the clinical education component of the specialty units.

The focus of clinical skills laboratories changes through the units. Unit I stresses basic clinical skills, Units II through V focus on specialty areas of practice, and Unit VI is designed to develop skills in consultation, administration, and other advanced clinical skills.

#### Inquiry Seminars

These seminars are designed to provide opportunities to explore and discuss major topic areas and theoretical concepts which are central to the development and practice of the professions. Presentations by content experts, small-group problem-solving, and large-group discussion are utilized to provide the means and impetus for these investigations.

Topics chosen for inquiry seminars are used to complement the major themes in each programme unit and may vary from year to year. The seminar leaders include faculty members and experts from the community.

#### Clinical Education

Students spend a total of 30 weeks in full-time clinical practice. Clinical education is organized in a variety of health-care facilities including teaching hospitals, community hospitals, health-care agencies, specialized centres, private clinics, and other community facilities throughout Ontario. Students integrate academic learning into practice under the supervision of qualified therapists.

The University Coordinator of Clinical Education (PT) or University Fieldwork Coordinator (OT) is responsible for arranging all clinical placements. No student may make her/his own arrangements with any clinical facility.

Placements are limited and subject to availability. Therefore, students will be required to complete some clinical education units in Northwestern Ontario or elsewhere outside of the Hamilton area.

The students are expected to provide their own means of transportation to each clinical facility and to cover costs of travel and parking. Travel to and from the cities where clinical placements will be offered in Northwestern Ontario will be arranged by the Northern Studies Stream, through funding made available through the Ontario Ministry of Health.

Students will be assessed an additional fee for the use of the computerized clinical placement service of the Canadian Association of Occupational Therapists.

#### Independent Study

An independent study is completed during Unit VI. It may consist of an extensive literature review on a selected topic, a simple research design/proposal, or participation in an ongoing research study or clinical project. Evaluation of the independent study is based on a learning contract which is negotiated by the student with a faculty member during Unit V.

#### Student Evaluation Methods

A variety of methods are used to assess student performance throughout the programmes, including written and oral evaluations, presentations, and tests of clinical skills.

### Admission Policy and Procedure

Enrolment in the second-degree programmes in Occupational Therapy or Physiotherapy is limited to 60 in each programme. Final selection of applicants for admission is made by McMaster University. The admission process considers academic achievement, personal qualities and experience. Personal qualities and experience are assessed on the basis of an autobiographical submission and a personal interview. Assessors are drawn from the faculty, the community, and students.

#### ELIGIBILITY

Applicants must:

1. At the time of application, have achieved a minimum grade point average of B- or 70% (2.7 on the 4 point grade scale) over the last two years of full-time academic study or the equivalent.
2. By June 30 in the year of admission, have completed an undergraduate baccalaureate degree at a recognized university, and have achieved/maintained a minimum overall grade point average of B- or 70% over the last two years of full-time academic study or the equivalent.

For those who have pursued their undergraduate degree on a part-time basis, eligibility assessment will be made using the courses equivalent to the last two years.

No preference will be given for any specific subject area in which the degree has been obtained.

#### APPLICATION PROCEDURE

Application packages with detailed instructions are available from:

Office of the Registrar  
 McMaster University  
 Gilmour Hall, Room 108  
 Hamilton, Ontario, L8S 4L8

or

Registrar's Office, Lakehead University

The procedures outlined below must be followed:

- a. The OUAU 105 application form and \$75 application fee must be submitted to the Ontario Universities' Application Centre on or before **January 15**.
- b. The autobiographical submission, the academic record form, the \$50 assessment fee and 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 **January 15**.

**NOTE:** The January 15 deadline is under review, and may be changed for the 1997 admissions cycle.

Academically eligible applicants are ranked on the basis of their grade point average over the last 2 years of full-time university study or the equivalent, and the score on their autobiographical submission. Those ranked among the top applicants to each of the Occupational Therapy and Physiotherapy programmes are invited for a personal interview.

Interviews are conducted between **April 1** and **May 15** in either **Hamilton** or **Thunder Bay**, according to the applicant's preference. Applicants invited to an interview are notified approximately three weeks in advance of their interview. All applicants are responsible for their own travel costs to and from the interview.

All applicants will be notified of the admission decision by June 1.

**DEFERRAL OF REGISTRATION**

All applications received by the January 15 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 1995-96 the academic fees (tuition and supplementary fees) for a student in the McMaster Undergraduate Occupational Therapy or Physiotherapy Second-Degree programmes are approximately \$4,300 for three terms, September to August. It is estimated that books and supplies cost an additional \$1,000 annually.

Financial difficulties are frequently experienced by second degree students. For these programmes difficulties are intensified by the lack of opportunity for summer employment as well as the relative scarcity of financial assistance available to second degree students.

Financial assistance may be available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP). To be eligible a student must be a Canadian citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario.

**Academic Regulations**

Students in the B.H.Sc.(OT) and B.H.Sc.(PT) programmes, in addition to meeting the general University academic regulations, must follow these specific programme requirements.

Registration in the B.H.Sc.(OT) and B.H.Sc.(PT) programmes implies acceptance on the part of the student of the objectives of that programme and the method by which progress towards those objectives is measured. The University reserves the right to cancel the academic privileges of any student at any time that the student's scholastic record or conduct warrants doing so. Where the performance of 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. 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 becomes ineligible for continuation in the programme a second time or who voluntarily withdraws from the programme a second time, may reapply only through the regular admissions process.

The latest possible date for readmission is two years from the beginning of the unit from which the student withdrew.

**Programmes**

**B.H.SC.(OT) 6405**

**YEAR I: 47 UNITS**

- Unit I OCCUP TH 1T15, 1L17, 1S13
- Unit II OCCUP TH 1T23, 1L24, 1S23, 1C26
- Unit III OCCUP TH 1T33, 1L34, 1S33, 1C36

**YEAR II: 53 UNITS**

- Unit IV OCCUP TH 2T43, 2L44, 2S43, 2C46
- Unit V OCCUP TH 2T53, 2L54, 2S53, 2C56
- Unit VI OCCUP TH 2T64, 2L63, 2I65, 2S63
- Unit VII OCCUP TH 2C76

**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 2T64, 2L63, 2I65, 2S63
- Unit VII PHYSIOTH 2C76

**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>

## Dean of Humanities

E. Simpson/A.B., Ph.D.

## Associate Dean of Humanities (Studies)

F.A. Hall/Assoc. Dipl., B.Mus., M.A., Ph.D.

## Director of Academic and Administrative Services

P.A. Kalnins/B.A.

## Student Advisor

S.A. Richard/B.A.

## Programme Information Assistants

P. Cruickshank

P. Goodall

C. Schlechta/B.A.

K. Singer

## Business Manager

S. Mercer

## Faculty Advancement Officer

N. Alexanian/B.A.

The Humanities at McMaster partake in a distinguished tradition. Our subjects--languages and literatures, history and philosophy, art, drama and music--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 German Area Studies
- Combined Honours in Latin American Studies
- Honours Linguistics
- Honours Modern Languages
- Honours Modern Languages and Linguistics
- Honours Russian and East European Studies

## PROGRAMMES AND DEGREES

### A. Level I Programmes

#### HUMANITIES I

#### PROGRAMME NOTES

1. 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.

2. 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.
3. Humanities I students are restricted to taking no more than 12 units of introductory (1Z06) language courses.
4. **Portfolio Required: ART 1F06:** The prerequisite for ART 1F06 requires permission of the School of Art, Drama and Music based on a **required portfolio interview**. If you intend to take ART 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the School for a portfolio interview in March of the calendar year in which you wish to register for the programme. The portfolio should contain a variety of original work in different media, including work derived from both firsthand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. **Acceptance into ART 1F06 is contingent upon receiving a written confirmation from the School of Art, Drama and Music.**
5. Students wishing to take Music courses other than MUSIC 1A06 must make arrangements with the School of Art, Drama and Music for qualifying tests.

#### \* REQUIREMENTS:

Students admitted to Humanities I (0700) must complete 30 units as follows:

18 units from ART 1F06, ART HIST 1A06, CAYUGA 1Z06, CLASSICS 1B06, 1L06, COMP LIT 1A06, DRAMA 1A06, ENGLISH 1D06, FRENCH 1A06, 1N06, 1Z06, GERMAN 1B06, 1Z06, GREEK 1Z06, HISPANIC 1A06, 1Z06, HISTORY 1A06, 1L06, ITALIAN 1A06, 1Z06, 1ZZ6, JAPANESE 1Z06, LATIN 1Z06, LINGUIST 1A06, MOHAWK 1Z06, MUSIC 1A06, 1B06, 1CC3, 1D03, (See Note 5 above.) OJIBWA 1Z06, PHILOS 1B06, 1D06, POLISH 1Z06, PORTUGUE 1Z06, RUSSIAN 1Z06

12 units Electives, which may include Humanities courses

#### MUSIC I

#### REQUIREMENTS

Students admitted to Music I (0370) must complete 30 or 33 units of work as follows:

18-21 units MUSIC 1B06, 1CC3, 1D03, 1E03 (or 1E06), 1G03.  
(Permission of the School of Art, Drama and Music is required for MUSIC 1E06.)

12 units Electives

### B. Degree Programmes

Upon successful completion of Humanities I, a student may be admitted to a programme of study leading toward a Bachelor of Arts degree. (Completion of Music I may lead to a Bachelor of Music or Bachelor of Arts degree.) There are three ways to complete a Bachelor's degree in the Faculty of Humanities.

#### SINGLE HONOURS PROGRAMME

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

#### COMBINED HONOURS PROGRAMME

Three years of study, beyond Level I, concentrated in the work of two disciplines (e.g. English and Philosophy). In fact, a student can combine study in any two Humanities disciplines, or one Humanities discipline and a subject from another Faculty where appropriate (e.g. History and Political Science) or one Humanities discipline with Women's Studies or Japanese Studies.

#### MINOR

A minor is an option available to a student enrolled in a four-level programme. A minor consists of at least 18 units of Level II, III, or IV courses beyond the designated Level I course(s), **using elective units only**, that meet the requirements set out in the programme description of that minor. A student is responsible for

*level I  
New admission Requirements - Old: 18 units from  
3 of 4 units of course*

New: 18 units from one list of all Hum courses

- only 6 units from one subject (except Classics (306+146)) allowed

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 (page 16) in this Calendar.

### B.A. PROGRAMME

Two years of study, beyond Level I, concentrated in the work of a single discipline.

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

There are a number of Humanities courses which may be taken as electives without prerequisites. Individual course descriptions, by Department, are given under the section entitled *Course Listings*.

Not only are students from other Faculties able to take individual courses which have no prerequisites, but they are also able to transfer into any of the degree programmes offered by the Faculty of Humanities. For the majority of programmes in the Faculty, admission may be gained after the successful completion of any Level I programme at the university, providing this includes the necessary programme requisites as outlined in the admission statement for each 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 English Literature, Comparative Literature, Drama and Linguistics. Generally, proficiency in more than one language is a hallmark of most highly-qualified Humanities' graduates seeking the widest range of post-graduation academic and employment opportunities.

### PART-TIME STUDY

Students wishing to enter any programme offered by the Faculty of Humanities and pursue a programme on a part-time basis should consult the appropriate Departmental Counsellor(s) before making their plans.

It is anticipated that at least the following Honours programmes in the Humanities will be available to those part-time students who are able to take their work only in the evening during the Fall/Winter session: Art History; Drama; English; History; Philosophy.

For part-time students who are able to attend evening classes only during the Fall/Winter session, the following B.A. programmes are available: Art History; Classics; Drama; English; French; History; Philosophy.

## ACADEMIC REGULATIONS

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

### ADMISSION AND READMISSION TO THE FACULTY OF HUMANITIES

Because of resource limitations, the University and Faculty of Humanities reserve the right to limit enrolment in any programme or course to the number which can be taught effectively. Enrolment will be by selection based on academic achievement.

Admission as a Second Bachelor's Degree student or as a Continuing Student is by selection and may be limited.

#### Admission is not guaranteed.

Students completing McMaster Level I programmes may be given preference for admission to limited enrolment programmes over students from other programmes or other universities.

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

Students who do not meet these requirements must submit a Request for Special Consideration to the Associate Dean of Humanities (Studies). Such requests for transfer are not automatic or guaranteed and will be considered at the same time as applications for readmission (see below).

Applications for readmission must be made, in writing, to the Associate Dean of Humanities (Studies). Readmission requests for September must be submitted by July 15 and for January by November 30.

Applications should explain the reasons for the student's inadequate performance and should include relevant documentary evidence, for example a letter from a physician outlining any medical condition that might have affected the student's academic performance or final grades. Readmission 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. **Readmission is not guaranteed.**

### ENGLISH AND HISTORY PROGRAMMES: ADMISSION FROM OTHER POST-SECONDARY INSTITUTIONS

Enrolment in English and History programmes is limited, with priority given to students who have completed Level I at McMaster University.

Applications, together with all supporting documents, from students from other post-secondary institutions who wish to be considered for admission to these programmes at McMaster must be received by the Registrar's Office no later than June 15.

### 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.

### DEADLINES

The Faculty of Humanities will not consider applications for admission after the dates stated in this Calendar. Registrations after the stated deadlines will not be accepted unless documentation is provided showing good cause and including permission of instructors to enter classes late. Dropping and adding of courses will be permitted only within the periods stated in this Calendar.

### SUMMER IMMERSION PROGRAMMES IN FRENCH

Students must obtain approval from the Associate Dean (Studies) prior to participating in any language immersion programme.

The government-sponsored summer language bursary programme offers university students the opportunity to take French courses at a large number of accredited institutions. Students wishing to attend another university in order to participate in a language immersion programme must: (a) petition the Associate Dean (Studies), (b) submit detailed course descriptions for assessment, and (c) obtain a Letter of Permission.

Students registered in a programme in French may take a maximum of six units of credit in this manner as elective work only. Students not registered in a programme in French may take up to 12 units of credit.

### ACADEMIC REGULATIONS PERTAINING TO MUSIC PROGRAMMES

Normally, students with an undergraduate degree in Music will not be admitted to a B.Mus. degree programme as a second undergraduate degree.

### EXCHANGE PROGRAMMES WITHIN CANADA

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

**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 (page 16) 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 (page 16) in this Calendar, and the sections on *Eligibility and Application* below.

**Eligibility**

Students registered in any Honours or Combined Honours programme in the Faculty of Humanities may apply to replace all or part of the work of their third year with an acceptable programme of study taken at a university or equivalent institution approved by the Faculty of Humanities.

To be eligible to take part in this programme, students must have completed at least 60 units of work with a Cumulative Average of at least 7.0. Individual programmes may have additional requirements. All requirements must be satisfied by the end of the Fall/Winter session (September-April) preceding the commencement of study elsewhere. Students taking part in this programme do not have the option of graduating with a three-year B.A. degree on the basis of work completed in this programme, but must return to McMaster University to complete their final 30 units of work.

Students may receive up to 30 units of credit for a full year of study at another institution. The awarding of all credit for work completed elsewhere may be confirmed only after departments have received transcripts and reviewed students' academic achievements following their return and after they have officially registered for Level IV. In certain cases, students may be recommended for the Deans' Honour List on the basis of work completed elsewhere.

**Application**

Students interested in applying for this programme should consult the Coordinator, Humanities Study Abroad, Togo Salmon Hall, Room 607, and the students' department(s) or School approximately one year before planning to begin their study abroad (i.e. during the Fall term of the year in which they enter Level II). No later than the end of February, a plan for the completion of the academic programme, approved by the programme counsellor(s), must be submitted together with the application to the Coordinator.

**SPRING COUNSELLING**

During the Spring Counselling period:

- Information sessions are held by departments in the Faculty of Humanities to discuss undergraduate programmes, course offerings for the next academic session, etc.;
- 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;
- Students in Levels II or III who wish to transfer into Level III or IV programmes in Honours English or Honours History or Level III of the B.A. English programme must complete an *Application for transfer to Level III or IV* available in Chester New Hall, Room 112;

- Students in Levels II, III, or IV obtain a copy of the new Undergraduate Calendar from the Office of the Registrar and updated Degree Audit Reports from the department offering the programme in which they are registered.

The dates for the Spring Counselling period may vary somewhat from year to year; however, the specific dates and information will be posted on campus, outlined in the campus newspaper and will be announced in some classes. It is the student's responsibility to participate in these counselling activities.

**SCHOOL OF ART, DRAMA AND MUSIC****PROGRAMMES IN ART AND ART HISTORY****NOTE**

Students intending to do graduate work in the field of Art History should note that most universities offering such programmes require undergraduate work in French, German or Italian for admission. These students are strongly encouraged to include one of these language courses as early as possible in their programme.

**Honours Art****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 1A06, and (c) a grade of at least B- in ART 1F06.

**NOTES**

- Students in Honours Art must complete ART 2A06, 2B06, 2C03, and 2F06 before registering in Level III or IV Art courses.
- Students who wish to take film courses are advised to take ART HIST 2X06 as an elective since it is the prerequisite for upper-level film courses.
- A Minor in Art History is not permitted in the Honours Art programme.

**REQUIREMENTS**

*120 units total (Levels I-IV)*

30 units	from the Level I programme completed prior to admission into the programme
30 units	ART 2A06, 2B06, 2C03, 2F06, 3C03, 3G06
12 units	ART 4B12
12 units	Level III or IV Art courses
9 units	from ART HIST 2B03, 2C03, 2D03, 2E03, 2G03, 2M03, 2N03
3 units	Level II, III or IV Art History
6 units	Level III or 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 1A06.

**NOTES**

- Students in Honours Art must complete ART 2A06, 2B06, 2C03, and 2F06 before registering in Level III or IV Art courses.
- Students who wish to take film courses are advised to take ART HIST 2X06 as an elective since it is the prerequisite for upper-level film courses.
- A Minor in Art History is not permitted in the Honours Art programme.



**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 42 units ART 2A06, 2B06, 2C03, 2F06, 3C03, 3G06, and 12 units of Level III or IV Art, including 4C06
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 12 units Electives to total 120 units

**Honours Art History 2029**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ART HIST 1A06.

**NOTES**

1. ART HIST 3J03 and 3K03 are available only as electives for students registered in an Art History programme.
2. Students who wish to take film courses are advised to take ART HIST 2X06 as an elective since it is the prerequisite for upper-level film courses.

**COURSE LIST 1**

ART HIST 3AA3, 3B03, 3BB3, 3E03, 3G03, 3H03, 3L03, 3S03, 3V03, 3X03, 4AA3, 4BB3, 4C03, 4D03, 4F03, 4M03, 4N03, 4O06, 4Q03, 4R03, 4V03, 4X03

**COURSE LIST 2**

ART HIST 3X03, 4AA3, 4BB3, 4C03, 4D03, 4F03, 4N03, 4V03, 4X03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 15 units from ART HIST 2B03, 2C03, 2D03, 2G03, 2M03, 2N03
  - 3 units ART HIST 2E03
  - 6 units Level III or IV Art History
- 24 units from Course List 1
  - 6 units from Course List 2
- 36 units Electives

**Combined Honours in Art History and Another Subject**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in ART HIST 1A06.

**NOTES**

1. ART HIST 3J03 and 3K03 are available only as electives for students registered in an Art History programme.
2. Students who wish to take film courses are advised to take ART HIST 2X06 as an elective since it is the prerequisite for upper-level film courses.

**COURSE LIST 1**

ART HIST 3AA3, 3B03, 3BB3, 3E03, 3G03, 3H03, 3L03, 3S03, 3V03, 3X03, 4AA3, 4BB3, 4C03, 4D03, 4F03, 4M03, 4N03, 4O06, 4Q03, 4R03, 4V03, 4X03

**COURSE LIST 2**

ART HIST 3X03, 4AA3, 4BB3, 4C03, 4D03, 4F03, 4N03, 4V03, 4X03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units from ART HIST 2B03, 2C03, 2D03, 2E03, 2G03, 2M03, 2N03
  - 3 units Level III or IV Art History
- 15 units from Course List 1

- 6 units from Course List 2
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

**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 1A06.

**NOTE**

ART HIST 3J03 and 3K03 are available only as electives for students registered in an Art History programme.

**REQUIREMENTS**

90 units total (Levels I-III)

- 30 units from the Level I programme completed prior to admission into the programme
- 18 units from ART HIST 2B03, 2C03, 2D03, 2E03, 2G03, 2M03, 2N03
- 12 units Level III or IV Art History
- 30 units Electives

**Minor in Art History**

24 units of Art History, of which no more than six units may be from Level I.

**PROGRAMMES IN DRAMA**

**NOTES**

1. The School of Art, Drama and Music offers a broadly based programme of study in the history, theory, and critical understanding of the dramatic text in performance. Programme requirements at Level II are designed to expose students to the breadth of the study through four foundation courses -- in the history of performance, the structures of theatrical texts, the medium of film, and the art of acting. Level III courses offer more specific approaches to the study of performance. A limited amount of student specialization within the programme is possible at this level. The Honours Seminars at Level IV focus on independent research and are restricted to Level IV Honours Drama students. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
2. 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 and are listed at the end of the Drama course descriptions. With the approval of the School of Art, Drama and Music, a limited number of courses from the 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.
3. Students registered in Honours Drama are strongly urged to complete six units of non-introductory work in a language other than English. Students in Combined Honours are strongly urged to complete an introductory course in a language other than English (OAC level or equivalent).

**Honours Drama 2148**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in DRAMA 1A06.

**NOTE**

A Minor in Film is not permitted in the Honours Drama programme.

**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 Drama
- 30 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 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.

**NOTE**

A Minor in Film is not permitted in the Honours Drama programme.

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units Level II Drama
- 18 units Level III or IV Drama
- 6 units Level IV Drama including at least three units from DRAMA 4C03, 4CC3, 4E03, 4EE3, 4FF3
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

**B.A. in Drama**

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
- 12 units Level II Drama
- 12 units Level III or IV Drama
- 36 units Electives

**Minor in Drama**

24 units of Drama, of which no more than six units may be from Level I.

**Minor in Film**

24 units of Drama: 2X06, 3H03, 3J03, 3R03, 3RR3, 3T03, 3TT3

**PROGRAMMES IN MUSIC**

Completion of a Music degree requires considerable daytime attendance.

**Honours Programmes for the B.Mus. Degree****Programme A, Alternative 1: 2373****Music Education**

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**

MUSIC 3AA3, 3K03, 3L03, 3M03, 3N03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4O03, 4P03, 4Q03, 4U03

**COURSE LIST 2**

MUSIC 2AA3, 3T03, 3U03, 4E03, 4G03, 4X03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units Music I programme
- 39 units MUSIC 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2G03, 2H03, 3E03, 3G03, 3J03, 3O03, 3Y03
- 15 units from Course List 1
- 9 units from Course Lists 1 and 2
- 3 units Level III or IV Music
- 24 units Electives, 12 of which may be from Music

### Programme A, Alternative 2: Music Education/Performance

2374

*Alternative 2 is intended for those students in the Education stream who are able to benefit from an increased performance component in their programme.*

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, including MUSIC 1E06, and a Cumulative Average of at least 6.0. Under exceptional circumstances, students may use MUSIC 1E03 in place of 1E06 as a prerequisite for MUSIC 2E06. Students interested in this option must request it in writing by March 15.

**COURSE LIST 1**

MUSIC 3AA3, 3K03, 3L03, 3M03, 3N03, 3P03, 3V03, 4K03, 4L03, 4M03, 4N03, 4O03, 4P03, 4Q03, 4U03

**COURSE LIST 2**

MUSIC 2AA3, 3T03, 3U03, 4X03

**REQUIREMENTS**

126 units total (Levels I-IV)

- 33 units Music I programme
- 54 units MUSIC 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2G03, 2H03, 3E06, 3G03, 3J03, 3O03, 3Y03, 4E06, 4G03
- 15 units from Course List 1
- 6 units from Course Lists 1 and 2
- 18 units Electives, six of which may be from Music

**Programme B, Alternative 1:**

2375

**Music History and 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 Music I and a Cumulative Average of at least 6.0.

**COURSE LIST 1**

MUSIC 4C03, 4H03, 4I03, 4U03

**COURSE LIST 2**

MUSIC 2AA3, 3T03, 3U03, 4X03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units Music I programme
- 45 units MUSIC 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2G03, 2H03, 3C03, 3CC3, 3E03, 3H03, 3J03, 3R03, 3Y03
- 6 units from MUSIC 3B03, 3BB3, 4B03, 4BB3
- 6 units from Course List 1
- 6 units from Course Lists 1 and 2
- 3 units Level III or IV Music
- 24 units Electives, 12 of which may be from Music

**Programme B, Alternative 2:**

2376

**Music History and Theory/Performance**

*Alternative 2 is intended for those students in the History and Theory stream who are able to benefit from an increased performance component in their programme.*

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, including MUSIC 1E06, and a Cumulative Average of at least 6.0. Under exceptional circumstances, students may use MUSIC 1E03 in place of 1E06 as a prerequisite for MUSIC 2E06. Students interested in this option must request it in writing by March 15.

**COURSE LIST 1**

MUSIC 4C03, 4H03, 4I03, 4U03

**COURSE LIST 2**

MUSIC 2AA3, 3T03, 3U03, 4X03

**REQUIREMENTS**

126 units total (Levels I-IV)

33 units Music I programme  
63 units MUSIC 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2G03, 2H03, 3C03, 3CC3, 3E06, 3G03, 3H03, 3J03, 3R03, 3Y03, 4E06, 4G03  
6 units from MUSIC 3B03, 3BB3, 4B03, 4BB3  
6 units from Course List 1  
6 units from Course Lists 1 and 2  
12 units Electives (non-Music courses)

### 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**

All Level III and IV Music courses except MUSIC 3G03, 3T03, 3U03, 4E03, 4G03, 4X03.

**COURSE LIST 2**

MUSIC 2AA3, 3T03, 3U03, 4X03.

**REQUIREMENTS**

120 units total (Levels I-IV)

30 units Music I programme  
27 units MUSIC 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2H03, 3E03, 3Y03  
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 to total 120 units

**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**

All Level II, III and IV Music courses, except MUSIC 3E03, 3G03, 4E03, 4G03.

**REQUIREMENTS**

90 units total (Levels I-III)

30 units Music I programme  
18 units MUSIC 2B06, 2CC3, 2D03, 2H03, 3Y03  
12 units from Course List 1  
30 units Electives

**Minor in Music**

24 units of Music, of which no more than six units may be from Level I, subject to the prerequisites and qualifying tests specified in the Calendar.

**DEPARTMENT OF CLASSICS****NOTES**

- 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.
- With the approval of the Department of Classics, the following related courses offered by another department are also available to students in a Classics programme:  
**Ancient Religious Studies:** RELIG ST 2E06, 2F03, 2I13, 3K03, 3O03, 3X03.
- 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.
- Students may receive up to six units of credit for archaeological field work at an approved Classical site. Consult the Department for further details.
- 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.
- Students intending to do graduate work in the field of Classics are strongly encouraged to include a thesis course (CLASSICS 4T06) in the final level of their programme.

**Honours Classics**

(PROGRAMME A: ANCIENT HISTORY AND ARCHAEOLOGY)

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.)

**NOTE**

When selecting their courses, students must ensure that the overall total includes at least 24 units of Levels III and IV Classics, Greek and Latin courses:

**REQUIREMENTS**

120 units total (Levels I-IV)

30 units from the Level I programme completed prior to admission into the programme  
30 units from CLASSICS 2A03, 2B03, 2C03, 2G06, 2K03, 2Z03, 3G03, 3H03, 3LL3, 3MM3, 3R03, 3S03, 3UU3, 3VV3  
6 units from CLASSICS 4B03, 4BB3, 4D06, 4E03, 4I06, 4LL6, 4T06  
18 units Levels II, III and IV Classics, Greek and 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.

**NOTE**

When selecting their courses, students must ensure that the overall total includes at least 24 units of Levels III and IV Classics, Greek and Latin courses.

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 9 units from CLASSICS 2D03, 2H06, 3I03, 3I13
- 24 units Greek (including GREEK 1Z06, if not completed in the Level I programme)
- 24 units Latin (including LATIN 1Z06, if not completed in the Level I programme)
- 9 units Levels II, III and IV Classics, Greek and Latin
- 24 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.)

**NOTE**

When selecting their courses, students must ensure that the overall total includes at least 18 units of Levels III and IV Classics, Greek and Latin courses.

**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, 2G06, 2K03, 2Z03, 3G03, 3H03, 3LL3, 3MM3, 3R03, 3S03, 3UU3, 3VV3
- 6 units from CLASSICS 4B03, 4BB3, 4D06, 4E03, 4I06, 4LL6, 4T06
- 9 units Levels II, III and IV Classics, Greek and 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.)

**NOTE**

When selecting their courses, students must ensure that the overall total includes at least 18 units of Levels III and IV Classics, Greek and Latin 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 CLASSICS 2D03, 2H06, 3I03, 3I13
- 24 units Greek or Latin
- 6 units Levels II, III and IV Classics, Greek and 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 2G06 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 and Latin, including at least nine units of Levels III and IV courses
- 36 units Electives

### Minor in Classics

24 units of Classics, of which no more than six units may be from Level I.

### Minor in Greek

24 units of Greek, of which no more than six units may be from Level I.

### Minor in Latin

24 units of Latin, of which no more than six units may be from Level I.

## DEPARTMENT OF ENGLISH

### Honours Arts & Science and English

(B.Arts Sc.; See Arts and Science Programme)

### 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**

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

**NOTES**

1. When registering, students should distribute their English courses (see *Requirements* below) as follows:
    - > Level II ENGLISH 2A06; 12 additional units of Level II English
    - > Level III 18 units of Level III English
    - > Level IV Six units of Level III English; 12 units of Level IV seminars (No student may take more than 12 units of Level IV seminars.)
  2. In addition to the 54 units of English courses, students must successfully complete six units of non-introductory work in a language other than English, if this was not completed in Level I, or ENGLISH 3L06/3LS6. The Department strongly advises students to fulfil this requirement before Level III.
- Note:** Students who wish to take *Old English Language and*

*Literature* in fulfillment of the language requirement must register in the course as English 3LS6 in which case it may not be used to fulfill the English area requirement.

- With special permission, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in the second term.

**REQUIREMENTS**

- 120 units total (Levels I-IV)
- 30 units from the Level I programme completed prior to admission into the programme
  - 6 units ENGLISH 2A06
  - 12 units from ENGLISH 2B06, 2G06, 2H06, 2I06
  - 6 units ENGLISH 3K06
  - 6 units from ENGLISH 3C06, 3D03, 3DD3, 3I03, 3J06, 3L06, 3T03, 3V06
  - 6 units from ENGLISH 3G06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3
  - 6 units from ENGLISH 3C06, 3D03, 3DD3, 3G06, 3I03, 3J06, 3L06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3, 3T03, 3V06
  - 12 units Level IV English seminars
  - 36 units Electives (See Note 2 above.)

**Combined Honours in English and Another Subject**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

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

**NOTES**

- When registering, students should distribute their English courses (see *Requirements* below) as follows:
  - > Level II ENGLISH 2A06; six additional units of Level II English
  - > Level III 12 units of Level III English
  - > Level IV Six units of Level III English and six units of Level IV seminars (No student may take more than six units of Level IV seminars.)
- In addition to the 36 units of English courses, students combining English 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, or ENGLISH 3L06/3LS6. The Department strongly advises students to fulfil this requirement before Level III.
 

**Note:** Students who wish to take *Old English Language and Literature* in fulfillment of the language requirement must register in the course as ENGLISH 3LS6 in which case it may not be used to fulfill the English area requirement.
- With special permission, students may substitute ENGLISH 4X03 for three units of Level IV seminar work in the second term.

**REQUIREMENTS**

- 120 units total (Levels I-IV)
- 30 units from the Level I programme completed prior to admission into the programme
  - 6 units ENGLISH 2A06
  - 6 units from 2B06, 2G06, 2H06, 2I06
  - 6 units ENGLISH 3K06
  - 6 units from ENGLISH 3C06, 3D03, 3DD3, 3I03, 3J06, 3L06, 3T03, 3V06
  - 6 units from ENGLISH 3G06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3
  - 6 units Level IV English seminars
  - 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
  - 18 units Electives to total 120 units (See Note 2 above.)

**B.A. in English 1200**

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 3.5 including a grade of at least C- in ENGLISH 1D06.

**NOTE**

In addition to the 30 units of English courses students must successfully complete six units of a language other than English, if this was not completed in Level I, or ENGLISH 3L06/3LS6. The Department strongly advises students to fulfil the language requirement before Level III.

**Note:** Students who wish to take *Old English Language and Literature* in fulfillment of the language requirement must register in the course as ENGLISH 3LS6 in which case it may not be used to fulfill the English area requirement.

**REQUIREMENTS**

- 90 units total (Levels I-III)
- 30 units from the Level I programme completed prior to admission into the programme
  - 6 units ENGLISH 2A06
  - 6 units from ENGLISH 2B06, 2G06, 2H06, 2I06
  - 6 units ENGLISH 3K06
  - 6 units from ENGLISH 3C06, 3D03, 3DD3, 3I03, 3J06, 3L06, 3T03, 3V06
  - 6 units from ENGLISH 3G06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3
  - 30 units Electives (See Note above.)

**Minor in English**

ENGLISH 1D06 and 18 units of Levels II and III English

**DEPARTMENT OF FRENCH**

**Honours Arts & Science and French**

(B.Arts Sc.; See Arts & Science Programme)

**Honours French**

**PROGRAMME A: LANGUAGE AND LITERATURE 2231**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in FRENCH 1A06 or 2M06.

**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, 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, 2WWW3
  - 3 units from FRENCH 2D03, 2E03, 3AA3, 3BB3, 4U03
  - 3 units from FRENCH 3K03, 3KK3
  - 3 units from FRENCH 3Q03, 3QQ3
  - 3 units from FRENCH 3A03, 3SS3, 4J03
  - 9 units from Course List 1
  - 12 units Levels III and IV French
  - 33 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. 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
- 3 units from FRENCH 3AA3, 3BB3, 4U03
- 9 units from Course List 1
- 9 units from FRENCH 3I03, 4E03, 4H03, 4S03, 4X03
- 12 units Linguistics courses beyond Level I
- 21 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.

**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, 4Y03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 12 units FRENCH 2B03, 2BB3, 3C03, 4A03
- 3 units from FRENCH 2G03, 3CC3, 3F03, 4BB3
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 3K03, 3KK3
- 3 units from FRENCH 3Q03, 3QQ3
- 3 units from FRENCH 3AA3, 3BB3, 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.)
- 15 units Electives to total 120 units

**B.A. in French**

1230

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in FRENCH 1A06 or 2M06.

**REQUIREMENTS**

90 units total (Levels I-III)

- 30 units from the Level I programme completed prior to admission into the programme
- 9 units FRENCH 2B03, 2BB3, 3C03
- 6 units from FRENCH 2G03, 3CC3, 3F03
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 3K03, 3KK3, 3Q03, 3QQ3
- 3 units from FRENCH 3A03, 3SS3, 4J03
- 9 units Levels II, III or IV French
- 24 units Electives

**Minor in Francophonie Studies**

FRENCH 1A06/2M06, 2B03, 2BB3, 3C03, and nine additional units of Level II or III French other than FRENCH 2J03, 2JJ3, 2W03, 2WW3.

**PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1995.****Honours French****PROGRAMME A: LANGUAGE AND LITERATURE** 2231

(Available only to students who entered this programme before September 1995.)

**NOTES**

1. When selecting their courses, students must ensure that the overall total includes a minimum of 36 units of Level III and IV French courses.
2. Upon completion of 60 units of work (including 18 units of required Level II French courses), and with the approval of the Department of French and the 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 2D03, 2E03, 2F03, 2FF3, 2H03, 2J03, 2JJ3, 2W03, 2WW3, 3AA3, 3BB3, 3K03, 3KK3, 3MM3, 3Q03, 3QQ3, 3R03, 3Z03

**COURSE LIST 2**

FRENCH 3S03, 4F03, 4I03, 4J03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4Y03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 9 units FRENCH 2A03, 3C03, 4A03
- 6 units from FRENCH 2C03, 2G03, 3CC3, 3F03, 4B03, 4BB3
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 2D03, 2E03, 3AA3, 3BB3, 4U03
- 3 units from FRENCH 3K03, 3KK3
- 3 units from FRENCH 3Q03, 3QQ3
- 3 units from Course List 1
- 9 units from Course List 2
- 12 units Levels III and IV French
- 36 units Elective, 12 of which may be French

**Honours French**

**PROGRAMME B: LANGUAGE AND LINGUISTICS 2232**  
*(Available only to students who entered this programme before September 1995.)*

**NOTE**

Upon completion of 60 units of work (including 18 units of required Level II French Area 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 3AA3, 3BB3, 3K03, 3KK3, 3Q03, 3QQ3, 3S03, 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
- 9 units FRENCH 2A03, 2G03, 2H03
- 6 units FRENCH 3C03, 3CC3
- 6 units FRENCH 4A03, 4BB3
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 3AA3, 3BB3, 4U03
- 9 units from Course List 1
- 15 units from FRENCH 3B03, 3G03, 3I03, 4C03, 4E03, 4H03, 4S03, 4X03
- 12 units Linguistics courses above Level I
- 24 units Electives, 12 of which may be French

**Combined Honours in French and Another Subject**

*(Available only to students who entered this programme before September 1995.)*

**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 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 3S03, 4F03, 4I03, 4J03, 4LL3, 4MM3, 4N03, 4O03, 4Q03, 4S03, 4U03, 4Y03

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 9 units FRENCH 2A03, 3C03, 4A03
- 3 units from FRENCH 2C03, 2G03, 3CC3, 3F03, 4BB3
- 3 units from FRENCH 2J03, 2JJ3
- 3 units from FRENCH 2W03, 2WW3
- 3 units from FRENCH 3K03, 3KK3
- 3 units from FRENCH 3Q03, 3QQ3
- 3 units from FRENCH 3AA3, 3BB3, 4U03
- 6 units from Course List 1
- 3 units Level III or IV French
- 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

**DEPARTMENT OF HISTORY**

**Subfields**

The Department has defined six fields of study. Students should consult the Programme Notes for their specific programme to determine the requirements regarding these fields. Level II and III courses are allocated to the fields as follows:

- European 2A06, 2C06, 2I06, 3F03, 3HH3, 3H06, 3I03, 3I16, 3R03, 3W03, 3Z03, 3ZZ3
- Ancient 2L06, 3LL3, 3MM3, 3UU3, 3VV3, 3WW3
- Asian 2B06, 2E06, 3A03, 3AA3, 3B03
- Canadian 2J06, 3EE3, 3G03, 3L03, 3M03, 3N03, 3P03, 3U03
- British 2N06, 3JJ3, 3NN3, 3QQ3, 3RR3, 3SS3, 3TT3
- The Americas 2H06, 3BB3, 3E06, 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**

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

**NOTES**

1. In selecting courses, students must ensure that they take a minimum of six units in each of three fields of History. For this purpose the Department has established the following six fields: European, Ancient, Asian, Canadian, British and the Americas (excluding Canada). This requirement must be satisfied by the end of Level III. All Level II and III History courses from the above list may be used towards this requirement. Students are permitted a maximum of 24 units of work in any one of the preceding fields. Additional History courses may be taken as electives.
2. The first 36 units of History beyond Level I must include one Level IV seminar, to be taken following the completion of at least 12 units of Level II History.

**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
- 18 units Level III History
- 18 units Level IV History
- 36 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**

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

**NOTES**

1. In selecting courses, students must ensure that they take a minimum of 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.

2. No Level IV seminar may be taken before completion of 12 units of History beyond Level I.

**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
- 12 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.)
- 18 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.

**NOTE**

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.

**REQUIREMENTS**

90 units total (Levels I-III)

- 30 units from the level I programme completed prior to admission into the programme
- 12 units Level II History
- 12 units Level III History
- 36 units Electives

**Minor in History**

24 units of History. Consult the *Course Listings* section for course prerequisites and limited enrolment courses.

**JAPANESE STUDIES****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, 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**

The Department of Modern Languages offers B.A. Honours programmes in:

- Comparative Literature
- German Area Studies
- Latin American Studies
- Linguistics
- Modern Languages and Linguistics
- Modern Languages
- Russian and East European Studies.

It also offers language courses in Japanese, Polish and Portuguese. In addition, Minors are available, using electives only, in either German, Hispanic Studies, Italian, Linguistics and Russian.

**Combined Honours in Comparative Literature and Another Subject**

*This programme is designed for students who wish to combine the study of Comparative Literature (taught in English) with Modern Languages (German, Italian, Russian, Spanish) or a subject offered by another department.*

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in COMP LIT 1A06. Students are strongly advised to include a language other than English in their Level I programme.

**NOTES**

1. Students combining with a subject other than a language must successfully complete six units of a language other than English, if this was not completed in Level I. The Department strongly advises students to fulfill this requirement before Level III.
2. Upon completion of 60 units of work and with the approval of the Department of Modern Languages and 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 and Modern Languages
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units (See Note 1 above.)

**Honours German Area Studies**

2263

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in each of GERMAN 1A03 and 1AA3, or 1B06, or 1Z06. Students are strongly recommended to include one of HISTORY 1A06, 1C06 or 1D06 and POL SCI 1A06 or 1B03 and 1C03 in their Level I programme. If not, these courses must be taken in Level II of the programme.

**NOTE**

Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.



Single Hons & Combined  
both deleted

**COURSE LIST 1**

All German courses above Level I; MOD LANG 2H03, 3G03, 3W03; HISTORY 3HH3, 3I03, 3I16, 3J06, 3W03, 4JJ6; POL SCI 2E06, 2O06; SOCIOLOG 2S06, 3A03; RELIG ST 2KK3, 3MM3

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 9 units GERMAN 2E03, 3Z03, 3ZZ3
- 15 units from GERMAN 2A03, 2AA3, 2G03, 2Z06, 3A03, 3B03, 4CC3, 4G03, 4TT3
- 3 units MOD LANG 3A03
- 3 units from MOD LANG 2H03, 3G03, 3W03
- 6 units from HISTORY 3HH3, 3I03, 3I16, 3J06, 3W03
- 6 units POL SCI 2E06, 2O06
- 3 units POL SCI 3PP3
- 12 units from Course List 1
- 36 units Electives to total 120 units

**Combined Honours in Latin American Studies and Another Subject**

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in HISPANIC 1Z06 or 1A06. Students with native knowledge of Spanish may with permission of the Department substitute six units of upper level Spanish language and literature courses.

**NOTE**

Upon completion of 60 units of work and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

**COURSE LIST 1**

All Hispanic courses beyond Level I, FRENCH 3Z03, HISTORY 3XX3, 3YY3, POL SCI 4Q06, PORTUGUE 2Z06.

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 9 units HISPANIC 3D03, 3DD3, 4DD3
- 12 units HISPANIC 2L03, 2LL3, 4LL3, 4SS3
- 3 units MOD LANG 3P03
- 3 units ANTHROP 2V03
- 9 units from Course List 1
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Elective

**Honours Linguistics 2312**

This programme is designed for students who wish to explore the theoretical foundations of linguistics while also acquiring practical skills in a number of languages.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in LINGUIST 1A06 and completion of at least six units of language study.

**NOTE**

1. In this programme students are required to study at least two languages. The department has defined four language groups (see below) for this purpose and students must take at least six units from two of these groups. By graduation, therefore, students will have completed at least six units of one language and 18 units of a second language, including 12 units above Level I.

New Prog: Hons Latin American Studies & Another subject (primarily Hispanic Studies courses & other existing courses)

**A. Modern Indo-European**

French, German, Italian, Russian, Spanish

**B. Classical**

Greek, Hebrew, Latin; Sanskrit

**C. Modern Non-Indo-European**

Japanese

**D. Indigenous Languages**

Cayuga, Mohawk, Ojibwa

2. Students may have to include HUMAN 2E03 in their programme in order to take HUMAN 3F03 and/or 3G03. Students should consult the instructor, Dr. Geoffrey Rockwell, Togo Salmon Hall, Room 312 to discuss their computer background.
3. Students who intend to take Psychology courses from Course List 1 should take PSYCH 1A06 in their Level I programme.

**COURSE LIST 1**

All Linguistics courses beyond Level I; all language courses; HUMAN 2C03, 2E03, 3F03, 3G03; PHILOS 2B03; 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
- 12 units from LINGUIST 2L03, 2M03, 3I03, 3I13, 3M03, 4T03, 4XX3
- 12 units from LINGUIST 2LL3, 2Q03, 3P03, 3X03, 3XX3, 4X03
- 6 units from LINGUIST 2A03, 2AA3
- 6 units from LINGUIST 4B03, 4C03, 4L03; HUMAN 3F03, 3G03
- 12 units from one of the languages taken in the Note 1 above
- 18 units from Course List 1
- 24 units Electives

**Honours Modern Languages and Linguistics 2363**

This programme combines the study of two or more modern languages (French, German, Italian, Japanese, Russian, Spanish) with a concentration in Linguistics.

Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including 12 units covering two different languages other than English with grades of at least B-. Students are strongly urged to complete LINGUIST 1A06 in their Level I programmes. If not, LINGUIST 1A06 must be included in Level II of their programme.

**NOTES**

1. Students entering the programme with French 1Z06 must complete French 1NN6, in addition to the 18 units of French, beyond Level I.
2. Students may have to include HUMAN 2E03 in their programme in order to take HUMAN 3F03 and/or 3G03. Students should consult the instructor, Dr. Geoffrey Rockwell, Togo Salmon Hall, Room 312 to discuss their computer background.
3. Upon completion of 60 units and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

**COURSE LIST 1**

All Linguistics and language courses beyond Level I ("language courses" also includes Latin, Greek, Hebrew, Sanskrit, and Indigenous languages).

**REQUIREMENTS**

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 15 units LINGUIST 2A03, 2AA3, 3X03, 3XX3, 4B03, 4C03
- 3 units from HUMAN 3F03, 3G03
- 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 and their respective literatures (German, Italian, Russian and Spanish) 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 1A03 and 1AA3, 1B06, 1Z06, HISPANIC 1A06, 1Z06, ITALIAN 1A06, 1Z06, 1ZZ6, RUSSIAN 1Z06. In addition, students must successfully complete at least six units from COMP LIT 1A06 and LINGUIST 1A06, whichever course was not taken in Level I must be included in Level II of the programme.

#### NOTES

- When selecting their courses, students must ensure that the overall total includes at least 24 units of Level III and IV Comparative Literature, Modern Languages, Linguistics and language courses.
- Upon completion of 60 units and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

#### COURSE LIST 1

All Level II, III and IV courses in Comparative Literature, Linguistics, Modern Languages, German, Hispanic Studies, Italian and Russian.

#### REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 3 units MOD LANG 2A03
  - 6 units LINGUIST 2A03, 2AA3
  - 3 units from COMP LIT 2A03, 2AA3
- 54 units 27 units above Level I in each of two languages and their literatures other than English (excluding literature courses in English translation)
- 6 units from Course List 1 (excluding the two languages chosen)
- 18 units Electives to total 120 units

### Combined Honours in Modern Languages and Another Subject

*This programme is designed for students who wish to combine the study of one modern language and its literature (German, Italian, Russian or Spanish) with another subject.*

**Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.**

#### ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0, including six units from the following list with a grade of B- in each course chosen: GERMAN 1A03 and 1AA3, 1B06, 1Z06, HISPANIC 1A06, 1Z06, ITALIAN 1A06, 1Z06, 1ZZ6, RUSSIAN 1Z06. In addition, students must successfully complete at least six units from COMP LIT 1A06 or LINGUIST 1A06.

#### NOTES

- When selecting their courses, students must ensure that the overall total includes at least 18 units of Level III and IV Comparative Literature, Modern Languages, Linguistics and language courses.
- Upon completion of 60 units and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), one or both terms of Level III of this programme may be replaced by courses of study at a university or universities under the Humanities Study Elsewhere Programme.

#### COURSE LIST 1

All Level II, III and IV courses in Comparative Literature, Linguistics, Modern Languages, German, Hispanic Studies, Italian and Russian.

#### REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 3 units MOD LANG 2A03
  - 3 units LINGUIST 2A03
  - 3 units from Course List 1
- 27 units courses above Level I from one of: German, Hispanic Studies, Italian or Russian courses
- 36 units Courses specified for the other subject. (Combinations with Social Sciences may require more than 36 units.)
- 18 units Electives to total 120 units

### Honours Russian and East European Studies 2491

**Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.**

#### ADMISSION

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in RUSSIAN 1Z06. Students are strongly recommended to include HISTORY 1A06 and POL SCI 1A06 in their Level I programme. If not completed, these courses must be taken in Level II of the programme.

#### NOTE

Upon completion of 60 units of work and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a university under the Humanities Study Elsewhere Programme.

#### COURSE LIST 1

All Russian courses above Level I; MOD LANG 3D03, 3K03, 3KK3, 3R03, 3RR3; HISTORY 3W03, 4O06; ANTHROP 2S03; POLITICAL SCIENCE 2E06 and 3AA3

#### REQUIREMENTS

120 units total (Levels I-IV)

- 30 units from the Level I programme completed prior to admission into the programme
- 18 units RUSSIAN 2C06, 3C06, 4C06
  - 9 units from MOD LANG 3D03, 3K03, 3KK3, 3R03, 3RR3
  - 6 units HISTORY 3H06
  - 12 units POL SCI 3K06, 3M06
  - 9 units from Course List 1
- 36 units Electives to total 120 units

### MINORS

#### Minor in 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 taken from Level I.

**PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO 1996:**

<b>Honours Comparative Literature (French Option)</b>	<b>2155</b>
<b>Honours Comparative Literature (Other Languages)</b>	<b>2156</b>

**STUDENTS WHO ENTERED THESE PROGRAMMES BEFORE SEPTEMBER 1996 MUST CONSULT THE DEPARTMENTAL COUNSELLOR TO DISCUSS WAYS OF MEETING THEIR PROGRAMME REQUIREMENTS.**

**DEPARTMENT OF PHILOSOPHY**

**Honours Arts & Science and Philosophy**

(B.Arts Sc.; See Arts and 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 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
27 units	PHILOS 2A06, 2C06, 3A06, 3G03, 3Q03, 4H03
3 units	from PHILOS 2B03, 2R03
3 units	Levels II, III or IV Philosophy
15 units	Levels III or IV Philosophy
6 units	Level IV Philosophy
36 units	Electives

**Combined Honours in Philosophy and Another Subject**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

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

**NOTES**

1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Students whose combined subject is in the Social Sciences and who choose PHILOS 2R03 for their Philosophy programme are

not required to take HUMAN 2C03 as part of their Social Science requirements. The HUMAN 2C03 requirement in these cases will be replaced by three units of elective work.

4. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

**REQUIREMENTS**

120 units total (Levels I-IV)

30 units	from the Level I programme completed prior to admission into the programme
12 units	PHILOS 2A06, 2C06
3 units	from PHILOS 2B03, 2R03
15 units	Levels III and IV Philosophy
6 units	Level IV Philosophy
36 units	Courses specified by the other subject. (Combinations with Social Science may require more than 36 units.)
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 BIOLOGY 1A06 or 1G06 with a grade of at least B- and six units of Level I Mathematics. Students are cautioned to observe that CHEM 1A06 is the normal prerequisite for BIOLOGY 2B03 and BIOLOGY 2C03, which are required courses in the programme. **Enrolment in this programme is limited.**

**NOTES**

1. Students intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

**REQUIREMENTS**

120 units total (Levels I-IV)

30 units	from the Level I programme completed prior to admission into the programme
12 units	BIOLOGY 2B03, 2C03, 2E03, 2F03 (CHEM 2C06 may replace six units of Biology courses)
24 units	Level III and IV Biology courses
21 units	PHILOS 2A06, 2C06, 2M03, 3O03, 4H03
3 units	from PHILOS 2B03, 2R03
3 units	from PHILOS 2D03, 2F03, 2G03
3 units	from PHILOS 3G03, 3N03
3 units	from Level III or IV Philosophy
3 units	Level IV Philosophy
18 units	Electives to total 120 units

**Honours Philosophy and Mathematics (B.A.) 2320420**

Students wishing to enter this programme must complete an *Application for Admission to Level II* in mid-March in order to be considered for admission.

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 6.0 including a grade of at least B- in each of MATH 1A03 or 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 intending to do graduate work in Philosophy are advised to include PHILOS 2B03 in their programme.
2. Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.
3. Upon completion of 60 units of work and with the approval of the Department of Philosophy and the Associate Dean of Humanities (Studies), one or both terms of Level III may be replaced by courses of study at a designated university abroad.

**REQUIREMENTS**

*120 units total (Levels I-IV)*

- |          |  |
|----------|--|
| 30 units | from the Level I programme completed prior to admission into the programme |
| 30 units | MATH 2A03, 2AA3, 2C03, 2R03, 3A03, 3AA3, 3E03, 3EE3, 3X03, 4X03            |
| 3 units  | from MATH 2S03, 2T03   |
| 9 units  | from Level III and IV Mathematics, Statistics                              |
| 12 units | PHILOS 2A06, 2C06  |
| 3 units  | from PHILOS 2B03, 2R03   |
| 21 units | Level III or Level IV Philosophy   |
| 3 units  | Level IV Philosophy course   |
| 9 units  | Electives  |

**B.A. in Philosophy**

1420

**Students wishing to enter this programme must complete an Application for Admission to Level II in mid-March in order to be considered for admission.**

**ADMISSION**

Completion of any Level I programme and a Cumulative Average of at least 3.5 including a grade of at least C- in any Level I Philosophy course.

**NOTE**

Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.

**REQUIREMENTS**

*90 units total (Levels I-III)*

- |          |  |
|----------|--|
| 30 units | from the Level I programme completed prior to admission into the programme |
| 12 units | PHILOS 2A06, 2C06  |
| 3 units  | from PHILOS 2B03, 2R03   |
| 3 units  | Levels II, III or IV Philosophy  |
| 6 units  | Levels III or IV Philosophy  |
| 36 units | Electives  |

**Minor in Philosophy**

Any Level I Philosophy course and PHILOS 2A06 or 2C06; and 12 additional units of Philosophy

# FACULTY OF SCIENCE

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

## Dean of Science

H. P. Weingarten/B.Sc., M.S., M. Phil., Ph.D.

## Associate Dean of Science (Studies)

T.M.K. Davison/B.Sc., M.A., Ph.D.

## Student Advisors

P.G. Henry/B.Sc.

L. Giordano/B.A.

## Programmes Assistant/Student Advisor

J. Kapshey

The Faculty of Science provides studies through the following Departments:

- Biochemistry
- Biology
- Chemistry
- Computer Science and Systems
- Geography
- Geology
- Mathematics and Statistics
- Materials Science and Engineering
- Physics and Astronomy
- Psychology

## PROGRAMMES AND DEGREES

### A. Level I Programme

#### NATURAL SCIENCES I: 30 UNITS

0710

#### REQUIREMENTS

- 3 units MATH 1A03
- 3 units from MATH 1AA3, 1B03, STATS 1CC3
- 6 units from CHEM 1A06, PHYSICS 1A06, 1B06, 1C06
- 12 units from Course List 1 (see below)
- 6 units from Course Lists 1 and 2 (see below)
- 1 course SCIENCE 1A00

#### COURSE LIST 1 - LEVEL I SCIENCE CORE COURSES

BIOLOGY 1A06	Adaptation in the Biological World
CHEM 1A06	Introductory Chemistry
COMP SCI 1SA3	Computing Fundamentals
COMP SCI 1MC3	Computer Science I
COMP SCI 1MD3	Computer Science II
ENVIR SC 1A06	Introduction to Environmental Science
GEOG 1C03	Introductory Climatology
GEOG 1G03	Introductory Geomorphology
GEOLOGY 1C03	Earth Processes
MATLS 1A03	Introduction to Materials
MATH 1AA3	Calculus II
MATH 1B03	Linear Algebra I
PHYSICS 1A06	Mechanics, Electricity and Modern Physics
PHYSICS 1B06	General Physics I
PHYSICS 1C06	Introductory Physics
PSYCH 1A06	General Psychology
STATS 1CC3	Introductory Computer-Aided Statistics

#### COURSE LIST 2 - LEVEL I ELECTIVES

- Level I Science Core courses (see above)
- All Level I Humanities courses
- All Level I Social Sciences courses, excluding Kinesiology
- ASTRON 1F03
- WOMEN ST 1A06

With the exception of Mathematics, no more than six units may be taken from any single subject.

With the permission of the Associate Dean of Science (Studies), well-prepared students may be permitted to elect up to six additional units.

Level I students should select courses carefully to meet the Level II admission requirements of a specific programme. A suitable choice of Level I options will allow successful students to enter Level II of any one of several programmes.

It is possible to complete Natural Sciences I through evening/summer studies. Students wishing this option should consult the Office of Part-Time Degree Studies for timetable information.

## B. Degree Programmes

### HONOURS PROGRAMMES

The programme requirements for the Honours B.Sc. programmes are listed in this section of the Calendar.

#### Honours (Specialist Option) Programmes

Most Departments offer four-level Honours B.Sc. programmes with a specialist option which requires concentration of studies in a specific discipline.

#### Honours (Complementary Studies Option) Programmes

Many Departments offer four-level Honours B.Sc. programmes (Complementary Studies Option) which require somewhat less concentration in the discipline and 21 units of complementary studies, 24 units of electives which include at least six units of Level III and IV courses.

The Honours Science (Complementary Studies Option) degree requires a breadth of studies in science; at least one course each from earth, life, mathematical and physical science is required.

#### Combined Honours Programmes

A number of Departments offer Combined Honours degrees which are academically more challenging than single Honours programmes.

Honours degrees in Molecular Biology and Biotechnology and in Biology and Pharmacology (a five-year Co-op programme) are organized by Committees of Instruction involving the Faculties of Health Sciences and Science. The Honours Neural Computation programme is organized by a Committee of Instruction involving the Faculties of Science and Engineering while the Honours Science (Environmental Science Option) programme has a Committee of Instruction involving many departments in the Faculty of Science.

#### Honours Co-op Programmes

The Faculty of Science has instituted Cooperative Education programmes in Honours Biochemistry, Honours Biology and Pharmacology, Honours Chemistry, Honours Geography and Environmental Science, and Honours Medical and Health Physics. Additional Honours Co-op programmes are in the planning stages and may be offered in the future subject to resource availability.

Honours Co-op programmes have limited enrolment and admission is by selection. Please see 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. All work for the Minor, with the exception of the Level I introductory course(s), must be completed at McMaster.

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 (page 16) in this Calendar.

**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 Earth Science, 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**

**Admission is limited for all Honours Co-op programmes and all four-level B.A., B.Arts Sc. and B.Sc. programmes involving Biochemistry, Biology, Molecular Biology and Biotechnology, and Psychology.**

Because of resource limitations, the University reserves the right to limit enrolment in any programme to the number which can be effectively taught. In the Faculty of Science, enrolment is by selection, based on academic achievement. Students should consult with the Departments concerned if there are any questions about entry to limited enrolment programmes.

For further information please see *Admission to Level II Programmes* in this section of the Calendar.

**ADMISSION TO B.SC. PROGRAMMES**

The admission criteria for the B.Sc. programmes, in each of the areas Earth, Life, Mathematical and Physical Science, are listed under the heading *Three-Level B.Sc. Programmes* in this section.

For further information please see *Admission to Level II Programmes* in this section of the Calendar.

**CONTINUATION IN HONOURS B.SC. AND B.SC. PROGRAMMES**

For information regarding requirements for continuing in Faculty of Science programmes, please see the *General Academic Regulations* section (page 16) in this Calendar.

**Programme Probation (Changes Beginning in 1996-97)**

Please refer to the *General Academic Regulations* section (page 16) in this Calendar for changes to regulations concerning Programme Probation in the Faculty of Science.

**READMISSION 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 readmission for one full academic year. Exceptions may be made only when there are extenuating circumstances which are supported by documentation.

Application for readmission must be made in writing **by July 15** to the Associate Dean of Science (Studies), and should include an explanation of the student's previous academic performance and reasons why the student would expect to succeed in the programme if readmitted.

**Readmission is not guaranteed.**

**FORMER SCIENCE STUDENTS**

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 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 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. Courses towards a

Minor, with the exception of the Level I introductory course(s), may not be taken on Letter of Permission.

Students must be in good standing to be eligible to take courses on a Letter of Permission.

### COOPERATIVE INTERNSHIPS

The Faculty of Science offers students the opportunity to participate in 12-16 month full-time paid work placements in industry to provide work experience related to their academic curriculum. Students compete for placements with participating companies through an application and interview process. In order to accept an internship, students must be in Level II or III of a four-level programme, and be eligible to return to complete their undergraduate degree. A fee is assessed following the start of the placement.

For further information, please consult the Associate Dean of Science (Studies) or Science Cooperative Education in the Faculty of Science.

### INTERNATIONAL STUDY DURING

#### LEVEL III OF HONOURS PROGRAMMES

There are two ways to undertake international studies during Level III of an Honours programme; via a Formal Exchange Programme or a Third Year Study Elsewhere programme.

#### Formal Exchange Programme

##### During Level III of Honours Programmes

See the heading *International Study* in the *General Academic Regulations* section (page 16) 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\*.

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 discussion with the Associate Dean of Science (Studies) about one year before they plan to enrol elsewhere.

Students must propose an academic programme that must be submitted to their Department for approval. Academic approval must be completed by the end of February for registration in the following Fall.

Students must maintain links through correspondence with their departments at McMaster University while they are engaged in study elsewhere. All credit for work completed may only be confirmed after departments have reviewed the students' academic achievement following their return and registration in their final year of study. The maximum credit available in this way is normally 30 units for the full year of study, equivalent to Level III. In certain cases, students may be recommended for the Deans' Honour List on the basis of work undertaken in the programme.

\*There are approved universities in the following areas: Rhône-Alpes (France), Baden-Württemberg (Germany), Lombardy (Italy) and Catalonia (Spain).

### EXCHANGE PROGRAMMES WITHIN CANADA

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

### PROGRAMME TRANSFERS

Up to the end of Level III, students may be permitted to transfer between Faculty of Science programmes on the recommendation of the Department concerned and with the approval of the Associate Dean of Science (Studies).

Students are eligible to apply for transfer from a B.Sc. programme to a related Honours Programme or between Honours programmes provided that they have:

- 1) attained a Cumulative Average of at least 6.0, and
- 2) completed the courses required for admission to the programme.

Permission to transfer to a programme is subject to any exceptions or special restrictions outlined in the *Admission* statement or the *Programme Notes* for that programme.

**Note:** The minimum Cumulative Average required to transfer to an Honours programme in the Faculty of Science is 6.0. Students entering Level III of a three-level B.Sc. programme should note that if they have completed 60 units with a Cumulative Average of 5.5, they must attain a Sessional Average of at least 7.0 on 30 units of course work to raise their Cumulative Average to 6.0. Students with a Cumulative Average of less than 5.5, who wish to transfer to an Honours programme, are advised to satisfy graduation requirements for their current three-level programme.

For further information please see *Transfer Procedures* in this section of the Calendar.

### GRADUATION

#### From Honours B.Sc. and B.Sc. Programmes

To graduate from a programme, students must meet the course requirements stated 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 (page 16) in this Calendar.

#### Transferring to Graduate with a Three-Level B.Sc. Degree from an Honours B.Sc. Programme

Students who successfully complete Level III of any Honours B.Sc. degree may request permission from the Associate Dean of Science (Studies) Office for transfer to graduate with a three-level B.Sc. degree.

### SECOND BACHELOR'S DEGREE PROGRAMMES

In addition to the regulations in the *General Academic Regulations* section (page 16) 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.

### Special Course Requirements

#### SCIENCE INQUIRY COURSE LIST

The following are restricted to students in an Honours (Complementary Studies Option) programme:

CHEM 4I03	Inquiry in Chemistry
COMP SCI 4ZI3	Computer Science Inquiry
SCIENCE 4J03	Inquiry: Relativity and Gravitation
SCIENCE 4I03	Inquiry: Energy, Physics and the Environment

The following are restricted to students in specified programmes:

BIOCHEM 4C03	Biochemistry Inquiry
BIOCHEM 4P03	Research Project
BIOLOGY 4C09	Senior Thesis
BIOLOGY 4F06	Senior Project
BIOLOGY 4FF3	Biology Inquiry
CHEM 4G06	Senior Thesis
COMP SCI 4ZP6	Project
GEOG 4C06	Research Paper
GEOG 4CC3	Review Paper
GEOG 4VV6	Research in Environmental Issues
GEOLOGY 4K06	Geology Thesis
PHYSICS 4A03	Special Topics

The following are open to students with the specified course prerequisites:

GEOLOGY 4C03	Climate Change: A Geological Perspective
GEOLOGY 4D03	Ecology and Geology of Coral Reefs
GEOLOGY 4I03	Minerals and Society
GEOLOGY 4W03	Environmental Analysis: A Case History Approach
MATH 3G03	Problem Solving
MATH 3Z03	History of Mathematics

**FIELD COURSES**

Field courses are offered through the Departments of Biology, Geography, and Geology. Some of these courses are taken outside the Fall/Winter session, during the spring or summer.

Students who enrol in field courses must pay **both**:

- a fee to the department to cover travel expenses, room and board **and**

- the associated tuition fee to McMaster at Fall registration.

Although students initially register for field courses through the appropriate departmental offices, it is their responsibility to include field courses on their registration forms for the appropriate Fall/Winter session.

Detailed information regarding field courses and deadlines for registration may be obtained from the individual departmental offices.

**March Counselling and Important Procedures**

Counselling is available throughout the year from the Office of the Associate Dean of Science (Studies) and the academic departments in the Faculty of Science. However, it is highly recommended that all students in the Faculty of Science make a counselling appointment with a Departmental Undergraduate Advisor during the March Counselling period.

During the March Counselling period:

- 1) Information sessions are held by the departments in the Faculty of Science to discuss undergraduate programmes, graduate study opportunities, career options, etc.;
- 2) students in Levels II, III, and IV obtain up-to-date Degree Status Reports (Degree Audits) for the programmes in which they are registered, and a copy of the new Undergraduate Calendar;
- 3) all Level I students seeking admission to a Level II programme for the following Fall/Winter session must complete an application form. See *Admission to Level II Programmes*;
- 4) students in Levels II or III who wish to transfer to another programme for the following Fall/Winter session must complete an application form. See *Transfer Procedures*;
- 5) students wishing to take courses requiring permission, including limited enrolment courses and Science Inquiry courses, apply to the appropriate department for permission. See *Courses Requiring Permission* and *Limited Enrolment Courses*.

The dates for the March Counselling period may vary somewhat from year to year. The dates and information will be posted on campus, outlined in the campus newspaper, and will be announced during classes. Application forms mentioned above will be available in the General Sciences Building, Room 116. It is the student's responsibility to participate in March Counselling activities.

**ADMISSION TO LEVEL II PROGRAMMES**

Any student seeking admission to a Level II programme in the Faculty of Science for the following Fall/Winter session must complete an *Application for Admission to Level II* during the March Counselling period. This form, which allows students to rank four programme choices, must be completed and returned to the Office of the Associate Dean of Science (Studies) **by the end of March**.

For admission in 1996-97 to all Level II programmes in the Faculty of Science, students must meet the minimum requirements as described in the individual programme descriptions in the Faculty of Science section of the 1995-96 Calendar. Admission to limited enrolment programmes is also based on Cumulative Average achieved; students will be admitted by a selection committee. See *Limited Enrolment* in this section of the Calendar.

**Level I students must meet the admission criteria for a Level II programme according to the Calendar in effect when they registered for Level I. Students must follow the programme requirements of the Calendar in force when they enter Level II, except when a later Calendar explicitly modifies such requirements.**

Students 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 Natural Sciences I, or apply to transfer to another Faculty. Students may repeat or upgrade any of the previous Level I courses but are advised to take only twelve units of additional Level I courses. Only forty-two units of Level I courses may be used as credit towards a three-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.

**COURSES REQUIRING PERMISSION**

In the *Course Listings* section of the Calendar, courses requiring permission may be identified by checking the course prerequisite which states as a requirement: *Permission of the instructor, department, coordinator, chair, etc.*

It is the student's responsibility to apply to the corresponding departmental office, instructor, etc. for permission **by the end of March** for courses in which they wish to register for the following Fall/Winter session.

**Students who do not apply for permission by the end of March risk losing the opportunity to take the course in the following Fall/Winter session.**

**LIMITED ENROLMENT COURSES**

In the *Course Listings* section of this Calendar, certain courses are described as having an enrolment limit, by the phrase: *Enrolment is limited* which appears below the prerequisite statement. There are two types of limited enrolment courses as follows:

- 1) Limited enrolment courses with a prerequisite stating as a requirement: *Permission of the instructor, department, coordinator, chair, etc.* have the enrolment controlled by requiring that permission be obtained prior to registration in the course.

It is the student's responsibility to apply to the corresponding departmental office for permission **by the end of March** for courses in which they wish to register for the following Fall/Winter session.

Students must state an alternate course on their registrations for each limited enrolment course selected. If permission has not been obtained for a course, it will be deleted from the Fall/Winter registration and the alternate course selection will be substituted.

If a limited enrolment course is an absolute requirement for a programme, then students in that programme have a guaranteed place in the course. This will be noted in the course prerequisite.

- 2) Limited enrolment courses that make no mention of obtaining permission have the enrolment controlled on a first-come, first-served basis. Students must state an alternate course on their registrations for each limited enrolment course they list.

**DEPARTMENT OF BIOCHEMISTRY****Honours Arts & Science and Biochemistry**

(B.Arts.Sc; See Arts & Science programme)

**Honours Molecular Biology and Biotechnology**

(See Molecular Biology and Biotechnology)

(See also Honours Biochemistry (Specialist Option), Level IV Molecular Biology, Biotechnology and Genetic Engineering Option; and Honours Biochemistry Co-op, Year 4 Molecular Biology, Biotechnology and Genetic Engineering Option)



All admissions statements on all pro rewritten to make them similar to other faculties. Cumulative average is mandated for every pro. <sup>to conform with the new acc. reqs</sup> **FACULTY OF SCIENCE 81**

## Honours Biochemistry (Complementary Studies Option)

2042

6 units from Level I Electives  
1 course SCIENCE 1A00

The election of PHYSICS 1A06 (or 1B06 or 1C06) in Level I or II is recommended.

### ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

3 units MATH 1A03  
3 units from STATS 1CC3, MATH 1AA3  
6 units CHEM 1A06  
6 units BIOLOGY 1A06  
6 units from Level I Science Core courses  
6 units from Level I Electives  
1 course SCIENCE 1A00

The election of PHYSICS 1B06 (or 1A06 or 1C06) in Level I or II is recommended.

### Minimum averages/grades:

A Cumulative Average of 5.0 and a weighted average of at least 6.0 in 18 units including BIOLOGY 1A06, CHEM 1A06, and 6 units from MATH 1A03, 1AA3, STATS 1CC3, PHYSICS 1B06 (or 1A06 or 1C06).

### 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 and III programmes.
- 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 2O06, 2R03  
6 units from the Faculty of Humanities and/or the Department of Religious Studies  
6 units Electives, excluding Biochemistry  
If not completed: SCIENCE 1A00

#### LEVEL III: 30 UNITS

15 units BIOCHEM 3B03, 3BB3, 3L03, BIOLOGY 2B03, CHEM 2N03  
3 units HUMAN 2C03  
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology.  
6 units Electives, excluding Biochemistry (students wishing to take BIOCHEM 4I03 in Level IV must elect CHEM 3F03; students wishing to take BIOCHEM 4D03 must elect BIOLOGY 3E03)

#### LEVEL IV: 30 UNITS

3 units BIOCHEM 4C03  
3 units from the Science Inquiry Course List  
3 units from BIOCHEM 3C03, 3H03, 3N03, 4Q03  
3 units from BIOCHEM 4D03, 4E03, 4I03, 4M03  
3 units from Level IV Biochemistry  
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 Natural Sciences I requirements, including:

3 units MATH 1A03  
3 units from STATS 1CC3, MATH 1AA3  
6 units CHEM 1A06  
6 units BIOLOGY 1A06  
6 units from Level I Science Core courses.

### Minimum averages/grades:

A Cumulative Average of 5.0 and a weighted average of at least 6.0 in 18 units including BIOLOGY 1A06, CHEM 1A06, and 6 units from MATH 1A03, 1AA3, STATS 1CC3, PHYSICS 1A06 (or 1B06 or 1C06).

### NOTES

- This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
- In Level IV a Biochemistry and a Molecular Biology, Biotechnology and Genetic Engineering option are available.
- 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, 2O06  
3-6 units from CHEM 2P06, 2R03  
3-6 units Electives. CHEM 2C03, COMP SCI 1SA3 (or 1MC3) and STATS 2MA3 are suggested

If not completed: SCIENCE 1A00

#### LEVEL III: 30 UNITS

12 units from 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 (Students considering Level IV Molecular Biology, Biotechnology and Genetic Engineering Option must elect BIOLOGY 3E03)

#### LEVEL IV: 30 UNITS (Biochemistry Option) 2040

9 units BIOCHEM 4E03, 4I03, 4M03  
12 units from Level III, IV Biochemistry courses which must include one of BIOCHEM 4B06, 4G03, 4P03 (maximum of six units from BIOCHEM 4B06, 4G03, 4P03)  
3 units from Level III, IV Science courses, excluding Biochemistry  
6 units Electives

#### LEVEL IV : 30 UNITS (Molecular Biology, Biotechnology and Genetic Engineering Option) 2041

Completion of Level III Honours Biochemistry (Specialist Option) with a Cumulative Average of at least 6.0 is required for admission. Students must indicate this option on registration form for Level IV.

12 units BIOCHEM 4D03, 4E03, 4I03, 4M03  
9 units from Level III, IV Biochemistry courses which must include one of BIOCHEM 4B06, 4G03, 4P03 (maximum of six units from BIOCHEM 4B06, 4G03, 4P03)  
3 units from Level III, IV Science courses, excluding Biochemistry (BIOLOGY 3X03 or 4V03 is recommended)  
6 units Electives

## Honours Biochemistry (Co-op) 2045

### ADMISSION

Enrolment in this programme is limited. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II Honours Biochemistry (Specialist Option) or Honours Biochemistry and Chemistry or Honours Molecular Biology and Biotechnology with a Cumulative Average of at least 6.0. Enrolment in this programme will be limited to a maximum of 25 students per year. Information about the programme and the selection procedure may be obtained from the Chair of the Committee of Instruction and will be explained in the month of February in an Information Session.

**NOTES**

1. This is a five-year co-op programme which includes two eight-month work terms which must be spent in Biochemistry related placements.
2. Students must be registered full-time and take a full academic workload.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. There are Level II and III prerequisites for many Level III and IV courses. The prerequisites should be considered when choosing your Level II and III courses.
5. No minors or Theme Schools are permitted in the Honours Biochemistry (Co-op) programme.

**REQUIREMENTS**

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

**LEVEL I**

30 units from the Natural Sciences I requirements

**LEVEL II**

30 units from Honours Biochemistry (Specialist Option), Honours Biochemistry and Chemistry (Biology 2B03 and 2C03 must be completed), Honours Molecular Biology and Biotechnology (Chemistry 2N03 must be completed)

**YEAR 3**

15 units from Academic Level III, Term 1, plus Work Orientation course and first work term of eight months' duration, Term 2 and Summer Term.

**TERM 1**

9 units BIOCHEM 3B03, 3L03, BIOLOGY 3003  
3 units from Level III, IV Biochemistry, Biology, Chemistry, Electives (Students considering Level IV Molecular Biology, Biotechnology and Genetic Engineering Option must elect BIOLOGY 3E03)  
3 units

→ Work Orientation Course

**TERM 2 AND SUMMER**

Work Term

**(Biochemistry Option)**

2045

**YEAR 4**

30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer Term.

**TERM 1**

3 units BIOCHEM 4M03  
9 units from Level III, IV Biochemistry, Biology, Chemistry  
3 units Electives

**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. Students may take BIOCHEM 4I03 instead of BIOCHEM 3BB3 in 1996-97)  
3 units from Level III, IV Biochemistry, Biology, Chemistry  
3 units Electives

**SUMMER**

Work Term

**YEAR 5**

15 units from Academic Level IV, Term 2, and completion of second eight-month work term, Term 1.

**TERM 1**

Work Term

**TERM 2**

9 units from BIOCHEM 4E03, 4G03, 4I03, 4P03  
3 units from Level III, IV Science courses, excluding Biochemistry  
3 units Electives

**(Molecular Biology, Biotechnology and Genetic Engineering Option)**

2046

Completion of Year 3 Honours Biochemistry (Co-op Option) with a Cumulative Average of at least 6.0 is required for admission. Students must indicate this option on registration form for Year 4.

**YEAR 4**

30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer Term.

**TERM 1**

6 units BIOCHEM 4D03, 4M03  
3 units from Level III, IV Biochemistry, Biology, Chemistry  
3 units from Level III, IV Biochemistry  
3 units Electives

**TERM 2**

9 units 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. Students may take BIOCHEM 4I03 instead of BIOCHEM 3BB3 in 1996-97)  
3 units from Level III, IV Biochemistry, Biology, Chemistry  
3 units Electives

**SUMMER**

Work Term

**YEAR 5**

15 units from Academic Level IV, Term 2, and completion of second eight-month work term, Term 1.

**TERM 1**

Work Term

**TERM 2**

6 units BIOCHEM 4E03, 4I03  
3 units from BIOCHEM 4G03, 4P03  
3 units from Levels III, IV Science courses, excluding Biochemistry  
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							
	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 Biochemistry and Chemistry 204070****ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03  
6 units CHEM 1A06  
6 units from PHYSICS 1A06, 1B06, 1C06  
6 units BIOLOGY 1A06  
3 units Level I Electives  
1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of BIOLOGY 1A06, CHEM 1A06, MATH 1A03, 1AA3.

**NOTES**

1. This programme fulfils the academic requirements for membership in the Chemical Institute of Canada.
2. Students should seek counselling for this programme in the Department of Chemistry.

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

27 units BIOCHEM 2A06, CHEM 2A03, 2B06, 2C03, 2P06; MATH 2A03

3 units Electives. Students considering Level III Honours Biochemistry (Specialist Option) should elect BIOLOGY 2C03. Students considering Level III Honours Chemistry (Specialist Option) should elect PHYSICS 2A03.

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

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

9 units CHEM 3B06, 3D03

1 course from CHEM 3A03, 3E06, 3Q03

3-6 units Electives

**LEVEL IV: 30 UNITS**

9 units BIOCHEM 4E03, 4I03, 4M03

3 units from BIOCHEM 4D03, 4Q03

6 units from BIOCHEM 4B06 or CHEM 4G06, or both BIOCHEM 4P03 and either CHEM 4TA3 or 4TB3

3 units from CHEM 3Z03, 4A03, 4D03

3 units from Level III, IV Chemistry

6 units Electives

**Minor in Biochemistry**

6 units CHEM 1A06

6 units from CHEM 2O06, 2B06

6 units from BIOCHEM 3G03 and 3GG3; or 3A03 and 3AA3, or 3B03 and 3BB3

6 units from Level IV Biochemistry

**DEPARTMENT OF BIOLOGY**

**Honours Philosophy and Biology**

(B.A.; See Faculty of Humanities, Department of Philosophy)

**Honours Arts & Science and Biology**

(B.Arts Sc; See Arts & Science programme)

**Honours Molecular Biology and Biotechnology**

(See Molecular Biology and Biotechnology)

(See also Honours Biochemistry (Specialist Option), Level IV Molecular Biology, Biotechnology and Genetic Engineering Option; and Honours Biochemistry Co-op, Year 4. Molecular Biology, Biotechnology and Genetic Engineering Option)

**Honours Biology**

2052

**(Complementary Studies Option)**

**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of Natural Sciences I requirements, including:

6 units MATH 1A03, STATS 1CC3

6 units CHEM 1A06

6 units BIOLOGY 1A06

6 units from Level I Science Core courses

6 units Level I Electives

1 course SCIENCE 1A00

The election of PHYSICS 1B06 (or 1A06 or 1C06) in Level I or II is recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in BIOLOGY 1A06.

**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) programme.

**COURSE LIST**

All Level III and IV Biology courses, except BIOLOGY 4C09 and 4L09; BIOCHEM 3A03, 3AA3, 3B03, 3BB3, 3C03, 3G03, 3GG3, 3H03, 3N03, 4D03, 4E03, 4M03; ENGINEER 4X03; GEOG 3P03, 4P03; GEOLOGY 2J03, 3J03, 4D03; MOL BIOL 4F03, 4H03, PHARMAC 4B03; PSYCH 2F03, 3F03, 3FA3, 3FB3, 3FF3, 3R03, 3S03, 3T03, 4F03, 4U03

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

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

6 units from CHEM 2O06, or both CHEM 2D03 and BIOCHEM 2E03

6 units from the Faculty of Humanities and/or the Department of Religious Studies

3 units Electives, excluding Biochemistry and Biology

3 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

3 units from BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03 (whichever is not completed)

6 units from Level III, IV Biology

6 units from the Course List (see above)

3 units HUMAN 2C03

6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology

6 units Electives, excluding Biology

**LEVEL IV: 30 UNITS**

6 units from the Science Inquiry Course List

6 units from Level III, IV Biology

6 units from the Course List (see above)

6 units from Level III, IV courses, excluding Biology

6 units Electives

**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 Natural Sciences I requirements, including:

6 units MATH 1A03, STATS 1CC3

6 units CHEM 1A06

6 units BIOLOGY 1A06

6 units from Level I Science Core courses

6 units from Level I Electives

1 course SCIENCE 1A00

The election of PHYSICS 1B06 (or 1A06 or 1C06) in Level I or II is recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in BIOLOGY 1A06.

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### NOTES

1. Students are advised to note carefully the prerequisites for all Levels III and IV courses listed in the following programme, particularly BIOCHEM 3G03 and 3GG3.
2. The Department of Biology has the following areas of specialization: a) Animal Physiology, b) Cell, Developmental, Molecular Biology and Biotechnology, c) Ecology, d) Genetics and Evolution, e) Microbiology, f) Plant Biology.

### COURSE LIST

All Levels III and IV Biology courses; BIOCHEM 3A03, 3AA3, 3B03, 3BB3, 3C03, 3G03, 3GG3, 3H03, 3N03, 4D03, 4E03, 4M03; ENGINEER 4X03; GEOG 3P03, 4P03; GEOLOGY 2J03, 3J03, 4D03; MOL BIOL 4F03, 4H03; PHARMAC 4B03; PSYCH 2F03, 3F03, 3FA3, 3FB3, 3FF3, 3R03, 3S03, 3T03, 4F03, 4U03

### REQUIREMENTS

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

#### LEVEL I

30 units (See Admission above.)

#### LEVEL II: 30 UNITS

21 units BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03; CHEM 2O06

3-6 units from STATS 2MA3, 2R06

3-6 units Electives, excluding Biochemistry and Biology. CHEM 2R03 is recommended.

If not completed: Science 1A00

#### 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

9 units BIOLOGY 4C09

9 units from Levels III, IV Biology

6 units from the Course List (see above)

6 units Electives

## Honours Biology and Mathematics 2050320

### ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

6 units MATH 1A03, 1AA3

6 units CHEM 1A06

6 units BIOLOGY 1A06

6 units from Level I Science Core courses

6 units from Level I Electives

1 course SCIENCE 1A00

The election of MATH 1B03 in Level I is recommended. It must be completed by the end of Level II.

### Minimum averages/grades:

A Cumulative Average of 5.0 and a grade of C+ in each of BIOLOGY 1A06 and MATH 1AA3.

### NOTES

1. Students should seek counselling for this programme in either the Department of Mathematics and Statistics or in the Department of Biology.
2. Students are advised to carefully note graduate programme requirements.
3. Students considering graduate studies in Biology are recommended to complete BIOLOGY 4C09 or BIOLOGY 4F06.
4. Students considering graduate studies in Mathematics, are recommended to complete MATH 1B03 by the end of Level I, and to select MATH 2AA3, 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.
5. Students must complete at least 9 units from Level IV courses.
6. 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

12 units MATH 2A03, 2C03, 2E03, 2R03

3 units from MATH 2S03, 2T03

3 units Electives

If not completed: MATH 1B03, SCIENCE 1A00

#### LEVEL III: 30 UNITS

(For students who entered Level II in 1995-96)

12 units from Level III, IV Biology, BIOCHEM 3G03, 3GG3 (See Note 5 above.)

6 units MATH 3F03, 3N03

6 units STATS 2D03, 2MB3

6 units Electives

If MATH 2B06 or 2J06 not completed then students must take MATH 2R03 and one of MATH 2S03, 2T03

#### LEVEL III: 30 UNITS

(Beginning in 1997-98)

12 units from Level III, IV Biology, BIOCHEM 3G03, 3GG3 (See Note 5 above.)

9 units MATH 3A03, 3F03, 3N03

3-6 units STATS 2D03, 2MB3

3-6 units Electives

#### LEVEL IV: 30 UNITS

(For students who entered Level II or III in 1995-96)

18 units from Level III, IV Biology, Mathematics, Statistics, MOL BIOL 4F03, 4H03, PHARMAC 4B03, PSYCH 4U03, 4I03 (See Note 5 above.)

12 units Electives

#### LEVEL IV: 30 UNITS

(Beginning in 1998-99)

18 units from Level III, IV Biology, Mathematics, Statistics, MOL BIOL 4F03, 4H03, PHARMAC 4B03, PSYCH 4I03, 4U03 (See Note 5 above.)

3-6 units from MATH 3AA3, 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. Selection is based on academic and other achievement (see below) but requires, as a minimum, completion of Level II an Honours Biology programme with a Cumulative Average of at least 6.0.

The student enrolment in this programme will be limited to a maximum of 25 per year. 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 be based on a self-directed problem based learning approach. PHARMAC 4B03 may be taught in a lecture format in some years.

- 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 placements.
- Students should seek academic counselling for this programme in the Department of Biology.
- No minors or Theme Schools are permitted in the Honours Biology and Pharmacology Co-op programme.

**COURSE LIST**

BIOCHEM 3G03, 3GG3, 3H03, 3N03; All Level III and IV Biology courses; GEOG 3P03, 3U03, 3UU3, 3W03, 4P03; MOL BIOL 4F03, 4H03, 4J03; PSYCH 4F03

**REQUIREMENTS**

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

**LEVEL I**

30 units from the Natural Sciences I requirements

**LEVEL II: 30 UNITS**

- 15 units BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03
- 6 units CHEM 2O06
- 3-6 units from STATS 2MA3, 2R06
- 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). If BIOCHEM 2A06 is not completed, students must take BIOCHEM 3G03, 3GG3
- 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 from PHARMAC 4F09, BIOLOGY 4L09

**YEAR 5**

15 units from Academic Level IV, Term 2, and completion of third four-month work term, Term 1.

**TERM 1**

Work Term

**TERM 2**

- 6 units from PHARMAC 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 Natural Sciences I requirements, including:

- 3 units MATH 1A03
- 3 units from MATH 1B03, 1AA3, STATS 1CC3
- 6 units CHEM 1A06
- 6 units BIOLOGY 1A06
- 6 units PSYCH 1A06
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

The election of PHYSICS 1B06 (or 1A06 or 1C06) in Level I or II is strongly recommended.

MATH 1B03 must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of BIOLOGY 1A06, CHEM 1A06, PSYCH 1A06.

**NOTES**

- Counselling for this programme is shared by the Departments of Biology and Psychology and alternates each year.
- MATH 1B03 must be completed by the end of Level II.
- In Level III or IV students must complete at least one laboratory course in Psychology (see Course List 4). Enrolment is limited for the Psychology laboratory courses.
- Students who hope to obtain scholarships should complete all 33 units of Levels II and III in the fall and winter terms.
- Students planning to do postgraduate work in Psychology or Neuroscience are strongly recommended to include one of Physics 1B06, 1A06, 1C06.
- Students who entered Level II of this programme in 1993-94 or later must complete one of BIOLOGY 4C09, 4F06 or PSYCH 4D06.
- A minor in Biochemistry is not permitted in the Honours Biology and Psychology programme.

**COURSE LIST 1**

All Level III Biology courses and BIOLOGY 2D03, 2E03, 2F03; BIOCHEM 3H03, 3N03

**COURSE LIST 2**

All Level IV Biology courses; BIOCHEM 4D03, 4E03, 4M03; MOL BIOL 4F03, 4H03; PHARMAC 4B03

**COURSE LIST 3**

All Level III and IV Psychology courses except PSYCH 3C06, 3D03, 3DD3

**COURSE LIST 4**

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

**REQUIREMENTS**

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

**LEVEL I**30 units (See *Admission* above.)**LEVEL II: 33 UNITS**

12 units BIOLOGY 2B03, 2C03; CHEM 2O06  
 6 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03  
 6 units from both PSYCH 2R03 and 2RR3 or STATS 2R06  
 9 units Electives. CHEM 2R03 is recommended.  
 If not completed: MATH 1B03, SCIENCE 1A00

**LEVEL III: 33 UNITS**

6 units BIOCHEM 3G03, 3GG3  
 12 units from Course List 1 (see above)  
 3 units from Course List 4 (see above)  
 3 units from PSYCH 2E03, 2F03, 2H03, 2T03 or all Level III Psychology courses, except PSYCH 3C06, 3CC3, 3D03, and 3DD3  
 6 units from all Level III Psychology courses, except PSYCH 3C06, 3CC3, 3D03, and 3DD3 (See *Note 3* above.)  
 3 units Electives

**LEVEL IV: 30 UNITS**

24 units from Course Lists 1, 2 and 3 (see above), including at least nine units from Course Lists 1 and 2, and at least nine units from Course List 3. One of BIOLOGY 4C09, 4F06 or PSYCH 4D06 is required.  
 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 BIOLOGY 1A06  
 18 units from Level II, III, IV Biology courses, including at least six units from Level III, IV Biology courses

**DEPARTMENT OF CHEMISTRY****NOTES**

- Students in all Chemistry programmes are required to complete three units of Computer Science before completion of Level II. Students are expected to have basic skills in the use of personal computers, word processing software and spreadsheet software. Those without these skills should enrol in COMP SCI 1SA3. Students with these skills should select COMP SCI 1MC3. Students are strongly recommended to complete this Computer Science requirement in Level I.
- Students are advised that joint Honours programmes are more challenging than single Honours programmes.

**Honours Arts & Science and Chemistry**

(B.Arts.Sc.; See Arts &amp; Science programme)

**Honours Biochemistry and Chemistry**

(See Department of Biochemistry)

**Honours Chemistry**

2072

**(Complementary Studies Option)****ADMISSION**

Completion of the Natural Sciences I requirements, including:  
 9 units MATH 1A03, 1AA3, 1B03  
 6 units CHEM 1A06  
 9 units from Level I Science Core courses  
 6 units from Level I Electives  
 1 course SCIENCE 1A00

One of PHYSICS 1A06, 1B06, 1C06 must be completed by the end of Level II; its election in Level I is strongly recommended.

COMP SCI 1MC3 (or 1SA3) must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in CHEM 1A06.

**NOTES**

- This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

- COMP SCI 2MF3, MATH 2O03, and PHYSICS 2A03 or 2B06 are recommended electives.
- 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.
- In some cases there are Level II (and III) prerequisites for Level III (and Level IV) courses. The prerequisites should be considered when choosing your Level II (III) programme.
- Students who wish to transfer from Level II of the B.Sc. in Physical Science to Level III of Honours Chemistry (Complementary Studies Option) must attain a CA of at least 6.0 including CHEM 2A03, 2B06 or 2O06, 2C03 and 2P06 and MATH 2A03 or 2N03 or both MATH 2G03 and 2O03.
- Students who wish to transfer from Level III of the B.Sc. in Physical Science to Level IV of the Honours Chemistry (Complementary Studies Option) must attain a CA of at least 6.0 including CHEM 2A03, 2B06 or 2O06, 2C03 and 2P06 and MATH 2A03 or 2N03 or both MATH 2G03 and 2O03, CHEM 3A03, 3B06 (or 3B03 and 3C03), 3D03 and 3Q03.

**REQUIREMENTS**

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

**LEVEL I**30 units (See *Admission* above.)**LEVEL II: 30 UNITS**

18 units CHEM 2A03, 2B06; 2C03, 2P06  
 3 units MATH 2A03  
 6 units from the Faculty of Humanities and/or the Department of Religious Studies  
 3 units Electives, excluding Chemistry  
 If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, and one of PHYSICS 1A06, 1B06, 1C06

**LEVEL III: 30 UNITS**

15 units CHEM 3A03, 3B06, 3D03, 3Q03  
 3 units HUMAN 2C03  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Chemistry

**LEVEL IV: 30 UNITS**

6 units from the Science Inquiry Course List  
 6 units CHEM 4T06  
 6 units from Level IV Chemistry  
 6 units Electives from Level III, IV, excluding Chemistry  
 6 units Electives

**Honours Chemistry (Specialist Option) 2070****ADMISSION**

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03  
 6 units CHEM 1A06  
 9 units from Level I Science Core courses  
 6 units from Level I Electives  
 1 course SCIENCE 1A00

PHYSICS 1A06 (or 1B06 or 1C06) must be completed by the end of Level II; its election in Level I is strongly recommended.

COMP SCI 1MC3 (or 1SA3) must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in CHEM 1A06.

**Notes**

- This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
- For students interested in physical chemistry recommended electives throughout the programme include MATH 2O03 (or 2C03), STATS 1CC3, 2MA3 and MATH 3C03, 3D03.

**REQUIREMENTS**

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

**LEVEL I**  
30 units (See Admission above.)

**LEVEL II: 30 UNITS**  
18 units CHEM 2A03, 2B06, 2C03, 2P06  
3 units MATH 2A03  
1 course from PHYSICS 2A03, 2B06  
3-6 units Electives, excluding Chemistry

If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, and one of PHYSIOS 1A06, 1B06, 1C06

**LEVEL III: 30 UNITS**  
21 units CHEM 3A03, 3B06, 3D03, 3E06, 3Z03  
6 units Electives, excluding Chemistry  
3 units Electives

**LEVEL IV: 30 UNITS**  
6 units from CHEM 4G06, 4T06  
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. 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 Applied Chemistry or Honours Biological Chemistry or Honours Biochemistry and Chemistry with a Cumulative Average of at least 6.0.

Enrolment in this programme will be limited to a maximum of 10 students per year. 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**
- This is a five-year co-op programme which includes two eight-month work terms which must be spent in Chemistry-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.
  - No minors or Theme Schools are permitted in the Honours Chemistry (Co-op) programme.
  - 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.
  - This programme is based on the requirements of the Honours Chemistry (Complementary Studies Option) programme.
  - Students considering postgraduate studies in Chemistry should note that 18 units of Level IV Chemistry are required for consideration for admission at McMaster.
  - This programme fulfills the academic requirements for membership in the Chemical Institute 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 Natural Sciences I requirements

**LEVEL II**  
30 units from Level II of Honours Chemistry (Complementary Studies Option), Honours Chemistry (Specialist Option), Honours Applied Chemistry, Honours Biological Chemistry, or Honours Biochemistry and Chemistry

**Year 3**  
15 units from Academic Level III, Term 1, plus Work Orientation course, and first work term of eight months duration, Term 2 and Summer term.

**TERM I**  
6 units CHEM 3A03, 3Q03  
3 units HUMAN 2C03  
6 units Electives, excluding Chemistry  
→ Work Orientation Course

**TERM 2 AND SUMMER**  
Work Term

**Year 4**  
(Beginning in 1997-98)  
30 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer term.

**TERMS 1 AND 2**  
15 units CHEM 3B06, 3D03, 3I03, 4TA3  
3 units from the Science Inquiry Course List  
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
6 units from Level III, IV courses, excluding Chemistry

**SUMMER**  
Work Term  
**Year 5**  
(Beginning in 1998-99)  
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 CHEM 4TB3  
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 Applied Chemistry 2015**

**ADMISSION**  
Completion of the Natural Sciences I requirements, including:  
9 units MATH 1A03, 1AA3, 1B03  
6 units CHEM 1A06  
9 units from Level I Science Core courses  
6 units from Level I Electives  
1 course SCIENCE 1A00

PHYSICS 1A06 (or 1B06 or 1C06) must be completed by the end of Level II; its election in Level I is strongly recommended.  
COMP SCI 1MC3 (or 1SA3) must be completed by the end of Level II.

**Minimum averages/grades:**  
A Cumulative Average of 5.0 and a grade of C+ in CHEM 1A06.

**NOTES**  
1. Level II of the Honours Applied Chemistry programme will not be offered after August 1997. An Honours Chemistry Co-op programme begins in Level III and admission is from Level II of a number of Honours Chemistry programmes. Students interested in applied chemistry should consider one of those programmes.

2. This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
3. Recommended electives throughout the programme include ENGINEER 2O03; MATLS 2C04, 4D03, 4E03; METALL 3C03, 4C04, 4N03; CHEM ENG 3D03, 3P03, 3Q03, 4C03, 4K03, 4N04; BUSINESS 3W06, 3X03, 3Y03, 3Z03; PHYSICS 2A03.

**REQUIREMENTS**

123-24 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: 32 UNITS**

(Last offered in 1996-97)

12 units CHEM 2A03, 2B06, 2C03

8 units CHEM ENG 2D04, 2F04

3 units MATH 2A03

9 units Electives, excluding Chemistry

If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, and one of PHYSICS 1A06, 1B06, 1C06

**LEVEL III: 31 UNITS**

(Last offered in 1997-98)

22 units CHEM 3B06, 3D03, 3E06, 3I03;

CHEM ENG 3M04

9 units Electives, excluding Chemistry

**LEVEL IV: 30-31 UNITS**

(Last offered in 1998-99)

3 units CHEM 3A03

6 units from CHEM 4G06, 4T06

3-4 units from CHEM 3Z03, CHEM ENG 3K04

6 units from Level IV Chemistry, Chemical Engineering

3 units from Level III, IV Science, Engineering

9 units Electives

**Honours Biological Chemistry 2048****ADMISSION**

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03

6 units CHEM 1A06

6 units BIOLOGY 1A06

3 units from Level I Science Core courses

6 units from Level I Electives

1 course SCIENCE 1A00

PHYSICS 1A06 (or 1B06 or 1C06) must be completed by the end of Level II; its election in Level I is strongly recommended.

COMP SCI 1MC3 (or 1SA3) must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in CHEM 1A06.

**NOTES**

1. This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
2. A minor in Biochemistry is not permitted in the Honours Biological Chemistry 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**

3 units BIOLOGY 2B03

18 units CHEM 2A03, 2B06, 2C03, 2P06

3 units MATH 2A03

6 units Electives, excluding Chemistry.

If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, and one of PHYSICS 1A06, 1B06, 1C06

**LEVEL III: 30 UNITS**

9 units BIOCHEM 3G03, 3GG3; BIOLOGY 2C03

9 units CHEM 3A03, 3B06

3 units from CHEM 3D03, 3F03

3-6 units from CHEM 3E06, 3Q03

3-6 units Electives.

**LEVEL IV: 30 UNITS**

9 units BIOCHEM 4I03; CHEM 4D03, 4DD3

6 units from CHEM 4G06, 4T06

3 units from BIOCHEM 3L03, Level IV Biochemistry

3 units from Level III, IV Biology

3 units Electives, excluding Biology

6 units Electives

**Honours Chemistry and Geology 2070250****ADMISSION**

Completion of Natural Sciences I, including:

9 units MATH 1A03, 1AA3, 1B03

6 units CHEM 1A06

3-6 units from GEOLOGY 1C03, ENVIR SC 1A06

3-6 units from Level I Science Core courses

6 units from Level I Electives

1 course SCIENCE 1A00

The election of PHYSICS 1A06 is recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in CHEM 1A06 and either GEOLOGY 1C03 or ENVIR SC 1A06.

**NOTES**

1. This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
2. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 2E01 is taken during the regular term of Level II.
3. Students should seek counselling for this programme in the Department of Chemistry.

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 33 UNITS**

15 units CHEM 2B06, 2C03, 2P06

15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2

3 units MATH 2A03

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

15 units CHEM 2A03, 3B06, 3E06

9 units GEOLOGY 3C03, 3G03, 3Q03

3 units from GEOLOGY 2I03, 2J03

3 units Electives

**LEVEL IV: 30 UNITS**

3 units CHEM 3A03

6 units from Level III, IV Chemistry

6 units from Level III, IV Geology

6 units from Level III, IV Chemistry, Geology

9 units Electives

**Honours Chemistry and Mathematics 2070320****ADMISSION**

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03

6 units CHEM 1A06

9 units from Level I Science Core courses

6 units from Level I Electives

1 course SCIENCE 1A00

COMP SCI 1MC3 (or 1SA3) and one of PHYSICS 1A06, 1B06, 1C06 must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of CHEM 1A06, MATH 1A03, 1AA3.



**NOTES**

1. This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
2. Students should seek counselling for this programme in either the Department of Chemistry or in the Department of Mathematics and Statistics.
3. A minor in Statistics is not permitted in the Honours Chemistry and Mathematics programme.
4. Students interested in graduate school in Mathematics should consider taking MATH 3E03, 3EE3.
5. Students interested in graduate studies in Chemistry at McMaster must take 18 units of Level IV Chemistry.

**REQUIREMENTS**

120 units total (Levels I to IV), of which no more than 48 units may be Level I courses and with at least 12 units from Level IV courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

15 units CHEM 2B06, 2C03, 2P06  
 9 units MATH 2A03, 2C03, 2R03  
 3 units from MATH 2S03, 2T03  
 3 units from MATH 2AA3, 2E03; STATS 2D03  
 If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, one of PHYSICS 1A06, 1B06, 1C06

**LEVEL III: 30 UNITS**

(For students who entered Level II in 1995-96)

15 units CHEM 2A03, 3B06, 3D03, 3Q03  
 6 units MATH 3F03, 3FF3  
 6 units from MATH 2R03, 2S03 (or 2T03), Level III, IV Mathematics, Level II, III, IV Statistics  
 3 units Electives, excluding Chemistry  
 If MATH 2J06 (or 2B06) not completed, then students must take MATH 2R03 and one of MATH 2S03, 2T03

**LEVEL III: 30 UNITS**

(Beginning in 1997-98)

15 units CHEM 2A03, 3B06, 3D03, 3Q03  
 12 units MATH 3A03, 3F03, 3FF3, 3X03  
 3 units Electives

**LEVEL IV: 30 UNITS**

(For students who entered Level III in 1995-96 and 1996-97)

6 units CHEM 4G06  
 3 units MATH 4Q03  
 6 units from Level III, IV Chemistry  
 6 units from Level III, IV Mathematics  
 6 units from Level III, IV Chemistry, Mathematics, Statistics  
 3 units Electives

**LEVEL IV: 30 UNITS**

(Beginning in 1998-99)

6 units CHEM 4G06  
 9 units MATH 3AA3, 4Q03, 4X03  
 6 units from Level III, IV Chemistry  
 6 units from Level III, IV Chemistry, Mathematics, Statistics  
 3 units Electives

**Honours Chemistry and Physics 2070440****ADMISSION**

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03  
 6 units CHEM 1A06  
 6 units from PHYSICS 1A06, 1B06, 1C06  
 3 units from Level I Science Core courses  
 6 units from Level I Electives  
 1 course SCIENCE 1A00

Students will be considered for admission if they have completed PHYSICS 1B06 (or 1C06) instead of 1A06. However, PHYSICS 1A06 is strongly recommended.

COMP SCI 1MC3 (or 1SA3) must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of CHEM 1A06, MATH 1A03, 1AA3, PHYSICS 1A06 (or 1B06 or 1C06).

**NOTES**

1. This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.
2. Students should seek counselling for this programme in the Department of Chemistry.
3. A minor in Astronomy is not permitted in the Honours Chemistry and Physics programme.

**REQUIREMENTS**

127 to 131 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 33 UNITS**

15 units CHEM 2B06, 2C03, 2P06  
 3 units MATH 2A03  
 3 units from MATH 2C03, 2O03  
 9 units PHYSICS 2B06, 2D03  
 3 units Electives

If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3

**LEVEL III: 33-34 UNITS**

12 units CHEM 2A03, 3B06, 3Q03  
 6 units MATH 3C03, 3D03  
 6 units PHYSICS 3M03, 3MM3  
 6-10 units from PHYSICS 3B06, 3K04, 3N03  
 0-3 units Electives. (Courses which are prerequisites for desired Level IV courses should be considered.)

**LEVEL IV: 31-34 UNITS**

6 units CHEM 4B03; PHYSICS 4F03  
 1 course from CHEM 4G06, PHYSICS 4J04, 4Q04  
 13-18 units from Level III, IV Astronomy, Chemistry, Physics, including either CHEM 4Y03 or PHYSICS 3K04  
 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 CHEM 1A06  
 18 units Level II, III, IV Chemistry courses, including at least 6 units from Level III, IV Chemistry courses

**DEPARTMENT OF  
COMPUTER SCIENCE AND SYSTEMS****Honours Economics and Computer Science  
(B.A.; See Faculty of Social Sciences, Department of Economics)****Honours Arts & Science and  
Computer Science  
(B.Arts Sc.; See Arts & Science programme)****Honours Computer Science 2147  
(Complementary Studies Option)****ADMISSION**

Completion of any Level I programme, including:

9 units MATH 1A03, 1AA3, 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**

- Students may choose their electives to complete a minor or some other coherent set of courses, such as:
  - Numerical Analysis: MATH 3Q03, 4Q03, 4QQ3 and 4RR3
  - Hardware: PHYSICS 2B06, 3B06, 4D06.
- 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) programme.
- A minor in Mathematics 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**

- 6 units COMP SCI 2MD3, 2MF3
  - 6 units from COMP SCI 2MC3, 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 3CA3, 3GA3, 3IA3, 3TA3
- 3 units from COMP SCI 2ME3, MATH 2G03, 3B03
- 3 units HUMAN 2C03
- 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
- 6 units Electives, excluding Computer Science

**LEVEL IV: 30 UNITS**

- 6 units COMP SCI 3EA3, 3MI3
- 6 units from COMP SCI 4ZP6 or the Science Inquiry Course List
- 6 units from Level IV Computer Science, excluding COMP SCI 4MP6, 4ZI3, 4ZP6
- 6 units Electives from Level III, IV, excluding Computer Science
- 6 units Electives

## Honours Computer Science (Specialist Option) 2145

**ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1AA3, 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**

- Students may choose their electives to complete a Minor or some other coherent set of courses, such as:
  - Numerical Analysis: MATH 3Q03, 4Q03, 4QQ3 and 4RR3
  - Hardware: PHYSICS 2B06, 3B06, 4D06
- 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 of specialization are satisfied.
- Students are encouraged to specialize in Level III and IV by choosing one of the following sets of courses:
  - Computer Systems: three of COMP SCI 4CB3, 4CC3, 4CD3, 4TB3
  - Software Engineering: three of COMP SCI 4EB3, 4EC3, 4ED3, 4TB3

- Artificial Intelligence: three of COMP SCI 4IB3, 4IC3, 4EB3, MATH 4C03, 4J03
  - Theory of Computation: three of COMP SCI 4TB3, 4TC3, 4TD3, 4GB3, MATH 4C03, 4J03
5. A minor in Mathematics is not permitted in the Honours Computer Science (Specialist Option) programme.

**COURSE LIST**

All Level III and IV Computer Science (excluding COMP SCI 4ZI3), Mathematics and Statistics courses and PHYSICS 3B06, 4D06

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

Students entering from a Faculty other than the Faculty of Science must complete the requirements of the Natural Sciences I programme before entry to Level IV.

**LEVEL II: 30 UNITS**

- 6 units COMP SCI 2MD3, 2MF3
  - 6 units from COMP SCI 2MC3, 2MJ3, 2SC3
  - 6 units MATH 2A03, 2AA3
  - 3 units MATH 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 3CA3, 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 (See Note 4 above.)
- 6 units Electives

## Honours Computer Science and Mathematics 2145320

**ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1AA3, 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, MATH 1AA3, 1B03.

**NOTE**

A minor in 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; PHYSICS 2C03, 2D03; 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 from COMP SCI 2MC3, 2MD3, 2MF3, 2SC3
- 12 units MATH 2A03, 2AA3, 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 3CA3, 3EA3, 3GA3, 3IA3, 3TA3
- 6 units MATH 3A03, 3X03
- 3 units from Level III, IV Mathematics, Statistics
- 6 units Electives

**LEVEL IV: 30 UNITS**

(for students entering Level IV in 1996-97)

- 6 units COMP SCI 4MP6
- 3 units from MATH 3X03, 4C03, 4J03, 4Q03, 4S03
- 6 units from Level III, IV Mathematics, Statistics
- 3 units from the Course List (see above)
- 6 units Electives, excluding Computer Science, Mathematics, Statistics
- 6 units Electives

**LEVEL IV: 30 UNITS**

(Beginning in 1997-98)

- 6 units COMP SCI 4MP6
- 3 units from MATH 3AA3, 4C03, 4J03, 4Q03, 4S03, 4X03
- 6 units from Level III, IV Mathematics, Statistics
- 3 units from the Course List (see above)
- 6 units Electives, excluding Computer Science, Mathematics, Statistics
- 6 units Electives

**Honours Computer Science and Psychology 2145460**

**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

- 9 units MATH 1A03, 1AA3, 1B03
- 6 units from CHEM 1A06, PHYSICS 1B06, 1A06, 1C06
- 6 units COMP SCI 1MC3, 1MD3
- 6 units PSYCH 1A06
- 3 units Level I Electives
- 1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of COMP SCI 1MC3, 1MD3, MATH 1AA3, PSYCH 1A06.

**NOTE**

In Level III or IV students must complete at least one laboratory course in Psychology (see the Course List). Enrolment is limited in the laboratory courses, and permission of the department must be obtained in March.

**COURSE LIST**

PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

- 9 units from COMP SCI 2MC3, 2MD3, 2MF3, 2SC3
  - 3 units MATH 2R03
  - 3 units from MATH 2S03, 2T03
  - 9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
  - 3-6 units from either one of STATS 2MA3, 2MB3, 2R06, or both PSYCH 2R03 and 2RR3
  - 0-3 units Electives
- If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

- 9 units COMP SCI 3MG3, 3MH3, 3MI3
- 3 units from COMP SCI 3CA3, 3EA3, 3IA3, 3TA3
- 3 units from COMP SCI 2ME3, 2MJ3, Level III, IV Computer Science (excluding COMP SCI 4ZI3)
- 12 units from Level III Psychology, PSYCH 4G03, 4QQ3, including at least one course from the Course List (see above)
- 3 units Electives

**LEVEL IV: 30 UNITS**

- 6 units from COMP SCI 4MP6 or PSYCH 4D06 (the project or thesis must be approved by the Chairs of both departments)
- 12 units from Level III, IV Computer Science, excluding COMP SCI 4ZI3
- 9 units from Level III, IV Psychology
- 3 units Electives

**Honours Computer Science and Statistics 2145542**

**ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1AA3, 1B03
- 6 units COMP SCI 1MC3, 1MD3
- 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 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, 2AA3, 2R03, 2S03, STATS 2D03
  - 6 units Electives
- If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

- 12 units COMP SCI 2ME3, 3MG3, 3MH3, 3MI3
- 3 units from MATH 2C03, 2O03
- 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 3CA3, 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
- 3 units Electives, excluding Computer Science, Mathematics, Statistics

**B.Sc. Three-Level Degree**

A three-level programme with a Computer Science orientation is available through the **B.Sc. in Mathematical Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

**Minor in Computer Science**

- 6 units from COMP SCI 1MC3, 1MD3 or (1MA3, 1MB3)
- 3 units from COMP SCI 2MC3, 2SC3
- 15 units from Level II, III, IV Computer Science, including at least six units from Level III, IV Computer Science

**DEPARTMENT OF GEOGRAPHY**

**Honours Geography (B.A.) and  
B.A. in Geography and  
Honours Geography and Geology (B.A.)  
and  
Honours Geography and Environmental  
Studies (B.A.)**

(See B.A. programmes in Geography, Faculty of Social Sciences,  
Department of Geography)

**Honours Arts & Science and Geography**

(B.Arts Sc.; See Arts & Science programme)

**Honours Geography (B.Sc.) 2241**

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units from CHEM 1A06, PHYSICS 1B06, 1A06, 1C06
- 6 units GEOG 1C03, 1G03
- 6 units from BIOLOGY 1A06, ENVIR SC 1A06
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of GEOG 1C03, 1G03.

**COURSE LIST**

GEOG 3C03, 3F03, 3G03, 3I03, 3J03, 3K03, 3L03, 3M03, 3N03, 3NN3, 3P03, 3U03; 3UU3, 3W03, 4A03, 4C06, 4CC3, 4D03, 4E03, 4H03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 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**

18 units GEOG 2F03, 2K03, 2N03, 2T03, 2W03, 3E03  
12 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

(For students who entered Level II in 1995-96)

6 units GEOG 3E03, 3O03  
12 units from the Course List (see above)  
6 units Electives, excluding Geography  
6 units Electives

**LEVEL III: 30 UNITS**

(Beginning in 1997-98)

3 units GEOG 3O03  
15 units from the Course List (see above)  
6 units Electives, excluding Geography  
6 units Electives

**LEVEL IV: 30 UNITS**

1 course from GEOG 4C06, 4CC3  
12-15 units from the Course List (see above), including at least nine units from Level IV courses  
6 units Electives, excluding Geography  
6 units Electives

**Honours Geography and  
Environmental Science (B.Sc.) 2242**

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03; STATS 1CC3
- 6 units CHEM 1A06
- 6 units GEOG 1C03, 1G03
- 6 units ENVIR SC 1A06
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in ENVIR SC 1A06 or in each of GEOG 1C03, 1G03.

**COURSE LIST 1**

GEOG 3F03, 3G03, 3K03, 3M03, 3N03, 3NN3, 3P03, 3W03, 4A03, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03; GEOLOGY 4S03, 4W03

**COURSE LIST 2**

BIOLOGY 3FF3, 3R03, 3SS3, 3TT3, 4A03, 4AA3, 4J03, 4Y03, ENGSOCY 3Z03

**COURSE LIST 3**

BIOLOGY 2D03, 2E03, GEOLOGY 2C03, 2K03

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

9 units BIOCHEM 2E03, BIOLOGY 2F03, CHEM 2D03  
3 units GEOG 2N03  
9 units from GEOG 2F03, 2K03, 2T03, 2W03  
9 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

18 units GEOG 3C03, 3E03, 3J03, 3O03, 3U03, 3UU3  
3 units from Course Lists 2 and 3 (see above)  
3 units from Course Lists 1 and 2 (see above)  
6 units Electives

**LEVEL IV: 30 UNITS**

6 units GEOG 4VV6  
9 units from Course Lists 2 and 3 (see above)  
9 units from Level IV courses from Course Lists 1 and 2 (see above.)  
6 units Electives

**Honours Geography and  
Environmental Science Co-op (B.Sc.) 2244**

**ADMISSION**

**Enrolment in this programme is limited.** 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.

**Enrolment in this programme will be limited to a maximum of 10 students per year.** 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 three four-month work terms which must be spent in placements related to Environmental Science. A senior thesis will be completed as part of Level IV.
2. Students must be registered full-time and take a full academic programme.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. No minors or Theme Schools are permitted in the Honours Geography and Environmental Science Co-op programme.
5. At least nine units of Level IV courses from Course Lists 1 and 2 must be completed after Year 3.

**COURSE LIST 1**

GEOG 3F03, 3G03, 3K03, 3M03, 3N03, 3NN3, 3P03, 3W03, 4A03, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03; GEOLOGY 4S03, 4W03

**COURSE LIST 2**

BIOLOGY 3FF3, 3R03, 3SS3, 3TT3, 4A03, 4AA3, 4J03, 4Y03, ENGSOCY 3Z03

**COURSE LIST 3**

BIOLOGY 2D03, 2E03, GEOLOGY 2C03, 2K03

**REQUIREMENTS**

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

**LEVEL I**  
30 units from the Natural Sciences I requirements

**LEVEL II**  
30 units from Level II Honours Geography and Environmental Science (B.Sc.)

**YEAR 3**  
30 units from Academic Level III, Terms 1 and 2, plus Work Orientation course, and completion of first four-month work term, Summer Term.

**TERMS 1 AND 2**  
18 units GEOG 3C03, 3E03, 3J03, 3O03, 3U03, 3UU3  
3 units from Course Lists 2 and 3 (see above)  
3 units from Course Lists 1 and 2 (see above)  
6 units Electives  
→ Work Orientation Course

**SUMMER**  
Work Term

**YEAR 4**  
24 units from Academic Studies Level IV, Term 1, completion of second four-month work term, Term 2, plus senior thesis, Summer Term.

**TERM 1**  
3 units GEOG 4CC3  
3 units from Course Lists 2 and 3 (see above)  
6 units from Course Lists 1 and 2 (see above) (At least nine units of Level IV courses from Course Lists 1 and 2 must be completed after Year 3)

3 units Electives

**TERM 2**  
Work Term

**SUMMER**  
9 units GEOG 4B09

**YEAR 5**  
15 units from Academic Level IV, Term 2, and completion of third four-month work term, Term 1.

**TERM 1**  
Work Term

**TERM 2**  
6 units from Course Lists 2 and 3 (see above)  
6 units from Course Lists 1 and 2 (see above)  
3 units Electives

	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 Geography and Geology (B.Sc.)**

2241250

**ADMISSION**

Completion of the Natural Sciences I requirements, including:  
6 units MATH 1A03, STATS 1CC3  
6 units from CHEM 1A06, PHYSICS 1A06, 1B06, 1C06  
6 units GEOG 1C03, 1G03,  
3-6 units from ENVIR SC 1A06; GEOLOGY 1C03  
0-3 units from Level I Science Core courses  
6 units from Level I Electives  
1 course SCIENCE 1A00  
CHEM 1A06 must be completed by the end of Level II.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of GEOG 1C03, 1G03 and one of GEOLOGY 1C03, ENVIR SC 1A06.

**NOTES**

- Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
- Students must take GEOLOGY 3S03 in Level III or IV when offered.

**COURSE LIST 1**

GEOG 4A03, 4C06, 4CC3, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4W03

**COURSE LIST 2**

All Level IV Geology courses

**COURSE LIST 3**

GEOG 3C03, 3F03, 3I03, 3K03, 3L03, 3N03, 3NN3, 3P03, 3U03, 3UU3, 3V03, 3W03

**COURSE LIST 4**

All Level III Geology courses

**REQUIREMENTS**

120-123 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

6 units GEOG 2N03, 2T03  
6 units from GEOG 2F03, 2K03, 2W03  
15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2  
3 units from Science, Engineering  
If not completed: CHEM 1A06, SCIENCE 1A00

**LEVEL III: 30 UNITS**

9 units GEOG 3E03, 3M03, 3O03  
3 units from GEOG 3F03, 3K03, 3N03, 3NN3, 3P03, 3U03, 3UU3, 3W03  
6 units GEOLOGY 3C03, 3S03  
3 units from GEOLOGY 2I03, 2J03, 3F03,  
3 units Electives, excluding Geography, Geology  
6 units Electives

**LEVEL IV: 30 UNITS**

6 units from Course List 1 (see above)  
6 units from Course List 2 (see above)  
9 units from Course Lists 1, 2, 3 and 4 (see above)  
9 units Electives  
If not completed: GEOLOGY 3S03

**B.Sc. Three-Level Degree**

A three-level programme with a Geography orientation is available through the B.Sc. in Earth Science which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

**Minor in Geography**

6 units from Level I Geography  
18 units from Level II, III, IV Geography courses, including at least six units of Level III, IV courses  
No more than six units may come from GEOG 2C03, 2E03, 2P03, 3JJ3 and 3R03. It is possible for a student to complete this Minor through evening and summer study.

**DEPARTMENT OF GEOLOGY**

**Honours Chemistry and Geology**

(See Department of Chemistry)

**Honours Geography and Geology (B.Sc.)**

(See Department of Geography)

**Honours Geography and Geology (B.A.)**

(See Faculty of Social Sciences, Department of Geography)

**Honours Geology  
(Complementary Studies Option)**

2252

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units CHEM 1A06
- 6 units from BIOLOGY 1A06, PHYSICS 1A06, 1B06, 1C06
- 3-6 units from GEOLOGY 1C03, ENVIR SC 1A06
- 0-3 units from Level I Science Core courses
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

The election of PHYSICS 1A06 (or 1B06 or 1C06) in Level I or II is strongly recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in GEOLOGY 1C03 or ENVIR SC 1A06.

**NOTES**

1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. In some cases there are Level II (and III) prerequisites for Level III and (Level IV) courses. These should be considered when choosing your Level II (III) programme.

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above)

**LEVEL II: 30 UNITS**

- 15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
- 3 units from GEOLOGY 2I03, 2J03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies
- 6 units Electives, excluding Geology. The election of GEOG 2N03 is strongly recommended.

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

- 12 units from Level III, IV Geology
- 3 units HUMAN 2C03
- 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology
- 6 units Electives, excluding Geology
- 3 units Electives

**LEVEL IV: 30 UNITS**

- 6 units from the Science Inquiry Course List
- 15 units from Level III, IV Geology
- 6 units from Level III, IV courses, excluding Geology
- 3 units Electives

**Honours Geology (Specialist Option) 2250****ADMISSION**

Completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, STATS 1CC3
- 6 units CHEM 1A06
- 6 units from PHYSICS 1A06, 1B06, 1C06
- 3-6 units from GEOLOGY 1C03, ENVIR SC 1A06
- 0-3 units from Level I Science Core courses
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in GEOLOGY 1C03 or ENVIR SC 1A06.

**NOTES**

1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. Students must take GEOLOGY 3S03 in Level III or IV when offered.

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

- 3 units CHEM 2R03
- 3 units GEOG 2N03
- 15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
- 6 units GEOLOGY 2I03, 2J03
- 3 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

- 9 units GEOLOGY 3C03, 3F03, 3G03
- 6 units GEOLOGY 3J03, 3Q03
- 3 units Electives, excluding Geology
- 12 units Electives

**LEVEL IV: 30 UNITS**

- 3 units GEOLOGY 4T03
- 15 units from Level IV Geology
- 12 units Electives

If not completed: GEOLOGY 3S03

**Honours Geology and Physics 2250440****ADMISSION**

Completion of the Natural Sciences I requirements, including:

- 9 units MATH 1A03, 1AA3, 1B03
- 6 units CHEM 1A06
- 6 units PHYSICS 1A06
- 3-6 units from GEOLOGY 1C03, ENVIR SC 1A06
- 0-3 units from Level I Science Core courses
- 3 units from Level I Electives
- 1 course SCIENCE 1A00

Students will also be considered for admission if they have completed PHYSICS 1B06 (or 1C06) instead of PHYSICS 1A06. However, PHYSICS 1A06 is strongly recommended.

The election of COMP SCI 1MC3 is strongly recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in either GEOLOGY 1C03 or ENVIR SC 1A06 and either a C+ in PHYSICS 1A06 (or 1B06 or 1C06) or an average of 6.0 in 6 units of Level I Mathematics.

**NOTES**

1. Students must register for GEOLOGY 2EE2 in Level II, but normally take it immediately after the April exam period. GEOLOGY 4A03 is normally taken in the summer after Level III, but is included in the Level IV registration.
2. GEOLOGY 3A03 and 3B03 must be completed but are offered in alternate years. These courses should be taken when they are offered.
3. A minor in Astronomy is not permitted in the Honours Geology and Physics programme.

**REQUIREMENTS**

124 units total (Levels I to IV), of which no more than 48 units may not be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 33 UNITS**

- 15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2
- 3 units GEOLOGY/PHYSICS 2I03
- 3 units MATH 2A03
- 3 units from MATH 2C03, 2O03
- 9 units PHYSICS 2B06, 2D03

If not completed: SCIENCE 1A00

*Many Math + Stats pro have several versions for the same year level because some upper level math courses have been rearranged + some divided*  
*Required with new courses + some 6 credit split into 2 three credit*

**LEVEL III: 30 UNITS**

- 3 units GEOLOGY 3C03
- 3 units from GEOLOGY 3A03, 3B03
- 3 units GEOLOGY 3F03
- 6 units MATH 3C03, 3D03
- 3-6 units from PHYSICS 2H03, CHEM 2P06
- 6 units PHYSICS 3M03, 3MM3
- 3-6 units Electives

**LEVEL IV: 31 UNITS**

- 3 units GEOLOGY 4T03
- 3 units from GEOLOGY 3A03, 3B03
- 7 units PHYSICS 4B04, 4K03
- 9 units from Level III, IV Astronomy, Geology, Physics
- 9 units Electives

**B.Sc. Three-Level Degree**

A three-level programme with a Geology orientation is available through the **B.Sc. in Earth Science** which is listed under the heading *Three-Level B.Sc. Programmes* in this section.

**Minor in Geology**

- 3-6 units from ENVIR SC 1A06 or GEOLOGY 1C03
- 18-21 units from Level II, III and IV Geology courses, including at least six units from Level III, IV Geology courses.

An emphasis on environmental geology can be obtained by selection of GEOLOGY 2K03, 4C03, 4I03, 4QQ3, and 4W03.

**MATERIALS SCIENCE AND ENGINEERING**

**Honours Materials Science (Specialist Option)**

2360

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

- 9 units MATH 1A03, 1AA3, 1B03
- 6 units CHEM 1A06
- 6 units from PHYSICS 1A06, 1B06, 1C06
- 3 units from Level I Science Core courses
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

COMP SCI 1MC3 must be completed by the end of Level II. PHYSICS 1A06 is recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of at least C+ in each of CHEM 1A06, 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 from MATH 1N03, 1NN3, 1N06
- 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**

124-129 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 34-37 UNITS**

- 4 units CHEM 2WW4
  - 6 units MATH 2A03, 2O03
  - 7 units ENGINEER 2O03 (unless MATLS 1A03 already taken), 2P04
  - 11 units MATLS 2B06, 2H03, 2X02
  - 6 units PHYSICS 2B06
- If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3

**LEVEL III: 31-32 UNITS**

- 16 units MATLS 3A03, 3E04, 3I05, 3T04
- 3 units MATH 3I03
- 3 units from STATS 3N03, 3Y03
- 3 units from PHYSICS 3O03, 3M03
- 6-7 units Electives

**LEVEL IV: 29-30 UNITS**

- 8 units MATLS 4A02, 4K04, 4L02
- 15-16 units from the Course List (see above)
- 6 units Electives, excluding Astronomy, Chemistry, Computer Science, Engineering, Engineering Physics, Materials, Mathematics, Physics, Statistics

**Minor in Materials Properties**

- 3 units from ENGINEER 2O03, MATLS 1A03
- 20 units MATLS 2B06, 2X02, 3A03, 3I05, 3T04

**NOTE**

In order to meet prerequisite requirements, at least 6 units of appropriate Level II Mathematics must be taken.

**Minor in Materials Processing**

- 3 units from ENGINEER 2O03, MATLS 1A03
- 20 units MATLS 2B06, 3A03, 3B03, 3E04, 4B04

**NOTE**

In order to meet prerequisite requirements, at least 6 units of appropriate Level II Mathematics must be taken.

**DEPARTMENT OF MATHEMATICS AND STATISTICS**

**Honours Biology and Mathematics**

(See Department of Biology)

**Honours Chemistry and Mathematics**

(See Department of Chemistry)

**Honours Computer Science and Mathematics**

(See Department of Computer Science and Systems)

**Honours Computer Science and Statistics**

(See Department of Computer Science and Systems)

**Honours Economics and Mathematics**

(B.A.; See Faculty of Social Sciences, Department of Economics)

**Honours Philosophy and Mathematics**

(B.A.; See Faculty of Humanities, Department of Philosophy)

**Honours Arts & Science and Mathematics**

(B.Arts Sc.; See Arts & Science programme)

**Honours Mathematics**

2323

**(Complementary Studies Option)**

**ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1AA3, 1B03
- 21 units Level I courses to complete a Level I programme

**Minimum grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**NOTES**

1. Students contemplating graduate studies in Mathematics should consider Honours Mathematics (Specialist Option) or (Applied Option).
2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These should be considered when choosing your Level II (and III) programme.
3. A minor in Statistics is not permitted in the Honours Mathematics (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**

15 units MATH 2A03, 2AA3, 2C03, 2R03, STATS 2D03  
 3 units MATH 2S03, 2T03  
 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**

(For students who entered Level II in 1995-96)

15 units from Level III, IV Mathematics, Statistics, MATH 2K03, STATS 2MB3  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Mathematics, Statistics  
 3 units Electives

**LEVEL III: 30 UNITS**

(Beginning in 1997-98)

9 units from MATH 3A03, 3E03, 3X03  
 6 units from Level III, IV Mathematics, Statistics, MATH 2K03, STATS 2MB3  
 3 units from HUMAN 2C03, MATH 2D03, 2E03  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Mathematics, Statistics

**LEVEL IV: 30 UNITS**

6 units from the Science Inquiry Course List  
 12 units from Level III, IV Mathematics, Statistics  
 6 units from Level III, IV courses, excluding Mathematics, Statistics  
 6 units Electives

**Honours Mathematics (Specialist Option) 2320****ADMISSION**

Completion of any Level I programme, including:

9 units MATH 1A03, 1AA3, 1B03  
 21 units Level I courses to complete a Level I programme

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**NOTES**

1. By electing STATS 2D03 and STATS 2MB3 in Level II of this programme, a student can also complete Level II Honours Statistics (Specialist Option) or Level II Honours Mathematics and Statistics (Specialist Option).
2. A minor in Statistics is not permitted in the Honours Mathematics (Specialist Option) programme.

**COURSE LIST 1**

MATH 2D03, 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**

12 units MATH 2A03, 2AA3, 2C03, 2R03  
 3 units from MATH 2S03, 2T03  
 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**

(For students entering Level IV in 1996-97)

6 units MATH 3X03, 4X03  
 15 units from Course List 2 (see above)  
 9 units Electives

**LEVEL IV: 30 UNITS**

(Beginning in 1997-98)

3 units MATH 4X03  
 18 units from Course List 2 (see above)  
 9 units Electives

**Honours Mathematics (Applied Option) 2324****ADMISSION**

Completion of any Level I programme, including:

9 units MATH 1A03, 1AA3, 1B03  
 21 units Level I courses to complete a Level I programme

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1B03, 1AA3.

**NOTES**

1. Students will acquire a strong mathematical background and a solid background in at least one area of engineering and applied science by selecting courses from the course list.
2. PHYSICS 1A06 is an adequate prerequisite for any course in the course list requiring PHYSICS 1D03.

**COURSE LIST**

CHEM 2P06, 3C03; CHEM ENG 3O04; CIV ENG 2C04, 2F03, 3B03, 3Q03; COMP SCI 2SB3, 4GB3; ELEC ENG 3CA3, 4CB3; ENGINEER 2P04, 2Q04, 2V04, 3P03; ENG PHYS 3O03; GEOL-OGY 4J03; MATLS 3P03; MECH ENG 3O04, 4S03; PHYSICS 2B06, 3C03, 3K04, 3M03, 3MM3, 4B04

**REQUIREMENTS**

120-126 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**

18 units MATH 2A03, 2AA3, 2C03, 2E03, 2R03, STATS 2D03  
 3 units from MATH 2S03, 2T03  
 9-11 units Electives. (Courses which are prerequisites for desired Level III and IV courses should be considered.)

If not completed: SCIENCE 1A00

**LEVEL III: 30-32 UNITS**

18 units MATH 3A03, 3E03, 3F03, 3FF3, 3Q03, 3X03  
 12-14 units from the Course List (see above)

**LEVEL IV: 30-32 UNITS**

18 units MATH 3AA3, 4Q03, 4QQ3, 4V03, 4X03; STATS 3U03  
 12-14 units from the Course List (see above)

**Honours Mathematics and Physics 2320440****ADMISSION**

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03  
 6 units from PHYSICS 1A06, 1B06; 1C06  
 6 units CHEM 1A06  
 3 units from Level I Science Core courses  
 6 units from Level I Electives

It is recommended that COMP SCI 1MC3 be taken in Level I.



**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03, PHYSICS 1A06 (or 1B06 or 1C06).

**NOTES**

1. Students who complete Level II of Honours Mathematics and Physics are eligible to proceed to any Level III Honours (Specialist Option) programme in Mathematics or Physics.
2. PHYSICS 3C03 is listed in Level III but is offered in alternate years, and may be taken in Level IV.
3. A minor in Astronomy or Statistics is not permitted in the Honours Mathematics and Physics programme.

**COURSE LIST**

COMP SCI 2MC3, 2MD3; MATH 2E03; STATS 2D03, 2MB3; all Level III and IV Astronomy courses; all Level III and IV Mathematics and Statistics courses; PHYSICS 4J04, all Level III and IV Physics courses except PHYSICS 3G03, 3S03, 3T03, 4R03, 4T03

**REQUIREMENTS**

124-126 units total (Levels I to IV), of which no more than 48 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 33 UNITS**

12 units MATH 2A03, 2AA3, 2C03, 2R03  
 3 units from MATH 2S03, 2T03  
 15 units PHYSICS 2B06, 2C03, 2D03, 2H03  
 3 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 31-32 UNITS**

9 units MATH 3A03, 3F03, 3X03  
 13 units PHYSICS 3C03, 3K04, 3M03, 3MM3  
 3-4 units from the Course List (see above)  
 6 units Electives

**LEVEL IV: 30-31 UNITS**

(For students entering Level IV in 1996-97)

6 units MATH 3X03, 4X03  
 4 units PHYSICS 4B04  
 14-15 units from the Course List (see above)  
 6 units Electives

**LEVEL IV: 30-31 UNITS**

(Beginning in 1997-98)

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 any Level I programme, including:  
 9 units MATH 1A03, 1AA3, 1B03  
 21 units Level I courses to complete a Level I programme

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**NOTES**

1. Students contemplating graduate studies in Mathematics or Statistics should consider Honours Mathematics and Statistics (Specialist Option).
2. In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These should be considered when choosing your Level II (and III) programme.

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

15 units MATH 2A03, 2C03, 2R03; STATS 2D03, 2MB3  
 3 units from MATH 2S03, 2T03

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**

(For students entering Level III in 1996-97)

6 units STATS 3D06  
 6 units from Level III, IV Mathematics, MATH 2K03  
 3 units from Level III, IV Statistics  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Mathematics, Statistics  
 3 units Electives

**LEVEL III: 30 UNITS**

(Beginning in 1997-98)

12 units MATH 3A03, 3X03; STATS 3D06  
 3 units from MATH 3E03, 3F03  
 3 units from HUMAN 2C03, MATH 2D03, 2E03  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Mathematics, Statistics

**LEVEL IV: 30 UNITS**

(For students entering Level IV in 1996-97 or 1997-98)

6 units from the Science Inquiry Course List  
 6 units from Level III, IV Mathematics courses  
 6 units from Level III, IV Statistics courses  
 6 units from Level III, IV courses, excluding Mathematics, Statistics  
 6 units Electives

**LEVEL IV: 30 UNITS**

(Beginning in 1998-99)

6 units from the Science Inquiry Course List  
 3 units from Level III, IV Mathematics courses, MATH 2K03  
 9 units from Level III, IV Statistics courses  
 6 units from Level III, IV courses, excluding Mathematics, Statistics  
 6 units Electives

**Honours Mathematics and Statistics 2320542  
 (Specialist Option)**

**ADMISSION**

Completion of any Level I programme, including:  
 9 units MATH 1A03, 1AA3, 1B03  
 21 units Level I courses to complete a Level I programme

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

12 units MATH 2A03, 2AA3, 2C03, 2R03  
 3 units from MATH 2S03, 2T03  
 6 units STATS 2D03, 2MB3  
 9 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

12 units MATH 3A03, 3X03; STATS 3D06  
 6 units from MATH 3AA3, 3E03, 3EE3  
 6 units from Level III, IV Statistics  
 6 units Electives

**LEVEL IV: 30 UNITS**

(For students entering Level IV in 1996-97)

12 units MATH 3X03, 4X03; STATS 4D03, 4M03  
 6 units from Level III, IV Mathematics  
 6 units from Level III, IV Statistics  
 6 units Electives

**LEVEL IV: 30 UNITS****(Beginning in 1997-98)**

- 9 units MATH 4X03; STATS 4D03, 4M03  
 3 units from MATH 3AA3, 3E03, 3EE3  
 6 units from Level III, IV Mathematics  
 6 units from Level III, IV Statistics  
 6 units Electives

**Honours Statistics**

2543

**(Complementary Studies Option)****ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1AA3, 1B03  
 21 units Level I courses to complete a Level I programme

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**NOTES**

- Students contemplating graduate studies in Statistics should consider Honours 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) programme.
- A minor in Mathematics is not permitted in the Honours Statistics (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**

- 12 units MATH 2A03, 2R03; STATS 2D03, 2MB3  
 3 units from MATH 2S03, 2T03  
 6 units from the Faculty of Humanities and/or the Department of Religious Studies  
 3 units from HUMAN 2C03, MATH 2D03, 2E03  
 6 units Electives, excluding Mathematics, Statistics  
 If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

- 6 units STATS 3D06  
 9 units from Level III, IV Mathematics, Statistics, MATH 2K03 from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Mathematics, Statistics  
 3 units Electives

**LEVEL IV: 30 UNITS**

- 6 units from the Science Inquiry Course List  
 12 units from Level III, IV Statistics  
 3 units from Level III, IV Mathematics, Statistics  
 6 units from Level III, IV courses, excluding Mathematics, Statistics  
 3 units Electives

**Honours Statistics (Specialist Option)**

2542

**ADMISSION**

Completion of any Level I programme, including:

- 9 units MATH 1A03, 1AA3, 1B03  
 21 units Level I courses to complete a Level I programme

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a grade of C+ in each of MATH 1AA3, 1B03.

**NOTE**

A minor in Mathematics is not permitted in the Honours Statistics (Specialist Option) programme.

**COURSE LIST 1**

COMP SCI 2MA3, 2MB3, 2MC3, 2MD3, 2ME3, 2SB3; MATH 2D03, 2E03

**COURSE LIST 2**

All Level III and IV Statistics courses

**COURSE LIST 3**

COMP SCI 3IA3, 3SC3, MATH 3E03, 3EE3, 3F03, 3FF3, 3Q03, 3R03, 4A06, 4C03, 4J03, 4K03, 4Q03, 4QQ3, 4RR3, 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**

- 12 units MATH 2A03, 2AA3, 2C03, 2R03  
 3 units from MATH 2S03, 2T03  
 6 units STATS 2D03, 2MB3  
 9 units Electives

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

- 15 units MATH 3A03, 3AA3, 3X03; STATS 3D06  
 6 units from Course Lists 1, 2 and 3 (see above)  
 9 units Electives

**LEVEL IV: 30 UNITS**

- 6 units 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**

- 3 units from MATH 1A03, 1C03  
 6 units MATH 1AA3, 1B03  
 18 units from Level II, III, IV Mathematics, including at least six units from Level III, IV Mathematics

**Minor in Mathematics and Statistics**

- 3 units from MATH 1A03, 1C03  
 6 units MATH 1AA3, 1B03  
 18 units from Level II, III, IV Mathematics and Statistics, including at least three units from Level III, IV Mathematics and three units from Level III, IV Statistics

**Minor in Statistics**

- 3 units from MATH 1A03, 1C03  
 6 units MATH 1AA3, 1B03  
 18 units from Level II, III, IV Statistics, including at least six units from Level III, IV Statistics

**NOTE**

Due to Mathematics prerequisites for Statistics courses, a Minor in Statistics cannot be completed without at least three units of Mathematics beyond Level I.

It is possible for a student to complete these Minors through evening and summer study.

**MOLECULAR BIOLOGY AND BIOTECHNOLOGY****Honours Molecular Biology and Biotechnology**

2365

**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

- 6 units MATH 1A03, STATS 1CC3  
 6 units CHEM 1A06,  
 6 units from PHYSICS 1B06, 1A06, 1C06  
 6 units BIOLOGY 1A06  
 6 units from Level I Electives  
 1 course SCIENCE 1A00

\* New item pro - deals with how the human brain  
computes as opposed to how a machine computes

**Minimum averages/grades:**

A Cumulative Average of 5.0 and a weighted average of at least 6.0 in BIOLOGY 1A06, CHEM 1A06, and 6 units from MATH 1A03, STATS 1CC3, PHYSICS 1B06 (or 1A06 or 1C06).

**NOTES**

1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction and also draws on the Departments Biology, Biochemistry and Pathology and the McMaster Institute for Molecular Biology and Biotechnology.
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 and Biotechnology 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 2O06, 2R03

3 units from BIOLOGY 2D03, 2E03, CHEM 2N03

6 units Electives. BIOLOGY 2D03, 2E03, CHEM 2N03 are recommended

If not completed: SCIENCE 1A00

**LEVEL III: 30 UNITS**

3 units from BIOLOGY 3H03, BIOCHEM 3B03

6 units BIOCHEM 3BB3, 3L03

15 units BIOLOGY 3E03, 3NN3, 3O03, 3V03; CHEM 3F03

6 units Electives

**LEVEL IV: 30 UNITS**

3-9 units from BIOCHEM 4B06, 4G03, 4P03; BIOLOGY 4C09, 4F06

9 units BIOCHEM 4D03, 4E03; BIOLOGY 4M03

3 units from BIOCHEM 3C03, 4I03, 4M03, 4Q03

3 units from BIOLOGY 3C03, 3X03, 4I13, 4P03, 4PP3, 4R03, 4V03

3 units from MOL BIOL 4F03, 4H03, 4J03

3-9 units Electives

**NEURAL COMPUTATION**

**Honours Neural Computation**

2381

**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

3 units from MATH 1A03, 1C03.

3 units MATH 1AA3

6 units from PHYSICS 1B06, 1A06, 1C06

6 units BIOLOGY 1A06

6 units PSYCH 1A06

6 units COMP SCI 1MC3, 1MD3, (or 1MA3, 1MB3)

1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 5.0, a grade of B- in PSYCH 1A06 and a weighted average of 6.0 in 12 units from COMP SCI 1MA3 (or 1MC3), 1MB3 (or 1MD3), MATH 1A03 (or 1C03), 1AA3, PHYSICS 1A06 (or 1B06 or 1C06)

**NOTES**

1. 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, Computer Science and Electrical and Computer Engineering.

2. Information and counselling may be obtained through the Programme Coordinator in the Department of Psychology.
3. 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.
4. 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, 3IA3, 3SD3, 3TA3, 4IB3, 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

3-4 units from MATH 2A03, 2Q04

3 units COMP SCI 2MD3

6 units from PSYCH 2E03, 2H03, 2T03, 2V03

3 units PSYCH 2F03

3 units NEURCOMP 3W03

6 units Electives

If not completed: SCIENCE 1A00

**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**

12 units from the Course List (see above)

9 units NEURCOMP 4D09

9 units Electives

**DEPARTMENT OF  
PHYSICS AND ASTRONOMY**

**Honours Chemistry and Physics**

(See Department of Chemistry)

**Honours Geology and Physics**

(See Department of Geology)

**Honours Mathematics and Physics**

(See Department of Mathematics and Statistics)

**Honours Arts & Science and Physics**

(B.Arts Sc.; See Arts & Science programme)

**Honours Physics**

2442

**(Complementary Studies Option)**

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03

6 units from PHYSICS 1A06, 1B06, 1C06

6 units CHEM 1A06

3 units from Level I Science Core courses

6 units from Level I Electives

1 course SCIENCE 1A00

COMP SCI 1MC3 must be completed by the end of Level II, and is recommended in Level I.

PHYSICS 1A06 is strongly recommended.

**Minimum grades:**

A Cumulative Average of 5.0 and either a grade of C+ in PHYSICS 1A06 (or 1B06 or 1C06) or an average of 6.0 in MATH 1A03, 1AA3.

covers a wide  
variety of fields -  
math, psychology,  
engineering, biology  
comp sci

## 100 FACULTY OF SCIENCE

### NOTES

1. If COMP SCI 1MC3 is completed in Level I then in Level II PHYSICS 2G03 may be replaced by PHYSICS 2C03 and 2D03.
2. The Physics Department considers Honours Physics (Specialist Option) to be more appropriate for graduate studies in Physics.
3. A minor in Astronomy or Mathematics is not permitted in the Honours Physics (Complementary Studies Option) programme.

### REQUIREMENTS

122-124 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: 30 UNITS

18 units MATH 2A03, 2O03; PHYSICS 2B06, 2G03, 2H03  
6 units from the Faculty of Humanities and/or the Department of Religious Studies  
6 units Electives

If not completed: COMP SCI 1MA3 (or 1MC3), SCIENCE 1A00

#### 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, MATH 3D03  
3 units HUMAN 2C03  
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
6 units Electives, excluding Physics, Astronomy

#### LEVEL IV: 31-32 UNITS

3 units PHYSICS 4A03  
3 units from the Science Inquiry Course List  
4 units PHYSICS 4J04  
9-10 units from Level III, IV Physics, Level III Astronomy  
6 units from Level III, IV courses, excluding Physics, Astronomy  
6 units Electives

### Honours Physics (Specialist Option) 2440

#### ADMISSION

Completion of the Natural Sciences I requirements, including:

9 units MATH 1A03, 1AA3, 1B03  
6 units from PHYSICS 1A06, 1B06, 1C06  
6 units CHEM 1A06  
3 units from Level I Science Core courses  
6 units from Level I Electives  
1 course SCIENCE 1A00

COMP SCI 1MC3 must be completed by the end of Level II, and is recommended in Level I.

PHYSICS 1A06 is strongly recommended.

#### Minimum averages/grades:

A Cumulative Average of 5.0 and either a grade of C+ in PHYSICS 1A06 (or 1B06 or 1C06) or an average of 6.0 in MATH 1A03, 1AA3.

#### NOTES

1. Students who have completed Level II of Honours Physics (Specialist Option) with a Cumulative Average of 6.0 are eligible to proceed to Level III of Honours Physics (Specialist Option), Honours Physics (Theory Option), or Honour Astrophysics (with completion of either ASTRON 1F03 or 2E03). They may also be considered for admission to Level III of Honours Materials Science, preferably if MATLS 1A03 or ENGINEER 2003, has been completed in Level II.
2. At least one of PHYSICS 3B06 or 4D06 must be completed and the requirement is listed in Level III, but may be taken in Level IV. Students will generally find that more choices are offered by the timetable if PHYSICS 3B06 is taken in Level III and if PHYSICS 4D06 is taken in Level IV.
3. Students interested in Applied Physics should include PHYSICS 3B06, 4D06 in their programme.

4. Students transferring to this programme who have credit in PHYSICS 2G03 must replace it with PHYSICS 2C03 and 2D03. MATH 2O03 does not have to be replaced with MATH 2C03, but MATH 2AA3 must be completed.
5. A minor in Astronomy or Mathematics is not permitted in the Honours Physics (Specialist Option) programme.

#### REQUIREMENTS

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 UNITS

9 units MATH 2A03, 2AA3, 2C03  
15 units PHYSICS 2B06, 2C03, 2D03, 2H03  
6 units Electives, excluding Physics, Astronomy  
3 units Electives

If not completed: COMP SCI 1MA3 (or 1MC3), SCIENCE 1A00

#### LEVEL III: 32 UNITS

6 units MATH 3C03, 3D03  
6 units from PHYSICS 3B06, 4D06 (See Note 2 above.)  
17 units PHYSICS 3H04, 3K04, 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, 4U03, ASTRON 3X03, 3Y03  
6 units from Level III, IV Science  
9 units Electives (See Note 3 above.)

### Honours Physics (Theory Option) 2441

#### ADMISSION

Completion of Level II Honours Physics (Specialist Option) or Level II Honours Mathematics and Physics with a Cumulative Average of at least 6.0.

#### NOTES

1. PHYSICS 3C03 must be completed but is offered in alternate years. The requirement is listed in Level III but the course should be taken when offered.
2. Students who opt for PHYSICS 3A03 as part of the requirement for Level IV should note that it is offered in alternate years. They should take it when offered.
3. A minor in Astronomy or Mathematics is not permitted in the Honours Physics (Theory Option) programme.

#### REQUIREMENTS

126-127 units total (Levels I to IV) of which no more than 48 units may be Level I courses

#### LEVEL I

30 units from the Natural Sciences I requirements

#### LEVEL II

33 units from either the Honours Physics (Specialist Option) Level II or the Honours Mathematics and Physics Level II requirements

#### LEVEL III: 32 UNITS

9 units MATH 3C03, 3D03, 3Q03  
3 units PHYSICS 3C03. (See Note 1 above.)  
17 units PHYSICS 3H04, 3K04, 3M03, 3MM3, 3N03  
3 units Electives (See Note 2 above.)

If not completed: one of COMP SCI 1MA3, 1MC3

#### LEVEL IV: 31-32 UNITS

3 units from MATH 4B03, 4V03, PHYSICS 3A03. (See Note 2 above.)  
10 units PHYSICS 4A03, 4B04, 4F03  
9 units from ASTRON 3X03, 3Y03, PHYSICS 3A03, 4E03, 4G03, 4K03, 4U03  
6-7 units from Level III, IV Science  
3 units Electives (See Note 1 above.)

**Honours Astrophysics 2444**

**ADMISSION**

Completion of Level II Honours Physics (Specialist Option), including either ASTRON 1F03 or 2E03, with a Cumulative Average of at least 6.0.

**NOTES**

1. ASTRON 3X03 and 3Y03 must be completed but are offered in alternate years. These courses should be taken when they are offered.
2. At least one of PHYSICS 3B06 or 4D06 must be completed and the requirement is listed in Level III, but may be taken in Level IV. Students will generally find that more choices are offered by the timetable if PHYSICS 3B06 is taken in Level III and PHYSICS 4D06 is taken in Level IV.
3. A minor in Mathematics or Physics is not permitted in the Honours Astrophysics programme.

**REQUIREMENTS**

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

**LEVEL I**

30 units from the Natural Sciences I requirements

**LEVEL II**

33 units from the Honours Physics (Specialist Option) Level II requirements, including one of ASTRON 1F03, 2E03

If not completed: SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3

**LEVEL III: 32 UNITS**

3 units from ASTRON 3X03, 3Y03  
 6 units from PHYSICS 3B06, 4D06 (See Note 2 above.)  
 17 units PHYSICS 3H04, 3K04, 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 (See Note 2 above.)

**Honours Medical and Health Physics 2443**

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

6 units MATH 1A03, 1AA3  
 6 units from PHYSICS 1A06, 1B06, 1C06  
 6 units CHEM 1A06  
 6-9 units from BIOLOGY 1A06, COMP SCI 1MC3, MATH 1B03  
 3-6 units from Level I Electives  
 1 course SCIENCE 1A00

BIOLOGY 1A06, COMP SCI 1MC3, MATH 1B03 must be completed by the end of Level II and are recommended in Level I. PHYSICS 1A06 is strongly recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and either a grade of C+ in PHYSICS 1A06 (or 1B06 or 1C06) or an average of 6.0 in MATH 1A03, 1AA3.

**NOTES**

1. The Department recommends that students interested in this programme elect PHYSICS 1A06, MATH 1A03, 1AA3, 1B03, BIOLOGY 1A06, CHEM 1A06, COMP SCI 1MC3 in Level I.
2. A minor in Astronomy or Mathematics is not permitted in the Honours Medical and Health Physics programme.

**REQUIREMENTS**

124 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**

6 units from BIOCHEM 2E03, CHEM 2D03, 2O06  
 6 units MATH 2E03, 2A03  
 3 units from MATH 2O03, 2C03

12 units PHYSICS 2B06, 2G03, 2H03  
 0-3 units Electives. BIOLOGY 2C03 is recommended.  
 If not completed: BIOLOGY 1A06, MATH 1B03, SCIENCE 1A00, one of COMP SCI 1MA3, 1MC3

**LEVEL III: 31 UNITS**

6 units BIOLOGY 2B03, MATH 3C03  
 10 units PHYSICS 3H04, 3N03, 3O03  
 9 units PHYSICS 3Q03, 3R03, 3T03  
 6 units Electives

If BIOCHEM 2E03 was not completed in Level II, then students must take BIOCHEM 3G03, 3GG3

**LEVEL IV: 33 UNITS**

3 units BIOLOGY 4U03  
 3 units from ENG PHYS 3X03, ENGINEER 4X03  
 12 units PHYSICS 4A03, 4D06, 4E03  
 12 units PHYSICS 4K03, 4R06, 4T03  
 3 units Electives

**Honours Medical and Health Physics Co-op 2330**

**ADMISSION:**

**Enrolment in this programme is limited.** 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. Enrolment in this programme will be limited to a maximum of 10 students per year. Information about the programme and the selection procedure may be obtained from the Chair of the Committee of Instruction and will be explained in the month of February in an Information Session.

**NOTES**

1. This is a five-year co-op programme which includes two eight-month work terms which must be spent in Medical or Health Physics related placements.
2. Students must be registered full-time and take a full academic programme.
3. Students are required to complete a Work Orientation Course before the first work placement.
4. At least one of ENG PHYS 3X03 or ENGINEER 4X03 must be completed and the requirement is listed in Year 4, Term 1, but may be taken in Term 2 of either Year 4 or Year 5.
5. No minors or Theme Schools are permitted in the Honours Medical and Health Physics (Co-op) programme.

**REQUIREMENTS**

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

**LEVEL I**

30 units from the Natural Sciences I requirements

**LEVEL II**

30 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 I**

3 units MATH 3C03  
 11 units PHYSICS 3HA2, 3N03, 3O03, 3T03  
 3 units Electives

If BIOCHEM 2E03 not completed, then BIOCHEM 3G03 must be taken.

→ Work Orientation Course

**TERM 2 AND SUMMER**

Work Term

**Year 4**

31 units from Academic Level IV, Term 1, and Academic Level III, Term 2, plus beginning of second eight-month work term, Summer term.

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### TERMS 1 AND 2

6 units BIOLOGY 2B03, 4U03  
 3 units from ENG PHYS 3X03, ENGINEER 4X03  
 7 units PHYSICS 3I01, 3Q03, 3R03  
 12 units PHYSICS 4D06, 4R06  
 3 units Electives

If BIOCHEM 3G03 has been completed, then BIOCHEM 3GG3 must be taken.

### 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

6 units PHYSICS 3HB2, 4I01, 4K03  
 6 units PHYSICS 4E03, 4T03  
 3 units Electives

	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	15 units from Academic Level IV	14 units from Academic Level III	Work Term
	Term 1	Term 2	Summer Term
YEAR 5	Work Term	15 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  
 3-9 units from either one of MATH 2A03, 2A06, 2G03 and one of MATH 2C03, 2O03 or MATH 2N03  
 3-6 units from PHYSICS 2A03, 2B06  
 3-6 units from PHYSICS 2H03, CHEM 2P06, 2R03  
 3 units from PHYSICS 2D03, 2G03  
 6 units ASTRON 3X03, 3Y03  
 3 units from PHYSICS 3M03, 3O03, CHEM 3B03

### Minor in Physics

6 units from PHYSICS 1A06, 1B06, 1C06  
 18 units from Levels II, III, IV Physics including at least six units from Level III, IV Physics

#### NOTE

A Minor in Physics can be completed without any Mathematics beyond Level I. However, more flexibility is possible if one of MATH 2A03, 2A06, 2G03 and one of MATH 2C03, 2O03 are completed. Additional flexibility is possible if PHYSICS 2B06 is completed.

## DEPARTMENT OF PSYCHOLOGY

### Honours Psychology (B.A.) and Major 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 Computer Science and Psychology

(B.Sc.; See Department of Computer Science and Systems)

### Honours Arts & Science and Psychology

(B.Arts Sc.; See Arts & Science programme)

### Honours Psychology (B.Sc.) (Complementary Studies Option)

2462

#### ADMISSION

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

3 units MATH 1A03  
 3-6 units from MATH 1B03, 1A43, STATS 1CC3  
 6 units from CHEM 1A06, PHYSICS 1B06, 1A06, 1C06  
 6 units PSYCH 1A06  
 6 units from BIOLOGY 1A06, CHEM 1A06, COMP SCI 1MC3, 1MD3, PHYSICS 1B06, 1A06, 1C06  
 3-6 units from Level I Electives

1 course SCIENCE 1A00

BIOLOGY 1A06 and MATH 1B03 are recommended. MATH 1B03 must be completed by the end of Level II.

#### Minimum averages/grades:

A Cumulative Average of 5.0 and a grade of C+ in PSYCH 1A06.

#### NOTES

- 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.
- In some cases there are Level II (and III) prerequisites for Level III (and IV) courses. These should be considered when choosing your Level II (and III) programme.

#### COURSE LIST

PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

#### REQUIREMENTS

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

#### LEVEL I

30 units (See Admission above.)

#### LEVEL II: 30 UNITS

6 units PSYCH 2R03, 2RR3  
 9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03  
 3 units HUMAN 2C03  
 6 units from the Faculty of Humanities and/or the Department of Religious Studies  
 3 units Electives, excluding Psychology  
 3 units Electives

If not completed: MATH 1B03, SCIENCE 1A00

#### LEVEL III: 30 UNITS

3 units from PSYCH 2E03, 2F03, 2H03, 2T03, or Level III Psychology  
 12 units from Level III Psychology, including one course from the Course List (See Note 1 above.)  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Psychology  
 3 units Electives

#### LEVEL IV: 30 UNITS

6 units from the Science Inquiry Course List  
 15 units from Level III, IV Psychology  
 6 units from Level III, IV courses, excluding Psychology  
 3 units Electives

If not completed: One course from the Course List (See Note 1 above.)

**Honours Psychology (B.Sc.)  
(Specialist Option)**

2461

**ADMISSION**

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of the Natural Sciences I requirements, including:

- 3 units MATH 1A03
- 3-6 units from MATH 1B03, 1AA3, STATS 1CC3
- 6 units from CHEM 1A06, PHYSICS 1B06, 1A06, 1C06
- 6 units PSYCH 1A06
- 6 units from BIOLOGY 1A06, CHEM 1A06, COMP SCI 1MC3, 1MD3, PHYSICS 1B06, 1A06, 1C06
- 3-6 units from Level I Electives
- 1 course SCIENCE 1A00

BIOLOGY 1A06 and MATH 1B03 are recommended in Level I. MATH 1B03 must be completed by the end of Level II.

**Minimum grades:**

A Cumulative Average of 5.0 and a grade of C+ in PSYCH 1A06.

**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 and both CHEM 1A06 and PHYSICS 1B06 (or 1A06 or 1C06) by the end of Level II is recommended.

**COURSE LIST**

PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

**REQUIREMENTS**

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

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

- 6 units PSYCH 2R03, 2RR3
- 9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
- 9 units from Levels I and II Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics, Physics
- 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology

If not completed: MATH 1B03, SCIENCE 1A00

**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**

- 6 units PSYCH 1A06
- 18 units from Level II, III Psychology courses, including at least six units from Level III Psychology courses

It is possible for a student to complete this Minor through evening and summer study.

When choosing Level II courses students should consider the prerequisite requirements for the various Level III courses.

**SCIENCE**

**Honours Science  
(Complementary Studies Option)**

2512

**NOTES**

1. The Honours Science (Complementary Studies Option) programme has been revised (see Honours Science (Complementary Studies Option) programme *Streams A, B, C, D* outlined below). Please note however, that the admission requirements as published in the 1995-96 Calendar will still apply for entry to Level II of the revised programme in 1996-97.
2. Students currently registered in Levels II, III, or IV of this programme should follow the requirements as outlined in the 1995-96 Calendar or alternatively may apply for transfer to the 1996-97 programme outlined below.

**Honours Science  
(Complementary Studies Option)**

<b>Stream A</b>	<b>2513</b>
<b>Stream B</b>	<b>2514</b>
<b>Stream C</b>	<b>2515</b>
<b>Stream D</b>	<b>2516</b>

**ADMISSION**

Completion of Natural Sciences I, including:

- 3 units MATH 1A03
- 3 units from MATH 1AA3, 1B03, STATS 1CC3
- 6 units from CHEM 1A06, PHYSICS 1B06, 1A06, 1C06
- 6 units from BIOLOGY 1A06, PSYCH 1A06
- 6 units from Level I Science Core courses
- 6 units from Level I Electives
- 1 course SCIENCE 1A00

One of ENVIR SC 1A06, GEOG 1C03, 1G03 or GEOLOGY 1C03 must be completed by the end of Level II.

One of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3 must be completed by the end of Level III.

The completion of all the requirements in Level I is strongly recommended.

**Minimum averages/grades:**

A Cumulative Average of 5.0 and one of:

- for Stream A: a grade of C+ in ENVIR SC 1A06 or a grade of C+ in two courses from GEOG 1C03, 1G03, GEOLOGY 1C03
- for Stream B: a grade of C+ in one of BIOLOGY 1A06, PSYCH 1A06
- for Stream C: a grade of C+ in two courses from COMP SCI 1MC3, 1MD3, MATH 1A03, 1AA3, 1B03, STATS 1CC3
- for Stream D: a grade of C+ in one of CHEM 1A06, PHYSICS 1B06, 1C06, 1A06

**NOTES**

1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction.
2. Initial counselling for this programme may be obtained from the Chair of the Committee of Instruction.
3. There are Level II (and III) prerequisites for many Level III (and IV) courses. These should be considered when choosing your Level II programme.
4. Minors within the Faculty of Science are not permitted in the Honours Science (Complementary Studies Option) programme.
5. **Students in this programme must choose a stream in Level II and must follow this stream through to completion of the programme. The four possible streams are as follows:**
  - **Stream A** Earth Sciences: Geography and Geology
  - **Stream B** Life Sciences: Biology and Psychology
  - **Stream C** Mathematical Sciences: Computer Science, Mathematics, Statistics
  - **Stream D** Physical Sciences: Chemistry and Physics

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### COURSE LIST 1 (Stream A)

All Level II, III and IV Physical Geography\*, and Geology courses  
\*Physical Geography courses are marked with an asterisk in the Geography course listing.

### COURSE LIST 2 (Stream B)

BIOCHEM 3B03, 3BB3, 3C03, 3G03, 3GG3, 3H03, 3N03, 4C03, 4D03, 4E03, 4I03, 4M03, 4Q03; ENGINEER 4X03; ENG PHYS 3X03; MOL BIOL 4F03, 4H03; PHARMAC 4B03

All Level II, III and IV Biology courses

All Level II, III, and IV Psychology courses, except PSYCH 2A03, 2B03, 2C03, 2V03, 3C06, 3CC3, 3D03, 3DD3, 4D06, 4UU3, 4V03, 4VV3

### COURSE LIST 3 (Stream C)

All Level II, III and IV Computer Science, Mathematics and Statistics courses

### COURSE LIST 4 (Stream D)

All Level II, III and IV 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: SCIENCE 1A00, one of ENVIR SC 1A06, GEOG 1C03, 1G03, GEOLOGY 1C03

If not completed for:

Stream B: BIOLOGY 1A06, PSYCH 1A06

Stream C: 9 units from COMP SCI 1M3, 1MD3, MATH 1A3, 1B3, STATS 1CC3

Stream D: CHEM 1A06, PHYSICS 1A06 (or 1B06 or 1C06)

#### LEVEL III: 30 UNITS

12 units from Level III courses in the selected stream Course List  
3 units from Level III courses in any Course List, excluding courses from the selected stream Course List  
3 units HUMAN 2C03  
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
6 units Electives, excluding courses from the selected stream Course List

If not completed for all streams: one of COMP SCI 1MA3, 1MC3, 1SA3 or 1ZA3

#### LEVEL IV: 30 UNITS

6 units from the Science Inquiry Course List  
12 units from Level III, IV courses in the selected stream Course List  
6 units from Level III, IV courses in any Course List, excluding courses from the selected stream Course List  
6 units Electives, excluding courses from the selected stream Course List

## Honours Science

2511

### (Environmental Science Option)

#### ADMISSION

Completion of Natural Sciences I requirements, including:

6 units MATH 1A03, STATS 1CC3

6 units CHEM 1A06

6 units BIOLOGY 1A06

6 units ENVIR SC 1A06

6 units from Level I Electives

1 course SCIENCE 1A00

#### Minimum averages/grades:

A Cumulative Average of 5.0 and a weighted average of 6.0 in CHEM 1A06, BIOLOGY 1A06, ENVIR SC 1A06.

#### NOTES

1. This Honours degree programme is administered within the Faculty of Science through a Committee of Instruction, and involves the Departments of Biochemistry, Biology, Chemistry, Geography and Geology.
2. Initial counselling for this programme may be obtained from the Chair of the Committee of Instruction.
3. There are Level II (and III) prerequisites for many Level III (and IV) courses. These should be considered when choosing your Level II programme.
4. Minors within the Faculty of Science are not permitted in the Honours Science (Environmental Science Option) programme.
5. The completion of Physics 1B06 is recommended by the end of Level III.

#### COURSE LIST

BIOLOGY 3E03, 3L03, 3U03, 3UU3, 4A03, 4PP3, 4S03, 4U03, 4Y03; CHEM 3A03, 4P03; GEOG 3F03, 3K03, 3M03, 3P03, 3W03, 4A03, 4D03, 4KK3, 4P03, 4Q03, 4R03, 4W03; GEOLOGY 3A03, 3B03, 3F03, 3J03, 4D03, 4J03, 4K06, 4QQ3, 4S03

#### 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 GEOG 2T03, 2W03  
9 units CHEM 2N03, 2O06  
3 units from GEOLOGY 2I03, 2J03  
3 units GEOLOGY 2E01, 2EE2  
3 units BIOLOGY 2F03  
6 units Electives

If not completed: SCIENCE 1A00

#### LEVEL III: 30 UNITS

##### (Beginning in 1997-98)

6 units from GEOG 2F03, 3U03, 3UU3  
6 units BIOCHEM 3E03, 3G03  
3 units ENVIR SC 3A03  
6 units GEOLOGY 2K03, 3Q03  
6 units from BIOLOGY 3SS3, 3TT3, 3R03  
3 units Electives

#### LEVEL IV: 30 UNITS

##### (Beginning in 1998-99)

18 units from Course List  
6 units ENVIR SC 4I03, 4W03  
6 units Electives

## THREE-LEVEL B.SC. PROGRAMMES

### B.Sc. in Earth Science

1149

#### ADMISSION

Completion of the Natural Sciences I requirements, including:

3 units MATH 1A03

3 units from MATH 1A3, 1B3, STATS 1CC3

6 units from CHEM 1A06, PHYSICS 1B06, 1A06, 1C06

6 units from ENVIR SC 1A06, GEOG 1C03, 1G03, GEOLOGY 1C03

6 units from Level I Science Core courses

6 units from Level I Electives

#### Minimum averages/grades:

A Cumulative Average of 3.5 and a weighted average of at least 4.0 in 12 units including one of CHEM 1A06, PHYSICS 1B06, 1C06, 1A06 and 6 units from ENVIR SC 1A06, GEOG 1C03, 1G03, GEOLOGY 1C03.



\* B.Sc. in General Science being phased out  
No admission to level II in 96-97

**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 Geography or Geology. Those who do not intend a particular emphasis should obtain counselling from the Department of Geology.

**COURSE LIST 1**

GEOG 2F03, 2K03, 2LL3, 2N03, 2T03, 2W03 and all Level II Geology courses

**COURSE LIST 2**

GEOG 3E03, 3F03, 3I03, 3K03, 3L03, 3M03, 3N03, 3NN3, 3O03, 3P03, 3W03 and all Level III Geology courses

**REQUIREMENTS**

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

**LEVEL I**

30 units (See Admission above.)

**LEVEL II: 30 UNITS**

15 units from Course List 1 (See above)  
6 units from the Faculty of Humanities and/or the Department of Religious Studies  
3 units HUMAN 2C03  
3 units Electives, excluding courses from Course List 1  
3 units Electives

**LEVEL III: 30 UNITS**

12 units from Course List 2 (see above)  
3-6 units from Course Lists 1 and 2 (see above)  
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
6 units Electives, excluding courses in Course Lists 1 and 2  
0-3 units Electives, excluding Biology

**B.Sc. in General Science**

1234

**NOTES**

1. **Level II of the B.Sc. General Science programme will not be offered after August 1996.** For those students interested in a broadly-based science programme, please see **Honours Science (Complementary Studies Option)**.
2. No more than 24 units of courses may be taken from any one department. Mathematics and Statistics is one department.
3. There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II programme.
4. Students should seek academic counselling to ensure that their choices are appropriate. Information on counselling for this programme may be obtained from the Department of Geology.

**COURSE LIST 1**

BIOCHEM 2E03; all Level II courses in Astronomy, Biology, Chemistry, Computer Science, Physical Geography\*, Geology, Materials Science, Mathematics, Physics, Psychology and Statistics

**COURSE LIST 2**

BIOCHEM 3B03, 3BB3, 3C03, 3G03, 3GG3; all Level III courses in Astronomy, Biology, Chemistry, Computer Science, Physical Geography\*, Geology, Materials Science, Mathematics, Physics, Psychology and Statistics

\*Physical Geography courses are marked with an asterisk in the Geography course listing.

**REQUIREMENTS**

90 units total (Levels I to III), of which no more than 42 units may be Level I courses

**LEVEL III: 30 UNITS**

(Last offered in 1996-97)

12 units from Course List 2 (see above). No more than six units from Biology courses may be taken  
3 units HUMAN 2C03  
6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
3 units Electives, excluding Biology and courses from Course Lists 1 and 2  
6 units Electives, excluding Biology

**B.Sc. in Life Science**

1312

**ADMISSION**

Completion of the Natural Sciences I requirements, including:

3 units MATH 1A03  
3 units from MATH 1B03, STATS 1CC3  
6 units CHEM 1A06  
6-12 units from BIOLOGY 1A06, PSYCH 1A06  
0-6 units from Level I Science Core courses  
6 units from Level I Electives  
1 course SCIENCE 1A00

**Minimum averages/grades:**

A Cumulative Average of 3.5 and a weighted average of 4.0 in 12 units from BIOLOGY 1A06, CHEM 1A06, PSYCH 1A06.

**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 Biology or Psychology. Those who do not intend a particular emphasis should obtain counselling from the Department of Biology.
3. Many Level III Psychology courses have as a prerequisite a Statistics course offered by the Faculty of Science.
4. Students who complete BIOCHEM 2E03 in Level II may not take BIOCHEM 3G03 and 3GG3 in Level III.
5. Enrolment in Psychology laboratory courses is limited. PSYCH 3C06, 3E03, 3L03, 3QQ3, 3S03, 3V03 are laboratory courses.

**COURSE LIST 1**

BIOCHEM 2E03; BIOLOGY 2B03, 2C03, 2D03, 2E03, 2F03; PSYCH 2E03, 2H03, 2O03 (or 2F03), 2T03

**COURSE LIST 2**

CHEM 2D03 or 2O06; STATS 2MA3 or 2R06 or PSYCH 2G03 or PSYCH 2R03, 2RR3

**COURSE LIST 3**

BIOCHEM 3B03, 3BB3, 3C03, 3G03, 3GG3; 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 Biochemistry, Biology, Psychology  
If not completed: SCIENCE 1A00

**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 Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
3 units Electives, excluding Biochemistry, Biology, Psychology  
6 units Electives, excluding Biology

**B.Sc. in Mathematical Science**

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 three courses from COMP SCI 1MC3, COMP SCI 1MD3, MATH 1A03, 1AA3, 1B03, STATS 1CC3.

**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 Computer Science. Those who do not intend a particular emphasis should obtain counselling from the Department of Mathematics and Statistics.

**COURSE LIST 1**

COMP SCI 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3, 2SB3; MATH 2A03, 2AA3, 2A06, 2B06, 2C03, 2D03, 2E03, 2G03, 2J06, 2K03, 2O03, 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 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 Natural Sciences I requirements, including:  
 6 units MATH 1A03, 1AA3  
 6 units from CHEM 1A06, PHYSICS 1A06, 1B06, 1C06  
 12 units from Level I Science Core courses  
 6 units from Level I Electives  
 1 course SCIENCE 1A00

CHEM 1A06, MATH 1B03, and PHYSICS 1A06 (or 1B06 or 1C06) 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 weighted average of 4.0 in 12 units from CHEM 1A06, MATH 1A03, 1AA3, 1B03, PHYSICS 1A06 (or 1B06 or 1C06).

**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 Chemistry or Physics. Those who do not intend a particular emphasis should obtain counselling from the Department of Physics.
- Students proceeding in Physics must include PHYSICS 2B06 and MATH 2A03 (or 2G03) and MATH 2O03 in Level II.

**COURSE LIST 1**

CHEM 2A03, 2B06, 2C03, 2O06, 2P06, 2R03; MATH 2A03, 2G03, 2N03, 2O03; PHYSICS 2A03, 2B06, 2G03, 2H03

**COURSE LIST 2**

CHEM 3A03, 3B06, 3I03, 3Q03; all Level III Astronomy, 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 Astronomy, Chemistry, and Physics  
 If not completed: SCIENCE 1A00, CHEM 1A06, MATH 1B03, and one of PHYSICS 1A06, 1B06, 1C06

**LEVEL III: 30 UNITS**

12 units from Course List 2 (see above)  
 3 units HUMAN 2C03  
 6 units from Business, Humanities, Social Sciences, excluding Physical Geography and Psychology  
 6 units Electives, excluding Astronomy, Chemistry, and Physics  
 3 units Electives, excluding Biology

# FACULTY OF SOCIAL SCIENCES

E-MAIL ADDRESS: socscfac@mcmaster.ca

## Dean of Social Sciences

J.A. Johnson/M.A., Ph.D.

## Associate Dean (Studies)

W.K. Whillier/B.A., Ph.D.

## Academic Assistant to the Dean

E. Frank/M.A.

## Student Advisors

J. Crossley/B.A.

M. Foster/M.A.

## Programmes Coordinator

E. 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. There is also growing interest among social scientists in the interaction between people and their natural and artificial environments. Developments in theory and refinements of method have, in recent years, given great impetus to social science studies and research.

The Faculty of Social Sciences includes the following departments or schools and programmes:

Anthropology, Economics, Gerontology, Kinesiology, Labour Studies, Political Science, Religious Studies, Social Work, Sociology, Geography and Psychology have programmes in the Faculty of Social Sciences as well as in the Faculty of Science.

The Faculty offers Bachelor of Arts, Honours Bachelor of Arts and Professional programmes.

## 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 developed 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, 1L03, 1Z03; ECON 1A06; GEOG 1B06 or 1C03 and 1G03; GERONTOL 1A06; LABR ST 1A03, 1AA3, 1Z03; POL SCI 1A06, 1B03, 1C03; PSYCH 1A06; RELIG ST 1B06, 1D06, 1E06, 1H03, 1I06; SOC WORK 1A06; SOCIOL 1A06
- 18 units Electives, which may include Social Sciences courses

## KINESIOLOGY I

0308

### PROGRAMME NOTE:

Enrolment in this Programme is limited. Application is made to Kinesiology I.

### REQUIREMENTS: 33 UNITS

- 21 units KINESIOL 1A06, 1B06, 1E06; CPR/First Aid (1CA1), Fitness (1F01) and Basic Aquatic Survival Skills (1S01).
- 12 units Electives

## B. Degree Programmes

### HONOURS PROGRAMMES

The Honours programmes provide a concentration in the particular field, as well as an extended time of study, and are normally a requirement for those who contemplate proceeding to graduate studies.

Students enrolled in an Honours programme in the Faculty of Social Sciences, in addition to meeting the University requirements for an Honours degree (see the *General Academic Regulations* section in this Calendar) must also fulfill the following breadth and skills requirements prescribed by the Faculty: six units, not in the student's Honours subject(s), six units from the Faculty of Humanities and/or the Department of Religious Studies. (Students enrolled in Religious Studies programmes are required to complete six units from the Faculty of Humanities); six units of Research Methods, in the students' Honours subject(s) prescribed by the Department(s) and HUMAN 2C03. Honours programmes in the Faculty of Social Sciences consist of a total of 120 units of work, normally completed over four years, and include in the body of work prescribed by the Department(s) at least three units of the History of Thought of the candidate's Honours Social Sciences discipline(s) and six units of Inquiry and Honours seminar.

**Honours (Specialist Option):** In addition to Honours programmes, the departments of Economics, Geography, Labour Studies, Psychology and Sociology offer an Honours (Specialist Option) programme which has different requirements from the Honours degree. The requirements in Honours (Specialist Option) will prepare students for graduate study in the discipline. Students intending to complete a Minor would normally register in an Honours programme rather than an Honours (Specialist Option) programme. In departments which offer an Honours but not a Specialist programme, the Honours programme will fully qualify students for graduate study.

**Combined Honours Programmes:** Subject to possible timetable restrictions, and provided that the student meets the requirements for entry into each of the relevant Honours programmes, a student may combine work in any two departments and be graduated with a Combined Honours degree. These combinations are available within the Faculty, with programmes in the Faculty of Humanities, with the Arts and Science programme and with the Women's Studies programme. The Honours Gerontology degree is offered only in combination with another subject. All Combined Honours programmes must be approved by both Departments concerned as well as by the Office of the Associate Dean(s) (Studies). Students will normally complete approximately 36 units of work beyond Level I in each component of the programme (normally 12 units per level in each subject).

**Minor:** A minor is an option available to students enrolled in a four- or five-level programme. A minor consists of at least 18 units of Level II, III, or IV courses beyond the designated Level I course(s) that meet the requirements set out in the programme description of that minor. Students are responsible for ensuring that the courses taken meet these requirements. Students who have the necessary requirements may apply for recognition of that minor when they graduate. If granted, this recognition will be recorded on the student's transcript.

**COMBINED B.A./B.S.W.:** The School of Social Work offers a Combined B.A./B.S.W. programme of studies leading to a B.A. and a B.S.W. degree. (See the programme description in this section.)

The B.S.W. degree may be attained separately only by those students who have already received one or more undergraduate degrees.

**BACHELOR OF KINESIOLOGY:** The Department of Kinesiology offers a programme of studies leading to the B.Kin. degree. (See the programme description in this section.)

**BACHELOR OF ARTS PROGRAMMES:** B.A. programmes consist of a total of 90 units of work, normally completed over three years.

The only three-level Combined Bachelor's degree programme is in Gerontology and Another Subject. The other subject may be from the Faculty of Social Sciences or the Faculty of Humanities. This programme may also be combined with the B.S.W. as a four-level programme.

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.

### Part-time Studies

Subject to limitations of course offerings, a student may pursue on a part-time basis any programme in the Faculty of Social Sciences, except for the B.Kin. programme. Normally, students will arrange their programme of studies in consultation with a Student Advisor in the Office of the Associate Dean (Studies) and with the Undergraduate Advisor of the appropriate Department(s).

## 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 READMISSION

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 submit a Request for Special Consideration. Such requests for transfer will be considered at the same time as applications for re-admission (see below).

A student who *may not continue at the University* may apply for readmission. Application for readmission must be made in writing to the Office of the Associate Dean of Social Sciences (Studies). Guidelines for the letter of application may be obtained from the Office of the Associate Dean (Studies). Deadlines for readmission application are the same as application deadlines for admission to the University. See *Sessional Dates* section of this Calendar. Readmission applications will be carefully reviewed and the evidence considered will include the student's academic performance before and after admission to McMaster, current Faculty admission requirements, the letter of application with any supporting documentation and the student's ability in English.

**Readmission is not automatic or guaranteed.**

**Decisions on requests for transfer and requests for readmission will be made after July 15 for entry or re-entry in September.**

### HUMANITIES/RELIGIOUS STUDIES REQUIREMENT

Students registered in the Faculty of Social Sciences except for those in B.Kin. and B.P.E. and those combining 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.

### 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.

### 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. Considerable inconvenience can result for a student whose registration does not meet the requirements.

All registrations, programme changes and course changes must be approved by 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 Associate Dean (Studies). Transfers are subject to the deadline dates established by the University.

### WITHDRAWAL

Students who wish to withdraw from the University are required to advise the Dean of Studies Office in writing. Students must surrender their McMaster Identification Cards to the Dean of Studies to ensure the processing of any fee refunds. Students who fail to withdraw formally from any course(s) by the stated deadlines will remain registered whether or not they attend classes and will be assigned a grade.

### COURSES IN KINESIOLOGY AND SOCIAL WORK AVAILABLE FOR UNDERGRADUATE CREDIT

Some Kinesiology and Social Work courses may be taken by students in other programmes as electives for undergraduate credit. Enrolment in these courses requires written permission of the department or instructor. These courses are:

KINESIOL	3P03, 3Q03, 4E03, 4L03, 4M03, 4Q03. KINESIOL 3SS3 and 4J03 may be taken as elective courses by undergraduates not in Kinesiology without permission of the instructor, but may be subject to enrolment restrictions.
SOC WORK	3C03, 3G03, 3H03, 4B03, 4C03, 4E03, 4J03, 4K03, 4M03, 4Z03

All other Social Work and Kinesiology courses are open only to students registered in those programmes.

### LETTER OF PERMISSION

If you wish to attend another university to take courses which will carry credit toward a McMaster degree, you must obtain permission ahead of time. To do this you must seek a Letter of Permission from the Associate Dean (Studies) and pay the appropriate fee. You 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. You must be in good standing in the Faculty to be eligible to take work on a Letter of Permission.

### 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.

*In most Honours programs in Soc Sci - was requirement that students had to complete six units of Soc Sci I course other than from the subject in which the student was majoring*

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 (page 16) 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 Officer*.

Acceptance to the Ontario and University-wide Exchange Programmes is by recommendation. Application forms can be obtained from:

The Student Exchanges Officer  
Hamilton Hall, Room 405

Telephone: (905) 525-9140, extension 24748

## DEPARTMENT OF ANTHROPOLOGY

### ANTHROPOLOGY SUBFIELDS (Applicable to all Anthropology programmes)

Anthropology includes the **four major subfields** of Social/Cultural Anthropology, Physical/Biological Anthropology, Archaeology, and Linguistics. Students may specialize in any one of these subfields though it is not necessary to do so. It should be noted, however, that each subfield has its own sequence of courses and prerequisites. (See the *Course Listings* section in this Calendar.)

#### CULTURAL/SOCIAL ANTHROPOLOGY

ANTHROP 2B03, 2F03, 2H03, 2I03, 2P03, 2Q03, 2R03, 2S03, 2X03, 2Z03, 3A03, 3AA3, 3B03, 3D03, 3F03, 3G03, 3P03, 3Q03, 3RR3, 3S03, 3T03, 3V03, 3Z03, 3ZZ3, 4A03, 4D03, 4EE3, 4I03, 4N03, 4P03, 4Q03, 4Y03

#### PHYSICAL/BIOLOGICAL ANTHROPOLOGY

ANTHROP 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, 3E03, 3EE3, 3K03, 3NP3, 3U03, 4F03, 4H03, 4HF3, 4PI3, 4U03 (Relevant courses are also offered by History and Classics.)

#### LINGUISTICS

ANTHROP 2AA3, 2AL3, 2L03, 2LL3; 2M03, 2Q03, 3AL3, 3I03, 3II3, 3M03, 3PL3, 3X03, 3XX3, 4BL3, 4L03, 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 your programme, it is important to take note of the prerequisites of certain upper-level courses.

## Honours Arts & Science and Anthropology

(B.ARTS.SC.; See Arts & Science programme)

### 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, 1Z03 or 1L03.

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 12 units ANTHROP 2E03, 2F03, 2I03, 2PA3
- 3 units from ANTHROP 3A03, 3B03, 3D03, 3F03
- 3 units ANTHROP 4I03
- 9 units Level IV Anthropology
- 21 units Level II, III or IV Anthropology

- 6 units Research Methods from the following list: STATS 1A03, ECON 2B03, GEOG 2LL3, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, SOCIOL 2Y03, 3H06, or STATS 1CC3, 2R06  
If only three units are taken from this list, an additional three units from ANTHROP 2DD3, 2FF3, 2Z03, 3K03, 3P03 and 4L03 must be completed.
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these may be added to electives.
- 27 units 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, 1Z03 or 1L03. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 12 units ANTHROP 2E03, 2F03, 2I03, 2PA3
- 3 units from ANTHROP 3A03, 3B03, 3D03, 3F03
- 3 units ANTHROP 4I03
- 3 units Level IV Anthropology
- 15 units Level II, III or IV Anthropology
- 36 units courses specified for the other subject
- 6 units Research Methods from the following list: STATS 1A03, ECON 2B03, GEOG 2LL3, POL SCI 2F06, 3N06, PSYCH 2G03, 2R03, SOCIOL 2Y03, 3H06, or STATS 1CC3, 2R06. If only three units are taken from this list, an additional three units from ANTHROP 2DD3, 2FF3, 2Z03, 3K03, 3P03 and 4L03 must be completed.  
In combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject may be completed.
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Anthropology are exempt from this requirement.
- 6 units 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 may be added to electives.
- 3 units 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, 1Z03 or 1L03.

#### REQUIREMENTS

90 units total (Levels I to III), of which 42 may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 6 units from ANTHROP 2E03, 2F03, 2PA3, 2Q03
- 18 units Level II, III or IV Anthropology
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 30 units Electives

## Minor in Anthropology

#### REQUIREMENTS

- 6 units from ANTHROP 1A03, 1Z03 or 1L03
- 3 units from ANTHROP 2E03, 2F03, 2PA3, 2Q03
- 15 units Level II, III or IV Anthropology

## DEPARTMENT OF ECONOMICS

### Honours Arts & Science and Economics

(B. Arts Sc.; See Arts & Science programme)

#### 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.

##### REQUIREMENTS

120 units total (Levels I to IV), of which 48 may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 30 units ECON 2G03, 2GG3, 2H03, 2HH3, 3A03, 3AA3, 3F03, 3G03, 3LL3, 4A03
  - 3 units from ECON 2K03, 3I03
- 18 units Level II, III or IV Economics, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.
- 3-6 units from MATH 1M03 (or 1A03, 1A06, 1AA6, 1C03, 1C06, 1N03, 1N06 or 1NN3). If requirement completed in Level I, these units may be added to electives.
- 3 units from MATH 1L03, STATS 1L03, 2D03 or OAC Finite Math. If requirement is completed in Level I or with OACs these units may be added to electives.
- 6 units Research Methods: ECON 2B03 and 3U03; or 3O06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these may be added to electives.
- 15-18 units Electives (The maximum Economics courses to be taken is 60 units.)

#### Honours Economics 2150

##### ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of B- in ECON 1A06. Credit in OAC Calculus, or MATH 1K03, or equivalent.

##### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3 and 4A03
  - 3 units from ECON 2K03, 3I03
- 18 units Level II, III or IV Economics courses, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.
- 3-6 units from MATH 1M03 (or 1A03, 1A06, 1AA6, 1C03, 1C06, 1N03, 1N06 or 1NN3). If requirement completed in Level I, these units may be added to electives.
- 3 units from MATH 1L03, STATS 1L03, 2D03 or OAC Finite Math. If requirement is completed in Level I or with OACs these units may be added to electives.
- 6 units Research Methods: ECON 2B03 and 3U03; or 3O06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 24-27 units Electives (The maximum Economics courses to be taken is 60 units.)

### 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, MATH 1L03, STATS 1L03, or STATS 2D03 is a prerequisite for research methods courses offered by the Department of Economics (ECON 2B03 and 3O06).
2. Students registered in Combined Honours programmes within the Faculty of Social Sciences who wish to satisfy the Inquiry and Honours Seminar requirements specified by the other department may replace ECON 3F03 and 4A03 with another six units Economics.

##### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3 and 4A03 (See *Note 2* above.)
  - 3 units from ECON 2K03, 3I03
- 9 units Level II, III or IV Economics, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.
- 36 units Courses specified for the other subject.
- 3-6 units from MATH 1M03 (or 1A03, 1A06, 1AA6, 1C03, 1C06, 1N03, 1N06 or 1NN3). If requirement completed in Level I, these units may be added to electives.
- 6 units Research Methods: ECON 2B03 and 3U03; or 3O06 or, in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject. (See *Note 1* above.)
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Economics are exempt from this requirement.
- 6 units 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 may be added to electives.
- 0-3 units 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 and 1MD3 (or 1MB3), MATH 1A03 and 1AA3 (or 1A06) and 1B03. MATH 1B03 may be postponed until Level II.

##### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 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 or IV Economics, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.
- 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 Research Methods: STATS 2D03; one of STATS 2MB3 or 3D06 or ECON 3O06
  - 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 6-9 units Electives

**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 ECON 1A06 and a grade of at least a B- in each of MATH 1A03, 1AA3 or 1A06 and 1B03.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 21 units ECON 2G03, 2GG3, 2H03, 2HH3, 3F03, 3LL3, 4A03
- 3 units from ECON 2K03, 3I03
- 12 units Level II, III or IV Economics, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.
- 18 units MATH 2A03, 2AA3, 2C03, 2R03, 3A03, 3AA3
- 3 units from MATH 2S03, 2T03
- 15 units from Level III, IV Mathematics, Statistics
- 6-9 units Research Methods: STATS 2D03; one of STATS 2MB3, STATS 3D06, or ECON 3O06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 0-3 units Electives

**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.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 9 units ECON 2G03, 2H03, 2B03
- 3 units from ECON 2K03, 3I03
- 12 units Level II, III or IV Economics, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I these units may be added to electives.
- 3-6 units from MATH 1M03 (or 1A03, 1A06, 1AA6, 1C03, 1C06, 1N03, 1N06 or 1NN3). If requirement completed in Level I, these units may be added to electives.
- 3 units from MATH 1L03, STATS 1L03, 2D03 or OAC Finite Math. If requirement completed in Level I or with OACs these units may be added to electives.
- 21-24 units Electives (The maximum Economics courses to be taken is 36 units.)

**Minor in Economics**

**REQUIREMENTS**

- 6 units ECON 1A06
- 6 units ECON 2G03, 2H03
- 12 units Level II, III or IV Economics, including up to six units from ECON 2A03, 2C03, 2D03, 2E03, 2F03, 2N03, 2T03.

**DEPARTMENT OF GEOGRAPHY**

**Honours Geography (B.Sc.) and**

**Honours Geography and Environmental Science (B.Sc.) and**

**Honours Geography and Geology (B.Sc.)**

(See B.Sc. programmes in Geography, Faculty of Science, Department of Geography.)

**Honours Arts & Science and Geography**

(B. Arts Sc.; See Arts & Science programme)

**Honours Geography**

2245

**(B.A., Specialist Option)**

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I Geography. STATS 1CC3 and one of MATH 1A03, 1A06, 1C03, 1C06 or 1M03 must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 12 units from GEOG 2A03, 2B03, 2D03, 2F03, 2K03, 2R03, 2T03, 2W03, 2Y03
- 9 units GEOG 3003, 4C06
- 9 units Level IV Geography
- 21 units Level III and Level IV Geography, excluding GEOG 3JJ3 and 3R03
- 3-6 units MATH 1A03, 1A06, 1C03, 1C06 or 1M03 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.
- 6 units Research Methods: one of STATS 1CC3 or GEOG 2LL3; and GEOG 2N03. If STATS 1CC3 was completed in Level I, these units may be added to electives.
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 18-21 units Electives. (The maximum Geography courses to be taken is 66 units, excluding Level I.)

**Honours Geography**

2240

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I Geography. STATS 1CC3 and one of MATH 1A03, 1A06, 1C03, 1C06 or 1M03 must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 3 units GEOG 3003
- 12 units GEOG 4CC3 and nine additional units of Level IV Geography
- or
- GEOG 4C06 and six additional units of Level IV Geography
- 27 units Level II, III or IV Geography excluding 2C03, 2E03, 2P03, 3JJ3, and 3R03
- 3-6 units MATH 1A03, 1A06, 1C03, 1C06 or 1M03 which must be

completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.

6 units Research Methods: one of STATS 1CC3 or GEOG 2LL3; and GEOG 2N03. If STATS 1CC3 was completed in Level I, these three units may be added to electives.

3 units HUMAN 2C03

6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.

27-30 units Electives

### Combined Honours B.A. in Geography and Another Subject

#### ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units of Level I Geography. Satisfaction of admission requirements for the Honours programme in the other B.A. subject. STATS 1CC3 and one of MATH 1A03, 1A06, 1C03, 1C06 or 1M03 must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

3 units GEOG 3O03

21 units Level II, III or IV Geography, excluding GEOG 2C03, 2E03, 3P03, 3JJ3, 3R03

12-15 units GEOG 4CC3 and nine additional units Level IV Geography or  
GEOG 4C06 and six additional units Level IV Geography or  
nine units Level IV Geography and the Thesis or Honours Seminar specified by the other Department Courses specified for the other subject

36 units MATH 1A03, 1A06, 1C03, 1C06 or 1M03 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be taken as electives.

3-6 units Research Methods: one of STATS 1CC3 or GEOG 2LL3; and GEOG 2N03 or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject. If STATS 1CC3 was completed in Level I, these three units may be taken as electives.

6 units HUMAN 2C03. Students combining Honours Arts and Science with Geography are exempt from this requirement.

3 units from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Geography with Arts and Science, or with a Humanities subject, are exempt from this requirement. If requirement completed in Level I, these units may be taken as electives.

6 units from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Geography with Arts and Science, or with a Humanities subject, are exempt from this requirement. If requirement completed in Level I, these units may be taken as electives.

0-15 units Electives

### Honours Geography and Environmental Studies (B.A.)

2243

#### ADMISSION

Completion of Social Sciences I with a Cumulative Average of at least 6.0 including an average of at least 7.0 in GEOG 1C03 and 1G03, and a grade of at least C+ in ENV SCI 1A06 and completion of ECON 1A06, STATS 1CC3 and one of MATH 1A03, 1A06, 1C03, 1C06, or 1M03 must be completed by the end of Level II. Their inclusion in Level I is strongly recommended.

#### COURSE LIST 1

GEOG 2F03, 2K03, 2LL3, 2N03, 2R03, 2RR3, 2T03, 2W03, 3F03, 3G03, 3K03, 3L03, 3M03, 3N03, 3P03, 3W03, 4A03, 4D03, 4E03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4W03

#### COURSE LIST 2

ANTHROP 2E03, 2F03, 2H03, 2PA3, 3C03, 3F03, 3V03, 3Z03, 4A03

BIOLOGY 2D03, 2E03, 3SS3, 3TT3, 4Y03

ECON 2G03, 3B03, 3C03, 3J06, 3W03, 3Z03, 4E03

PHILOS 2G03

POL SCI 2E06, 2G06, 3S03, 3Z06, 4F06, 4G06, 4K06, 4O06

SOCIOL 3G03, 3HH3

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)

3 units BIOLOGY 2F03

24 units GEOG 3C03, 3E03, 3J03, 3O03, 3U03, 3UU3, 4VV6

3 units from Course List 1

18 units from Course List 2

12 units from Level III or IV courses in Course List 1 or 2

3 units from Course List 1 or 2

3-6 units MATH 1A03, 1A06, 1C03, 1C06 or 1M03 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.

6 units Research Methods: one of STATS 1CC3 or GEOG 2LL3; and GEOG 2N03. If STATS 1CC3 was completed in Level I, these three units may be added to electives.

3 units HUMAN 2C03

6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.

6-9 units Electives

GEOLOGY 1C03 is strongly recommended.

### Honours Geography and Geology (B.A.)

2240250

#### ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 and an average of at least 7.0 in GEOG 1C03 and 1G03 and a grade of at least B- in GEOLOGY 1C03. STATS 1CC3 and one of MATH 1A03, 1A06, 1C03, 1C06 or 1M03 must be completed by the end of Level II. Their inclusion in Level I is strongly recommended. CHEM 1C03 must be completed by the end of Level II.

#### COURSE LIST 1

GEOG 4A03, 4C06, 4D03, 4E03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4W03

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

30 units from the Level I programme completed prior to admission to the programme (See Admission above.)

3 units GEOG 2T03

6 units from GEOG 2F03, 2K03, 2W03

15 units GEOLOGY 2B06, 2C03, 2D03, 2E01, 2EE2

9 units GEOG 3E03, 3M03, 3O03

6 units from GEOG 3F03, 3K03, 3N03, 3P03, 3W03

6 units GEOLOGY 3C03, 3S03

3 units from GEOLOGY 2I03, 2J03, 3F03

6 units Level IV Geography from Course List 1

6 units Level IV Geology

3 units CHEM 1C03. If requirement completed in Level I, these units may be added to electives.

3-6 units from MATH 1A03, 1A06, 1C03, 1C06 or 1M03 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.

6 units Research Methods: one of STATS 1CC3 or GEOG 2LL3; and GEOG 2N03. If STATS 1CC3 was completed in Level I, these three units may be added to electives.

3 units HUMAN 2C03

6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.

6-9 units Electives



**B.A. in Geography**

1240

**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 of Level I Geography.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 6 units from GEOG 2A03, 2B03, 2D03, 2F03, 2K03, 2LL3, 2N03, 2NN3, 2R03, 2RR3, 2T03, 2U03, 2W03, 2Y03
- 6 units Level II Geography
- 6 units from GEOG 3F03, 3G03, 3K03, 3M03, 3N03, 3NN3, 3P03, 3Q03, 3T03, 3W03, 3X03, 3Z03
- 6 units Level III Geography.
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 30 units Electives. (The maximum Geography courses to be taken is 36 units, excluding Level I.)

**Minor in Geography**

**REQUIREMENTS**

- 6 units Level I Geography
- 6 units Level III or IV Geography
- 12 units Level II, III or IV Geography with no more than six units from GEOG 2C03, 2E03, 2P03, 3JJ3 or 3R03

**GERONTOLOGICAL STUDIES**

**Combined Honours in Gerontology and Another Subject**

**ADMISSION**

Enrolment in this programme is limited. Admission is by selection.

Completion of any Level I programme with a minimum Cumulative Average of 6.0 including a grade of at least B- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the Honours B.A. programme in the other subject.

**NOTES**

1. Application for admission, including a statement explaining the applicant's interest in the programme, should 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 (or its equivalent) in Level I *may* be considered for admission to the programme, and should consult the Chair of the Committee of Instruction.
3. Courses other than Gerontology courses or those listed in Course List 1 may be substituted at registration, with the permission of the Chair of the Committee of Instruction.
4. GERONTOL 2B03 and 3D03 may both be counted toward the required units in Gerontology.
5. GERONTOL 2C03 or 3C03 and 3G03 must be completed by the end of Level III.

**COURSE LIST 1**

- ANTHROP 3Z03
  - ECON 3D03, 3Z03
  - GEOG 4S03
  - HTH SCI 3B03
  - PHILOS 3C03
  - RELIG ST 2M03, 2N03, 2WW3
  - SOC WORK 3C03, 4E03
  - SOCIOL 3CC3, 3G03, 3HH3, 3X03, 4P03
- or other designated and approved courses. (See *Note 3* above.)

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 3 units from GERONTOL 2A03, 2AA3
- 3 units from GERONTOL 2B03, 3D03. (See *Note 4* above.)
- 3 units GERONTOL 3B03
- 6 units from GERONTOL 4A06 (Thesis) or PSYCH 4D06 (Thesis)-or RELIG-ST 4J06 (Thesis)
- 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 Research Methods: GERONTOL 2C03 or 3C03
- 3-6 units Research Methods: one of GERONTOL 3G03, SOCIOL 3H06, PSYCH 2R03 or another approved three unit statistics course
- 3 units HUMAN 2C03. Students combining Arts and Science with Gerontology are exempt from this requirement.
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Gerontology with Arts & Science, or with a Humanities subject, are exempt from this requirement. If requirement completed in Level I, these units may be added to electives.
- 3-6 units Electives

**B.A. in Gerontology and Another Subject**

**ADMISSION**

Enrolment in this programme is limited. Admission is by selection.

Completion of any Level I programme with a minimum Cumulative Average of 3.5 including a grade of at least C- in GERONTOL 1A06 (or its equivalent), and satisfaction of admission requirements for the B.A. in the other subject.

**NOTES**

1. Application for admission, including a statement explaining the applicant's interest in the programme, should 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 (or its equivalent) *may* be considered for admission to the programme and should consult the Chair of the Committee of Instruction.
3. Courses other than those listed in Course List 1 may be substituted at registration, with the 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. GERONTOL 2B03 and 3D03 may both be counted toward the required units in Gerontology.
6. Students in the B.A. in Gerontology and Another Subject/Bachelor of Social Work should consult with the Chair of the Committee of Instruction regarding GERONTOL 3B03 (The Gerontology Field Observation requirement) and SOC WORK 4V03.

**COURSE LIST 1**

- ANTHROP 3Z03
  - ECON 3D03, 3Z03
  - GEOG 4S03
  - HTH SCI 3B03
  - PHILOS 3C03
  - RELIG ST 2M03, 2N03, 2WW3
  - SOC WORK 3C03, 4E03
  - SOCIOL 3CC3, 3G03, 3HH3, 3X03, 4P03
- or other designated and approved courses (See *Note 3* above.)

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme (See *Admission* above.)
- 3 units from GERONTOL 2A03, 2AA3
- 6 units from GERONTOL 2C03, 3B03 or 3C03
- 3 units from GERONTOL 2B03, 3D03 (see *Note 5* above.)
- 12 units Level II, III or IV Gerontology or courses from Course List 1
- 24 units Courses specified for the other subject (See *Note 4* above.)
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Gerontology with a Humanities subject, are exempt from this requirement. If requirement completed in Level I, these units may be added to electives.
- 6 units Electives

**B.A. in Gerontology as a Second Degree 1265****ADMISSION**

**Enrolment in this programme is limited. Admission is by selection.**

Completion of an undergraduate degree from a recognized university normally with a minimum 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, should 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 (or its equivalent) in their first degree programme *may* be considered for admission to the programme and should consult the Chair of the Committee of Instruction.

**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. This may include Research Methods courses, Advanced Seminar in Gerontology, a directed research course for second degree students and other courses at the fourth year level. 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 I 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 at registration, with the permission of the Chair of the Committee of Instruction.
4. GERONTOL 2B03 and 3D03 may be counted toward the required units in Gerontology.

**COURSE LIST 1**

ANTHROP 3Z03  
ECON 3D03, 3Z03  
GEOG 4S03  
HTH SCI 3B03  
PHILOS 3C03

RELIG ST 2M03, 2N03, 2WW3

SOC WORK 3C03, 4E03

SOCIOL 3CC3, 3G03, 3HH3, 3X03, 4P03  
or other designated and approved courses. (See *Note 3* above.)

**REQUIREMENTS (MINIMUM)**

30 units total

- 3 units from GERONTOL 2A03, 2AA3
- 3 units 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

**Honours B.A. in Gerontology and Another Subject as a Second Degree****ADMISSION**

**Enrolment in this programme is limited. Admission is by selection.**

Former McMaster students who have completed a three-level B.A. degree in Combined Gerontology and Another Subject may apply to the Combined Honours in Gerontology and Another Subject as a Second Degree if they have a minimum CA 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, should be addressed to the Chair of the Committee of Instruction and sent to the Office of the Registrar (Admissions) **prior to May 15**.

**NOTES**

1. Students are required to take courses to total at least 30 units, including all Honours requirements for both subjects. All units for the second degree must be completed at McMaster.
2. Courses other than those listed below in Course List 1 may be substituted at registration with the permission of the Chair of the Committee of Instruction.
3. GERONTOL 2B03 and 3D03 may both be counted towards the required units in Gerontology.

**COURSE LIST 1**

ANTHROP 3Z03  
ECON 3D03, 3Z03  
GEOG 4S03  
HTH SCI 3B03  
PHILOS 3C03  
RELIG ST 2M03, 2N03, 2WW3  
SOC WORK 3C03, 4E03  
SOCIOL 3CC3, 3G03, 3HH3, 3X03, 4P03  
or other designated and approved courses. (See *Note 2* above.)

**REQUIREMENTS (MINIMUM)**

30 units total

Gerontology courses or courses from Course List 1 to complete the Honours requirements including six units of research methods. Courses specified for the other subject.

**DEPARTMENT OF KINESIOLOGY**

Students entering the University starting in September 1994 will follow the requirements for the Bachelor of Kinesiology programme. Those students who entered the University prior to September 1994 will follow the requirements for the Bachelor of Physical Education Programme as outlined below. These students will be given a choice of whether they wish to graduate with the B.P.E. or B.Kin. degree.

**Bachelor of Kinesiology (B. Kin.) 2308**

**Enrolment in this programme is limited.**

The Department of Kinesiology offers a four-year programme leading to the degree of Bachelor of Kinesiology (B.Kin.). The programme differs somewhat from the majority of Kinesiology programmes in the province in that the majority of the student's Level I course load is in Kinesiology. The programme is divided into two distinct parts.

During Levels I and II students take a core of 36 units of required theoretical courses in which they are introduced to the various subdisciplines of Kinesiology and a core of six units of required practicum courses.

During Levels III and IV students are free to select from a variety of Kinesiology electives in both theory and practicum areas. These courses, supplemented by the arts and science electives selected by the student, may be grouped in various ways with career and/or graduate study goals in mind.

**NOTES**

1. Since September 1995, practicum courses have been graded as Pass or Fail and are not included in the calculation of the Cumulative Average. (In 1994-95 practicum courses were graded as A, B or F.)

**2. Readmission**

A student who is ineligible to continue in the B.Kin. programme may apply for readmission after not less than one year. Application for re-admission must be made in writing to the Undergraduate Coordinator by **March 31** of the year in which readmission is desired. Students will not be considered for readmission unless they have achieved a minimum average of 7.0 (B-) in at least 24 units of university course work.

**Readmission is not guaranteed.**

**3. Work load**

In any Fall/Winter session, a student may not register for more than the required 33 units without the approval of the Undergraduate Coordinator.

**4. Transferring into the B. Kin. Programme**

Enrolment of transfer students from another university or another McMaster programme is limited and applicants must normally have at least a B- average in their previous university work to be considered. Students transferring from another university should see the *Admission Requirements and Application Procedures* sections of this Calendar. McMaster students interested in transferring should contact the Undergraduate Administrative Assistant for a transfer form by **March 31** of the year in which the transfer is desired.

**REQUIREMENTS**

132 units total (Levels I to IV), of which 51 units including 3 practicum units may be Level I.

**LEVEL I: 33 UNITS**

18 units KINESIOL 1A06, 1B06, 1E06  
3 units CPR/First Aid (1CA1), Fitness (1F01) and Basic Aquatic Survival Skills (1S01)

12 units Electives

**LEVEL II: 33 UNITS**

18 units KINESIOL 2A06, 2B06, 2C06  
3 units Dance (2D01), Body Awareness (2E01) and Play (2P01)

12 units Electives

**LEVELS III AND IV: 66 UNITS**

30 units Level III or IV Kinesiology (maximum allowed)  
6 units Practicum  
30 units Electives

**B.Kin. as a Second Degree 2309**

**Enrolment in this programme is limited.**

**ADMISSION**

Completion of any undergraduate degree from a recognized university with a minimum average of at least 7.0 (B-).

**NOTES**

- Applications must be received at the Ontario Universities' Application Centre by **May 15** of each year.
- The degree must be completed on a full-time basis.

- Since September 1995, practicum courses have been graded as Pass or Fail and are not included in the calculation of the Cumulative Average. (In 1994-95 practicum courses were graded as A, B or F.)

**REQUIREMENTS**

78 units total (66 Theory and 12 Practicum)

**LEVEL I: 21 UNITS**

18 units KINESIOL 1A06, 1B06, 1E06  
3 units CPR/First Aid (1CA1), Fitness (1F01) and Basic Aquatic Survival Skills (1S01)

**LEVEL II: 21 UNITS**

18 units KINESIOL 2A06, 2B06, 2C06  
3 units Dance (2D01), Body Awareness (2E01) and Play (2P01)

**LEVELS III AND IV: 36 UNITS**

30 units Level III or IV Kinesiology (maximum allowed)  
6 units Practicum

**Bachelor of Physical Education (B.P.E.) 2430**

**NOTES**

1. **From September 1992 until August 1995, practicum courses were graded as A, B, or F and were not included in the calculation of the Cumulative Average. Since September 1995, practicum courses have been graded as Pass or Fail.**

2. Advanced credit and credit earned during the Spring/Summer sessions may be used to reduce the time required to complete the degree. In any Fall/Winter session, a student may not register for more than the required number of units without the approval of the Undergraduate Coordinator.

**REQUIREMENTS**

For students who entered September 1992 or September 1993  
131 units total (Levels I to IV), of which 49 units may be Level I courses including Practicum

**LEVELS III AND IV: 66 UNITS**

(Last offered in 1996-97)  
30 units Levels III or IV Physical Education or Kinesiology (maximum allowed)  
6 units Practicum  
30 units Electives

**LABOUR STUDIES**

**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 1B03 and 1C03, PSYCH 1A06, SOCIOLOGICAL 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 15**. The Admissions Committee may wish to interview each applicant.
- Students are encouraged to consult the Labour Studies programme handbook which is available from the Labour Studies Office.
- Students may not transfer from Labour Studies to a Minor in Labour Studies except by the normal application process.
- Students must successfully complete ECON 1A06 and SOCIOLOGICAL 1A06 by the end of 60 units.
- LABR ST 2A06 and COMMERCE 2BA3 should be taken in Level II; COMMERCE 4BC3 and 4BD3 should be taken in Level III.
- Students should take note of all required prerequisites for upper level courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 15 units LABR ST 2A06, 2B03, 2C03; COMMERCE 2BA3 (See *Note 5* above.)
- 9 units LABR ST 3C03; COMMERCE 4BC3, 4BD3 (See *Note 5* above.)
- 12 units from LABR ST 3A03, 3AA3, 3B03, 3D03, 3E03, 3F03, 3I03
- 18 units LABR ST 4A09, 4B03, 4C03, 4D03
- 12 units SOCIOLOGICAL 1A06 and ECON 1A06 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.
- 3-6 units Research Methods: from ECON 2B03, 3O06, SOCIOLOGICAL 2Y03, 3H06, POL SCI 2F06, 3N06, STATS 1A03, 1CC3, 2R06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 9-12 units Electives, which may include COMMERCE 3BB3

**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 1B03 and 1C03, PSYCH 1A06, SOCIOLOGICAL 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 15**. The Admissions Committee may wish to interview each applicant.
2. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
3. Students may not transfer from Labour Studies to a Minor in Labour Studies except by the normal application process.
4. Students must successfully complete ECON 1A06 and SOCIOLOGICAL 1A06 by the end of 60 units.
5. LABR ST 2A06 should be taken in Level II. COMMERCE 4BC3 should be taken in Level III if needed as a prerequisite for Level IV courses.
6. Students should take note of all required prerequisites for upper level courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 9 units LABR ST 2A06, 2C03
- 21 units from LABR ST 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3F03, 3I03; COMMERCE 4BC3 and 4BD3
- 12 units LABR ST 4A09, 4B03
- 3 units from LABR ST 4C03, 4D03
- 12 units SOCIOLOGICAL 1A06 and ECON 1A06 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.
- 3-6 units Research Methods: from ECON 2B03, 3O06, SOCIOLOGICAL 2Y03, 3H06, POL SCI 2F06, 3N06, STATS 1A03, 1CC3, 2R06

- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.

18-21 units Electives, which may include COMMERCE 3BB3

**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 1B03 and 1C03, PSYCH 1A06, SOCIOLOGICAL 1A06. Satisfaction of admission requirements for the Honours B.A. programme in the other subject.

**NOTES**

1. Application for admission (forms available in the 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 15**. The Admissions Committee may wish to interview each applicant.
2. **Electives:** SOCIOLOGICAL 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.
3. Students may choose to satisfy the requirements for Research Methods, Inquiry and Honours Seminar either as specified by the Labour Studies programme or as specified by the other department or programme. Students combining Labour Studies with a Humanities subject or with Religious Studies must complete the Research Methods, Inquiry and Honours Seminar requirements as specified by the Labour Studies programme. (LABR ST 4A09 and 4B03, and three to six units from the Labour Studies Research Methods Menu). Combined Honours students who wish to satisfy the Research Methods, Inquiry and Honours Seminar requirements as specified by the other department may replace LABR ST 4A09 and 4B03 with three units Level III or IV and three units Level IV Labour Studies courses.
4. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
5. Students must successfully complete ECON 1A06 and SOCIOLOGICAL 1A06 by the end of 60 units.
6. Students may not transfer from Honours Labour Studies to a Minor in Labour Studies except by the normal application process.
7. LABR ST 2A06 should be taken in Level II. COMMERCE 4BC3 should be taken in Level III if needed as a prerequisite for Level IV courses.
8. Students should take note of all required prerequisites for upper level courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

**REQUIREMENTS**

120-123 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 9 units LABR ST 2A06, 2C03
- 15 units from LABR ST 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3F03, 3I03; COMMERCE 4BC3 and 4BD3
- 12 units LABR ST 4A09, 4B03
- 3 units from LABR ST 4C03, 4D03
- 36 units Courses specified for the other subject
- 12 units SOCIOLOGICAL 1A06 and ECON 1A06 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be taken as electives.

- 3-6 units Research Methods: from ECON 2B03, 3O06, SOCIOL 2Y03, 3H06, POL SCI 2F06, 3N06, STATS 1A03, 1CC3, 2R06 or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject (See Note 3 above.)
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Labour Studies are exempt from this requirement.
- 6 units 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 may be taken as electives.
- 0-18 units Electives, which may include COMMERCE 3BB3.

**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 1B03 and 1C03, PSYCH 1A06, 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 15**. The Admissions Committee may wish to interview each applicant. Students applying for the Honours programme will automatically be considered for the B.A. programme.
2. Part-time students continuing under the regulations of the previous B.A. programme (i.e., who **entered** the programme **prior to 1987/88**) should consult the office of the Associate Dean (Studies) of the Faculty of Social Sciences or the Director of Labour Studies.
3. Students are encouraged to consult the Labour Studies Programme Handbook, which is available from the Labour Studies Office.
4. Students in the B.A. programme may not transfer to another Labour Studies programme except by the normal application process.
5. Students must successfully complete ECON 1A06 and SOCIOL 1A06 by the end of 60 units.
6. LABR ST 2A06 should be taken in Level II.
7. Students should take note of all required prerequisites for upper level courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

**REQUIREMENTS**

- 90 units total (Levels I to III), of which 42 units may be Level I courses
- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 12 units LABR ST 2A06, 2B03, 2C03
- 9 units COMMERCE 2BA3, 4BC3, 4BD3
- 12 units from LABR ST 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3F03, 3I03
- 12 units SOCIOL 1A06 and ECON 1A06 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 9 units Electives, which may include COMMERCE 3BB3.

**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 15**. The Admissions Committee may wish to interview each applicant.
2. Honours students with a Minor in Labour Studies may take no more than three units of Level IV courses.
3. Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
4. Students may not transfer from the Minor in Labour Studies to another Labour Studies programme except by the normal application process.
5. Students should take note of all required prerequisites for upper level courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

**REQUIREMENTS**

- 6 units LABR ST 1A03 and 1Z03 or 1AA3
- 9 units LABR ST 2A06, 2C03
- 9 units Level II, III or IV Labour Studies
- 12 units ECON 1A06 and SOCIOL 1A06

**PHYSICAL EDUCATION (B.P.E.)**

(See Department of Kinesiology)

**DEPARTMENT OF POLITICAL SCIENCE**

**Honours Arts & Science and Political Science**

(B. Arts Sc.; See Arts & Science programme)

**Honours Political Science 2450**

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including an average of at least 7.0 in six units from POL SCI 1A06 or 1B03 and 1C03.

**NOTES**

1. Students should be alerted to those Level II courses that are required to qualify for a number of Level III and IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POL SCI 2F06 or 3N06 and 2O06 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes.

**REQUIREMENTS**

- 120 units total (Levels I to IV), of which 48 units may be Level I courses
- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 6 units POL SCI 2O06
- 30 units Level II, III or IV Political Science of which a maximum of 12 units may be Level II
- 6 units POL SCI 4Z06
- 6 units Level IV Political Science
- 6 units Research Methods: POL SCI 2F06 or 3N06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 27 units Electives (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 an average of at least 7.0 in six units from POL SCI 1A06 or 1B03 and 1C03. Satisfaction of the admission requirements for the Honours programme in the other subject.

### NOTES

1. Students should be alerted to those Level II courses that are required to qualify for a number of Level III and IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POL SCI 2F06 or 3N06 and 2O06 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes.

### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- |          |  |
|----------|--|
| 30 units | from the Level I programme completed prior to admission to the programme (See <i>Admission</i> above.)   |
| 6 units  | POL SCI 2O06   |
| 12 units | Level III Political Science  |
| 12 units | Level II, III or IV Political Science  |
| 6 units  | Level IV Political Science   |
| 36 units | Courses specified for the other subject  |
| 6 units  | Research Methods: POL SCI 2F06 or 3N06 or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject.  |
| 3 units  | HUMAN 2C03. Students combining Honours Arts and Science with Political Science are exempt from this requirement.   |
| 6 units  | 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. If requirement completed in Level I, these units may be added to electives. |
| 3 units  | Electives (the maximum Political Science courses to be taken is 48 units).   |

## B.A. in Political Science 1450

### ADMISSION

Completion of any Level I programme, with a Cumulative Average of at least 3.5 including an average of at least 4.0 in six units from POL SCI 1A06 or 1B03 and 1C03.

### NOTES

1. Students should be alerted to those Level II courses that are required to qualify for a number of Level III and IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.
2. POL SCI 2F06 or 3N06 and 2O06 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes.

### REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I courses

- |          |   |
|----------|---|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)   |
| 12 units | Level II Political Science  |
| 12 units | Level III Political Science   |
| 6 units  | from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I these units may be added to electives. |
| 30 units | Electives (The maximum Political Science courses to be taken is 36 units.)  |

## Minor in Political Science

### NOTES

1. All students should note those Level II Political Science courses that are required in order to register in a number of Level III courses.
2. 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 Political Science of which up to 12 units may be Level II courses |

## DEPARTMENT OF PSYCHOLOGY

### Honours Psychology (B.Sc.) and

### Honours Psychology (B.Sc.) (Complementary Studies Option)

(See B.Sc. programmes in Psychology, Faculty of Science, Department of Psychology)

### Honours Biology and Psychology (B.Sc.)

(See B.Sc. programmes in Biology, Faculty of Science, Department of Biology)

### Honours Computer Science and Psychology (B.Sc.)

(See B.Sc. programmes in Computer Science, Faculty of Science, Department of Computer Science and Systems)

### Honours Arts and Science and Psychology

(B. Arts Sc.; See Arts & Science programme)

### Honours Psychology (B.A., Specialist Option) 2459

### ADMISSION

**Enrolment in this programme is limited.** (See *Note 1* below.) Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in Psychology 1A06 and credit in one of MATH 1A03, 1A06, 1AA6, 1C03, 1C06 or a grade of at least C- in MATH 1M03.

### NOTES

1. Applications for all Levels may be picked up at the Office of the Associate Dean, Faculty of Social Sciences, Kenneth Taylor Hall, Room 120. The applications are available **March 1st** and must be submitted by **March 31st**.
2. Credit in one of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, or MATH 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.
3. PSYCH 2R03, 2RR3 and MATH 1B03 must be completed before entrance into Level III of the programme.
4. At some time during the programme, the student:
  - a. must meet a laboratory requirement by completing one of PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, or 4QQ3. Enrolment in Psychology Laboratory courses is limited.
  - b. must complete six units from the Faculty of Humanities and/or the Department of Religious Studies;
  - c. must complete HUMAN 2C03.
5. BIOLOGY 1A06 is a prerequisite for PSYCH 2F03.
6. **Students who entered Level II Honours B.A. Psychology before September 1994, may, in Level IV, register for Psychology 4D06 (Psychology Thesis) with permission of the course coordinator. These students will be transferred to Honours Psychology (Specialist Option).**

### COURSE LIST 1

- |       |  |
|-------|--|
| PSYCH | 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3 |
|-------|--|

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

**LEVEL II: 30 UNITS**

- 6 units PSYCH 2R03, 2RR3
- 9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
- 3 units MATH 1B03
- 3 units from the Faculty of Science, excluding Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A06 is highly recommended.
- 6 units Electives, excluding Psychology. (See Note 4 (b), and (c) above.)
- 3 units 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 (See Note 6 above.)
- 12 units Level III or IV Psychology including one course from Course List I, 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**

Enrolment in this programme is limited. (See Note 1 below.) Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in Psychology 1A06 and credit in one of MATH 1A03, 1A06, 1AA6, 1C03, 1C06 or a grade of at least C- in MATH 1M03.

**NOTES**

1. Applications for all Levels may be picked up at the Office of the Associate Dean, Faculty of Social Sciences, Kenneth Taylor Hall, Room 120. The applications are available **March 1st** and must be submitted by **March 31st**.
2. Credit in one of MATH 1A03, 1A06, 1AA6, 1C03, 1C06 or MATH 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.
3. PSYCH 2R03, 2RR3 and MATH 1B03 must be completed before entrance into Level III of the programme.
4. At some time during the programme, the student:
  - a. must meet a laboratory requirement by completing one of PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, or 4QQ3. Enrolment in Psychology Laboratory courses is limited.
  - b. must complete six units from the Faculty of Humanities and/or the Department of Religious Studies;
  - c. must complete HUMAN 2C03.
5. BIOLOGY 1A06 is a prerequisite for PSYCH 2F03.
6. This programme requires nine units of Level III or IV courses outside of Psychology. The prerequisites for these courses should be considered in Levels II and III.
7. **Students who entered Level II Honours B.A. Psychology before September 1994, may, in Level IV, register for Psychology 4D06 (Psychology Thesis) with permission of the course coordinator. These students will be transferred to Honours Psychology (Specialist Option).**

**COURSE LIST 1**

PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

**LEVEL II: 30 UNITS**

- 6 units PSYCH 2R03, 2RR3
- 9 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
- 3 units MATH 1B03
- 3 units from the Faculty of Science, excluding the Psychology and the Mathematics courses taken to satisfy the admission or programme requirements. BIOLOGY 1A06 is recommended.
- 9 units Electives, excluding Psychology. (See Notes 4 (b), (c) and 6 above.)

**LEVEL III: 30 UNITS**

- 15 units Level III Psychology; or three units from PSYCH 2E03, 2F03, 2H03, 2T03 (if not taken in Level II) and 12 units of Level III Psychology. (See Note 4 (a) above.)
- 12 units Electives, excluding Psychology (See Notes 4 (b), (c) and 6 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 Notes 4 (a) and 7 above.)
- 9 units Electives chosen from Levels III and IV courses excluding Psychology. (See Notes 4 (b), (c) and 6 above.)
- 6 units Electives

**Combined Honours in Psychology and Another Subject (B.A.)**

**ADMISSION**

Enrolment in this programme is limited. (See Note 1 below.) Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with a Cumulative Average of at least 6.0, a grade of at least B- in Psychology 1A06 and credit in one of MATH 1A03, 1A06, 1AA6, 1C03, 1C06 or a grade of at least C- in MATH 1M03. Satisfaction of the admission requirements for the Honours programme in the other subject.

**NOTES**

1. Applications for all Levels may be picked up at the Office of the Associate Dean, Faculty of Social Sciences, Kenneth Taylor Hall, Room 120. The applications are available **March 1st** and must be submitted by **March 31st**.
2. Credit in one of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, or MATH 1M03 with a grade of at least C- must be completed before entrance into Level II of the programme.
3. PSYCH 2R03, 2RR3 and MATH 1B03 must be completed before entrance into Level III of the programme.
4. At some time during the programme, the student:
  - a. must meet a laboratory requirement by completing one of PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, or 4QQ3. Enrolment in Psychology Laboratory courses is limited.
  - b. must complete six units from the Faculty of Humanities and/or the Department of Religious Studies. Students combining Psychology with Arts and Science or with a Humanities subject are exempt from this requirement.
  - c. must complete HUMAN 2C03. Students combining Psychology with Arts and Science are exempt from this requirement.
5. BIOLOGY 1A06 is a prerequisite for PSYCH 2F03.

**COURSE LIST 1**

PSYCH 3C06, 3E03, 3L03, 3LL3, 3QQ3, 3S03, 3V03, 4G03, 4QQ3

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

*Students in all Relig Studies pro now must complete units of Relig Studies courses in order to gain admission*

## 120 FACULTY OF SOCIAL SCIENCES

### LEVEL II: 30 UNITS

- 6 units PSYCH 2R03, 2RR3
- 6 units from PSYCH 2E03, 2F03, 2H03, 2T03, 2V03
- 3 units MATH 1B03
- 3 units from the Faculty of Science, excluding the Psychology and the Mathematics courses taken to satisfy the admission or programme requirements.
- 12 units Courses as specified for the other subject.

### 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 4 (a) above.)
- 12 units Courses as specified for the other subject.
- 6 units Electives (See Note 4 (b) and (c) above.)

### LEVEL IV: 30 UNITS

- 12 units Level III or IV Psychology including one course from Course List I, if not already completed. (See Note 4 (a) above.)
- 12 units Courses as specified for the other subject.
- 6 units Electives (See Note 4 (b) and (c) above.)

## Psychology Major (B.A.)

3460

### NOTES

1. The Psychology Major programme is being phased out. Level III will be last offered in September 1996.
2. Completion of one of MATH 1A03, 1A06, 1AA6, 1B03, 1C03, 1C06, or 1M03 is required for entrance into Level III. Completion in Level I is highly recommended.
3. The statistics requirement (PSYCH 2G03 or 2R03) must be completed before entrance into Level III.
4. This programme requires 12 units of Level III or IV Elective courses, three of which may be Psychology. The prerequisites for these courses should be considered in Levels II and III.

### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

### LEVEL III: 30 UNITS

(Last offered in 1996-97)

- 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
- 6 units from Business, Humanities or Science, excluding Psychology
- 9 units Electives, excluding Psychology. (See Note 4 above.)
- 3 units Electives

### LEVEL IV: 30 UNITS

- 12 units Level III or IV Psychology
- 6 units from Business, Humanities or Science, excluding Psychology
- 12 units Electives from Level III or IV, no more than three of which may be Psychology courses

## B.A. in Psychology

1460

### ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 3.5 and a grade of at least C- in PSYCH 1A06.

### NOTES

1. Completion of one of MATH 1A03, 1A06, 1AA6, 1B03, 1C03, 1C06, 1K03, or 1M03 is required in Level II. (Completion in Level I is highly recommended.)
2. The statistics requirement (PSYCH 2G03 or 2R03) must be completed before entrance into Level III.

### REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I courses

### LEVEL II: 30 UNITS

- 3 units from PSYCH 2G03, 2R03 (See Note 2 above.)
- 6 units from PSYCH 2E03, 2F03, 2H03, 2T03
- 3 units Level II Psychology

3-6 units from MATH 1A03, 1A06, 1AA6, 1B03, 1C03, 1C06, 1K03 or 1M03 (See Note 1 above.)

6 units from Business, Humanities or Science, excluding Psychology

3-6 units Electives, excluding Psychology

### 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 1A06
- 12 units Level II or III Psychology
- 6 units Level III Psychology

## DEPARTMENT OF RELIGIOUS STUDIES

### Fields of Study

The Department offers courses in four fields of study. Students are encouraged to specialize in any one of these fields. Level II, III and IV courses are allocated to the fields as follows:

#### I. ASIAN RELIGIONS

RELIG ST 2A03, 2J06, 2L03, 2P06, 2PP3, 2RR3, 2T03, 2TT3, 3AA3, 3E03, 3H03, 3I03, 3L03, 3P03, 3S03, 3U03, 3UU3, 4F03, 4G03

SANSKRIT 3A06, 4B06

#### II. BIBLICAL STUDIES

RELIG ST 2B03, 2D06, 2DD3, 2EE3, 2F03, 2GG3, 2HH3, 2NN3, 2O03, 2VV3, 2YY3, 2Z03, 3K03, 3M03, 3N03, 3R03, 3T03, 4B03, 4C03

HEBREW 2A03, 2A06, 2B03, 3A03, 3A06, 3B03

#### III. WESTERN RELIGIOUS THOUGHT

RELIG ST 2C03, 2CC3, 2G06, 2H03, 2I03, 2II3, 2JJ3, 2KK3, 2R06, 2S06, 2U03, 2UU3, 2X03, 2XX3, 2Y03, 2ZZ3, 3II3, 3KK3, 3LL3, 3MM3, 3NN3, 3YY3, 3Z03, 3ZZ3, 4D03, 4E03

#### IV. CONTEMPORARY AND COMPARATIVE RELIGIONS

RELIG ST 2AA3, 2BB3, 2K03, 2M03, 2N03, 2O06, 2Q03, 2QQ3, 2SS3, 2V03, 2W03, 2WW3, 3A03, 3B03, 3BB3, 3J06, 3JJ6, 3SS3

### NOTE

Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit and/or Japanese early in their programme (see the calendar offerings listed under these headings). Students wishing to specialize in Biblical Studies should consider work in Greek (see offerings under *Classics, Greek* in the *Course Listings* section of this Calendar) and/or Hebrew.

## 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 required to consult a Departmental Undergraduate advisor or a member of the Undergraduate Affairs Committee in the selection of their third and fourth year courses.
2. Part-time students should be aware that required courses in Levels II, III and IV are regularly offered in the evenings and/or in the summer. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.



3. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 6 units from Asian Religions
- 3 units from Biblical Studies
- 3 units from Western Religious Thought
- 3 units from Contemporary and Comparative Religions
- 3 units RELIG ST 3F03
- 9 units Level III Religious Studies
- 12 units RELIG ST 4A06, 4J06
- 9 units Level III or IV Religious Studies or approved substitutions
- 6 units Research Methods: six units of Linguistics or Statistics; or six units of a language other than English
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities. If requirement completed in Level I, these units may be added to electives.
- 27 units 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 or a member of the Undergraduate Affairs Committee in the selection of their third and fourth year courses.
2. Part-time students should be aware that required courses in Levels II, III and IV are regularly offered in the evenings and/or in the summer. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.
3. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies.
4. Students must consult with both departments to determine the manner in which the Research Methods requirement is to be satisfied. Options include six units of Language other than English or Linguistics or six units of Statistics.
5. Students who wish to write a thesis in a subject other than Religious Studies must consult with the Departmental Undergraduate Advisor. For example, a student in Combined Honours Religious Studies and Gerontology may, with the approval of the advisor from Religious Studies, arrange to complete Gerontology 4A06 rather than Religious Studies 4J06.

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 3 units from Asian Religions
- 6 units three units each from two of Biblical Studies, Western Religious Thought and Contemporary and Comparative Religions
- 3 units RELIG ST 3F03
- 9 units Level III Religious Studies or approved substitutions
- 12 units RELIG ST 4A06, 4J06 (See *Note 5* above.)
- 3 units Level II, III or IV Religious Studies
- 36 units Courses specified for the other subject
- 6 units Research Methods: six units of Linguistics or Statistics; or six units of a language other than English. (See *Note 4* above.) If requirement completed in Level I, these units may be added to electives.

- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Religious Studies are exempt from this requirement.
- 6 units from the Faculty of Humanities. Students combining Religious Studies with Arts and Science, or with a Humanities subject, are exempt from this requirement. If requirement completed in Level I, these units may be added to electives.
- 3 units Electives

**B.A. in Religious Studies 1475**

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 3.5 and an average of at least 4.0 in six units of Religious Studies courses, preferably including one Level I Religious Studies course.

**NOTES**

1. All students should consult the Departmental Handbook. All are strongly urged to consult the Departmental Advisor at least once each year.
2. Part-time students should be aware that required courses in Levels II, III and IV are regularly offered in the evenings and/or in the summer. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.
3. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies.

**REQUIREMENTS**

90 units total (Levels I to III), of which 42 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 3 units from Asian Religions
- 6 units three units each from two of Biblical Studies, Western Religious Thought and Contemporary and Comparative Religions
- 3 units RELIG ST 3F03
- 9 units Level III Religious Studies or approved substitutions (including Level IV courses)
- 9 units Level II, III or IV Religious Studies
- 6 units from the Faculty of Humanities. If requirement completed in Level I, these units may be added to electives.
- 24 units Electives (The maximum Religious Studies courses to be taken is 48 units.)

**Minor in Religious Studies**

**NOTES**

1. All students should consult the Departmental Handbook. All students are strongly urged to consult the Departmental Advisor at least once a year. Part-time students should be aware that required courses in Levels II, III and IV are regularly offered in the evenings and/or in the summer.

**REQUIREMENTS**

24 units Religious Studies courses with no more than six units from Level I

**SCHOOL OF SOCIAL WORK**

**Combined B.A./B.S.W.**

**ADMISSION**

Completion of any Level I programme, including PSYCH 1A06 and SOCIOL 1A06, normally with a CA of at least 6.0 and evidence of personal suitability, which may be evaluated by one or a combination of written statements, tests, or interviews.

An applicant must complete Level I by April of the year in which application is made.

In choosing Level I courses, the student should take care to 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 105 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*, fill out 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. Complete and 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

**1. Course Groupings:** There are three groups of courses in the Social Work programme:

- Group I includes core courses which are required.
- Group II includes courses which are primarily practice oriented.
- Group III includes courses which are primarily policy oriented. Only Group III courses may be taken for elective credit by undergraduates not in Social Work, with the exception of SOC WORK 4A03 which is open only to Social Work students. Social Work students must take 12 units from Group III courses for elective credit. Permission of the School for Group III courses is required for all students.

##### GROUP I

SOC WORK 2B06, 2C03, 2D03, 3D06, 3DD6, 4D06, 4DD6

##### GROUP II

SOC WORK 3N03, 3O03, 3P03, 3R03, 4G03, 4O03, 4P03, 4T03, 4V03, 4W03, 4X03, 4Y03

##### GROUP III

SOC WORK 3C03, 3G03, 3H03, 4A03, 4B03, 4C03, 4E03, 4J03, 4K03, 4M03, 4Z03

**2. Progression Within Programme:** Students must achieve a minimum grade of C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06 and 4D06, and 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, 3H06, GERONTOL 2C03, 3C03, POL SCI 2F06 or 3N06) as a Social Work requirement or as required for the B.A. A statistics course may not substitute for a research methods course.

**4. Graduation:** To qualify for the B.A./B.S.W. degrees, students must complete a total of at least 48 units of Social Work for credit towards the B.S.W. degree and a total of 90 units of credit towards the B.A. degree which includes 12 units Group III Social Work courses.

The B.S.W. degree component will be granted only if the student has achieved a grade of at least C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06, and 4D06, and a Pass in SOC WORK 3DD6 and 4DD6, and a CA of 6.0.

**5.** Students are expected to assume the cost of travelling to and from field practice agencies.

#### REQUIREMENTS

*138 units total (Levels I to IV), of which 48 units may be Level I courses*

30 units	from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)
12 units	SOC WORK 2B06, 2C03, 2D03 (which must be completed prior to enrolling in SOC WORK 3D06 and 3DD6)
12 units	SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)
3 units	from SOC WORK 3N03, 3R03
12 units	SOC WORK 4D06, 4DD6
3 units	from SOC WORK 4O03, 4X03, 4Y03
6 units	Group II Social Work courses
12 units	Group III Social Work courses
3 units	PSYCH 2A03 (which must be completed prior to enrolling in SOC WORK 3D06 and 3DD6)
3 units	Social Sciences Research Methods. (If completed as part of the B.A., these units may be added to electives. See <i>Note 3</i> above.)
24 units	Courses specified for the B.A. (This may vary according to the B.A. programme.)
18 units	Electives. (Other requirements may be specified by the B.A. programme.)

#### B.S.W.

1620

#### ADMISSION

Completion of an undergraduate degree from a recognized university, including *introductory* Psychology and Sociology, (equivalent to the McMaster courses PSYCH 1A06 and SOCIOL 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 through the Ontario Universities' Application Centre (OUAC). See *Two-Tier Applications* below.

#### 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*, obtain a 105 application form from the Admissions Office of any Ontario university. The completed form should be returned to the Ontario Universities' Application Centre (OUAC) with the appropriate fee.

\* Two sets of Soc pro - those effective Sept '96 + those for prior years  
 - original req'd  
 - no update of Research Methods course has been included

If you wish to study *part-time*, obtain a McMaster University Part-time Application form which can be obtained from OUAC or directly from McMaster, at the Office of the Registrar, Gilmour Hall, Room 108. The completed form should be submitted to the Ontario Universities' Application Centre 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 three groups of courses in the Social Work programme:

- Group I includes core courses which are required;
- Group II includes courses which are primarily practice oriented;
- Group III includes courses which are primarily policy oriented. Only Group III courses may be taken for elective credit by undergraduates not in Social Work, with the exception of SOC WORK 4A03 which is open only to Social Work students. Social Work students must take 12 units from Group III courses. Permission of the School for Group III courses is required for all students.

**GROUP I**

SOC WORK 2B06, 2C03, 2D03, 3D06, 3DD6, 4D06, 4DD6

**GROUP II**

SOC WORK 3N03, 3O03, 3P03, 3R03, 4G03, 4O03, 4P03, 4T03, 4V03, 4W03, 4X03, 4Y03

**GROUP III**

SOC WORK 3C03, 3G03, 3H03, 4A03, 4B03, 4C03, 4E03, 4J03, 4K03, 4M03, 4Z03

**2. Progression Within Programme:** Students must achieve a minimum grade of C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06, and 4D06, and a Pass in SOC WORK 3DD6 and 4DD6, and a CA of at least 6.0.

**3.** Three units of Group II must be taken if PSYCH 2A03 was completed prior to admission to the B.S.W. programme.

**4.** Three units of Group III must be taken if three units of Social Sciences Research Methods were completed prior to admission to the B.S.W. programme (eg. SOCIOLOGICAL 2Z03, 3H06, GERONTOLOGICAL 2C03, 3C03, POLITICAL SCIENCE 2F06 or 3N06). A statistics course may not substitute for a research methods course.

**5. Graduation:** To qualify for the B.S.W. students must complete a total of 60 units of credit at McMaster. The B.S.W. will be granted only if the student has achieved a grade of at least C+ in each of SOC WORK 2B06, 2C03, 2D03, 3D06, and 4D06, and a Pass in SOC WORK 3DD6 and 4DD6, and a CA of 6.0.

**6.** Students are expected to assume the cost of travelling to and from field practice agencies.

**REQUIREMENTS**

60 units total

- 12 units SOC WORK 2B06, 2C03, 2D03 (which must be completed prior to enrolling in SOC WORK 3D06 and 3DD6)
- 3 units PSYCH 2A03. If requirement was completed prior to admission, these units must be chosen from Group II Social Work courses. (See Note 3 above.)
- 12 units SOC WORK 3D06, 3DD6 (which must be completed prior to enrolling in SOC WORK 4D06 and 4DD6)
- 3 units from SOC WORK 3N03, 3R03

- 12 units SOC WORK 4D06, 4DD6
- 3 units from SOC WORK 4003, 4X03, 4Y03
- 9 units Group III Social Work courses
- 3 units Social Sciences Research Methods. If requirement was completed prior to admission, these units must be chosen from Group III Social Work courses. (See Note 4 above.)
- 3 units additional Group II Social Work courses. (See Note 3 above.)

**DEPARTMENT OF SOCIOLOGY**

**PROGRAMMES FOR STUDENTS ENTERING IN SEPTEMBER 1996.**

**Honours Sociology (Specialist Option) 2522**  
 In 1997-98, enrolment in this programme may be limited.

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOLOGICAL 1A06.

**NOTES**

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

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 6 units SOCIOLOGICAL 2S06
- 3 units from SOCIOLOGICAL 3A03, 3P03, 3PP3
- 3 units from SOCIOLOGICAL 3I03, 3003, 3W03
- 12 units Level IV Sociology
- 24 units Level II, III or IV Sociology
- 9 units Research Methods; SOCIOLOGICAL 2Z03 which must be completed by the end of 60 units, and SOCIOLOGICAL 3H06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 24 units Electives

**Honours Sociology 2520**  
 In 1997-98, enrolment in this programme may be limited.

**ADMISSION**

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOLOGICAL 1A06.

**NOTES**

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

**REQUIREMENTS**

120 units total (Levels I to IV), of which 48 units may be Level I courses

- 30 units from the Level I programme completed prior to admission to the programme. (See Admission above.)
- 6 units SOCIOLOGICAL 2S06
- 3 units from SOCIOLOGICAL 3A03, 3P03, 3PP3
- 3 units from SOCIOLOGICAL 3I03, 3003, 3W03
- 12 units Level IV Sociology
- 18 units Level II, III or IV Sociology
- 9 units Research Methods; SOCIOLOGICAL 2Z03 which must be completed by the end of 60 units, and SOCIOLOGICAL 3H06
- 3 units HUMAN 2C03
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 30 units Electives

## Combined Honours in Sociology and Another Subject

In 1997-98, enrolment in this programme may be limited.

### ADMISSION

Completion of any Level I programme with a Cumulative Average of at least 6.0 including a grade of at least B- in SOCIOL 1A06. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

### NOTES

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

### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- |           |  |
|-----------|--|
| 30 units  | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)  |
| 6 units   | SOCIOL 2S06  |
| 3 units   | from SOCIOL 3A03, 3P03, 3PP3   |
| 3 units   | from SOCIOL 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 | Research Methods: SOCIOL 2Z03 which must be completed by the end of 60 units, and SOCIOL 3H06 or, in combined programmes within the Faculty of Social Sciences, the six units Research Methods specified for the other subject.  |
| 3 units   | HUMAN 2C03. Students combining Honours Arts and Science with Sociology are exempt from this requirement.   |
| 6 units   | 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. If requirement completed in Level I, these units may be taken as electives. |
| 0-3 units | Electives  |

## 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 SOCIOL 1A06.

### NOTES

1. Students enrolled in the B.A. Gerontology and Sociology programme will complete GERONTOL 2C03 or 3C03 to satisfy the Research Methods requirement and will replace SOCIOL 2Z03 with three units of Level II or III Sociology.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

### REQUIREMENTS

90 units total (Levels I to III), of which 42 units may be Level I courses

- |          |  |
|----------|--|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)  |
| 6 units  | SOCIOL 2S06  |
| 3 units  | SOCIOL 2Z03 (Research Methods--see Note 1 above.)  |
| 15 units | Level II or III Sociology  |
| 6 units  | from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives. |
| 30 units | Electives  |

## Minor in Sociology

### NOTE

Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

### REQUIREMENTS

- |          |                                    |
|----------|------------------------------------|
| 6 units  | SOCIOL 1A06                        |
| 6 units  | from SOCIOL 2D06, 2O06, 2S06, 2V06 |
| 12 units | Level II or III Sociology          |

## PROGRAMMES FOR STUDENTS WHO ENTERED PRIOR TO SEPTEMBER 1996.

### Honours Sociology (Specialist Option) 2522 (Available only to students who entered this programme before September 1996.)

#### NOTES

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

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- |          |  |
|----------|--|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)  |
| 6 units  | SOCIOL 2S06  |
| 3 units  | from SOCIOL 3A03, 3P03, 3PP3   |
| 3 units  | from SOCIOL 3I03, 3O03, 3W03   |
| 12 units | Level IV Sociology   |
| 24 units | Level II, III or IV Sociology  |
| 6 units  | Research Methods: SOCIOL 3H06  |
| 3 units  | HUMAN 2C03   |
| 6 units  | from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives. |
| 27 units | Electives  |

### Honours Sociology 2520

(Available only to students who entered this programme before September 1996.)

#### NOTES

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

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- |          |  |
|----------|--|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.)  |
| 6 units  | SOCIOL 2S06  |
| 3 units  | from SOCIOL 3A03, 3P03, 3PP3   |
| 3 units  | from SOCIOL 3I03, 3O03, 3W03   |
| 12 units | Level IV Sociology   |
| 18 units | Level II, III or IV Sociology  |
| 6 units  | Research Methods: SOCIOL 3H06  |
| 3 units  | HUMAN 2C03   |
| 6 units  | from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives. |
| 33 units | Electives  |

## Combined Honours in Sociology and Another Subject

(Available only to students who entered this programme before September 1996.)

#### NOTES

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

#### REQUIREMENTS

120 units total (Levels I to IV), of which 48 units may be Level I courses

- |          |   |
|----------|---|
| 30 units | from the Level I programme completed prior to admission to the programme. (See <i>Admission</i> above.) |
| 6 units  | SOCIOL 2S06   |
| 3 units  | from SOCIOL 3A03, 3P03, 3PP3  |
| 3 units  | from SOCIOL 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 units Research Methods: SOCIOL 3H06 or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject.
- 3 units HUMAN 2C03. Students combining Honours Arts and Science with Sociology are exempt from this requirement.
- 6 units 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. If requirement completed in Level I, these units may be added to electives.
- 3 units Electives

## **B.A. in Sociology 1520**

*(Available only to students who entered this programme before September 1996).*

### **NOTE**

1. Students enrolled in the B.A. Gerontology and Sociology programme will complete GERONTOL 2C03 or 3C03 to satisfy the Research Methods requirement.
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

### **REQUIREMENTS**

*90 units total (Levels I to III), of which 42 units may be Level I courses*

- 30 units from the Level I programme completed prior to admission to the programme. (See *Admission* above.)
- 6 units SOCIOL 2S06
- 18 units Level II or III Sociology including one of SOCIOL 2Y03, 2Z03 or 3H06 (See *Note 1* above.)
- 6 units from the Faculty of Humanities and/or the Department of Religious Studies. If requirement completed in Level I, these units may be added to electives.
- 30 units Electives

# WOMEN'S STUDIES PROGRAMME

E-MAIL ADDRESS: daenzer@mcmaster.ca

## Director

Patricia M. Daenzer/B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)

## Administrative Assistant

Pat Young

Women's Studies is a rapidly expanding discipline which brings fresh new approaches to scholarship. It focuses on women's contributions to civilization in all fields of endeavour, past and present. It examines the ways in which ideas about women have developed and tests the validity of those ideas in the light of new knowledge and theories. It establishes the importance of gender as a category of analysis in scholarly enquiry, social relations, cultural expression and belief systems.

Students choose a subject they wish to pair with Women's Studies and work towards a combined degree. By offering a Combined Honours B.A. degree with another subject of the student's own choice, Women's Studies encourages the reassessment of the traditional academic disciplines in order to create a more balanced understanding of women and men.

Women's Studies courses are interdisciplinary, allowing students to explore the relationship between different branches of knowledge and to test the presuppositions of established theoretical frameworks in any area of enquiry. The Director of Women's Studies advises students on selection of appropriate courses.

The programme emphasizes the integration of theory and practice, with small-group teaching, personal attention to individual development and the encouragement of student-designed research at all levels.

The Women's Studies programme is committed to understanding and seeking to improve the conditions of life for all women. Students in the programme are trained in feminist theories and in applied skills, enabling them to be creatively responsive to community needs and to be capable of critically analyzing women's issues and problems in the local and international work world.

Graduates of the programme will find many career options in such areas as education, health care, labour relations, personnel management, industrial and government consulting, as well as in work for higher degrees in Women's Studies.

## ACADEMIC REGULATIONS

The Women's Studies programme is governed by the general Academic Regulations of the University and the regulations described below.

### Honours Arts & Science and Women's Studies

(B. Arts Sc.; See Arts & Science programme)

## Combined Honours B.A. in Women's Studies and Another Subject

### ADMISSION

Completion of any Level I programme with a weighted average of at least 7.0 in 12 units of Level I work, including a grade of at least B- in WOMEN ST 1A06 and satisfaction of admission requirements for the Honours B.A. programme in the other subject.

### NOTES

- Enrolment in the programme is limited.** Application for admission (forms available in the Women's Studies office), including a letter explaining the applicant's interest in the programme, should be made to the Director of Women's Studies prior to April 15.
- Students who have not taken WOMEN ST 1A06 because they have transferred from another university may be considered for admission to the programme if they are deemed by the Admission Committee to have fulfilled requirements equivalent to WOMEN ST 1A06.
- Registration in each level of the programme requires written approval of the Director of the Women's Studies programme and the appropriate Other Subject Counsellor.
- In Levels II, III and IV, students must take the six-unit Women's Studies course appropriate to their level and six additional units of approved discipline-related courses at each level. Students should plan their programmes in consultation with the Director of Women's Studies, the Departmental Counsellor for their Other Subject, and the Associate Dean of the Faculty in which the student is registered.

### REQUIREMENTS

30 units	from Level I, completed prior to admission to the programme. (See <i>Admission</i> above.)
6 units	WOMEN ST 2A06
6 units	from WOMEN ST 2B06, 2C06, 2H03, 2HH3, RELIG ST 2B03, 2BB3, 2SS3, SOCIOL 2Q06, 2U06
6 units	WOMEN ST 3A06
6 units	from WOMEN ST 3B03, 3BB3, 3C03, 3CC3, 3D06, HISTORY 3X03, LABR ST 3E03, PHILOS 3I03, SOC WORK 3O03, SOCIOL 3D03, 3E03, 3X03
6 units	WOMEN ST 4A06
6 units	from WOMEN ST 4B06, 4C06, HISTORY 4H06, KINESIOL 4T03, SOCIOL 4U03
18 units	Elective course work beyond Level I

Some courses not listed above may be substituted, at the appropriate level, from: Anthropology, Classics, Comparative Literature, English, French, Geography, History, Labour Studies, Philosophy, Physical Education, Religious Studies and Sociology. Students must select their courses in consultation with the Director of Women's Studies.

**Note:** The courses required for the Women's Studies portion of the Combined Honours programme must not include courses offered by the Department in the student's other subject area.

### Minor in Women's Studies

#### REQUIREMENTS

6 units	WOMEN ST 1A06
18 units	Level II, III Women's Studies courses as listed under <i>Women's Studies</i> in the <i>Course Listings</i> section of this Calendar.

to school  
Admission has been extended for one more year  
No further admission to this school after 95 - students currently in the minor will complete

## 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 (page 16) of this Calendar.)

It is anticipated that Theme Schools' life cycles will normally be five years. They will accept approximately 60 students a year for three years with the objective of graduating about 180 students by the end of the cycle.

The subject area of Theme Schools will vary over time, depending on the interests of faculty and students.

Individual Theme Schools will invite applications from students wishing to enrol early in each calendar year. Normally, students will indicate their particular interests and qualifications. Students selected for a school will be informed in the spring.

Currently, two schools are in operation. The Theme School on International Justice and Human Rights will be admitting new students in September 1996; the last intake to the Theme School on New Materials and Their Impact on Society was in September 1995.

Because Theme Schools are under review, the University cannot guarantee that students will be able to enter a Theme School in September 1997 or later.

### SCHEDULING OF COURSES

Students participating in Theme Schools should be aware that many Theme School courses will be held on Thursday evenings. This is necessary to make Theme School courses available to students from a wide variety of programmes. The Theme Schools will arrange classes that meet the scheduling needs of their students; however, it may be necessary for students to change their optional courses in their Honours programmes to have conflict-free schedules.

## ACADEMIC REGULATIONS

Theme School Minor programmes are governed by the general Academic Regulations of the University and the regulations described below.

Normally, students will enter a Theme School in Level II and will complete a four- or five-year degree with a Theme School Minor. Continuation in the Theme School normally requires students to maintain standing in their programme.

## THEME SCHOOL ON INTERNATIONAL JUSTICE AND HUMAN RIGHTS

### Director

Rhoda E. Howard/B.A., M.A., Ph.D., F.R.S.C.  
(on leave 1996-97)

### Acting Director

Stefania S. Miller/B.A., M.A., Ph.D.  
Kenneth Taylor Hall, Room 202, ext. 24164

This Theme School takes as its starting point the global consensus on human rights enshrined in the International Bill of Rights of the United Nations, and many other UN documents. The focus is on comparative international debates about the relationships among modernization, technology, development and human rights. The concept of International Justice recognizes the cultural and ideological diversity that underlies these debates. Canadian topics are also addressed in the Theme School.

This Theme School provides students with a chance to investigate problems of human rights and international justice from an interdisciplinary perspective. Students conduct individual and group research using problem-based and self-directed learning techniques.

### ADMISSION

#### Enrolment in the Theme School Minor is limited.

The Theme School on International Justice and Human Rights will admit a maximum of 75 students to the minor in 1996-97. Admission will be by selection and on condition that a student is accepted into any four- or five-level programme.

Applications for admission in 1996-97 should be made to the Director by April 1, 1996. Application forms may be obtained from the Theme School on International Justice and Human Rights office, KTH 201. Applications will be reviewed in mid-May and students will be notified by mail of the decision. After June 1, students may continue to apply to the Theme School; applications will be accepted until the enrolment limit is reached.

Although enrolment in the Theme School on International Justice and Human Rights is limited to Level II students registered in four- or five-level programmes, places in TSIJHR 2A06 may be available to other interested students in Level II or above starting in September 1996, and places in Level III and IV International Justice and Human Rights courses may be available to students in Level II or above starting in September 1997.

### REQUIREMENTS

Students are required to complete 24 units in order to obtain the Theme School minor. Six units must consist of Level I work acceptable to the Director. In Level II all students must take TSIJHR 2A06, the Introductory Seminar. In Levels III and IV students may complete their minor by taking an additional 12 units of Theme School courses.

## THEME SCHOOL ON NEW MATERIALS AND THEIR IMPACT ON SOCIETY

### WEB ADDRESS:

<http://www.science.mcmaster.ca/themeschool/homepage.html>

*The Theme School on New Materials and Their Impact on Society is being phased out. The last intake was September 1995.*

### Director

A. John Berlinsky/B.Sc., M.Sc., Ph.D.  
(on leave 1996-97)

### Acting Director

John S. Preston/B.Eng., M.Sc., Ph.D., P.Eng.  
A.N. Bourns Building, Room 451, ext. 27294

Throughout history, the discovery and development of new materials have had a profound impact on the evolution of human civilization. Our ability to produce such materials as bronze, iron, paper and silicon created new directions in science, industry, health care and the arts and have affected all aspects of human endeavour, from war and peace to space exploration to daily living.

This Theme School explores the discovery of new materials and investigates the impact of materials-driven technology on business, health, recreation, technology, the arts and the environment.

### REQUIREMENTS

*The last intake for this Theme School was September 1995.*

This programme has three main components comprising 24 units as follows:

- Courses (TSNM 2B03\*, 3B03, 4B03, 4C03);
- The Theme School Seminar (TSNM 2A02\*, 3A02, 4A02); and
- Research Internship (TSNM 2R06\*, 3R06).

The Seminar is required of all students for a total of six units.

A minimum of 18 units must be taken from among the Theme School courses and research internships. Normally, one or two courses are taken in the Fall and Winter terms.

\* Last offered in 1995-96.

See specific courses and their descriptions listed under *Theme Schools* in the *Course Listings* section in this Calendar.

# MINORS AND THEMATIC AREAS

## MINORS

The following two listings constitute University-sanctioned Minors in Indigenous Studies and Peace Studies.

No degree is granted for either programme of study, but Honours students can receive a Minor designation on their transcripts following graduation if their chosen Minor programme is successfully completed. Please see the *Minor* subsection in the University's *General Academic Regulations* section (page 16) for further information.

## Indigenous Studies

For more information, please contact the Indigenous Studies office, Chester New Hall, Room 228, ext. 27426.

The Minor in Indigenous Studies was developed as a direct response to the wishes of representatives of Indigenous groups in Ontario, of students, and of educators, for greater accessibility to a university education for native students. The structure of the programme was developed by the President's Committee on Indigenous Issues. This Committee, comprising University and Aboriginal representatives, formulates policy on all issues affecting the Indigenous communities at large. The Committee serves as the primary resource on all subjects relating to the education and support needs of the University's Indigenous population, both in Indigenous-specific and general programming and services.

The Indigenous Studies Minor responds to a desire for a programme of study that examines Indigenous people's history, spirituality, and contemporary situation, with particular attention to the Indigenous people's own perspective. As such, the Minor will provide new perspectives on these subjects for non-native students and will 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.

Students in Honours programmes will qualify at graduation for a Minor in Indigenous Studies if they complete these requirements:

INDIG ST 1A06	Introduction to Indigenous Studies
<i>and 18 units from:</i>	
INDIG ST 2A06	Introduction to Indigenous People's Spirituality
INDIG ST 2B03	Introduction to Indigenous People's History
INDIG ST 2C03	Introduction to Contemporary Indigenous Societies
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: Selected Topics
INDIG ST 3C03	Study of Iroquois First Nations in Contemporary Times
INDIG ST 3CC3	Contemporary Indigenous Societies: Selected Topics
INDIG ST 3D03	Contemporary Native Literature in Canada
INDIG ST 3E03	Contemporary Native Literature in the United States
OJIBWA 1Z06	Beginner's Intensive Ojibwa
OJIBWA 2Z06	Intermediate Ojibwa
OJIBWA 3Z06	Advanced Ojibwa
MOHAWK 1Z06	Beginner's Intensive Mohawk
MOHAWK 2Z06	Intermediate Mohawk
MOHAWK 3Z06	Advanced Mohawk
CAYUGA 1Z06	Beginner's Intensive Cayuga
CAYUGA 2Z06	Intermediate Cayuga

CAYUGA 3Z06	Advanced Cayuga
ANTHROP 2B03	Indigenous Peoples of North America
ANTHROP 2O03	North American Prehistory
ANTHROP 2V03	The Aztecs, Maya and Inka
ANTHROP 3A03	Cultures in Contact: The Canadian North
ANTHROP 3F03	Contemporary Northern Peoples
ANTHROP 3U03	Canadian Archaeology
ANTHROP 4PI3	From Foraging to Farming in the Lower Great Lakes
POL.SCI 3C03	Government and Politics of Indigenous Peoples

No more than six of these 18 units may be Level I courses.

**Please see the Course Listings section for a detailed description of the above courses.**

## Peace Studies

Peace Studies, which is concerned with war and peace — their nature, causes and relation to social life — is a growing international field. It is now possible for students to complete a Minor in Peace Studies at McMaster. The requirements of the Minor include the core course, SOC SCI 2B06, and an additional 18 units above Level I, selected from the courses listed below.

The courses listed are offered by various departments and are relevant to the study of peace and conflict. They are drawn from a wide variety of disciplines within the Faculties of Humanities, Social Sciences and Science. The range of options available for the Minor ensures an interdisciplinary approach. The Minor should be of interest to students wishing to pursue to a wide range of careers.

Students wishing to pursue a Minor in Peace Studies can obtain further information from Dr. Graeme MacQueen or Kim McNicol at the Centre for Peace Studies, University Hall, Room B104, ext. 24729.

ANTHROP 2X03	Warfare and Aggression
ANTHROP 3T03	Domination and Resistance
HISTORY 3I03	The International Relations of the European Powers, 1914-1945
HISTORY 3I16	The History of Warfare, 1865-1945
HISTORY 3RR3	War and Society in 20th Century Britain
PHILOS 1B06	Philosophy and Society
PHILOS 2G03	Social and Political Issues
PHILOS 3P03	Philosophies of War and Peace
POL.SCI 2E06	International Politics
POL.SCI 3AA3	International Politics in the Post-War Period
POL.SCI 4F06	Human Rights: International and National Issues in International Politics
POL.SCI 4M06	Religious Non-Violence
RELIG ST 2H03	Life, Work and Teachings of Mahatma Gandhi
RELIG ST 2L03	Introduction to the Study of Peace
SOC.SCI 2B06	Genocide and Ethnocide
SOC.SCI 2C03	Peace and Development
SOC.SCI 2D03	Political Sociology
SOCIOL 3F06	

**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

ARTHIST 3J03	Japanese Art
ARTHIST 3K03	Arts of China
GEOG 2C03	China: People and Land in Transition
GEOG 3JJ3	Geography of Japan
HISTORY 2B06	China: From Late Imperial Times to the Present



HISTORY 2E06	The Islamic World, 600-1800
HISTORY 3A03	Imperial Islam: The Ottomans
HISTORY 3AA3	The Modern Middle East
HISTORY 3B03	Modern Japan
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 2A03	The Confucian Tradition
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 2TT3	Taoism and the Search for Immortality in China
RELIG ST 3AA3	Popular Religion in India
RELIG ST 3E03	Japanese Religion
RELIG ST 3H03	Story Telling in East Asian Religions
RELIG ST 3I03	Storytelling in Indian Religion
RELIG ST 3P03	Esoteric Buddhism in East Asia
RELIG ST 3U03	The Buddhist Tradition in India
RELIG ST 3UU3	Ch'an and Zen Buddhism
RELIG ST 4F03	Advanced Seminar in East Asian Religions
RELIG ST 4G03	Advanced Seminar in South Asian Religions

**COURSES WITH SIGNIFICANT ASIAN CONTENT**

ECON 2C03	Asian-Pacific Economies
POL SCI 4MM6	International Relations of the Pacific Rim
RELIG ST 1B06	World Religions
RELIG ST 2BB3	Images of the Divine Feminine
RELIG ST 2H03	Religious Non-Violence
RELIG ST 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
JAPANESE ST 4A06	Guided Reading in Japanese Studies
JAPANESE ST 4B03	Guided Reading in Japanese Studies
SANSKRIT 3A06	Introduction to Sanskrit Grammar
SANSKRIT 4B06	Readings in Sanskrit Texts

**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
ENGLISH 3Z03	Contemporary Canadian Poetry
FRENCH 2D03	Introduction to the Civilization of French Canada
FRENCH 2E03	Literature of Quebec
FRENCH 3AA3	The Modern French-Canadian Novel
FRENCH 3BB3	Contemporary Quebec Theatre
FRENCH 4U03	Topics in French-Canadian Literature

HISTORY 2J06	The History of Canada
HISTORY 3L03	Modern Canada: The Great Transformation, 1890-1929
HISTORY 3M03	Modern Canada: From Depression to Referendum, 1929-1980
HISTORY 3N03	The History of the Canadian Working Class
HISTORY 3U03	Aspects of French Canadian History
MUSIC 3T03	Canadian Music

**SOCIAL SCIENCES**

ANTHROP 3A03	Cultures in Contact: The Canadian North
ANTHROP 3F03	Contemporary Northern Peoples
ECON 2K03	Economic History of Canada
GEOG 2E03	Canada
GEOG 3T03	Geography of Planning
GEOG 4U03	Selected Problems in Urban Planning
GEOG 4Z03	The Landscape of Urban Housing
POL SCI 2G06	Politics in Canada
POL SCI 3DD6	Political Participation and Elitist Politics in Canada
POL SCI 3FF3	Canadian Foreign Policy
POL SCI 3GG3	Politics of Federalism
POL SCI 3I13	Elections and Electoral Behaviour in Canada
POL SCI 3JJ3	Provincial Politics in Canada
POL SCI 4O06	Canadian Public Policy
POL SCI 4S06	Canadian Political Theory

**Health and Society**

While there is no B.A. programme in Health and Society; students wishing to concentrate in this area should be aware of the following courses offered by Departments and Schools in the Faculties of Social Sciences and Humanities.

For more information on specific courses, please consult the Course Listings in the Calendar. Students should note that not all listed courses may be available and should check carefully for prerequisites.

Students wishing to pursue courses in Health and Society may obtain more information from Dr. Vivienne Walters, Kenneth Taylor Hall, Room 718, ext. 24692.

**COURSES DEALING WITH HEALTH AND SOCIETY ISSUES**

ANTHROP 2U03	Plagues and People
ANTHROP 3Z03	Medical Anthropology: The Biomedical Approach
ANTHROP 3ZZ3	Medical Anthropology: Symbolic Healing
ECON 3Z03	Health Economics
GEOG 4S03	Geography of Health Care
KINESIOL 3SS3	Body, Mind, and 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
SOC WORK 3C03	Social Aspects of Health and Disease
SOCIOL 3G03	Sociology of Health Care
SOCIOL 3HH3	Sociology of Health
SOCIOL 4G03	The Social Production of Illness

Students will also find courses relevant to this theme in the listings of other Faculties.

## PART-TIME DEGREE STUDIES

The University offers a broad range of educational opportunities if you wish to take degree studies on a part-time basis. In addition to the daytime offerings in the Fall/Winter there is a wide selection of evening classes available in the Fall/Winter and Spring/Summer sessions. There is a limited number of daytime classes scheduled for the Spring/Summer session.

If you take degree courses, you will associate with one of the undergraduate Faculties (Business, Health Sciences, Humanities, Science or Social Sciences). By so doing, you will have the opportunity to consult with the academic counsellors of your Faculty, and with the departments whose courses are of interest to you. If your interests change, it is often possible to transfer to another department or Faculty.

The courses which you take in the early stages of your education will form the basis for choosing your programme of study. The Level 1 courses will give you the information you need for this purpose, as well as provide the prerequisites for more advanced courses and admission to programmes of study. The programmes of study which are available entirely through evening and summer courses are indicated on the *Degrees by Programme* chart, in the *Degrees and Programmes* section of this Calendar. You should also familiarize yourself with the requirements and information found in the following sections: *Admissions Requirements*, *General Academic Regulations* and *Sessional Dates*, as well as the programme descriptions found in the specific Faculty sections.

### ADMISSION

**Before you register for any degree course or programme, you must apply for admission.**

- If you have already completed some university, community college, or other post-secondary education, you will be required to submit official transcripts of this work and a Transcript Assessment Fee, along with your application, in order to be considered for admission and possible credit towards your McMaster programme.
- If you satisfy the University's normal admission requirements for full-time study, you may choose to register for part-time study in most programmes.
- If you do not satisfy these requirements, you may be admissible as a **Mature Student** and given the opportunity to show that you can deal successfully with university work. New regulations are now in effect for continuation as a Mature Student. 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.

## COORDINATOR OF PART-TIME DEGREE STUDIES

The Coordinator of Part-time Degree Studies, Gordon Raymond, or the Assistant Coordinator, Tina Horton, may be telephoned at 525-9140, ext. 24324 or 24325, for counselling and to discuss preparation and plans for degree study.

Mr. Raymond's office, Gilmour Hall, Room 103, is open in the day, and in the evening by appointment. More detailed information concerning programmes and courses is provided by the Academic Counsellors within each Faculty as follows:

- Business: ext. 23941
- Humanities: ext. 24326
- Science: ext. 27590
- Social Sciences: ext. 24604

Information about application procedures and admission regulations is available through the Office of the Registrar, (Gilmour Hall, Room 108, 525-4600).

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

McMaster University supports the Mohawk/McMaster Education Information Centre in downtown Hamilton. This centre exists to provide information and maintain comprehensive collections of calendars and brochures concerning educational opportunities across Canada. The staff can help you to make contact with the appropriate persons at McMaster.

The Information Centre is at the Hamilton Public Library (Central Branch), 55 York Boulevard, Hamilton, just off Jackson Square, telephone (905) 525-9140, ext. 22020.

### MAPS

The McMaster Association of Part-time Students (MAPS) maintains an office and student lounge in Kenneth Taylor Hall, Room 102, telephone 525-9140, ext. 22021, and publishes a newsletter, *Link*, which is sent to all part-time students. The coffee lounge is 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 in the evening.

# COURSE LISTINGS

## ANTHROPOLOGY

### Faculty as of January 15, 1996

#### Chair

D. Ann Herring

#### Professors Emeriti

David J. Damas/B.A. (Toledo), A.M., Ph.D. (Chicago)

Richard Slobodin/B.A., M.S. (City College of New York), Ph.D. (Columbia)

#### Professors

John J. Colarusso/B.A. (Cornell), M.A. (Northwestern), Ph.D. (Harvard)

Matthew Cooper/B.A. (Brooklyn College), M.Phil., Ph.D. (Yale)

David R. Counts/B.A. (Texas), Ph.D. (Southern Illinois)

Harvey Feit/B.A. (Queens), M.A. Ph.D. (McGill)

Edward V. Glanville/B.A., Ph.D. (Dublin)

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)

William L. Rodman/B.A. (Sydney), M.A., Ph.D. (Chicago)

Shelley Saunders/B.A., M.A., Ph.D. (Toronto)

Emöke Szathmáry/B.A., Ph.D. (Toronto)

#### 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), 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 Wilms (Clinical Epidemiology and Biostatistics)/B.A. (Waterloo), M.A. (McMaster), Ph.D. (British Columbia)

#### Associate Members

Henry Schwarczl (Geology) B.A. (Chicago), M.S., Ph.D. (California Institute of Technology), F.R.S.C.

#### External Members

#### Professors

Dorothy Counts (University of Waterloo) B.A., M.A., Ph.D. (Southern Illinois) part-time

Regna Darnell (University of Western Ontario) B.A. (Bryn Mawr College), M.A., Ph.D. (University of Pennsylvania)

Michael Spence (University of Western Ontario) B.A., M.A., (Toronto), Ph.D. (Southern Illinois) part-time

#### Associate Professors

Christopher Ellis (University of Western Ontario) B.A. (Waterloo), M.A. (McMaster), Ph.D. (Simon Fraser) part-time

Dan W. Jorgenson (University of Western Ontario) B.A. (California State University), Ph.D. (University of British Columbia)

Susan Pfeiffer (University of Guelph) B.A. (University of Iowa), M.A., Ph.D. (Toronto) part-time

### 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.
- The department offers two Level I Anthropology courses. ANTHROP 1A03 and 1Z03, taken together, are designed to provide an introduction to the study of Anthropology.
- Registration in all courses marked \*\* 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 1Z03 THE HUMAN JOURNEY: THE ANTHROPOLOGY OF THE PAST

An examination of the story of the human species, from the earliest origins to the rise of civilization, as told by physical anthropology and archaeology.

Three hours (lectures and discussion); one term

#### ANTHROP 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, Spanish and other Indo-European-based languages of Europe.

Three lectures; one term

Prerequisite: LINGUIST 1A06 or ANTHROP 2AL3/LINGUIST 2A03

Antirequisite: LINGUIST 3B03

Cross-list: LINGUIST 2AA3

#### ANTHROP 2AL3 THE MAKING OF THE EUROPEAN LINGUISTIC LANDSCAPE

This history of language use in Europe from the fall of the Roman Empire to the flowering of linguistic nationalism.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: LINGUIST 2A03

#### 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, evolutionary mechanisms, 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

*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 SOCIAL ANTHROPOLOGY

An introduction to the concepts and theory underlying the comparative study of social institutions with particular emphasis on preliterate societies. This course is designed to equip students with a repertoire of concepts necessary for more advanced courses in anthropology.

Three hours (lectures and discussion); one term

Prerequisite: Six units of Level I Anthropology

*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

The interdependence of human societies and their physical and biological environments is examined. Human attitudes toward space, place and environment in Western and non-Western societies are emphasized. The convergence of Western environmental movements and aboriginal philosophy is explored.

Three hours (lectures and discussion); one term

## 1.32 ANTHROPOLOGY

### **ANTHROP 2103 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 in an Honours Programme in Anthropology.*

### **ANTHROP 2JJ3 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

Antirequisite: ANTHROP 2J03

### **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

Cross-list: LINGUIST 2L03

### **ANTHROP 2LL3 LANGUAGES OF THE WORLD**

The course is an introduction to population linguistics; the study of the languages of the world in their relations to geography, history, culture and migrations of peoples. The course considers three major classifications of languages—typological, genetic and areal—and the problems related to them.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level II and above

Cross-list: LINGUIST 2LL3

### **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

Cross-list: LINGUIST 2M03

### **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: ANTHROP 1Z03 or 2PA3

### **ANTHROP 2P03 PEOPLES OF THE PACIFIC**

An introduction to the ways of life and thought in Pacific island societies.

The course will emphasize the material culture, networks of social relations, and systems of belief, of the peoples of Melanesia, Polynesia, and Micronesia.

Three hours (lectures and discussion); one term

### **ANTHROP 2PA3 INTRODUCTION TO PREHISTORIC ARCHAEOLOGY**

An introduction to the goals and methods of archaeological research with a focus on specific problems in human prehistory.

Three hours (lectures and discussion); one term

Prerequisite: Three units of Level I Anthropology

*This course is required of all students in an Honours programme in Anthropology.*

### **ANTHROP 2Q03 LINGUISTICS AND THE STUDY OF CULTURE**

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

Cross-list: LINGUIST 2Q03

### **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 AN ETHNIC HISTORY OF THE LANDS IN AND AROUND THE FORMER SOVIET UNION**

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.

Three hours (lectures and discussion); one term

### **ANTHROP 2V03 AZTECS, MAYA AND INKA**

A survey of these three great prehistoric New World civilizations, using archaeological, ethnohistoric and colonial information. Topics will include religion, social structure, political and economic organization, as well as the similarities and differences among the Aztecs, Maya and Inka.

Three hours (lectures); one term

### **ANTHROP 2X03 WARFARE AND AGGRESSION**

The aim of the course is to assess the extent to which violence is both controlled by and an expression of society and culture.

Three hours (lectures and discussion); one term

### **ANTHROP 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: ANTHROP 1A03 or 2F03 and registration in an Anthropology programme

Cross-list: SOCIOL 2Z03

### **ANTHROP 3A03 CULTURES IN CONTACT: THE CANADIAN NORTH**

A comparative ethnographic analysis of traditional and contemporary hunting and gathering cultures in the Canadian Arctic and Subarctic. The course examines socio-political change, environmental relations, and the impact of the fur-trade on aboriginal communities.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 1A03 or 2F03; or registration in a Health Sciences programme

### **ANTHROP 3AA3 READING ETHNOGRAPHIES**

Learning to evaluate ethnographic text is a fundamental skill in anthropological training and research. This course examines selected texts, some of which have become classic in the history of the discipline, to distinguish the reliable from unreliable. Through detailed study, students will gain critical resources for future studies.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2F03

### **ANTHROP 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 HUMAN ADAPTABILITY/ THE PHYSICAL ENVIRONMENT**

Biocultural models of the ways in which humans cope with features of their physical environment, such as hot and cold climates, high altitude, photoperiodicity and solar radiation.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level III or IV of any programme. ANTHROP 2E03 is highly recommended.

### **ANTHROP 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 3D03 ETHNOLOGY: PACIFIC ISLANDS**

Analysis of selected issues in Pacific anthropology.

Three hours (lectures and discussion); one term

### **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 Death*). In 1996-97, the topic will be *New World Arctic and Subarctic Archaeology*.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2PA3

### **ANTHROP 3EE3 SPECIAL TOPICS IN ARCHAEOLOGY II**

As per ANTHROP 3E03. In 1996-97, the topic will be *Aztec Archaeology and Ethnohistory*.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2PA3

**ANTHROP 3F03 CONTEMPORARY NORTHERN PEOPLES**

An examination of native-white interaction in northern Canada with an emphasis on present day events.  
Three hours (lectures and discussion); one term  
Prerequisite: ANTHROP 1A03 or 2F03; or registration in a Health Sciences programme

**ANTHROP 3G03 COMPARATIVE MYTHOLOGY**

The reconstruction of lost mythic traditions by means of comparative techniques drawn from historical linguistics. The Indo-European traditions of Eurasia will be examined.  
Three hours (lectures and discussion); one term

**ANTHROP 3H03 ANTHROPOLOGICAL DEMOGRAPHY**

This course offers an introduction to the study of population dynamics (birth, death, migration) and population structure. It focuses on issues particularly pertinent to anthropological studies of past and present populations.  
Three hours (lectures and discussion); one term  
Prerequisite: ANTHROP 2E03

**ANTHROP 3I03 SYNTAX**

A study of the human capacity to form words into sentences. Emphasis will be on generative transformational grammar.  
Three hours (lectures); one term  
Prerequisite: Registration in Level II and above  
Cross-list: LINGUIST 3I03

**ANTHROP 3I13 SEMANTICS**

A study of patterns of meaning in language: a critical survey of current theories and issues.  
Three lectures; one term  
Prerequisite: ANTHROP 3I03/LINGUIST 3I03  
Cross-list: LINGUIST 3I13

**ANTHROP 3K03 ARCHAEOLOGICAL INTERPRETATION**

Technique and methodology in the investigation of archaeological material.  
Three hours (lectures and discussion); one term  
Prerequisite: Three units of Level II Archaeology  
*Enrolment is limited.*

**ANTHROP 3M03 MORPHOLOGY**

The study of word formation in languages of the world: a critical survey of current theories and issues.  
Three hours (lectures); one term  
Prerequisite: ANTHROP 3I03/LINGUIST 3I03  
Cross-list: LINGUIST 3M03

**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 3NP3 NEOLITHIC PREHISTORY**

A survey of the development of settled, food-producing human cultures from earliest villages to urban life.  
Three hours (lectures and discussion); one term  
Prerequisite: ANTHROP 1Z03 or 2PA3

**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 Level II or III of any Anthropology programme

**ANTHROP 3PL3 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: FRENCH 2H03 or LINGUIST 1A06  
Cross-list: LINGUIST 3P03

**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 TOPICS IN THE ANTHROPOLOGY OF GENDER**

This course involves a consideration of the anthropology of gender. Cross-cultural material from small-scale and large-scale societies is used to discuss gender in relation to work activities, socialization, and the construction of images and identities.  
Three hours (lectures and discussion); one term  
Prerequisite: Registration in Level III or IV of an Anthropology programme.

**ANTHROP 3S03 HISTORY OF THOUGHT IN SOCIAL ANTHROPOLOGY**

The development of anthropology as a discipline, with emphasis on the emergence and refinement of concepts concerning culture, social structure, and sociocultural change.  
Three hours (lectures and discussion); one term  
Prerequisite: Registration in Level III or IV Anthropology

**ANTHROP 3T03 DOMINATION AND RESISTANCE**

This course focuses on the comparative study of political processes cross-culturally. The processes of domination and resistance in the history of contact between western and indigenous cultures are specifically examined.  
Three hours (lectures and discussion); one term  
Prerequisite: Six units of Social/Cultural Anthropology

**ANTHROP 3U03 CANADIAN ARCHAEOLOGY**

A study of the development of native Canadian cultures prior to the arrival of Europeans.  
Three hours (lectures and discussion); one term  
Prerequisite: Three units of Level II Archaeology

**ANTHROP 3V03 COMPARATIVE ECONOMIC ORGANIZATION**

An examination of contrasting types of economic organization, with particular reference to societies with a non-industrial base.  
Three hours (lectures and discussion); one term  
Prerequisite: Six units of Social/Cultural Anthropology

**ANTHROP 3W03\*\* SPECIAL TOPICS IN ANTHROPOLOGY I**

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 Level II, III or IV Anthropology

**ANTHROP 3WW3\*\* SPECIAL TOPICS IN ANTHROPOLOGY II**

As per ANTHROP 3W03, but on a different topic.  
One term  
Prerequisite: Registration in Level II, III or IV Anthropology

**ANTHROP 3X03 SOCIOLINGUISTICS I**

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: Registration in Level II, and above  
Antirequisite: ANTHROP 3AL6  
Cross-list: LINGUIST 3X03

**ANTHROP 3XX3 SOCIOLINGUISTICS II**

An introduction to the sociology of language with particular emphasis on the social situation of the major European languages. Topics covered include diversity of languages/typology, language contacts (pidgins, creoles and lingua francas), language planning (bilingualism and multilingualism) and language and culture.  
Three lectures; one term  
Prerequisite: ANTHROP 3X03  
Antirequisite: ANTHROP 3AL6  
Cross-list: LINGUIST 3XX3

**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 or 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 4A03 THEORIES OF SOCIAL EVOLUTION**

The various theories of social evolution from classical to modern times, but with special attention to Spencer, Marx, sociobiology, and modern anthropological works.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2F03 and three additional units of Level II or III Anthropology

**ANTHROP 4B03 CURRENT PROBLEMS IN ANTHROPOLOGY I**

The topic varies with each instructor (e.g. one class may examine *Urban Anthropology* and another focus on *Recent Advances in Genetics*). In 1996-97 the topic will be Male Cooperation in Primates.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Anthropology or permission of the instructor. ANTHROP 2E03 is strongly recommended.

**ANTHROP 4BB3 CURRENT PROBLEMS IN ANTHROPOLOGY II**

As per ANTHROP 4B03, but on a different topic.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Anthropology

**ANTHROP 4BL3 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 an Anthropology or Linguistics programme; or permission of the Programme Coordinator

Cross-list: LINGUIST 4B03

**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 Anthropology

**ANTHROP 4EE3 COMPARATIVE SYSTEMS OF THOUGHT**

Selected studies in religion, magic, and systems of knowledge in the cultures of non-literate peoples, and their expression in myth and ritual.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level IV Anthropology

**ANTHROP 4F03 ARCHAEOLOGICAL THEORY**

A seminar in current topics and issues in archaeological theory.

Three hours (lectures and discussion); one term

Prerequisite: Three units of Level III Archaeology courses

**ANTHROP 4G03\*\* INDEPENDENT RESEARCH I**

Independent study of a research problem through published materials and/or fieldwork. 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 Level II, III or IV Anthropology

**ANTHROP 4GG3\*\* INDEPENDENT RESEARCH II**

As per ANTHROP 4G03, but on a different topic.

One term

Prerequisite: Registration in Level IV 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 and three units of Level III Archaeology

**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 4L03 FIELD LINGUISTICS**

An advanced course in techniques of linguistic field research. The field situation is simulated by using an actual target language.

Three hours (seminar); one term

Prerequisite: 12 units of Anthropology or Linguistics above Level I

Cross-list: LINGUIST 4L03

**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 Science

**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 4PI3 FROM FORAGING TO FARMING  
IN THE LOWER GREAT LAKES**

The course examines the development of Late Woodland horticultural village societies in the lower Great Lakes, from about A.D. 900 until shortly after European contact, taking as the prime example the historically well-known Iroquoian groups of Ontario, Quebec and New York.

Three hours (seminar); one term

Prerequisite: ANTHROP 2PA3 and three units of Level III Archaeology

**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 INFECTIOUS DISEASE AND HUMAN EVOLUTION**

An advanced course in the evolution of infectious disease and changing relationships between homo sapiens and infectious diseases in the course of human history.

Three hours (lectures and discussion); one term

Prerequisite: ANTHROP 2E03 and registration in Level IV Anthropology

*Not open to students with credit in ANTHROP 4J03 if the topic was Infectious Disease and Human Evolution.*

**ANTHROP 4T03 GENERATIVE GRAMMAR: MIND AND CULTURE**

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/LINGUIST 2Q03, 2L03 or 3I03

Antirequisite: ANTHROP/LINGUIST 2T03

Cross-list: LINGUIST 4T03

**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: Three units of Level III Archaeology

**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

# SCHOOL OF ART, DRAMA AND MUSIC

## Faculty as of January 15, 1996

### Director

Antony Hammond

### Professors Emeriti

Marta Hidy/Dipl. Perf. (*Budapest*), F.R.H.C.M. (Hon.) (*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*)

### Professors

Antony Hammond/B.A. (*New Zealand*), M.A., Ph.D., (*Auckland*) (*Drama*)  
 Hayden B.J. Maginnis/B.A. (*Western*), M.F.A., Ph.D. (*Princeton*) (*Art History*)  
 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*)  
 David William/Honourary, part-time (*Drama*)

### Associate Professors

Donald F. Carr/B.A. (*Guelph*), M.F.A. (*Chicago*) (*Art*)  
 Hugh G. Galloway/Dipl. Art (*Edinburgh*) (*Art*)  
 Frederick A. Hall/Assoc. Dipl., B.Mus. (*McGill*), M.A., Ph.D. (*Toronto*) (*Music*)  
 Hugh K. Hartwell/Assoc. Dipl., B. Mus. (*McGill*), A.M., Ph.D. (*Pennsylvania*) (*Music*)  
 Judy N. Major-Girardin/B.F.A. (*Windsor*), M.F.A. (*Alabama*) (*Art*)  
 Richard Monette/Honourary, Part-time (*Drama*)  
 Brian S. Pocknell/M.A. (*Manchester*), D. de l'U. (*Paris-Sorbonne*) (*Drama*)  
 Paul Rapoport/A.B. (*Michigan*), M.Mus., Ph.D. (*Illinois*) (*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

James A. Deaville/B.M., M.M., Ph.D. (*Northwestern*) (*Music*)  
 Susan Fast/B.M. (*Western Washington*), M.A., Ph.D. (*Iowa*) (*Music*)  
 Stephen B. Johnson/B.A. (*Guelph*), M.A. (*Toronto*), Ph.D. (*New York*) (*Drama*)  
 Keith W. Kinder/Dip. F.A. (*Calgary*), B.Mus. (*Western*), M.Mus. (*Northwestern*), Ph. D. (*Colorado*) (*Music*)  
 Niamh O'Laoghaire/B.A., M.A., Ph.D. (*Toronto*)  
 William Renwick/B.Mus. (*British Columbia*), Ph.D. (*CUNY*), A.A.G.O., F.R.C.C.O. (*Music*)  
 Glenn T. Scott/B.A. (*McGill*), M.F.A., Ph.D. (*Princeton*) (*Art History*)  
 Warren D. Tresidder/B.A. (*New South Wales*), M.A. (*British Columbia*), Ph. D. (*Michigan*) (*Art History*)

### Lecturers

Elizabeth Horton Sharf/A.B. (*Wellesley College*), M.A. (*Michigan*) (*Art History*)  
 Elizabeth M. Inman/B.A. (*London*) (*Drama*)

### Instructors

Taras Cymbalisty/B.A. (*McMaster*) Part-time (*Drama*)  
 Doreen DelVecchio/B.A., M.A., Ph.D. (*McMaster*) part-time (*Drama*)  
 Jean Maddison/M.F.A. (*Royal College of Art, London*) part-time (*Art*)  
 Barbara Michel/B.A., M.A., Ph.D. (*Toronto*) part-time (*Drama*)  
 Viv Moore/B.F.A. (*York*) part-time (*Drama*)  
 Kim Ness/B.A. (*McMaster*), M. Litt. (*Edinburgh*), M.M.St. (*Toronto*) part-time /Art Gallery Director and Curator  
 Kevin Orr/B.F.A. (*Concordia*), D.E.C. (*John Abbott*), M.F.A. (*U.B.C.*) part-time (*Drama*)  
 Jean Rosenfeld/B.A. (*McMaster*), B.A. (*Carleton*), M.A. (*York*) part-time (*Art*)  
 Gord Smith/R.C.A. (*Sir George Williams*) part-time (*Art*)

### Part-time Faculty (Music)

Norma Ashcroft  
 Terry Basom/B.Mus.Ed. (*Kansas*), M.Mus. Ed. (*North Texas*)  
 Angela Elster/B.Mus. Ed. (*Toronto*)  
 Roger Flock  
 Paul Grimwood/B.Mus. (*Western*)  
 Sharyn Hall/A.Mus., B.A., M.A., Ph.D. (*Toronto*)  
 John Packer/B.A. (*McMaster*)

### Instructors (Music)

Elise Bédard/B.Mus., L.Mus., M.Mus. (*McGill*) voice  
 Cécile Bérard-Dunn/B.Mus. (*Collège de Marie de l'Incarnation*), M.M. (*Montréal*) piano  
 Greg Bush/jazz band  
 Lita Classen/B.Mus. (*Ottawa*), M.Mus. (*Vincent d'Indy Montréal*) Dipl. Perf. (*Vienna*) voice  
 Marc Donatelle/B.M. (*Northwestern*), M.M. (*Southern California*) trombone  
 Paul Elliott/B.Mus. (*Oberlin*), M.M. (*New England Conservatory*) flute  
 Don Englert/jazz saxophone  
 Robert Erlendson/jazz piano  
 Roger Flock/percussion  
 David Gerry/A.R.C.T., B.Mus. (*Toronto*), Dipl. Ped. (*Japan*) flute  
 Tanya Gernburd/B.A., M.A. (*Tashkent*) musicianship  
 Paul Grimwood/B.Mus. (*Western*) harpsichord & organ  
 Marta Hidy/Dipl. Perf. (*Budapest*), F.R.H.C.M. (Hon.) violin  
 Judy Hunter/A.R.C.T. (*Toronto*), A.Mus., Mus.G. Paed., B.A. (*Western*), L.T.C.L., F.T.C.L., A.T.C.L. (*Trinity College, London*) piano  
 Willy Jarvis/electric bass  
 MaryKenedi/Lic. Dipl., Mus. Bac., Mus.M. (*Toronto*) piano  
 Zdeněk Koníček/Dipl. Music, M.A. (*Prague*) cello  
 Jeffrey McFadden/B.Mus. (*Western*), Mus. M. (*Toronto*) guitar  
 Willem Moolenbeek/A.R.C.T., B.Sc., M.Sc. (*Guelph*) saxophone  
 Paul Novotny/electric bass  
 Marie Peebles/viola  
 Jon Peterson/Art. Dipl. (*Curtis*) oboe  
 Stephen Pierre/Mus. Bac. (*Toronto*) clarinet  
 Jeff Reynolds/B.Phil. (*York*), B.Mus. (*Calgary*), M.Mus. (*Victoria*), M.A. Ed. (*Toronto*) trumpet  
 Philip Sarabura/A.R.C.T., B.Mus. (*Western*) choir  
 Suzanne Shulman/flute  
 Cynthia Szábo/Assoc. Dipl., B.Mus. (*Michigan*), M.Mus., D.M.A. (*Indiana*) piano  
 Geoff Young/jazz guitar  
 Alla Zaccarelli/piano

### Associate Members

Katherine M.D. Dunbabin (*Classics*) B.A., D.Phil. (*Oxford*)  
 Laurel A. Means (*English*) B.A., M.A. (*Arkansas*), M.A. Ph.D. (*Toronto*)  
 Fiorigio Minelli (*Modern Languages*) B.A., M.A. (*Western*), Ph.D. (*Brown*) (*Hispanic Studies*)  
 Richard E. Morton (*English*) B.A. (*Wales*), B. Litt. (*Oxford*)  
 W. Graham Roebuck (*English*) B.A. (*Durham*), M.A. (*McMaster*), Ph.D. (*London*)  
 George Thomas (*Modern Languages*) B.A., Ph.D. (*London*) *Russian*  
 David C. Wilson (*Kinesiology*) B.Ed. (*Bristol*), M.A. (*York*)

## 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.  
 Prerequisite: Permission of the School of Art, Drama and Music based on **required portfolio interview**. If you intend to take Art 1F06 which is required for entrance into any Honours Art programme, you must make an appointment with the department for a portfolio interview in March. The portfolio should contain a variety of original work in different media including work derived from both first-hand observation and the imagination. Aptitude in art and academic ability are both considered in the selection process. In exceptional circumstances where distance does not allow for an interview, portfolios may be submitted in the form of colour slides or photographs. Late applications will be considered subject to space availability and merit after the first allocations have been confirmed in June. **Applicants for this course should use the MHA OUAC code.**

### ART 2A06 PAINTING I

An introduction to approaches and techniques related to the development of paintings from conception through organization to completed work. Four hours demonstration and two hours independent study; two terms  
 Prerequisite: ART 1F06

**ART 2B06 SCULPTURE I**

A series of workshops and seminars to expand the student's understanding and experience in the production of three-dimensional works of art. A portfolio of three-dimensional works will be produced.

Four hours demonstration and two hours independent study; two terms  
Prerequisite: ART 1F06

**ART 2C03 DRAWING I**

An exploration of a variety of approaches to drawing with an emphasis on the study of the figure.

One studio practice (three hours); two terms  
Prerequisite: ART 1F06

**ART 2F06 PRINTMAKING I**

An introduction to printmaking techniques including monotypes, collotypes and editioned prints in intaglio, lithography and relief. Emphasis will be on developing personal images that relate to these techniques.

Four hours demonstration and two hours independent study; two terms  
Prerequisite: ART 1F06

**ART 3A03 ADVANCED PAINTING I**

A series of defined assignments and independent projects focused on improving skills and fostering personal direction in the field of painting.

Two hours demonstration and one hour independent study (twice weekly); one term  
Prerequisite: ART 2A04 or ART 2A06

**ART 3AA3 ADVANCED PAINTING II**

A series of self-directed projects and in-class assignments with emphasis on independent development preparing the student for Level IV work.

Two hours demonstration and one hour independent study (twice weekly); one term  
Prerequisite: ART 2A04 or ART 2A06

**ART 3B03 ADVANCED SCULPTURE I**

A series of advanced workshops and projects designed to develop individual artistic direction in the field of sculpture.

Two hours demonstration and one hour independent study (twice weekly); one term  
Prerequisite: ART 2B04 or ART 2B06

**ART 3BB3 ADVANCED SCULPTURE II**

A series of self-directed projects and in-class assignments with emphasis on independent development preparing the student for Level IV work.

Two hours demonstration and one hour independent study (twice weekly); one term  
Prerequisite: ART 2B04 or ART 2B06

**ART 3C03 DRAWING II**

An exploration of drawing with an emphasis on refining skills and developing personal direction.

One studio practice (three hours); two terms  
Prerequisite: ART 2C03

**ART 3G06 CURRENT PRACTICES IN THE VISUAL ARTS**

An independent studio study course in conjunction with a series of lectures and critiques by contemporary visual artists and individuals involved in the business of art. The development and realization of a body of self-directed work and a written thesis are requirements of this course. Work will be supervised and critiqued by a committee of studio faculty on an ongoing basis.

Three hours; two terms  
Prerequisite: Registration in Level III of any Honours programme in Art

**ART 3P03 ADVANCED PRINTMAKING I**

Continuation of Art 2F06 with a more in-depth investigation of lithographic print techniques and greater emphasis on self-directed work.

Two hours demonstration and one hour independent study (twice weekly); one term  
Prerequisite: ART 2F04 or ART 2F06

**ART 3PP3 ADVANCED PRINTMAKING II**

Continuation of Art 3P03 with a more in-depth investigation of intaglio and relief print techniques and greater emphasis on self-directed work.

Two hours demonstration and one hour independent study (twice weekly); one term  
Prerequisite: ART 3P03

**ART 4B12 MAJOR STUDIO PROJECT**

A summation of independent investigations in the visual arts resulting in a significant body of work, an exhibition, and a written thesis. Work will be supervised and critiqued by a committee of studio faculty on an ongoing basis.

Prerequisite: ART 3G06 and registration in Level IV Honours Art with a grade of at least B- in six units of Level III work in the chosen field  
Antirequisite: ART 4C06  
*Students wishing to integrate ART 4B12 with ART 4D03 must have a grade of at least A- in a previous course in the chosen field or fields.*

**ART 4C06 MINOR STUDIO PROJECT**

An independent investigation into painting, sculpture, printmaking, drawing or mixed media to be conducted under the supervision of a committee of studio faculty.

Prerequisite: ART 3G06 and registration in Level IV of Combined Honours in Art and Another Subject with a grade of at least B- in six units of Level III work in the chosen field

Antirequisite: ART 3F06 or 4B12 or registration in 4B12

*Students wishing to integrate ART 4C06 with ART 4D03 must have a grade of at least A- in a previous course in the chosen field or fields.*

**ART 4D03 MEDIA RESEARCH**

An independent investigation of studio techniques relevant to the student's individual interest. Work will be supervised and critiqued by a committee of studio faculty.

Prerequisite: Registration in Level IV of any Honours programme in Art with a grade of at least B- in three units of Level III work in the chosen field  
*Students wishing to integrate ART 4B12 or 4C06 with ART 4D03 must have a grade of at least A- in a previous course in the chosen field or fields.*

**ART HISTORY ...**

Courses and programmes in Art History are administered within the School of Art, Drama and Music of the Faculty of Humanities.

**Courses****ART HIST 1A06 INTRODUCTION TO THE STUDY AND HISTORY OF THE VISUAL ARTS**

An examination of the various forms and functions of art and architecture in the Western tradition, with an historical study of the major monuments of that tradition.

Two lectures, one tutorial; two terms

**ART HIST 2B03 GREEK ART**

The architecture, sculpture, and painting of the Greek and Hellenistic worlds.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2B03

**ART HIST 2C03 ROMAN ART**

The architecture, sculpture, and painting of the Roman world.

Three lectures; one term

Prerequisite: ART HIST 2B03

Cross-list: CLASSICS 2C03

**ART HIST 2D03 19TH- AND 20TH-CENTURY ART AND ARCHITECTURE**

A study of the major movements 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

**ART HIST 2G03 THE ART OF THE MEDIEVAL WORLD**

A systematic survey of the history of medieval art between c. 350 and 1400 A.D.

Three lectures; one term

Prerequisite: Registration in Level II and above

**ART HIST 2H03 AESTHETICS**

An introduction to some main theories of the nature of art, criticism, and the place of art in life and society.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: PHILOS 2H03

*Offered in alternate years.*

**ART HIST 2M03 THE ART AND ARCHITECTURE OF THE ITALIAN RENAISSANCE 1400-1580**

The history of art in Renaissance Italy with the emphasis on the works of individual artists and architects.

Three lectures; one term

Prerequisite: Registration in Level II and above

**ART HIST 2N03 ITALIAN BAROQUE ART AND ARCHITECTURE**

An examination of the major trends in Italian art and architecture from 1580-1780.

Three lectures; one term

Prerequisite: Registration in Level II and above



**ART HIST 2X06 THE ART OF THE FILM**

An introduction to film style and technique through a detailed critical analysis of major works from the silent period to the present day.

Two lectures, plus one weekly film screening; two terms

Prerequisite: Six units from the Faculty of Humanities, and registration in Level II and above

Cross-list: DRAMA 2X06

**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: ART HIST 2D03 or 2P03

*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

*Offered in alternate years.*

**ART HIST 3BB3 THE ART OF NORTHERN EUROPE IN THE 17TH CENTURY**

A discussion of the art of France, Flanders, the Netherlands and England in the Baroque period. Emphasis will be given to Rubens, Poussin and Rembrandt.

Three lectures; one term

Prerequisite: ART HIST 2N03

*Offered in alternate years.*

**ART HIST 3CC3 LITERATURE AND FILM**

An examination of the particular characteristics of both literature and film and the relationship between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.

Three lectures, plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama, Literature or Art History. ART HIST 2X06 is recommended.

Cross-list: COMP LIT 3L03, DRAMA 3H03, and ENGLISH 3CC3

**ART HIST 3E03 EUROPEAN ARCHITECTURE OF THE 17TH AND 18TH CENTURIES**

This course will examine the developments in architecture primarily in Italy, France and England in the 17th and 18th centuries with background material, where necessary, on 16th-century architectural styles.

Three lectures; one term

Prerequisite: ART HIST 2N03

**ART HIST 3F03 THE AMERICAN CINEMA I**

A survey of some of the 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: ART HIST 2X06

Cross-list: DRAMA 3R03

**ART HIST 3FF3 THE AMERICAN CINEMA II**

A survey of some of the predominant features of the American Cinema from 1950 to the present day. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.

Two lectures, plus one weekly film screening; one term

Prerequisite: ART HIST 2X06

Cross-list: DRAMA 3RR3

**ART HIST 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 2G03

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 (ca. 1000-480 B.C.) and its relationship to the art of the Near East.

Three lectures; one term

Prerequisite: ART HIST 2B03

Cross-list: CLASSICS 3H03

*Alternates with ART HIST 3G03*

**ART HIST 3J03 JAPANESE ART**

An introduction and discussion of major aspects of the visual arts of Japan.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: JAPAN ST 3J03

*Available only as an elective for students registered in an Art History programme.*

**ART HIST 3K03 ARTS OF CHINA**

An introduction to the arts of China from the Neolithic period to the twentieth century, covering Bronze Age arts, recent archaeological discoveries, Buddhist sculpture, figure and landscape painting, and Chinese calligraphy.

Seminar (two hours); one term

Prerequisite: Registration in Level II and above

*Available as an elective only for students registered in an Art History programme.*

**ART HIST 3L03 VENETIAN RENAISSANCE PAINTING**

An examination of the works of the major painters of the Renaissance in Venice, including such artists as Giovanni Bellini, Giorgione and Titian.

Three lectures; one term

Prerequisite: ART HIST 2M03

*Offered in alternate years.*

**ART HIST 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 III or IV of a programme in Art or Art History

*Offered in alternate years.*

**ART HIST 3T03 TOPICS IN NATIONAL CINEMAS I**

Previous topics include: Soviet and East European Cinema. Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: ART HIST 2X06

Cross-list: DRAMA 3T03 and MODERN LANG 3T03

*ART HIST 3T03 may be repeated, if on a different topic, to a total of six units.*

**ART HIST 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: ART HIST 2X06

Cross-list: DRAMA 3TT3

*ART HIST 3TT3 may be repeated, if on a different topic, to a total of six units.*

**ART HIST 3V03 SUPERVISED READING**

Readings in a field of special interest to the student, under the guidance of a Faculty member.

Prerequisite: Registration in Level III or IV of Honours Art History or Level IV Honours Art and a grade of at least A- in a previous course in the chosen field and permission of the School of Art, Drama and Music

Antirequisite: ART 4D03

**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

*Offered in alternate years.*

*Enrolment is limited.*

**ART HIST 4BB3 SEMINAR IN ANCIENT ART**

Consult the Department concerning the topic to be offered.

Seminar (two hours); one term

Prerequisite: ART HIST 2B03 and 2C03, and registration in Level III or IV of an Honours programme in Art History.

Cross-list: CLASSICS 4BB3

*ART HIST 4BB3 may be repeated, if on a different topic, to a total of six units.*

*Enrolment is limited.*

**ART HIST 4C03 THE ART OF THE HIGH RENAISSANCE IN ROME**

A study of the art and architecture of Raphael, Michelangelo and their contemporaries in Rome in the early 16th century.

Seminar (two hours); one term

Prerequisite: ART HIST 2M03

*Offered in alternate years.*

*Enrolment is limited.*

**ART HIST 4CC3 STUDIES IN THEATRE AND FILM**

Senior Seminar: A comparative examination of the performance, visual and narrative techniques of theatre and film, including specific examples of adaptation.

Seminar (two hours), plus weekly film screening; one term

Prerequisite: Registration in Level IV of an Honours programme in Art History

Cross-list: DRAMA 4C03

*Offered in alternate years.*

*Enrolment is limited.*

**ART HIST 4D03 STUDIES IN THE HISTORY AND HISTORIOGRAPHY OF EARLY ITALIAN ART**

An investigation of major Italian artists from the thirteenth through fifteenth centuries, the historiographical tradition related to these figures, and the methodological premises of that tradition.

Seminar (two hours); one term

Prerequisite: Registration in Level III or Level IV of a programme in Art or Art History. Previous completion of Art History 2E03 is recommended.

Alternates with ART HIST 4V03

Enrolment is limited.

**ART HIST 4F03 DUTCH PAINTING OF THE 17TH CENTURY**

A study of the so-called "minor masters" of Holland's Golden Age of painting.

Seminar (two hours); one term

Prerequisite: ART HIST 3BB3

Offered in alternate years.

Enrolment is limited.

**ART HIST 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 Art or Art History. Art History 2X06/Drama 2X06 is recommended.

Cross-list: DRAMA 4FF3

Offered in alternate years.

Enrolment is limited.

**ART HIST 4M03 ASPECTS OF THE ART OF MATISSE AND PICASSO**

An examination of selected paintings, sculptures and drawings by Henri Matisse and Pablo Picasso.

Three lectures; one term

Prerequisite: ART HIST 2D03 or 2P03

Offered in alternate years

**ART HIST 4N03 NEOCLASSICISM AND ROMANTICISM**

An historical and critical investigation of selected issues and artists connected with the Neoclassical and Romantic movements.

Seminar (two hours); one term

Prerequisite: ART HIST 2D03 or 2O03

Offered in alternate years.

**ART HIST 4O06 THESIS**

Supervised study of a problem in the history of art of special interest to the student.

Prerequisite: Registration in Level IV of any Honours programme in Art History; and a grade of at least A- in a previous course in the chosen field, and permission of the School of Art, Drama and Music

**ART HIST 4Q03 CARAVAGGIO**

A study of all of the paintings attributed to Caravaggio and their stylistic and documentary evidence. The variety of methods of examining an artist's work is emphasized.

Three lectures; one term

Prerequisite: ART HIST 2N03

Offered in alternate years.

**ART HIST 4R03 PAINTING AND SCULPTURE OF 15TH-CENTURY ITALY**

An examination of the representational arts of the early Renaissance with emphasis on the Florentine contribution.

Three lectures; one term

Prerequisite: ART HIST 2M03

Offered in alternate years.

**ART HIST 4S03 SPECIAL STUDIES IN FILM**

Previous topics include: Genre Studies, Film Comedy. Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: ART HIST 2X06

Cross-list: DRAMA 3J03

ART HIST 4S03 may be repeated, if on a different topic, to a total of six units.

**ART HIST 4V03 THE STUDY, CRITICISM AND EVALUATION OF ART**

A seminar to introduce students to the history, theory, and practice of connoisseurship. Its focus will be to develop skills in confronting the single work of art.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History

Alternates with Art History 4D03.

Enrolment is limited

**ART HIST 4X03 INTRODUCTION TO ART GALLERIES AND MUSEUMS**

A study of the history and methods of institutions created for the purpose of collecting, preserving, displaying and interpreting art objects.

Seminar (two hours); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History

Offered in alternate years.

Enrolment is limited.

**ARTS AND SCIENCE****Director**

Barbara M. Ferrier (Biochemistry) B.Sc., Ph.D. (Edinburgh)

**Council of Instructors**

N. Balakrishnan (Mathematics and Statistics) B.Sc., M.Sc. (Madras), Ph.D. (I.I.T., Kanpur)

John D. Browning (Modern Languages) B.A., M.Phil. (London), Ph.D. (Essex)

Sylvia Bowerbank (English and Arts & Science) B.A. (McMaster),

B.Ed. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)

David W. Butterfield (Economics) B.S., M.S. Eng. (Calif. Inst. of Tech.), A.B., M.A., Ph.D. (California-Berkeley)

William E. Harris (Physics and Astronomy) B.Sc. (Alberta), M.Sc., Ph.D. (Toronto)

Bradd Hart (Mathematics and Statistics) B.Math (Waterloo), Ph.D. (McGill)

Robert J. Henderson (Kinesiology) B.P.E. (McMaster), M.A. (Alberta)

Robert C. Hudspith (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)

Gordon Slade (Mathematics and Statistics) B.A.Sc., M.Sc. (Toronto), Ph.D. (California-Berkeley)

Mark Vorobej (Philosophy) B.A. (Carleton), M.A., Ph.D. (Toronto)

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 courses is normally registration in the Arts and Science Programme.
- Limited Enrolment:** Enrolment in Level I of the Arts and Science Programme is limited to approximately 55 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 course which presently deals with Third World Development includes lectures and exercises on advanced methods of library research and an introduction to computers.

**ARTS&SCI 1D06 CALCULUS**

This course aims to provide a thorough understanding of the principles and major applications of differential and integral calculus of functions of one variable, as well as an introduction to multivariate calculus and differential equations.

*ARTS&SCI 1D06 serves as a prerequisite for all upper level Mathematics, Statistics, Computer Science and Physics courses, for which MATH 1A06 or MATH 1A03 is a prerequisite.*

**ARTS&SCI 2A06 MODERN WESTERN CIVILIZATION**

Development of political, economic, sociological and psychological thought in the writings of such major figures as Hobbes, Rousseau, Adam Smith, Marx, Weber, Keynes, Freud and Skinner. Attention will be given to their treatment of such topics as the nature of man, the concept of human rights, the role of government in the economy, the motivation of human action, and the applicability of scientific method to political, economic and psychological problems.

**ARTS&SCI 2D06 PHYSICS**

Classical mechanics and special relativity are treated, highlighting the discoveries of Newton and Einstein. The laws of thermodynamics, entropy, and elementary statistical physics are presented. Finally, the important discoveries leading to the quantum theory are surveyed. Laboratory projects will be undertaken.

**ARTS&SCI 2R06 STATISTICS: MATHEMATICAL MODELS FOR CHANGE, CHANCE AND ERROR**

Probability, distributions, measures of association, tests of significance, mathematical models, and other quantitative methods useful in the analysis of variable phenomena, are considered.

**ARTS&SCI 3A06 LITERATURE**

Literary works drawn from a variety of genres and periods will be examined. The course will focus on the ways in which great writers have treated enduring human ethical concerns. It will attempt to show how literary creativity involves the matching of formal and stylistic mastery, on the one hand, with ethical awareness on the other.

**ARTS&SCI 3B03 TECHNOLOGY AND SOCIETY I**

The Culture of Technology. Current technological practices and approaches are studied as a cultural activity with its own beliefs, values, social structures and institutions.

**ARTS&SCI 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 cultures 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: CURING SOCIETY**

Examination of such issues of health and sickness as the functions of hospitals, attitudes toward illness, and the funding of medical research.

*Not offered in 1996-97.*

**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 3D03 CREATIVE ARTS I**

The nature of a selected art form and its relation to culture and ideas is examined. Close attention is paid to the creative process as a way of understanding the nature of the artistic product.

*Not offered in 1996-97.*

**ARTS&SCI 3DD3 CREATIVE ARTS II**

Further examination of the creative process by examination of another art form is undertaken.

Prerequisite: ARTS&SCI 3D03

*Not offered in 1996-97.*

**ARTS&SCI 3L03 ISSUES IN ASIAN RELIGIOUS THOUGHT: 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 ISSUES IN ASIAN RELIGIOUS THOUGHT: EAST INDIA**

Readings in 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

**ARTS&SCI 4A06 INDIVIDUAL STUDY**

This course consists of a library, laboratory, or field project under the supervision of a faculty member. Students intending to register must first consult the Director of the Arts & Science Programme and then prepare an outline for approval after consultation with the faculty supervisor.

**ARTS&SCI 4A12 INDIVIDUAL STUDY**

ARTS&SCI 4A06 based on more extensive study.

**ARTS&SCI 4C06 THESIS**

This course consists of a library, laboratory, or field project under the supervision of a faculty member. Three copies of a completed thesis must be submitted by the end of classes. Students intending to register must first consult the Director of the Arts & Science Programme and then prepare an outline for approval after consultation with the faculty supervisor.

**ARTS&SCI 4C12 THESIS**

ARTS&SCI 4C06 based on more extensive research.

**ASIAN STUDIES**

(SEE MINORS AND THEMATIC AREAS OF STUDY)

**ASTRONOMY**

(SEE PHYSICS AND ASTRONOMY)

**BIOCHEMISTRY****Faculty as of January 15, 1996****Chair**

G.E. Gerber

**Professors Emeriti**

Ross H. Hall/B.A. (*British Columbia*), M.A. (*Toronto*), Ph.D. (*Cambridge*)  
Dennis R. McCalla/B.Sc. (*Alberta*), M.Sc. (*Saskatchewan*), Ph.D. (*California Inst. of Technology*), F.C.I.C.

**Professors**

Vettai S. Ananthanarayanan/M.Sc., Ph.D. (*Madras*)  
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*)  
John P. Capone/B.Sc. (*Western*), Ph.D. (*McMaster*)  
William W. Chan/M.A., Ph.D. (*Cambridge*)  
Richard M. Epanand/A.B. (*Johns Hopkins*), Ph.D. (*Columbia*)  
Barbara M. Ferrier/B.Sc., Ph.D. (*Edinburgh*)  
Karl B. Freeman/B.A., Ph.D. (*Toronto*)  
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**

David W. Andrews/B.Sc. (*Ottawa*), Ph.D. (*Toronto*)  
Calvin B. Harley/B.Sc. (*Waterloo*), Ph.D. (*McMaster*)/part-time  
Daniel S.C. Yang/B.Sc., M.Sc. (*Alberta*), Ph.D. (*Pittsburgh*)

**Assistant Professors**

Albert M. Berghuis/M.Sc. (*Groningen, The Netherlands*), Ph.D. (*British Columbia*)  
Douglas W. Bryant/B.Sc. (*McGill*), M.Sc., Ph.D. (*York*)/part-time  
Corinne G. Lobe/B.Sc., Ph.D. (*Alberta*)  
Gerard D. Wright/B.Sc., Ph.D. (*Waterloo*)

**Associate Members**

- Stephanie A. Atkinson/(*Pediatrics*) B.A. (Western), Ph.D. (Toronto)  
 Aled M. Edwards/(*Pathology*) B.Sc., Ph.D. (McGill)  
 Lori D. Frappier/(*Pathology*) B.Sc. (Queen's), Ph.D. (McGill)  
 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)

**Courses** *If no prerequisite is listed, the course is open.***BIOCHEM 2A06 PRINCIPLES OF BIOCHEMISTRY**

An overview of biochemical processes emphasizing the importance of structure, function, reactivity and energetics of molecules in biological systems. Designed for students intending to proceed to Level III Biochemistry courses.

Three lectures or tutorial; two terms

Prerequisite: Credit or registration in one of CHEM 2B06, 2O06, and registration in an Honours Biochemistry programme or Honours Molecular Biology and Biotechnology

Antirequisite: BIOCHEM 2E03, 3G03, 3GG3

**BIOCHEM 2E03 ELEMENTARY BIOCHEMISTRY**

A treatment of the basic areas of biochemistry, including physiological biochemistry. Designed for students who do not intend to pursue biochemistry.

Three lectures; second term

Prerequisite: Credit or registration in one of CHEM 2D03, 2B06, 2O06

Antirequisite: BIOCHEM 2A06, 3A03, 3AA3, 3G03, 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: BIOCHEM 2A06, or BIOCHEM 3G03 and 3GG3

Antirequisite: BIOCHEM 3A03, BIOLOGY 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: BIOCHEM 2A06, or BIOCHEM 3G03 and credit or registration in BIOCHEM 3GG3

Antirequisite: BIOCHEM 3A03 (except for students in Honours Biochemistry Co-op programme in 1996-97)

**BIOCHEM 3C03 CELLULAR BIOCHEMISTRY**

Biochemical basis of complex cellular processes such as compartmentalization, vesicular traffic, cell division, movement and communication. Includes physical principles of related techniques and instrumentation.

Three lectures; one term

Prerequisite: BIOCHEM 2A06, or BIOCHEM 3G03 and 3GG3

**BIOCHEM 3E03 ENVIRONMENTAL BIOCHEMISTRY LABORATORY**

Fundamental principles and techniques of experimental biochemistry analyses of environmental problems.

One lab (three hours), one tutorial (three hours); one term

Prerequisite: Enrolment in Level III of Honours Science (Environmental Science Option)

Antirequisite: BIOCHEM 3L03

First offered in 1997-98.

**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 2B06 or 2O06

Antirequisite: BIOCHEM 2A06, 2E03, 3A03, 3AA3

*Students who receive special permission to register in this course after completing BIOCHEM 2E03 will not retain credit for BIOCHEM 2E03 on completion of this course.*

**BIOCHEM 3GG3 METABOLISM AND HUMAN PHYSIOLOGICAL BIOCHEMISTRY**

Production of energy by cells and its utilization to maintain their structure and function. The integration and control of biochemical processes in healthy cells, tissues, organs and the whole body.

Three lectures; second term

Prerequisite: BIOCHEM 3G03 and BIOLOGY 1A06; or either CHEM 2B06 or 2O06 with a grade of at least B and permission of the instructor

Antirequisite: BIOCHEM 2A06, 3E03, 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 BIOCHEM 3G03 and 3GG3

**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, and registration in an Honours Biochemistry programme or in the Honours Molecular Biology and Biotechnology programme; or BIOCHEM 3G03, 3GG3 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 BIOCHEM 3G03 and 3GG3

**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 an Honours Biochemistry programme or permission of the Department

Antirequisite: BIOCHEM 4L03; BIOLOGY 3V03

*Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar*

**BIOCHEM 4A03 RECENT ADVANCES IN BIOCHEMISTRY AND MOLECULAR BIOLOGY**

Student presentation and critical evaluation of selected topics from the current research literature.

Three lectures; one term

Prerequisite: Registration in Level IV of an Honours Programme in Biochemistry. Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4C03

*Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar*

**BIOCHEM 4B06 SENIOR THESIS**

A thesis based on a project directly supervised by a member or associate member of the Department of Biochemistry.

Three labs (three hours); two terms

Prerequisite: BIOCHEM 3P03, or BIOLOGY 3V03 and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme.

Students must have a CA of at least 9.5. Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4G03, 4L03, 4P03

*Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar*

**BIOCHEM 4C03 BIOCHEMISTRY INQUIRY**

Broader aspects of biochemistry such as those relating to food, drugs, health and environment discussed in small groups. Group and individual projects, seminars and lectures as appropriate to the subject matter.

Three hours; one term

Prerequisite: Registration in Level IV of Honours Biochemistry (Complementary Studies Option); or one of BIOCHEM 2A06, 2E03 or 3G03 and registration in a Complementary Studies programme and permission of the instructor

Antirequisite: BIOCHEM 4A03

*Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar*

**BIOCHEM 4D03 BIOTECHNOLOGY AND GENETIC ENGINEERING**

Theory, methods and applications in genetic engineering and biotechnology with emphasis on recombinant DNA, hybridomas, engineered organisms, and fermentation processes.

Three lectures; first term

Prerequisite: One of BIOCHEM 3A03, 3G03

Prerequisite: (Beginning in 1997-98) BIOLOGY 3E03; one of BIOCHEM 3B03, BIOLOGY 3H03 and one of BIOCHEM 2A06, 3G03

#### **BIOCHEM 4E03 GENE EXPRESSION**

Advanced course covering current concepts and strategies of molecular mechanisms of eukaryotic gene expression and regulation at the transcriptional, post-transcriptional, translational and post-translational levels. Three lectures; second term

Prerequisite: BIOCHEM 3A03 or both BIOCHEM 3G03 and 3GG3

Prerequisite: (Beginning in 1997-98) One of BIOCHEM 3B03, BIOLOGY 3H03 and one of BIOCHEM 2A06, 3G03

#### **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); one term

Prerequisite: Registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme and one of BIOCHEM 3P03, BIOLOGY 3V03 and either one of BIOCHEM 3A03, 3B03 or both BIOCHEM 2A06 and BIOLOGY 3H03. Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4B06, 4L03

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar

#### **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: One of BIOCHEM 3A03, 3G03 and one of CHEM 3D03, 3F03 or registration in Honours Biochemistry Co-op

Prerequisite: (Beginning in 1997-98) BIOCHEM 3B03, 3BB3 and one of CHEM 3D03, 3F03

#### **BIOCHEM 4J03 BIOCHEMICAL IMMUNOLOGY**

The molecules of the immune system will be examined in detail. Topics will include the regulation, biosynthesis and structure of immunoglobulins. Major histocompatibility complex, loci products and T cell receptors. One tutorial (three hours); 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); one term

Prerequisite: BIOCHEM 3L03 and either BIOCHEM 3A03 or both BIOCHEM 3B03 and 3BB3

Antirequisite: BIOCHEM 3P03; 4B06, 4G03

#### **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 programme or Year 4 of Honours Biochemistry Co-op programme or BIOCHEM 3G03 and 3GG3

#### **BIOCHEM 4P03 RESEARCH PROJECT**

A research project will be supervised by a member or associate member of the Department of Biochemistry.

Three labs (three hours); one term

Prerequisite: One of BIOCHEM 3A03 or 3G03 and 3GG3, and one of BIOCHEM 3P03, BIOLOGY 3V03, and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme. Permission of the Department is required by March 31.

Antirequisite: BIOCHEM 4B06

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar

#### **BIOCHEM 4Q03 BIOCHEMICAL PHARMACOLOGY**

Interactions of drugs with living systems. Drug absorption, distribution, mechanism of action, metabolism and elimination will be discussed.

Three lectures; first term

Prerequisite: BIOCHEM 2A06 and registration in Level IV of an Honours Biochemistry programme or Year 4 of Honours Biochemistry Co-op programme; or BIOCHEM 3G03 and 3GG3

Antirequisite: BIOLOGY 3AA3

## **BIOLOGY**

### **Faculty as of January 15, 1996**

#### **Chair**

B.N. White

#### **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)

B. Ann Oaks/B.A. (Toronto), M.A., Ph.D. (Saskatchewan), F.R.S.C.

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), M.A. (Mount Holyoke), Ph.D. (Toronto)

#### **Professors**

Turlough Finan/B.Sc., M.Sc. (Galway, Ireland), Ph.D. (Guelph)

Frank L. Graham/(Pathology) M.A., Ph.D. (Toronto)

John A. Hassell/B.Sc. (Brooklyn College), Ph.D. (Connecticut)

John N.A. Lot/B.Sc. (British Columbia), M.S., Ph.D. (California, Davis)

D. Gordon McDonald/B.Sc. (Western), M.Sc., Ph.D. (Calgary)

Richard A. Morton/M.S., Ph.D. (Chicago)

Colin A. Nurse/B.E.Sc. (Western), Ph.D. (Harvard)

Michael J. O'Donnell/B.Sc., Ph.D. (Toronto)

Ludvik A. Prevec/M.A., Ph.D. (Toronto)

Andrew J. Rainbow/(Radiology) B.Sc. (Manchester), M.Sc. (London), Ph.D. (McMaster)

Rama S. Singh/B.Sc. (Agra), M.Sc. (Kanpur), Ph.D. (California, Davis)

George J. Sorger/B.Sc. (McGill), M.S., Ph.D. (Yale)

Emöke J.E. Szathmáry/B.A., Ph.D. (Toronto)

Bradley N. White/B.Sc. (Nottingham), Ph.D. (McMaster)

Christopher M. Wood/B.Sc., M.Sc. (British Columbia), Ph.D. (East Anglia)

#### **Associate Professors**

Patricia Chow-Fraser/B.Sc., M.Sc. (Waterloo), Ph.D. (Toronto)

Allan D. Dingle/B.Sc. (McMaster), M.Sc. (Illinois), Ph.D. (Brandeis)

G. Brian Golding/B.Sc. (Dalhousie), Ph.D. (Alberta)

Delsworth G. Harnish/B.Sc., M.Sc. (Queen's), Ph.D. (McMaster)

J. Roger Jacobs/B.Sc. (Calgary), M.Sc., Ph.D. (Toronto)

Jurek Kolasa/M.Sc., Ph.D. (Poznan)

James S. Pringle/(Royal Botanical Gardens), A.B. (Dartmouth), M.S. (New Hampshire), Ph.D. (Tennessee)/part-time

C. David Rollo/B.Sc., M.Sc. (Guelph), Ph.D. (British Columbia)

Herbert E. Schellhorn/B.Sc., M.Sc. (Guelph), Ph.D. (North Carolina)

Elizabeth A. Weretilnyk/B.Sc., Ph.D. (Alberta)

#### **Assistant Professors**

Ana Campos/B.A., M.A. (Rio de Janeiro), Ph.D. (Brandeis)

Susan A. Dudley/B.Sc., M.Sc. (McGill), Ph.D. (Chicago)

H. Lisle Gibbs/B.Sc. (Queen's), M.S., Ph.D. (Michigan)

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)

### **Courses If no prerequisite is listed, the course is open.**

#### **BIOLOGY 1A06 ADAPTATION IN THE BIOLOGICAL WORLD**

A course in introductory Biology which stresses the adaptation of form and function at the levels of molecules, cells, organisms and populations. Three lectures, one lab (three hours); two terms

Prerequisite: Registration in one of Natural Sciences 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 1A06 strongly recommended. CHEM 1A06 is a prerequisite for many Biology courses in Level II, III, and IV. OAC Biology is strongly recommended.

Corequisite: SCIENCE 1A00

#### **BIOLOGY 1J03 HUMAN PHYSIOLOGY**

Physiology of respiration, circulation, energy and muscle metabolism and reproduction.

Three lectures; one term

Antirequisite: Registration in Natural Science I or in any Biology, Biochemistry or Molecular Biology and Biotechnology programme

**BIOLOGY 2B03 CELL BIOLOGY**

Basic treatment of cell structure and function, including transport and chemical signals; adaptation of structure and function in specialized cells. Three lectures; two lectures, one lab (three hours); or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 1A06, CHEM 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 1A06, CHEM 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 1A06 or ENVIR SC 1A06

**BIOLOGY 2E03 THE ANIMAL KINGDOM**

Selected aspects of design in the major animal groups, with emphasis on adaptations to terrestrial versus aquatic environments.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 1A06 or ENVIR SC 1A06

**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 1A06 or ENVIR SC 1A06

**BIOLOGY 3AA3 FUNDAMENTAL CONCEPTS OF PHARMACOLOGY**

Drug interaction with living organisms; receptor theory of drug action; drug absorption, elimination, toxicity, design; individual variations in drug action; drug-drug interactions; society and drugs.

Three lectures, or two lectures, one tutorial; one term

Prerequisite: CHEM 2O06 or 2B06, and credit or registration in one of BIOLOGY 3P03, 3U03, 3UU3, and credit in one of BIOCHEM 2A06, 3A03 or 3G03.

Registration in one of BIOCHEM 3AA3 or 3GG3 is recommended.

Antirequisite: BIOCHEM 4Q03 or registration in Honours Biology and Pharmacology

**BIOLOGY 3B03 PLANT PHYSIOLOGY**

Principles of physiology and plant cell metabolism. Topics include: photosynthesis, photorespiration, mineral nutrition, water relations and transpiration.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 2B03 and 2D03

**BIOLOGY 3BB3 STRUCTURE AND DEVELOPMENT OF PLANT CELLS**

Ultrastructure, development and function of plant cells, and tissues.

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

Not offered in 1996-97.

**BIOLOGY 3E03 INTRODUCTORY MICROBIOLOGY**

Biology of the prokaryotic cell including structure-function relationships, antimicrobial agents and bacterial taxonomy. Use of microorganisms in biotechnology.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 2B03 and either CHEM 2D03 or 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

**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, 1C06 or permission of the instructor

Cross-list: PHYSICS 3T03

**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 3N03 EMBRYOLOGY**

Descriptive and experimental studies of animal development, including: gametogenesis; fertilization; cell proliferation, migration, and selective cell associations; inductive interactions; organogenesis; regeneration.

Two lectures, one lab (three hours); one term

Prerequisite: BIOLOGY 2E03

**BIOLOGY 3NN3 DEVELOPMENTAL BIOLOGY**

A study of the principles underlying developmental phenomena; polarity, gradients and pattern formation; intra and intercellular mechanisms governing cell determination and differentiation; cell lineage and cell recognition.

Three lectures, or two lectures, one tutorial; one term

Prerequisite: BIOLOGY 2B03, 2C03. BIOLOGY 3N03 is 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 is 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 one of BIOCHEM 3A03 or 3G03

**BIOLOGY 3R03 FIELD BIOLOGY I**

Field work plus written assignments chosen from an assortment of modules offered by faculty from McMaster and other Ontario Universities' Biology Departments. 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 1A06 or ENVIR SC 1A06 and acceptance into a specific module

**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.

Two lectures, one tutorial; one term

Prerequisite: BIOLOGY 2F03; or permission of the instructor. One of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3 and one of STATS 2MA3 or 2R06 are highly recommended.

**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 one of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3 and one of STATS 2MA3 or 2R06 is 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. BIOCHEM 3G03 and 3GG3 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. BIOCHEM 3G03 and 3GG3 are recommended.

*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 DEVELOPMENT**

An analysis of development in plants: cytological, genetical and biochemical studies.

Three lectures; one term

Prerequisite: BIOLOGY 2B03, 2C03 and 2D03. BIOLOGY 3BB3 is recommended

Antirequisite: BIOLOGY 4H03

**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 3TT3, 3SS3 or 3J03

**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: Credit in BIOCHEM 2A06 or 3G03. BIOLOGY 3H03 and 3B03 are recommended.

*Offered in alternate years.*

*Offered in 1996-97.*

**BIOLOGY 4C09 SENIOR THESIS**

A thesis based upon a research project carried out under the direction of a member of the Faculty.

Prerequisite: Registration in Level IV of any Honours Biology programme and permission of the Chair

Antirequisite: BIOLOGY 4F06, PSYCH 4D06, or PHARMAC 4F09

See the heading *Courses Requiring Permission* 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.*

*Offered in 1996-97.*

**BIOLOGY 4EE3 THE SCIENCE AND POLITICS OF HUMAN NATURE**

The nature of genetic diversity in humans; the nature versus nurture debate in relation to genetic determinism and biological basis of behaviour.

Lectures and seminars (three hours); one term

Prerequisite: BIOLOGY 2C03 and one of BIOLOGY 3J03, 3FF3, ANTHROP 2E03

**BIOLOGY 4F06 SENIOR PROJECT**

Students may enlarge their background in a field of specialization through an experimental or library project under the direction of a member of the Faculty.

Prerequisite: Registration in a Level IV Biology programme and permission of the Chair

Antirequisite: BIOLOGY 4C09 or PSYCH 4D06

See the heading *Courses Requiring Permission* in the *Faculty of Science* section of the Calendar

**BIOLOGY 4FF3 BIOLOGY INQUIRY**

This course will provide students with an opportunity to develop skills required to launch broadly-based investigations of selected biological themes.

Small groups will meet to define areas of interest, to discuss component problems, and give seminars on the chosen topics.

Seminar and discussions (three hours); two terms

Prerequisite: Registration in Honours Biology (Complementary Studies Option), Honours Biochemistry (Complementary Studies Option), or Honours Science (Complementary Studies Option) and permission of the instructor

Antirequisite: BIOLOGY 4C09, 4F06

See the heading *Courses Requiring Permission* 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 and 3K03. These are minimum requirements, and final selection by the Chair of the Department

of Biology will be based on academic merit.

*Enrolment limit: 16* See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar

*Offered in alternate years.*

*Offered in 1996-97.*

**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. PSYCH 2F03, 3R03, and BIOLOGY 3H03 are recommended.

**BIOLOGY 4I13 ADVANCED TOPICS IN IMMUNOLOGY**

This course allows students to build on and put into practice their previous knowledge of the immune system by solving typical immunological problems.

Two lectures, one tutorial; one term

Prerequisite: BIOLOGY 4I03 or 3X03

**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 1A06 or ENVIR SC. 1A06 and acceptance into a specific module

*Offered in alternate years.*

*Offered in 1996-97.*

**BIOLOGY 4L09 SENIOR THESIS FOR CO-OP STUDENTS**

A thesis based upon a research project carried out under the direction of a member of the Biology Department.

Prerequisite: Registration in the Honours Biology and Pharmacology Co-op programme. Approval of the project must be obtained from the Programme Director and the Chair of the Department by the end of preregistration.

## 144 CHEMICAL ENGINEERING

### BIOLOGY 4M03 MOLECULAR ASPECTS OF EUKARYOTIC CHROMOSOMES

Chromatin structure, repeated DNA sequences, concerted evolution of gene families, telomeres, centromeres, gene transfer, oncogenes, transposable elements.

Three lectures; one term

Prerequisite: BIOLOGY 3O03 and either BIOCHEM 2A06 or both BIOCHEM 3G03 and 3GG3

### 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.

Not offered in 1996-97.

### 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.

Offered in 1996-97.

### BIOLOGY 4R03 HUMAN GENETICS

A comprehensive study of the human genome from the basic science of genetics to the practice of genetic medicine. Topics include the human chromosomes, their normal and pathological constitutions; the human genome project; gene mapping and linkage analysis; and gene therapy.

Two lectures, one tutorial (two hours); one term

Prerequisite: Credit or registration in Biology 3I03

### BIOLOGY 4S03 TOXICOLOGY OF AQUATIC ENVIRONMENTS

Chemistry, mechanisms of toxicity, and ecotoxicology of environmental pollutants in aquatic environments.

Two lectures, one lab (three hours); one term

Prerequisite: Six units of Level III or IV Biology laboratory courses. BIOCHEM 3G03 and 3GG3 are recommended.

Offered in alternate years.

Offered in 1996-97.

### 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. BIOLOGY 3HH3 and one of BIOLOGY 3UU3, PSYCH 2F03, 3F03, 3FF3, 3FA3, 3FB3 are strongly recommended.

Offered in alternate years.

Offered in 1996-97.

### 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 3A03 or 3G03

### 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

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 1996-97.

### 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

## BUSINESS

(SEE COMMERCE)

## CANADIAN STUDIES

(SEE MINORS AND THEMATIC AREAS OF STUDY)

## CAYUGA

(SEE INDIGENOUS STUDIES)

## CHEMICAL ENGINEERING

Faculty as of January 15, 1996

### Chair

P.E. Wood

### Professors Emeriti

Alvin E. Hamielec/B.A.Sc., M.A.Sc., Ph.D. (Toronto), F.R.S.C., F.C.I.C., P.Eng./NSERC Industrial Research Chair in Polymer Production Technology

Leslie W. Shemilt/O.C., B.A.Sc., Ph.D. (Toronto), M.Sc. (Manitoba), D.Hon.C. (AGH, Cracow), F.R.S.C., F.C.A.E., F.C.I.C., F.A.I.Ch.E., F.E.I.C., P.Eng.

### 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)

Cameron M. Crowe/B.Eng. (McGill), Ph.D. (Cambridge), F.C.I.C., P.Eng.

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)

Jóhn F. MacGregor/B.Eng. (McMaster), M.Sc., Ph.D. (Wisconsin), F.A.S.A., P.Eng.

Thomas E. Marlin/B.S. (State University of New York), 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.), P.Eng.

Donald R. Woods/B.Sc. (Queen's), M.S., Ph.D. (Wisconsin), F.C.I.C., F.A.I.Ch.E., P.Eng.

Joseph D. Wright/B.Sc. (Alberta), Ph.D. (Cambridge), P.Eng./part-time

### Assistant Professors

Elizabeth A. Edwards/B.Eng., M.Eng. (McGill), Ph.D. (Stanford)

Shiping (Stephen) Zhu/B.Eng. (Zhejiang), Ph.D. (McMaster)

### Department Note:

All Chemical Engineering courses are open to students registered in a Chemical Engineering programme, subject to 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



**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**

Executive programs modelling heat exchangers, separators and reactors. Creativity, analysis, heuristics and defining open-ended problems.

One lecture, two tutorials (two hours); second term

Prerequisite: CHEM ENG 2G02 and registration or credit in CHEM ENG 2A04, 3E04, 3K04, 3M04

**CHEM ENG 3K04 INTRODUCTION TO REACTOR DESIGN**

Stoichiometry of multiple reactions, kinetics of homogeneous reactions, interpretation of batch data, design of ideal and non-ideal CSTR and plug flow reactors.

Three lectures; one tutorial (two hours); second term

Prerequisite: Registration or credit in CHEM ENG 3D03, 3E04 or registration in Level IV Honours Applied Chemistry

**CHEM ENG 3L02 INTERMEDIATE LABORATORY SKILLS**

Experiments and projects in heat transfer, thermodynamics, mass transfer and fluid mechanics with appropriate data analysis and report writing.

One lecture, one lab (three hours); second term

Prerequisite: CHEM ENG 2A04 and registration or credit in CHEM ENG 3D03, 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

**CHEM ENG 3P03 PROCESS CONTROL**

Transient behaviour of chemical processes. Theory and practice of automatic control. Introduction to computer process control.

Two lectures, one tutorial (two hours); second term

Prerequisite: MATH 2M06, and registration or credit in CHEM ENG 2A04, 3E04, 3K04, 3O04

**CHEM ENG 3Q03 INTRODUCTION TO POLYMER SCIENCE**

An overview of important synthetic and natural polymers with emphasis on polymer structure, the chemistry of polymer formation. An introduction to polymer characterization.

Three lectures; second term

Prerequisite: CHEM 2O06 or 2B06 or 2D03

**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; second term

Prerequisite: One of STATS 3M03, 3N03, 3Y03

**CHEM ENG 4E03 MODELLING AND CONTROL OF CHEMICAL PROCESSES**

Modelling, simulation and control of complex process structures (series, parallel, recycle, staged and multivariable) with consideration to applying control, including model-based algorithms, via digital computation.

Three lectures; first term

Prerequisite: CHEM ENG 3E04, 3G03, 3K04, 3M04, 3P03

**CHEM ENG 4K03 REACTOR DESIGN FOR HETEROGENOUS SYSTEMS**

Catalytic kinetics, mass transfer limitations, packed and fluidized bed reactors, two phase reactors.

Three lectures; second term

Prerequisite: CHEM ENG 3K04

**CHEM ENG 4L02 ADVANCED LABORATORY SKILLS**

Experiments and projects in transport phenomena, reaction kinetics, reactor design and process control with appropriate data analysis and report writing.

One lab (three hours), one lecture; first term

Prerequisite: CHEM ENG 3L02, and registration in Level IV Chemical Engineering or Chemical Engineering and Management or Chemical Engineering and Society

**CHEM ENG 4M03 SEPARATIONS**

Distillation column design; transport phenomena, laminar, turbulent and unsteady state mass transfer; analogies; absorption, extraction, adsorption, ion exchange, drying, humidification, crystallization.

Three lectures; first term

Prerequisite: CHEM ENG 2A04, 3O04, 3M04

**CHEM ENG 4N04 ENGINEERING ECONOMICS AND PROBLEM SOLVING**

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 4B03

**CHEM ENG 4T03 APPLICATIONS OF CHEMICAL ENGINEERING IN MEDICINE**

Applications of chemical engineering principles to biological systems and medical problems including examples from hemodynamics, blood oxygenation, artificial kidney systems, controlled drug release, biosensors and biomaterials.

Three lectures; second term

Prerequisite: 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; first term

Prerequisite: One of CHEM ENG 2A04 or MECH ENG 3R03 or MATLS 3E06, and one of CHEM ENG 3O04 or MECH ENG 3O04

**CHEM ENG 4Y04 UNDERGRADUATE RESEARCH PROJECT**

Research projects with students working on their own 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, 1996****Chair**

B.E. McCarry

**Professors Emeriti**

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.

Alfio Corsini/B.Sc., Ph.D. (McMaster), 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.

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.

Ian D. Penser/B.Sc. (Birmingham), Ph.D., D.Sc. (London), F.R.S.C., (U.K.), F.C.I.C.

Henry G. Thode/C.C., M.B.E., B.Sc., LL.D. (Regina, Saskatchewan), Ph.D. (Chicago), D.Sc. (Toronto, British Columbia, Acadia, Laval, Royal Military College, McGill, Queens, McMaster, York), F.R.S., F.R.S.C., F.C.I.C.

Richard H. Tomlinson/B.Sc. (Bishops), Ph.D. (McGill), F.C.I.C.

**Professors**

Richard F.W. Bader/B.Sc., M.Sc. (McMaster), Ph.D. (M.I.T.), F.R.S.C., F.C.I.C.

Alexander D. Bain/B.Sc. (Toronto), M.Sc. (British Columbia), Ph.D. (Cambridge)

Russell A. Bell/B.Sc. (Wellington), M.S. (Wisconsin), Ph.D. (Stanford), F.C.I.C.

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.

Orville E. Hileman, Jr./B.S. Ed. (Bowling Green State), Ph.D. (Case Institute of Technology), F.C.I.C.

Adam P. Hitchcock/B.Sc. (McMaster), Ph.D. (British Columbia), F.C.I.C.

Geraldine A. Kenney-Wallace/L.R.I.C., A.R.I.C. (London), M.Sc., Ph.D. (British Columbia), F.R.S.C.

Joseph D. Laposz/B.Sc. (St. Louis), M.S. (Chicago), Ph.D. (Loyola)

William J. Leigh/B.Sc., M.Sc., Ph.D. (Western), F.C.I.C.

Colin J.L. Lock/B.Sc., Ph.D. (London), A.R.C.S., D.I.C., F.R.S.C. (U.K.), 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.

David P. Santry/B.Sc., Ph.D. (London)

Gary J. Schrobilgen/B.Sc. (Loras College, Iowa), M.Sc. (Brock), Ph.D. (McMaster)

Johan K. Terlouw/B.Sc., M.Sc., Ph.D. (Utrecht)

John Warkentin/B.Sc., M.Sc. (Manitoba), Ph.D. (Iowa State), F.C.I.C.

Nick H. Werstiuik/B.Sc. (Alberta), M.A., Ph.D. (Johns Hopkins), F.C.I.C.

**Associate Professors**

Jacques Barbier/M.Sc. (Toronto), Ph.D. (ANU)

Michael A. Brook/B.Sc. (Toronto), Ph.D. (McGill)

Randall S. Dumont/B.Sc. (Western), 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)

A. John Yarwood/B.Sc., Ph.D. (Birmingham)

**Assistant Professors**

Pierre Brassard/B.Sc., M.Sc. (Concordia), Ph.D. (INRS)

Paul H.M. Harrison/B.A. (Oxford), Ph.D. (Alberta)

Lijuan Li/B.Sc., M.Sc. (Jilin), Ph.D. (McMaster)

**Associate Members**

I. David Brown/(Physics) B.Sc., Ph.D. (London) F.C.I.C.

Richard M. Epand/(Biochemistry) AB (Johns Hopkins), Ph.D. (Columbia)

Walter F. Kean/(Medicine) M.B., Ch.B. (Glasgow) F.R.C.P.(C), F.A.C.P.

Robert H. Pelton/(Chemical Engineering) M.Sc. (Guelph), Ph.D. (Bristol)

Daniel S.C. Yang/(Biochemistry) B.Sc., M.Sc. (Alberta), Ph.D. (Pittsburgh)

**Department Notes**

- \*Indicates this course is not necessarily offered every session.
- Students not in a Science programme should note that CHEM 1A06 is a prerequisite for CHEM 2D03 and CHEM 2D03 is a prerequisite for BIOCHEM 2E03.

**Courses If no prerequisite is listed, the course is open.****CHEM 1A06 INTRODUCTORY CHEMISTRY**

First Term: An introduction to inorganic chemistry; molecular structure and equilibrium. Second Term: An introduction to organic chemistry and kinetics. The laboratory is designed to illustrate the lecture material and coordinates with it.

Three lectures, one tutorial, one lab (three hours) every other week; two terms  
Prerequisite: OAC Chemistry and either registration in one of Natural Sciences I, Engineering I, Arts & Science I, any programme above Level I; or a grade of at least 80% in OAC Chemistry

Corequisite: SCIENCE 1A00

Antirequisite: CHEM 1E03, 1F03

**CHEM 1C03 GENERAL CHEMISTRY**

A general-interest course in Chemistry discussing topics relevant to society and the environment.

Three lectures; one term

Prerequisite: A minimum of one high school Chemistry course

Not open to students with credit or registration in CHEM 1A06, 1E03, 1F03.

Not open to students registered in Science or Engineering programmes.

**CHEM 1E03 GENERAL CHEMISTRY FOR ENGINEERING I**

An introductory course for Engineering students, emphasizing molecular structure and equilibria. A laboratory provides experience in experimental techniques and accurate measurement.

Three lectures, one tutorial (one hour), one lab (three hours) every other week; first term

Prerequisite: OAC Chemistry; registration in an Engineering programme

Antirequisite: CHEM 1A06

**CHEM 1F03 GENERAL CHEMISTRY II**

An introduction to organic chemistry and kinetics. The second half of CHEM 1A06.

Three lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: CHEM 1E03

Antirequisite: CHEM 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); one term

Prerequisite: Credit or co-registration in CHEM 2P06 or 2R03

Antirequisite: CHEM 2M05, 2N03

**CHEM 2B06 ORGANIC CHEMISTRY**

A systematic treatment of mono- and di-functional organic compounds and an introduction to spectroscopic techniques for structure determination.

Two lectures, one lab (three hours); two terms

Prerequisite: Registration in an Honours Chemistry programme, B.Sc. General Science, B.Sc. Physical Science, or the Honours Science (Complementary Studies Option) programme

Antirequisite: CHEM 2D03, 2O06

**CHEM 2C03      STRUCTURE AND REACTIONS OF  
THE MAIN GROUP ELEMENTS**

Comparative chemistry of the non-transition elements; introduction to symmetry. Three lectures, one lab (three hours); one term.  
Prerequisite: Registration in a Biochemistry, Chemistry or B.Sc. Physical Science programme, or permission of the instructor  
Antirequisite: CHEM 2F03 or 2W03 or 2WW4

**CHEM 2D03      INTRODUCTORY ORGANIC CHEMISTRY**

An introduction to the chemistry of monofunctional aliphatic and aromatic compounds.

Three lectures, one lab (three hours) every other week, one tutorial every other week; one term

Prerequisite: CHEM 1A06 or registration in a Chemical Engineering programme  
Antirequisite: CHEM 2B06

*CHEM 2D03 is not a prerequisite for further courses in Organic Chemistry.*

**CHEM 2M05      ANALYTICAL CHEMISTRY**

An introduction to classical and modern analytical techniques with an emphasis on applications in Engineering.

One lecture, one lab (three hours), first term; two lectures, one lab (three hours); second term

Prerequisite: Registration in a Chemical Engineering programme  
Antirequisite: CHEM 2A03, 2N03

**CHEM 2N03      ANALYTICAL CHEMISTRY**

An introduction to the basic principles of analytical chemistry with application to selected classical and instrumental methods of analysis.

Two lectures, one lab (three hours); one term

Prerequisite: One of CHEM 2P06, 2Q06, 2R03 or 2T06, any of which may be taken concurrently; registration in an Honours Biochemistry programme or permission of the instructor

Antirequisite: CHEM 2A03, 2M05

**CHEM 2O06      ORGANIC CHEMISTRY**

An introduction to organic chemistry with emphasis on the reactions of functional groups and an introduction to spectroscopic techniques for structure determination.

Three lectures, one lab (three hours) every other week; one tutorial (two hours) every other week; two terms

Prerequisite: CHEM 1A06 with a grade of at least C-, or registration in a programme in which CHEM 2O06 is required

Antirequisite: CHEM 2B06

*Students who receive special permission to register in this course after completing CHEM 2D03 will not retain credit for CHEM 2D03 on completion of this course.*

**CHEM 2P06      PHYSICAL CHEMISTRY I**

An introduction to macroscopic and microscopic aspects of thermodynamics and kinetics and their application to chemical and physical transformations.

Three lectures, one lab (three hours) or tutorial; two terms

Prerequisite: CHEM 1A06 and one of MATH 1A06, 1C06, 1AA3

Antirequisite: CHEM 2Q06, 2R03, PHYSICS 2H03

**CHEM 2R03      GENERAL PHYSICAL CHEMISTRY**

A survey of thermodynamic and kinetic principles and their application to biological systems.

Three lectures; one term

Prerequisite: CHEM 1A06 and one of MATH 1A03, 1A06, 1C03, 1C06, ARTS & SCI 1D06

Antirequisite: CHEM 2P06, 2Q06, 2T06 or PHYSICS 2H03

**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 1A06 or registration in a Ceramic, Chemical, Materials or Metallurgical Engineering programme

Antirequisite: CHEM 2B06, 2C03, 2D03, 2O06, 2W03, 3E06, 3Q03

**CHEM 3A03      ANALYTICAL CHEMISTRY II**

An introduction to modern instrumental methods of analysis.

Three lectures, one lab (three hours); one term

Prerequisite: CHEM 2A03, or both CHEM 2N03 and CHEM 2P06 or 2R03

**CHEM 3B06      PHYSICAL CHEMISTRY II**

An introduction to quantum chemistry, group theory and spectroscopy. Theoretical and experimental aspects of the electronic structure of atoms and molecules. The role of spectroscopy in molecular structure determination.

Three lectures, one lab (three hours) or tutorial; two terms

Prerequisite: completion of CHEM 2P06 (or 2R03 with a grade of at least B) and one of MATH 2A03, 2G03, 2N03 or 2P04

Antirequisite: CHEM 3B03, 3L03, 3S03, 3U03, 4L03

**CHEM 3D03      ORGANIC CHEMISTRY**

A mechanistically oriented discussion of mono- and polyfunctional organic compounds with emphasis on applications to synthesis.

Three lectures, one lab (three hours); one term

Prerequisite: CHEM 2B06 or 2O06

Antirequisite: CHEM 3F03

**CHEM 3E06      TRANSITION METAL INORGANIC CHEMISTRY**

The properties, structures, and reactions of inorganic compounds, with emphasis on transition metal chemistry; introduction to organometallic chemistry.

Equivalent to CHEM 3Q03 plus 3P03.

Two lectures, one lab (three hours); two terms

Prerequisite: CHEM 2C03; or one of CHEM 2W03, 2WW4 with a grade of at least B-

Antirequisite: CHEM 3Q03 or 3P03

**CHEM 3F03      BIO-ORGANIC CHEMISTRY**

Topics in bio-organic chemistry; a sequel to Chemistry 2O06.

Two lectures, one lab (three hours); one term

Prerequisite: CHEM 2B06 or CHEM 2O06; registration in an Honours Biochemistry programme, Honours Molecular Biology and Biotechnology programme, or Honours Arts & Science and Biochemistry, or permission of the instructor

Antirequisite: CHEM 3D03

**CHEM 3I03      INDUSTRIAL CHEMISTRY**

A survey of the chemical industry. Products obtained from petroleum, natural gas and soda ash. Petrochemicals, synthetic and natural polymers.

Three lectures; one term

Prerequisite: One of CHEM 2B06, 2D03, 2O06 and one of CHEM 2C03, 2W03, 2WW4, or registration in Level IV of a Chemical Engineering programme

**CHEM 3P03      TRANSITION METAL CHEMISTRY**

The chemistry of the heavier transition elements. An introduction to organometallic chemistry and bio-inorganic chemistry. The second half of CHEM 3E06.

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. The first half of CHEM 3E06.

Two lectures, one lab (three hours); first term

Prerequisite: CHEM 2C03; or one of CHEM 2W03, 2WW4 with a grade of at least B-

Antirequisite: CHEM 3E06

**CHEM 3Z03      PHYSICAL CHEMISTRY III**

The linkage of microscopic and macroscopic descriptions of physical and chemical phenomena. Applications to molecules, macromolecules and solids.

Three lectures; second term.

Prerequisite: completion of CHEM 2P06 and completion of or concurrent registration in CHEM 3B06

Antirequisite: CHEM 3KK6

**CHEM 4A03\*      ADVANCED ORGANIC CHEMISTRY**

A discussion of criteria of mechanism of stepwise organic reactions and of the courses of concerted reactions, such as electrocyclic and sigmatropic processes, in ground and excited states of molecules.

Two lectures; one term

Prerequisite: CHEM 3D03 or 3F03

**CHEM 4B03      CHEMICAL APPLICATIONS OF SPECTROSCOPY**

Aspects of molecular spectroscopies and their application to the solution of chemical problems.

Two lectures; second term

Prerequisite: CHEM 3B06; or CHEM 3B03 and either CHEM 3S03 or 4L03

**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

**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.

See the heading *Courses Requiring Permission* in the *Faculty of Science* section of the Calendar.

**CHEM 4I03 INQUIRY IN CHEMISTRY**

Seminars and directed readings dealing with the impact of Chemistry on society.

Two lectures; one term

Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry and permission of the instructor. Students registered in Honours Chemistry (Complementary Studies Option) or Honours Chemistry (Co-op) will be given preference.

*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 2R03

**CHEM 4Q03\* ADVANCED QUANTUM MECHANICS**

Applications of quantum mechanics to problems of chemical interest.

Two lectures; first term

Prerequisite: CHEM 3B03 or 3B06 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, Mössbauer 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. The first half of CHEM 4T06.

Two lectures, one lab (four hours); first term

Prerequisite: CHEM 3A03 or registration in Level IV of Honours Applied Chemistry

**CHEM 4TB3 ADVANCED INSTRUMENTAL ANALYSIS**

Advanced instrumental methods of analysis, with emphasis on general principles and applications of computers to chemical analysis. The second half of CHEM 4T06.

Two lectures, one lab (four hours); second term

Prerequisite: CHEM 3A03 or registration in Level IV of Honours Applied Chemistry

**CHEM 4T06 INSTRUMENTAL ANALYSIS**

Instrumentation, interfacing and measurement system theory. Advanced instrumental methods of analysis including radiochemistry, with emphasis on general principles of instrumentation and applications of computers to chemical analysis.

Two lectures, one lab (four hours); two terms

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, first term

Prerequisite: One of CHEM 3B06, 3C03, 3KK6, 3S03

Antirequisite: PHYSICS 3K04

**CIVIL ENGINEERING****Faculty as of January 15, 1996****Chair**

B. Baetz

**Professor Emeritus**

Gunhard, A.E. Oravas/B.Eng., M.S. (Civil Eng., Eng. Mech), Ph.D. (Michigan)

**Professors**

Peter L. Dold/B.Sc.Eng. (Chemical), Ph.D. (Cape Town), WTC Chair, Environmental Systems Engineering

Robert G. Drysdale/B.Sc. (C.E.) (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)

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.

Stan Pietruszczak/B.Sc., M.Sc. (Warsaw), Ph.D. (Polish Acad. Sci.)

Dieter Stolle/B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.

Wai K. Tso/B.Sc. (London), M.S., Ph.D. (Caltech.), P.Eng.

**Associate Professors**

Brian L. Allen/B.Sc. (Alberta), M.S., Ph.D. (California, Berkeley), P.Eng.

Brian Baetz/B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Duke), P.Eng.

Robert G. Horvath/B.A.Sc. (Windsor), M.E.Sc. (Western Ont.), Ph.D. (Toronto), P.Eng.

K.S. Sivakumaran/B.Sc. (C.Eng.) (Sri Lanka), M.Eng. (Asian Inst. Tech.), Ph.D. (Calgary), P.Eng.

Ioannis K. Tsanis/Dip.Civ.Eng. (Aristoteles Univ., Thessaloniki), M.A.Sc., Ph.D. (Toronto), P.Eng.

John C. Wilson/B.Eng., M.Eng. (McMaster), Ph.D. (Caltech.), P.Eng.

**Assistant Professor**

Syed Moin/B.S. (Osmania), M.S. (Nevada), Ph.D. (McMaster)/part-time

**Associate Members**

William P. Anderson/ (Geography) M.A., Ph.D. (Boston)

Elizabeth A. Edwards/ (Chemical Engineering) B.Eng., M.Eng. (McGill), Ph.D. (Stanford)

**Department Note:**

All civil engineering courses are open to students registered in a civil engineering programme, subject to prerequisite requirements. Prior permission of the Department is necessary for students from other engineering departments and other faculties.

**Courses****CIV ENG 2A02 SURVEYING AND MEASUREMENT**

Introduction to measurement and computational techniques of surveying, the theory of measurement and errors, adjustment of observations.

One lecture, one lab (three hours) or one tutorial (two hours); first term

**CIV ENG 2C04 STRUCTURAL MECHANICS**

Mechanics of materials; plastic deformations and residual stresses due to axial loading and bending; torsion of noncircular and thin-walled sections; unsymmetric bending and eccentric axial loading, shear stresses and unsymmetric loading of thin-walled members; transformation of stress and strain; yield and fracture criteria; energy methods; stability of columns.

Three lectures, one lab (three hours); second term

Prerequisite: Credit or registration in ENGINEER 2P04

**CIV ENG 2D03 GEOLOGY FOR ENGINEERS**

Composition of earth; classification of rocks and minerals; weathering; geomorphology; subsurface exploration; groundwater; earth movements; case studies.

Two lectures each week, one lab (three hours) or tutorial (two hours), every other week; second term

**CIV ENG 2E03 COMPUTER APPLICATIONS IN CIVIL ENGINEERING**

Computers in analysis and design; computer languages; numerical techniques including error analysis, root finding and interpolation; matrix manipulation, eigenvalues and differential equations.

Two lectures, one tutorial (two hours); 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 2J03 ECOLOGICAL ASPECTS OF ENVIRONMENTAL ENGINEERING**

Natural systems, processes; mass balance. Global interactions of biosphere, element cycles, energy balances, climate. Ecological systems; community structure. Modelling of natural systems. Man's perturbations. Two lectures, one tutorial (two hours); second term  
*Enrolment is limited.*

**CIV ENG 2O03 FLUID MECHANICS**

Fluid properties; hydrostatics; continuity, momentum and energy equations; potential flow; laminar and turbulent flow; flow in closed conduits; open channel flow.

Two lectures, one tutorial (one hour), one lab (two hours), every other week; second term

Prerequisite: Credit or registration in ENGINEER 2P04 and MATH 2M06

**CIV ENG 3A03 GEOTECHNICAL ENGINEERING I**

Composition of soils, soil identification and classification; compaction; seepage theory; effective stress concept; stresses and displacements using elastic solutions; consolidation theory; numerical solutions.

Two lectures, one lab (three hours) or one tutorial (two hours) every other week; first term

Prerequisite: CIV ENG 2O03

Antirequisite: CIV ENG 2F03

**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 or CIV ENG 2F03

**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); second term

**CIV ENG 3M04 MUNICIPAL HYDRAULICS**

Analysis/design of water distribution networks. Analysis and design of wastewater collection systems. Open channel flow: hydraulic cross-sections.

Three lectures, one lab (three hours); second term

Prerequisite: CIV ENG 2O03 and credit or registration in MATH 3J04

**CIV ENG 3Q03 WATER QUALITY MODELLING**

Physical, chemical and biological characteristics of water. Stoichiometry, reaction kinetics, and material balances. Mathematical modelling of physical systems. Water quality in rivers. Water quality standards.

Two lectures, one lab (three hours); first term

Prerequisite: CIV ENG 2J03, 2O03 and MATH 2M06

**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 HYDROLOGY**

Hydrologic cycle; climate; precipitation; hydrologic abstractions; streamflow analysis; unit hydrograph; frequency analysis; hydrologic routing; rainfall-runoff modelling; urban runoff models; design storms; snow and ice hydrology. Three lectures, one tutorial (three hours); first term

Prerequisite: CIV ENG 3M04

**CIV ENG 4B03 ENGINEERING SYSTEMS**

Mathematical models and systems; economic comparison of projects; optimization; linear, non-linear and dynamic programming; simulation modelling.

Two lectures, one tutorial (two hours) or lab (three hours); first term

Prerequisite: Registration in final level of a Civil Engineering programme

**CIV ENG 4C03 ENVIRONMENTAL IMPACT AND SUSTAINABILITY**

Natural and urban ecosystems; environmental impact/assessment/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); second 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; first term

Prerequisite: MATH 3J04

Cross-list: 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); first 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. Stormwater systems; floodplain analysis; network systems; reservoir analysis, flood control; river engineering.

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); first 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); second term

Prerequisite: CIV ENG 3G03, 3J04, 3S03

**CIV ENG 4Y04 BRIDGES AND OTHER HEAVY CIVIL STRUCTURES**

Introduction to bridge engineering; design of post/prestressed concrete structures; calculation of ultimate strength and serviceability. Plate girders; composite construction. Applications to heavy civil structures.

Three lectures, one lab (three hours) or one tutorial (two hours); second term

Prerequisite: CIV ENG 3G03, 3J04, 3S03

## CLASSICS

## Faculty as of January 15, 1996

Chair

Katherine M. D. Dunbabin

Professors Emeriti

Alexander G. McKay/B.A. (Toronto), M.A. (Yale), A.M., Ph.D. (Princeton), F.R.S.C.  
George M. Paul/M.A. (Oxford), Ph.D. (London)  
Donald M. Shepherd/M.A. (Queen's), Ph.D. (Chicago)

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

Peter Kingston/B.A., Ph.D. (London)

Assistant Professors

Sheila Dillon/B.A. (Rutgers), Ph.D. (NYU)  
Claude Eilers/B.A. (Sask.), M.A. (McMaster), D. Phil. (Oxford)  
Michelle G. George/B.A. (Toronto), M.A., Ph.D. (McMaster)  
Evan Haley/A.B. (Dartmouth), Ph.D. (Columbia)

Associate Member

D. Geagan/(History) A.B. (Boston), Ph.D. (John Hopkins)

**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, 3R03, 3S03
- b. **Ancient History and Society**  
CLASSICS 2G06, 2K03, 2Z03, 3LL3, 3MM3, 3UU3, 3VV3
- c. **Ancient Philosophy**  
CLASSICS 2P06, 4C03, 4J03
- d. **Classical Literature in Translation**  
CLASSICS 2D03, 2H06, 3I03, 3I13
- e. **Greek Language and Literature**  
GREEK 1Z06, 2A03, 2AA3, 2R03, 3A03, 3BB3, 4A03, 4BB3,
- f. **Latin Language and Literature**  
LATIN 1Z06, 2A03, 2AA3, 3BB3, 3R03, 4BB3, 4R03

**CLASSICS ...****Courses** *If no prerequisite is listed, the course is open.*

*No language other than English is required for courses listed under Classics.*

**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  
Prerequisite: Registration in Level II and above

**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 2G06 THE HISTORY OF GREECE AND ROME**

Greece from the rise of the city-states to Alexander; Rome from the Middle Republic through the early Empire. Attention will be given to political, military and social developments in the light of both literary and archaeological evidence.  
Three lectures; two terms  
Prerequisite: Registration in Level II and above  
Cross-list: HISTORY 2L06

**CLASSICS 2H06 GREEK AND ROMAN THEATRE AND DRAMA**

The social history of the theatre in the Classical world; readings from Greek and Roman tragedies and comedies.  
Three lectures; two terms  
Prerequisite: Registration in Level II and above  
Antirequisite: CLASSICS 2H03 or 2HH3, COMP LIT 2H03 or 2HH3, DRAMA 2H03 or 2HH3  
Cross-list: COMP LIT 2H06

**CLASSICS 2K03 THE SOCIETY OF GREECE AND ROME**

A description and analysis of selected aspects of the social life of Greece and Rome. Attention will be given to subjects such as work and leisure, slavery, marriage and family, and the role of women.  
Three lectures; one term  
Prerequisite: Registration in Level II and above  
Antirequisite: CLASSICS 2U03 or 2V03

**CLASSICS 2P06 ANCIENT GREEK PHILOSOPHY**

A study of Western philosophical thought from its earliest beginnings to the triumph of Christianity in the Roman Empire, with emphasis on Plato and Aristotle.  
Three lectures; two terms  
Prerequisite: Registration in Level II and above  
Cross-list: PHILOS 2A06

**CLASSICS 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 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 Elegiac and Lyric Poetry, The Legend of the Trojan War, Satire. Consult the Department concerning the topic to be offered.  
Three lectures; one term  
Prerequisite: Six units of Classics  
Cross-list: COMP LIT 3I03  
*Alternates with CLASSICS 3I13*  
CLASSICS 3I03 may be repeated, if on a different topic, to a total of six units.

**CLASSICS 3I13 TOPICS IN GREEK AND ROMAN LITERATURE II**  
Topics include: Greek and Roman Epic. Consult the Department concerning the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Classics

Cross-list: COMP-LIT 3I13

*Alternates with CLASSICS 3I03*

CLASSICS 3I13 may be repeated, if on a different topic, to a total of six units.

**CLASSICS 3LL3 THE HELLENISTIC AGE**

The successors of Alexander, the world of the monarchies and their absorption into the Roman Empire. Political, cultural and social achievements in the light of modern historical research will be emphasized.

Three hours (lectures and discussion groups); one term

Prerequisite: One of CLASSICS 1L06, 2G06, HISTORY 2I06, RELIG ST 2E06, or six units of Classics

Cross-list: HISTORY 3LL3

**CLASSICS 3MM3 TOPICS IN ROMAN HISTORY**

Studies of Roman history and institutions during the Republic or the Empire. Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: One of CLASSICS 1L06, 2G06, 2K03, 2V03, 3VV3

Cross-list: HISTORY 3MM3

CLASSICS 3MM3 may be repeated, if on a different topic, to a total of six units.

**CLASSICS 3R03 THE ARCHAEOLOGY OF GREEK CITIES**

An examination of major Greek archaeological sites, focusing on selected sanctuaries and settlements from the Bronze Age to the Hellenistic period.

Three lectures; one term

Prerequisite: One of CLASSICS 2A03, 2B03, 3S03

*Alternates with CLASSICS 3S03.*

**CLASSICS 3S03 THE ARCHAEOLOGY OF THE CITY OF ROME AND ROMAN ITALY**

The growth of the city of Rome, from its origins to the triumph of Christianity, and an examination of the archaeological remains of Pompeii, Ostia and other cities of Roman Italy.

Three lectures; one term

Prerequisite: One of CLASSICS 2A03, 2C03, 3R03

*Alternates with CLASSICS 3R03.*

**CLASSICS 3UU3 GREEK SOCIETY**

Advanced study of selected aspects of the social life of Greece, based on contemporary literature, documents and artifacts.

Three lectures; one term

Prerequisite: Six units of Classics, including 2K03 or 2U03; or CLASSICS 1L06 or 2G06

Cross-list: HISTORY 3UU3

*Alternates with CLASSICS 3VV3.*

**CLASSICS 3VV3 ROMAN SOCIETY**

Advanced study of selected aspects of the social life of Rome, based on contemporary literature, documents and artifacts.

Three lectures; one term

Prerequisite: Six units of Classics, including 2K03 or 2V03; or CLASSICS 1L06 or 2G06

Cross-list: HISTORY 3VV3

*Alternates with CLASSICS 3UU3.*

**CLASSICS 4B03 SEMINAR IN CLASSICAL ARCHAEOLOGY**

Consult the Department concerning the topic to be offered.

Seminar (two hours); one term

Prerequisite: Six units from CLASSICS 2A03, 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 HISTORY 4BB3

Enrolment is limited.

CLASSICS 4BB3 may be repeated, if on a different topic, to a total of six units

**CLASSICS 4C03 PLATO**

Critical examination of Plato's writings with reference to selected central philosophical issues.

One lecture, one seminar (two hours); one term

Prerequisite: CLASSICS 2P06, and registration in Level III or IV of any programme

Cross-list: PHILOS 4C03

*Offered in alternate years.*

**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 2G06, 2K03, 2U03, 3LL3, 3UU3, 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 2G06, 2K03, 2U03, 2V03, 3UU3, 3VV3, and registration in Level III or IV of an Honours programme in Classics (A)

CLASSICS 4E03 may be repeated, if on a different topic, to a total of six units.

*Enrolment is limited.*

**CLASSICS 4J03 ARISTOTLE**

A systematic study of Aristotle's major doctrines.

Seminar (two and a half hours); one term

Prerequisite: CLASSICS 2P06, and registration in Level III or IV of any programme

Cross-list: PHILOS 4J03

*Offered in alternate years.*

**CLASSICS 4T06 THESIS**

Reading and research in Classics supervised by a Department member. A major paper is required as well as a formal oral examination.

Tutorials; two terms

Prerequisite: Registration in Level IV of any Honours programme in Classics, and permission of the Department

## GREEK...

### Notes:

- 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, 2R03

- Students with OAC Ancient Greek should normally register in GREEK 2A03, but with special permission, may register in GREEK 1Z06.

### Courses *If no prerequisite is listed, the course is open.*

#### GREEK 1Z06 BEGINNER'S INTENSIVE GREEK

A rapid introduction to the grammar of Classical Greek. Passages of simple Greek are read in the second term.

Five hours (lectures and tutorials); two terms

Prerequisite: Open except to graduates of OAC Ancient Greek, who must have special permission to register in the course

This course, with a grade of at least B-, is accepted as a prerequisite for admission to any Honours programme in Classics, or, with a grade of at least C-, for admission to the B.A. programme in Classics.

#### GREEK 2A03 INTERMEDIATE GREEK I

A study of selected passages from Greek authors designed to develop a student's proficiency in reading Greek.

Three lectures; one term

Prerequisite: OAC Ancient Greek or GREEK 1Z06. Students using this course as a Humanities I requirement will register for GREEK 2A03 and 2R03 or for GREEK 2A03 and 2AA3.

#### GREEK 2AA3 INTERMEDIATE GREEK II

A study of selected passages from Greek authors designed to further the development of the student's proficiency in reading Greek.

Three lectures; one term

Prerequisite: GREEK 2A03

#### GREEK 2R03 GREEK LANGUAGE

A study of Greek grammar and style based chiefly upon reading selected passages from the works of Xenophon and translation from English to Greek. Two lectures; two terms

Prerequisite: OAC Greek or GREEK 1Z06. Students using this course as a Humanities I requirement will also register for Greek 2A03.

#### GREEK 3A03 GREEK HISTORIANS

Selected readings from Greek historical authors, such as Herodotus and Thucydides. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: Six units of Level II Greek

*Alternates with GREEK 4A03.*

**GREEK 3BB3 TOPICS IN GREEK LITERATURE I**

Previous topics include: Homer, Aristophanes, Greek Tragedians. Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Level II Greek

GREEK 3BB3 may be repeated, if on a different topic, to a total of six units. Alternates with GREEK 4BB3.

**GREEK 4A03 ATTIC ORATORS**

Selected readings from the speeches of Attic orators, such as Lysias and Demosthenes. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: Six units of Level II Greek

Alternates with GREEK 3A03.

**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 GREEK 3BB3.

GREEK 4BB3 may be repeated, if on a different topic, to a total of six units.

**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 a student's proficiency in reading Latin. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: OAC Latin or LATIN 1Z06. Students using this course as a Humanities I requirement will register for LATIN 2AA3.

**LATIN 2AA3 INTERMEDIATE LATIN II**

A study of selected passages from Latin authors designed to further a student's proficiency in reading Latin. Attention will be given to grammar and techniques of literary criticism.

Three lectures; one term

Prerequisite: LATIN 2A03

Antirequisite: LATIN 2F03 or 2G03

**LATIN 3BB3 TOPICS IN LATIN LITERATURE I**

Previous topics include: Roman Verse Satire, Poetry of the Neronian Age, Petronius. Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Level II Latin

LATIN 3BB3 may be repeated, if on a different topic, to a total of six units.

**LATIN 3R03 ADVANCED LATIN**

Readings from Latin authors. The course will also include grammatical exercises.

Three lectures; one term

Prerequisite: Six units of Level II Latin

Alternates with LATIN 4R03.

**LATIN 4BB3 TOPICS IN LATIN LITERATURE II**

Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: Six units of Level II Latin

Alternates with LATIN 3BB3.

LATIN 4BB3 may be repeated, if on a different topic, to a total of six units.

**LATIN 4K03 GUIDED READING IN CLASSICAL LATIN AUTHORS**

Selected readings from Classical 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.

**LATIN 4R03 ADVANCED LATIN**

Readings from Latin authors. The course will also include grammatical exercises.

Prerequisite: Six units of Level II Latin

Alternates with LATIN 3R03.

**COMMERCE****Faculty as of January 15, 1996****Chair, Marketing, Business Policy and International Business Area**

D. Wayne Taylor

**Chair, Finance and Business Economics Area**

Clarence C.Y. Kwan

**Chair, Accounting Area**

Y.C. Lillian Chan

**Chair, Human Resources and Labour Relations Area**

Rick D. Hackett

**Chair, Management Science and Information Systems Area**

G. John Miltenburg

**Professors Emeriti**

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. (Montreal)/  
(Marketing)

William J. Schlatter/A.B., A.M., Ph.D. (Illinois), C.P.A. (Accounting)

Andrew Z. Szendrovits/M.A., Ph.D. (Kolozsvar)/(Production and Management Science)

George W. Torrance/B.A.Sc., M.B.A. (Toronto), Ph.D. (State University of New York at Buffalo), P. Eng. (Management Science)

**Professors**

Prakash L. Abad/B.Tech. (Indian Institute of Technology), M.S., M.B.A., Ph.D. (Cincinnati)/(Management Science)

Roy J. Adams/B.A. (Pennsylvania State), M.A., Ph.D. (Wisconsin)/(Industrial Relations)

Naresh C. Agarwal/B.A., M.A. (Delhi), Ph.D. (Minnesota)/(Human Resources)

Norman P. Archer/B.Sc. (Alberta), Ph.D. (McMaster), M.S. (New York)/  
(Management Science)

Peter M. Banting/B.A., M.B.A. (McMaster), Ph.D. (Michigan State)/(Marketing)

Min S. Basadur/B.A.Sc. (Toronto), M.B.A. (Xavier), Ph.D. (Cincinnati), P. Eng. (Organizational Behaviour) (Half-time)

M.W. Luke Chan/B.Sc. (Prince Edward Island), M.A., Ph.D. (McMaster)  
(Finance and Business Economics)/Director of International Programmes

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-Melton), M.A., Ph.D. (California, Berkeley), P. Eng./Management Science/(Information Systems)/Dean

Robert G. Cooper/B.Eng., M.Eng. (McGill), M.B.A., Ph.D. (Western Ontario)/  
(Marketing)/Lawson Mardon Chair in Industrial Marketing and Technology Management

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)

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/Chair, Finance and Business Economics Area  
 Robert F. Love/B.A.Sc. (Toronto), M.B.A. (Western), Ph.D. (Stanford), P.Eng./Management Science/Co-ordinator, Ph.D. Programme (Management Science/Information Systems)  
 G. John Miltenburg/B.Eng.Mgt., M.B.A. (McMaster), M.Eng. (Toronto), Ph.D. (Waterloo), P.Eng./Production and Management Science/Chair, Management Science and Information Systems Area  
 Dean C. Mountain/B.A. (McMaster), M.A., Ph.D. (Western)/Finance and Business Economics  
 Mahmut Parlar/B.Sc., M.Sc. (Middle East Technical University), Ph.D. (Waterloo)/Management Science  
 Joseph B. Rose/B.B.A. (Adelphi), M.B.A. (California), Ph.D. (State University of New York at Buffalo)/Industrial Relations  
 Randolph E. Ross/B.A. (Waterloo Lutheran), M.B.A. (Michigan State), D.B.A. (Indiana)/Marketing  
 George Steiner/M.Sc. (Budapest), Ph.D. (Waterloo)/Production and Management Science  
 William G. Truscott/B.S.E. (Princeton), M.B.A. (McMaster), D.B.A. (Indiana) P.Eng./Production and Management Science  
 George O. Wesolowsky/B.A.Sc. (Toronto), M.B.A. (Western), Ph.D. (Wisconsin)/Management Science

**Associate Professors**

Christopher K. Bart/B.A., M.B.A. (York), Ph.D. (Western), C.A./Business Policy/Director of Innovation Research Centre  
 Trevor W. Chamberlain/B.Sc. (California, Berkeley), M.B.A. (McGill), Ph.D. (Toronto), C.A./Finance/Associate Dean (Academic)  
 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. (State University of New York at Buffalo)/Marketing and Management Science  
 Richard W. Deaves/B.A., M.A., Ph.D. (Toronto)/Finance and Business Economics  
 Diwaker Gupta/B.Tech. (Indian Institute of Technology) M.A.Sc. (Windsor), Ph.D. (Waterloo)/Production and Management Science  
 Rick D. Hackett/B.Sc. (Toronto), M.A. (Windsor), Ph.D. (Bowling Green State)/Human Resources/Chair, Human Resources and Labour Relations Area  
 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, U.K.), M.Sc. (Southampton), Ph.D. (Waterloo)/Information Systems  
 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), P.Admin, P.Mgr./Business and Public Policy/Chair, Marketing, Business Policy and International Business Area  
 Willi Wiesner/B.A. (Wilfrid Laurier), M.A.Sc., Ph.D. (Waterloo)/Human Resources/Co-ordinator, Ph.D. Programme (Human Resources/Labour Relations)  
 Yufei Yuan/B.S. (Fudan), Ph.D. (Michigan)/Information Systems  
 F. Isik Zeytinoglu/B.A., M.A. (Bogazici), M.S., Ph.D. (Pennsylvania)/Industrial Relations

**Assistant Professors**

Stephen Drew/B.A. (Cambridge), B.Sc. (London), Ph.D. (Cambridge)/Business Policy and International Business  
 Scott J. Edgett/B.B.A. (Prince Edward Island), M.B.A. (McMaster), Ph.D. (Bradford)/Marketing  
 Jason Lee/B.Sc. (Calgary), Ph.D. (Alberta)/Finance  
 S.M. Khalid Nainar, B.A., M.A. (Delhi), Ph.D. (Florida)/Accounting  
 Hugh A.L. Thomas/B.A. (Alberta), M.B.A. (Hong Kong), Ph.D. (New York)/Finance

**Lecturers**

Christopher C. Costanza/B.Com., M.B.A. (McMaster), C.A./Accounting/Manager of Budgeting  
 Elizabeth A. Csordas/B.Sc. (Windsor), M.B.A. (McMaster), C.M.A./Accounting/M.B.A. Programme Advisor  
 Nicholas A. Mastroluisi/B.Sc. (Western), M.B.A. (McMaster), C.A., C.B.V./Taxation (Half-time)

Teal McAteer-Early/B.Comm. (Queens), M.I.R., Ph.D. (Toronto)/Marketing and Business Policy  
 Barbara M.C. Pitts/B.A. (McMaster), B.Ed., (Brock), M.B.A. (McMaster)/Organizational Behaviour  
 Marvin G. Ryder/B.A., B.Sc. (Carleton), M.B.A. (McMaster)/Marketing and Business Policy/Assistant to the Dean (Computing)  
 Tina Salisbury/B.Com., M.B.A. (McMaster)/Management Science and Information Systems  
 Terry Seawright/B.A.Sc. (Toronto), M.B.A. (McMaster)/Marketing  
 Paul M. Stillman/B.Sc. (McMaster), LL.B. (Osgoode Hall)/Business Law (Half-time)  
 Linda White/B.Com., M.B.A. (McMaster) C.M.A./Accounting

**Faculty Notes:**

1. Commerce courses (except those listed in Note 2) are **OPEN ONLY** to students registered in Commerce or the Engineering and Management programme, and to students registered in degree programmes in Labour Studies when such courses are specified as part of the programme.
2. The following Commerce courses are open to students other than those specified in Note 1 subject to meeting the prerequisites: COMMERCE 2AA3, 2AB3, 2BA3, 2FA3, 2MA3, 2QA3, 2QB3, 3BC3, 3FA3, 3MC3. **Enrolment will be limited to forty additional students per course.**
3. Level II and Level III Commerce courses are generally scheduled for three one-hour lectures per week; one term. Level IV Commerce courses are scheduled for two lectures per week (a two-hour lecture and a one-hour lecture); one term.
4. In most Level IV Commerce courses, section size will be restricted to a maximum of 40 students; students will be admitted on a first-come, first-served basis.

**Courses**

**COMMERCE 1S03 INTRODUCTION TO BUSINESS**

This is a broad integrative course that introduces students to the basic principles and practices of business. Major topics include: business and economic systems, accounting, finance, marketing, human resources management, labour relations, management science and information systems. Special emphasis will be placed upon how these topics are interrelated, international and ethical considerations and the relationships among business, government and society.  
 Prerequisite: Registration in Business I or Engineering I  
 Antirequisite: BUSINESS 1A03, COMMERCE 1A03

**COMMERCE 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 (See Note 2 above.)  
 Antirequisite: BUSINESS 3W06

**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 (See Note 2 above.)  
 Antirequisite: COMMERCE 3AA3

**COMMERCE 2BA3 ORGANIZATIONAL BEHAVIOUR AND HUMAN RESOURCES**

This course provides students with a knowledge of organizational behaviour and human resource issues and practices from a general management education perspective. Topics covered include organizational research processes, creative thinking, problem solving and decision making, systems approach and organizational effectiveness, motivation and reward systems, work reorganization (eg. teams, quality circles, participative management) and organizational structures.  
 (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, COMMERCE 2AA3 (See Note 2 above.)  
 Antirequisite: BUSINESS 3X03

**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 (See Note 2 above.)  
 Antirequisite: BUSINESS 3Y03

**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, MATH 1L03 or STATS 1L03, and one of MATH 1M03 (or 1A03 and 1AA3), and one of COMP SCI 1A03, 1BA3, 1ZA3 (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, 1ZA3 (See Note 2 above.)

Antirequisite: COMMERCE 3QB3

**COMMERCE 2SO3 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: COMMERCE 1SO3

**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

**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

Antirequisite: COMMERCE 4AB3

First offered in 1996-97.

**COMMERCE 3BC3 HUMAN RESOURCE MANAGEMENT AND LABOUR RELATIONS**

This course builds on COMMERCE 2BA3, focussing on human resource management and labour relations issues and practices from a general management education perspective.

Prerequisite: COMMERCE 2BA3 (See Note 2 above.)

Antirequisite: COMMERCE 3BA3, 3BB3, BUSINESS 3Z03

First offered in 1996-97.

**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 (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

**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

Antirequisite: COMMERCE 4FX3

**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 COMMERCE 2QA3 or STATS 3Y03

**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

**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 (See Note 2 above.)

First offered in 1996-97.

**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

**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, or registration in an Engineering and Management programme

Antirequisite: COMMERCE 4QA3, MECH ENG 4C03

First offered in 1996-97.

**Level IV Commerce Courses ...**

In most Level IV Commerce courses, section size will be restricted to a maximum of 40 students; students will be admitted on a first-come basis.

**COURSES****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

**COMMERCE 4AB3 FINANCIAL ACCOUNTING III**

This course considers reporting issues that relate to liabilities and owners' equity including 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.

Prerequisite: COMMERCE 3AB3

Antirequisite: COMMERCE 3AC3

**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: COMMERCE 3AC3 or 4AB3

**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. The nature of control structures and of audit evidence is examined. The nature, scope, and application of auditing procedures are examined through a selective analysis of asset, liability, revenue, and expense items.

Prerequisite: COMMERCE 3AB3

**COMMERCE 4AE3 ACCOUNTING INFORMATION SYSTEMS**

Considers the principles underlying the role of accounting as an information system for planning and controlling business operations. The course emphasizes the importance of internal control in both manual and automated systems.

Prerequisite: COMMERCE 3AB3

**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: COMMERCE 3AC3 or 4AB3, may be taken concurrently

**COMMERCE 4AG3 ADVANCED ACCOUNTING TOPICS**

This course extends the knowledge base of earlier accounting courses and deals with specific advanced accounting topics, such as accounting for changing prices and not-for-profit accounting, the conceptual framework and standard setting and fiduciary accounting.

Prerequisite: COMMERCE 4AC3, 4AF3

Available summers 1996, 1997 subject to sufficient enrolments and availability of qualified instructors.

Continuing Students refer to School of Business: Continuing Students.

**COMMERCE 4AH3 ADVANCED AUDITING**

This course considers a number of advanced topics concerning both the auditor and the audit profession. It builds on the knowledge of the audit task derived in earlier courses as well as on the technical skills and breadth of knowledge obtained in earlier accounting courses.

Prerequisite: COMMERCE 4AC3, 4AD3

Available summers 1996, 1997 subject to sufficient enrolments and availability of qualified instructors.

Continuing Students refer to School of Business: Continuing Students.

**COMMERCE 4AI3 COMPUTER CONTROL AND AUDITING**

This course introduces the student to the field of EDP auditing through lectures, readings and hands-on experience with EDP audit software.

Prerequisite: COMMERCE 4AC3, 4AD3

Available summers 1996, 1997 subject to sufficient enrolments and availability of qualified instructors.

Continuing Students refer to School of Business: Continuing Students.

**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

First offered in 1997-98.

**COMMERCE 4BA3 BEHAVIOURAL ISSUES IN MANAGEMENT**

Detailed analysis of employee motivation and reward systems; organizational structure; leadership and decision-making; group processes; and management of conflict and change.

**COMMERCE 4BB3 PERSONNEL SELECTION**

This course considers the strategies and problems in personnel decisions in the context of the Canadian environment. Topics include job analysis and manpower planning, methods of personnel recruitment and selection, human rights legislation in Canada and the U.S., the practice of recruitment and selection in Canada, decision-making strategies in personnel recruitment and selection, and assessment centres.

Prerequisite: COMMERCE 3BB3 or 3BC3

**COMMERCE 4BC3 COLLECTIVE BARGAINING**

A survey of the nature, determinants, and impact of collective bargaining in Canada. Both the procedural and substantive aspects of collective bargaining will be studied.

Prerequisite: COMMERCE 3BA3 or 3BC3, or LABR ST 2A03 or 2A06

**COMMERCE 4BD3 SETTLEMENT OF INDUSTRIAL DISPUTES**

The nature and the role of industrial conflict as well as the techniques which have been developed to control the incidence of conflict in union-management situations.

Prerequisite: COMMERCE 3BA3, 3BC3, or LABR ST 2A03 or 2A06. COMMERCE 4BC3 recommended.

**COMMERCE 4BE3 COMPENSATION ADMINISTRATION**

Various aspects of the process of developing and administering a compensation plan for an organization are discussed. Considerable emphasis is placed on the applications of concepts and theories to actual organizational contexts. Topics include economic and behavioural theories of compensation, job evaluation, incentive systems, fringe benefits, and compensation plans for managerial and professional employees.

Prerequisite: COMMERCE 3BB3 or 3BC3

**COMMERCE 4BF3 LABOUR LAW AND POLICY**

An analysis of the concepts and fundamentals of Canadian labour law and analysis of Canadian labour policy.

Prerequisite: COMMERCE 3BA3 or 3BC3, and subject to space availability  
Cross-list: LABR ST 3C03

**COMMERCE 4BG3 PUBLIC SECTOR COLLECTIVE BARGAINING**

This course examines unionization and collective bargaining for employees in the public and para-public sectors. The topics covered include the origin and growth of public sector unions, models of public sector bargaining, legal aspects of bargaining rights and impasse resolution, bargaining issues and bargaining outcomes, and empirical studies of the effectiveness of dispute resolution procedures.

Prerequisite: COMMERCE 4BC3 and subject to space availability

Cross-list: LABR ST 4C03

**COMMERCE 4BH3 COMPARATIVE INDUSTRIAL RELATIONS**

A discussion of industrial relations policies and practices in several selected countries. Topics will include the development, structure, objectives and strategies of labour and management organizations.

Prerequisite: COMMERCE 3BA3 or 3BC3 and subject to space availability

Cross-list: LABR ST 4D03

**COMMERCE 4BI3 TRAINING AND DEVELOPMENT**

This course provides a framework for establishing, revising and examining training programs in organizations. Topics include: needs assessment, development of training objectives, planning and delivery of instruction, learning principles and evaluation of training.

Prerequisite: COMMERCE 3BB3 or 3BC3

Antirequisite: COMMERCE 4BX3, if taken in Jan. 1994

**COMMERCE 4BX3 SPECIAL TOPICS IN HUMAN**

**RESOURCES/LABOUR RELATIONS**

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: Announced at the time of offering

First offered in 1997-98.

**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

**COMMERCE 4FD3 FINANCIAL INSTITUTIONS**

This course examines, from a managerial perspective, the major types of financial institutions in Canada: chartered banks, trust companies, insurance companies, investment banks and other institutional investors.

Prerequisite: COMMERCE 3FA3

**COMMERCE 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

**COMMERCE 4FF3 PORTFOLIO THEORY AND MANAGEMENT**

This course offers an advanced treatment of investment decision-making and the role of financial markets in pricing securities. Topics include portfolio selection models, the institutional environment of investment decisions, and investment and asset pricing theory.

Prerequisite: COMMERCE 3FA3

Antirequisite: COMMERCE 4FC3

**COMMERCE 4FG3 FINANCIAL THEORY**

This course explores the theoretical foundations of finance and their applications to corporate finance policy. Topics covered include rational investment decisions, asset pricing, efficient markets, financial decisions and the role of information in financial decision-making.

Prerequisite: COMMERCE 3FA3

Antirequisite: COMMERCE 4FB3

**COMMERCE 4FX3 SPECIAL TOPICS IN FINANCE**

Various topics in Finance are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.

Prerequisite: Announced at the time of offering

First offered in 1997-98.

**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 3MA3

**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 3MA3

**COMMERCE 4MX3 SPECIAL TOPICS IN MARKETING, POLICY & INTERNATIONAL BUSINESS**

Various topics in Marketing, Policy & International Business are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.

Prerequisite: Announced at the time of offering.  
*First offered in 1997-98.*

**COMMERCE 4PA3 BUSINESS POLICY: STRATEGIC MANAGEMENT**

This case course focuses primarily upon the concept of corporate strategy formulation and implementation by exploring the functions and nature of general management and the role of the CEO within an organization. The course integrates and builds upon the learning experiences of previous functional area courses within a broader strategic analysis framework.

Prerequisite: Registration in fourth year of a Commerce programme or fifth year of an Engineering and Management programme

**COMMERCE 4PB3 INTRODUCTION TO CANADIAN TAXATION**

The principles of Canadian federal income taxation are examined in considerable detail through a reading of both the statute law and the common law. Emphasis is placed on the application of the law to the situations of individuals and businesses. Topics include: administration, liability for income tax, computation of income, computation of taxable income and computation of tax.

Prerequisite: COMMERCE 3AB3 and 3FA3  
Antirequisite: COMMERCE 4SB3

**COMMERCE 4PC3 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 4PB3  
Antirequisite: COMMERCE 4SC3

**COMMERCE 4PD3 COMMERCIAL LAW**

This course emphasizes those areas of law which are most relevant to business activity. Particular attention is given to the law relating to contracts and business organizations. Other areas of study include sources of law, the judicial process, real and personal property, torts, agency, credit and negotiable instruments.

Antirequisite: COMMERCE 4SD3, BUSINESS 3V03

**COMMERCE 4PE3 INTERNATIONAL BUSINESS**

A survey of theories, concepts, and corporate strategies relevant to the actual conditions and problems of international investment, trade, finance, and other related areas. Topics include balance of payments, foreign exchange, political risk, joint ventures, global strategy, international personnel, and international development.

Antirequisite: COMMERCE 4SA3

**COMMERCE 4QA3 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, or registration in an Engineering and Management programme

Antirequisite: COMMERCE 3QC3, MECH ENG 4C03

**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

**COMMERCE 4QC3 OPTIMIZATION APPLICATIONS IN BUSINESS**

An examination of the techniques of management science and their application to business problems. Topics include: linear programming, integer programming, and optimization problems on networks.

Prerequisite: COMMERCE 3QA3, or registration in an Engineering and Management programme

**COMMERCE 4QD3 MANAGEMENT SUPPORT SYSTEMS**

This course examines the database approach and model building, in supporting managerial decision making processes.

Prerequisite: COMMERCE 2QB3 or 3QB3

**COMMERCE 4QX3 SPECIAL TOPICS IN MANAGEMENT SCIENCE/INFORMATION SYSTEMS**

Various topics in Management Science/Information Systems are considered. They will vary depending upon recent developments in the field and upon the research interests of the instructor. The topics to be included are announced at the time of the course offering.

Prerequisite: Announced at the time of offering.  
*First offered in 1997-98.*

**COMMERCE 4SA3 INTERNATIONAL BUSINESS**

A survey of theories, concepts and corporate strategies relevant to the conditions and problems of international investment, trade, finance and other related areas. A strong emphasis is placed upon the a multi-disciplinary understanding of international business. Topics include balance of payments, foreign exchange, political risk, joint ventures, global strategy, international personnel and international development.

Prerequisite: Registration in Level IV of a Commerce programme or Level V of an Engineering and Management programme

Antirequisite: COMMERCE 4PE3.

*First offered in 1997-98.*

**COMMERCE 4SB3 INTRODUCTION TO CANADIAN TAXATION**

The principles of Canadian federal income taxation are examined in considerable detail through a reading of both the statute law and the common law. Emphasis is placed on the application of the law to the situations of individuals and businesses. Topics include: administration, liability for income tax, computation of income, computation of taxable income and computation of tax.

Prerequisite: COMMERCE 3AB3 and 3FA3

Antirequisite: COMMERCE 4PB3

*First offered in 1997-98.*

**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

Antirequisite: COMMERCE 4PC3

*First offered in 1997-98.*

**COMMERCE 4SD3 COMMERCIAL LAW**

This course emphasizes those areas of law which are most relevant to business activity. Particular attention is given to the law relating to contracts and business organizations. Other areas of study include sources of law, the judicial process, real and personal property, torts, agency, credit and negotiable instruments.

Antirequisite: COMMERCE 4PD3, BUSINESS 3V03

*First offered in 1997-98.*

**COMMERCE 4SE3 ENTREPRENEURSHIP**

The problems and experiences encountered in starting and developing new enterprises will be studied. A cornerstone of the course is the development of a detailed business plan for a local entrepreneur.

Prerequisite: COMMERCE 3FA3 and one of COMMERCE 3MA3, 3MC3

**COMMERCE 4SX3 SPECIAL TOPICS IN BUSINESS**

Various topics in business are considered. They will vary depending upon recent developments in the field and upon the interests of the instructor. The topics to be included are announced at the time of the course offering.

Prerequisites: Announced at the time of offering

*First offered in 1997-98.*

**COMMERCE 4SY3 INDEPENDENT STUDY IN BUSINESS**

A student wishing to pursue independent study in business may do so under the supervision of a faculty member from the School of Business. If successful, the student receives credit for one Level IV three unit elective course in Commerce. The student is expected to develop an original paper, research paper or project. It is the responsibility of the student to find a supervising faculty member and to gain approval of the study from the Associate Dean (Academic) in the semester preceding the semester in which the study will be done.

Prerequisite: To be determined by the supervising faculty member

*First offered in 1997-98.*

## COMPARATIVE LITERATURE

*Comparative Literature* courses are administered within the Department of Modern Languages of the Faculty of Humanities.  
 Coordinator, Togo Salmon Hall, Room 611

### Department Notes:

1. Comparative Literature is the study of literature from the point of view of more than one national literature and/or in conjunction with any other intellectual discipline. It is designed to meet the needs of those students who wish to study literary texts as an intercultural and often interdisciplinary phenomenon.
2. For additional courses which may be taken as part of a programme in Comparative Literature, see courses listed under *Modern Languages*.
3. No language other than English is required for courses listed under *Comparative Literature*.

### Courses *If no prerequisite is listed, the course is open.*

#### COMP LIT 1A06 THE EUROPEAN LITERARY TRADITION

An introduction to the origins and continuity of the Western literary tradition from the Bible and classical literature to modern literature, as seen in representative texts. Attention is given to the development of critical skills in reading and writing.

Two lectures, one tutorial; two terms

Prerequisite: OAC English

#### COMP LIT 2A03 MODERN EUROPEAN LITERATURE I

A study of the central themes and ideas shaping the Enlightenment and Romanticism through the reading of representative works.

Three lectures; one term

Prerequisite: COMP LIT 1A06

#### COMP LIT 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 2D03 BIBLICAL TRADITIONS IN LITERATURE

A study of the influence of the Bible on Western literatures, especially English. Approaches may include the examination of symbolism, imagery, typology, doctrinal themes and narrative structures.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: ENGLISH 2D03

#### COMP LIT 2G03 BIBLE AS STORY

An examination of narratives from the Hebrew Bible, Intertestamental literature, and New Testament, from a literary perspective. Attention is paid to narrative features such as character, plot, irony and symbolism, as well as to the dynamics of the reading experience.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

Cross-list: RELIG ST 2VV3

#### COMP LIT 2H06 GREEK AND ROMAN THEATRE AND DRAMA

The social history of the theatre in the Classical world; readings from Greek and Roman tragedies and comedies.

Three lectures; two terms

Prerequisite: Registration in Level II and above

Antirequisite: COMP LIT 2H03 or 2HH3, CLASSICS 2H03 or 2HH3, DRAMA 2H03 or 2HH3

Cross-list: CLASSICS 2H06

#### COMP LIT 2M03 GREEK AND ROMAN MYTHOLOGY

A study of the myths of Greek and Roman gods and heroes, their explanation according to theories on the nature of myths and their use by Greek and Roman authors particularly Homer and Vergil.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2D03

#### 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 *COMPLIT 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

*COMPLIT 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, The Structure of Comedy. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: Registration in Level II and above of a Comparative Literature programme

*COMPLIT 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

#### 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 *COMPLIT 3I13*

*COMPLIT 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 *COMPLIT 3I03*

*COMPLIT 3I13 may be repeated, if on a different topic, to a total of six units.*

#### COMP LIT 3J03 STUDIES IN 16TH-CENTURY LITERATURE

A study of the prose and poetry of the first phase of the English Renaissance with some emphasis on the work of More and Sidney, and subsidiary reading of continental writers influential in England such as Petrarch, Pico, Erasmus, Castiglione, Machiavelli and Montaigne.

Three lectures; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme or permission of the instructor

Cross-list: ENGLISH 3I03

#### COMP LIT 3L03 LITERATURE AND FILM

An examination of the particular characteristics of both literature and film and the relationships between them through a detailed study of selected novels, short stories and plays and the films that have been based on them.

Three lectures, plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme

Cross-list: ART HIST 3CC3, DRAMA 3H03 and ENGLISH 3CC3

#### 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 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

*Offered in alternate years.*

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.

Tutorials; one term

Prerequisite: Registration in Level IV of a Comparative Literature programme and permission of the Department

**COMPUTER ENGINEERING**

(SEE ELECTRICAL AND COMPUTER ENGINEERING)

**COMPUTER SCIENCE AND SYSTEMS****Faculty as of January 15, 1996****Chair**

Patrick J. Ryan

William F. Smyth (Acting Chair to June 30, 1996)

**Professor Emeritus**

Gerald L. Keech/ B.A.Sc. (Toronto), M.Sc., Ph.D. (McMaster)

**Professors**

Ryszard Janicki/M.Sc. (Warsaw), Ph.D., D.Hab. (Polish Acad. Sci.)

Peter E. Lauer/B.A. (Alabama), M.A. (Emory), Ph.D. (Queen's, Belfast)

Patrick J. Ryan/ B.Sc. (Toronto), Ph.D. (Brown)

William F. Smyth/C. Eng., B.A. (Toronto), M.Sc. (Ottawa), Ph.D. (Curtin), F.B.C.S., F.I.C.A.

**Associate Professors**

Ivan Bruha/Dipl. Ing. (CVUT, Prague), RNDr (Charles, Prague), Ph.D. (CVUT, Prague)

Frantisek Franek/M.Sc., RNDr (Charles, Prague), Ph.D. (Toronto)

Robin E. Griffin/B.Sc., Ph.D. (McMaster)/part-time

Tao Jiang/B.Sc. (Univ. of Sci. and Tech. of China, Hefei), Ph.D. (Minnesota)

Derek J. Kenworthy/B.A., M.A., D.Phil. (Oxford)

W.F. Skipper Poehlman/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)

Kenneth A. Redish/B.Sc. (London), F.B.C.S./part-time

Nicholas Solntseff/C. Eng., B.Sc., Ph.D. (Sydney), F.B.C.S.

Jeffrey I. Zucker/B.Sc. (Witwatersrand), Ph.D. (Stanford)

**Assistant Professors**

Barbara E. Ley/B.Sc. (Brock), M.Sc., Ph.D. (Toronto)/part-time

David G. Jones/B.Sc. (Western), Ph.D. (Stanford)

**Associate Members**

Norman P. Archer/(Business) B.Sc. (Alberta), M.S. (New York), Ph.D. (McMaster)

Sue Becker/ (Psychology) B.A., M.Sc. (Queen's), Ph.D. (Toronto)

William J. Garland/(Engineering Physics) M.Eng., Ph.D. (McMaster), P.Eng.

T. Z-Q. Luo/ (Electrical and Computer Engineering) B.Sc. (Peking), Ph.D. (M.I.T.)

Daniel C. McCrackin/(Electrical and Computer Engineering) B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.

David L. Parnas/ (Electrical and Computer Engineering) B.S., M.S., Ph.D. (Carnegie Instit. of Technology)

Alexander Rosa/(Mathematics) M.S. (Kiev), Ph.D. (Slovak Acad. Sciences)

George Steiner/ (Business) Ph.D. (Waterloo)

Barna Szabados/(Electrical and Computer Engineering) Dip.Eng. (Grenoble), M.Eng., Ph.D. (McMaster), P.Eng.

Yufei Yuan/(Business) B.S. (Fudan), Ph.D. (Michigan)

**Department Notes**

1. The following are suggested Computer Science options for students not in Computer Science programmes:

**Science-oriented students:** COMP SCI 1MC3, 1MD3, 2MF3 and 2SB3, 2SC3, 3MG3, 3CA3, 3SD3, 3SE3.

**Business-oriented students:** COMP SCI 1BA3, 1MC3, 1MD3, 2ME3, 2SC3, 3SE3, 4EC3.

**Social Sciences and Humanities students:** COMP SCI 1SA3, 2SC3, 3SE3.

2. Students wishing to pursue a Computer Science Minor are referred to the Department of Computer Science and Systems in the Faculty of Science section of this Calendar.

3. MATH 1A06, 1AA6, 1C06, 1N06 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.

**COURSES** *If no prerequisite is listed, the course is open.***COMP SCI 1BA3 INTRODUCTION TO COMPUTING AND COMPUTER USE FOR BUSINESS**

Organization of microcomputers; DOS and WINDOWS; problem solving using electronic spreadsheets, with business applications; basics of wordprocessing/desktop publishing; elementary database concepts, computer communications.

Three lectures, one tutorial; one term

Prerequisite: Registration in the School of Business and one OAC Mathematics credit, or one of MATH 1K03, 1M03, STATS 1L03

**COMP SCI 1MC3 COMPUTER SCIENCE I**

Essentials of Computer Science: machine architecture, data structures, operating systems, problem solving and programming paradigms; programming language features; software engineering; artificial intelligence.

Three lectures, one tutorial; one term

Antirequisite: COMP SCI 1MA3, ENGINEER 1D04

Students with credit in COMP SCI 1SA3 will lose this credit if COMP SCI 1MC3 is taken.

**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: One of COMP SCI 1MA3, 1MC3, ENGINEER 1D04 and credit or registration in one of MATH 1A03, 1B03, 1C03, 1M03

Antirequisite: COMP SCI 1MB3

**COMP SCI 1SA3 COMPUTING FUNDAMENTALS**

Overview of the computer as a tool for problem solving; introduction to programming concepts; software tools; application packages; communication and networks; the Internet; free speech and privacy.

Three lectures, one tutorial; one term

*Not open to students with credit or registration in COMP SCI 1MC3 or 1ZA3.*

**COMP SCI 2MD3 DATA STRUCTURES AND ALGORITHMS**

Commonly used abstract data types such as lists, stacks, queues, sets, and trees and their applications and efficient implementations; fast sorting, matching, and graph algorithms and complexity; emphasis on theoretical analysis. Three lectures, one term

Prerequisite: One of COMP SCI 1MB3, 1MD3, 2MC3

Antirequisite: COMP ENG 2YA3

**COMP SCI 2ME3 DESIGN OF INFORMATION SYSTEMS I**

Introduction to structured system design, emphasizing the software development process in the business environment: management systems; system analysis, design, implementation, and maintenance. Features COBOL. Three lectures; one term

Prerequisite: COMP SCI 1MB3 or 1MC3

**COMP SCI 2MF3 INTRODUCTION TO COMPUTER ARCHITECTURE**

Introduction to the structure of computer systems; organization of central processing units, memory subsystems and input/output devices; introduction to machine language, assembler programming and system software.

Two lectures, one lab (two hours); one term

Prerequisite: One of COMP SCI 1MA3, 1MC3, ENGINEER 1D04

**COMP SCI 2MJ3 DISCRETE STRUCTURES**

An introduction to the basic concepts of discrete mathematics and discrete structures needed in many areas of computer science. Logic, combinatorics, graph theory and their applications are included.

Three lectures; one term

Prerequisite: One of MATH 1B03, 1H05, STATS 1CC3

**COMP SCI 2SB3 COMPUTATIONAL METHODS FOR SCIENCE AND ENGINEERING**

Algorithms for the solution of common scientific problems and their efficient implementation in FORTRAN, an analysis and estimation of both computational error and program efficiency.

Three lectures; one term

Prerequisite: One of COMP SCI 1MA3, 1MC3, 1SA3, ENGIN 1D04 and either MATH 1H05 and 1N06 or MATH 1A03 and 1B03

Antirequisite: COMP ENG 2KA3

**COMP SCI 2SC3 DESIGN AND IMPLEMENTATION OF C PROGRAMS**

Algorithmic development, stepwise refinement, modularization, searching and sorting methods, problem solving; data types, arithmetic/logical expressions, looping arrays, subprograms, input/output, style and program testing.

Three lectures, one tutorial; one term

Prerequisite: One of COMP SCI 1MA3, 1MC3, 1SA3, ENGINEER 1D04 and credit in one of MATH 1A03, 1B03, 1C03, 1H05, 1M03, 1N06

**COMP SCI 3CA3 COMPUTER ORGANIZATION AND ASSEMBLER PROGRAMMING**

A second course in computer organization with particular emphasis on assembly language programming and software development tools.

Two lectures, one lab (two hours); one term

Prerequisite: COMP SCI 2MF3

Not offered in 1996-97.

**COMP SCI 3EA3 INTRODUCTION TO SOFTWARE ENGINEERING**

Methodologies for the development and maintenance of large programs. Problem specification, program design, implementation, software reliability, testing and modularity. One large team project.

Three lectures; one term

Prerequisite: COMP SCI 2MD3 or COMP ENG 2YA3

Antirequisite: COMP ENG 3VA3

**COMP SCI 3GA3 INTRODUCTION TO COMPUTER GRAPHICS**

Principles of computer graphics. Data structures and algorithms, hardware and software systems for graphics. Object modelling and display techniques: visual realism, perspective, visibility and shading.

Three lectures; one term

Prerequisite: COMP SCI 2MD3 or COMP ENG 2YA3 and either one of MATH 2B06, 2J06, 2M06, 2Q04 or MATH 2R03 and one of MATH 2S03, 2T03

**COMP SCI 3IA3 LIST PROCESSING AND LOGIC PROGRAMMING**

Data and control structures for AI systems: symbolic expressions; LISP (lists, list processing functions, forms); POP-11 (user stack, structures, matching, macros, backtracking); resolution principle; basic PROLOG.

Three lectures; one term

Prerequisite: COMP SCI 2MD3 or COMP ENG 2YA3

**COMP SCI 3MG3 COMPUTER SYSTEM ARCHITECTURE**

Processor, memory and input/output; compilers, assemblers, loaders; introduction to pipelining, virtual memory and parallel computing techniques.

Three lectures; one term

Prerequisite: COMP SCI 2MF3 or COMP ENG 2HA3

**COMP SCI 3MH3 PRINCIPLES OF OPERATING SYSTEMS**

Concepts of operating systems; process coordination, memory management, file systems; introduction to distributed systems and computer networks.

Three lectures; one term

Prerequisite: COMP SCI 2MD3 and 3MG3 or COMP ENG 2YA3 and 3HB3

Antirequisite: COMP ENG 4WA3

**COMP SCI 3MI3 ORGANIZATION OF PROGRAMMING LANGUAGES**

A comparative study of programming languages, emphasizing functional languages. Introduction to formal methods of language definition.

Three lectures; one term

Prerequisite: COMP SCI 2MD3 or COMP ENG 2YA3

**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 1MB3, 1MD3, 2SB3, COMP ENG 2YA3

Not offered in 1996-97

**COMP SCI 3SE3 DESIGN OF VISUAL PROGRAMMING ENVIRONMENTS**

A study of visual programming environments: events, procedures, objects and attributes; paradigms: event-driven, object-oriented; applications: graphical user interfaces, human factors, visualization techniques.

Two lectures, one lab; one term

Prerequisite: One of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, ENGINEER 1D04

First offered in 1997-98.

**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; and one of COMP SCI 2MJ3, MATH 2M06, 2Q04 or both MATH 2R03 and one of MATH 2S03 or 2T03

**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: One of COMP SCI 1MA3, 1MC3; one of MATH 1A03, 1C03; and one of MATH 1B03, 1H05

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 COMP ENG 3HB3 or credit or registration in PHYSICS 4D06

**COMP SCI 4CC3 ADVANCED OPERATING SYSTEMS**

Modern operating systems: large-scale interactive to small real-time systems; microcomputer/mainframe interconnections; message passing techniques; networks; languages for implementation of distributed operating systems.

Three lectures; one term

Prerequisite: COMP SCI 3MH3 or COMP ENG 4WA3

**COMP SCI 4CD3 DISTRIBUTED SYSTEM ARCHITECTURES**

Distributed systems: real-time, agent-oriented, heterogeneous, multi-computer, 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 COMP ENG 3HB3 or credit or registration in PHYSICS 4D06

**COMP SCI 4EB3 DATABASE MANAGEMENT SYSTEM DESIGN**

Concepts and structures for the design of database management systems. Topics include: data models, data normalization, data-description languages, query facilities, file organization and security.

Three lectures; one term

Prerequisite: COMP SCI 2MD3 or COMP ENG 2YA3

**COMP SCI 4EC3 DESIGN OF INFORMATION SYSTEMS II**

Advanced software development in the business/industrial environment. Comparative analysis of alternatives to structured design, especially object-oriented techniques.

Three lectures; one term

Prerequisite: COMP SCI 2ME3 and registration in Level IV of a Computer Science programme

**COMP SCI 4ED3 SOFTWARE ENGINEERING APPLICATIONS**

A continuation of COMP SCI 3EA3. Use of advanced software specification techniques and software tools to support program development. A large-scale team project produces high-quality production software.

Three lectures; one term

Prerequisite: COMP SCI 3EA3 or COMP ENG 3VA3

**COMP SCI 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: Credit or registration in MATH 3B03, and credit in COMP SCI 2MD3 or a grade of at least B- in COMP SCI 1MB3 or 2SB3

**COMP SCI 4IB3 INTRODUCTION TO ARTIFICIAL INTELLIGENCE**

AI disciplines: perception, pattern recognition, machine learning, image processing, scene analysis, speech processing; problem solving, production systems, backtracking, graph search techniques, GPS, STRIPS, PLANNER; PROLOG.

Three lectures; one term

Prerequisite: COMP SCI 3IA3

**COMP SCI 4IC3 THE ARCHITECTURE OF EXPERT SYSTEMS**

"Hands-on" experience in the design and development of knowledge-based systems: applying human expertise to specific areas of problem-solving; knowledge representations, knowledge engineering, and knowledge-based programming.

Three lectures; one term

Prerequisite: COMP SCI 3IA3

Not offered in 1996-97.

**COMP SCI 4MP6 PROJECT FOR COMBINED PROGRAMMES**

Under the supervision of a faculty member, teams of two to three students implement, write up and defend a substantial project, in the area of the combined programme.

Occasional tutorials, no lectures; two terms

Prerequisite: Registration in Level IV of any combined Honours Computer Science programme. Completion of COMP SCI 3EA3 is strongly recommended.

Antirequisite: COMP SCI 4ZP6, COMP ENG 4JA4

**COMP SCI 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 1996-97.

**COMP SCI 4TD3 DESIGN AND ANALYSIS OF ALGORITHMS**

Techniques for the design and analysis of algorithms, especially divide-and-conquer, greedy, and dynamic programming algorithms. An introduction to computational complexity. Analysis of particular algorithms of practical or theoretical importance in computer science.

Three lectures; one term

Prerequisite: COMP SCI 2MD3, 2MJ3 and one of MATH 2B06, 2J06, 2M06, 2Q04, 2R03

**COMP SCI 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

See the heading *Courses Requiring Permission* in the *Faculty of Science* section of the Calendar

**COMP SCI 4Z13 COMPUTER SCIENCE INQUIRY**

Research and directed readings dealing with the impact of computers and computer networks on society.

Three hours; one term

Prerequisite: Registration in Level IV of an Honours programme in the Faculty of Science which requires Science Inquiry  
*Enrolment is limited.* See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar

**COMP SCI 4ZP6 PROJECT**

Under the supervision of a faculty member, teams of two to three students implement, write up and defend a substantial project in an area of computer science.

Occasional tutorials, no lectures; two terms

Prerequisite: Registration in Level IV of Honours Computer Science.

Completion of COMP SCI 3EA3 is strongly recommended

Antirequisite: COMP SCI 4MP6, COMP ENG 4JA4

**Collaborative Course Offerings**

The Department is participating in an experimental venture with the University of Guelph to provide courses over the Video Link. The courses provided via the link are:

**COMP SCI 4EG3 ORGANIZATION AND MANAGEMENT OF COMPUTING ACTIVITIES**

Strategic planning of computing and data resources in an organization; system management, estimating techniques, productivity issues; project management, quality assurance, configuration management.

Four hours (lectures and tutorials); one term

Prerequisite: COMP SCI 2ME3 and 3EA3

*Enrolment is limited.* See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

Not offered in 1996-97.

**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 3M3

*Enrolment is limited.* See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

**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

Cross-list: COMP ENG 4HF3

*Enrolment is limited.* See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

**DRAMA**

Courses and programmes in Drama are administered within the School of Art, Drama and Music of the Faculty of Humanities.

**Note:**

Students are advised to note carefully the prerequisites for all courses. Students are also advised to take note which courses are offered in alternate years.

**Courses If no prerequisite is listed, the course is open.****DRAMA 1A06 INTRODUCTION TO DRAMA**

An exploration of theatrical media. Emphasis will be placed on the study of plays from major periods of Western drama. The relationship of theatre to film, opera and other performing arts will be introduced.

Two lectures, one tutorial; two terms

**DRAMA 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 studio (three hours); two terms



Prerequisite: DRAMA 1A06, with a grade of at least B-  
*Enrolment is limited. Priority is given to students enrolled in Drama programmes.*

**DRAMA 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

Cross-list: ART HIST 2X06

**DRAMA 3A03 TOPICS IN ACTING**

The study and performance of scenes from the theatre of Classical Greece and Medieval Britain. Extension of acting skills through specific voice, body and language techniques.

Two studio (three hours); one term

Prerequisite: DRAMA 2A06

*Enrolment is limited. Priority is given to students enrolled in Drama programmes.*

**DRAMA 3AA3 ACTING SHAKESPEARE**

The study and performance of scenes from the works of William Shakespeare. Extension of acting skills through specific voice, body and language techniques.

Two studio (three hours); one term

Prerequisite: DRAMA 2A06

*Enrolment is limited. Priority is given to students enrolled in Drama programmes.*

**DRAMA 3B03 INDEPENDENT STUDY IN DRAMA I**

Students who wish to undertake independent study must consult the Drama Chair prior to registration.

One term

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 TECHNICAL ASPECTS OF THE THEATRE**

A survey of the theory and practice of all the technical skills involved in a theatrical production: 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 and permission of the School of Art, Drama and Music

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 3E03 PRODUCTION AND STAGE MANAGEMENT**

A study of the organizational skills involved in a theatrical production. In addition to lecture/discussion, each student will be involved in one production during the academic year as Stage Manager/Production Assistant.

Two hours, first term; one hour (workshops), second term

Prerequisite: Registration in a programme in Drama and permission of the School of Art, Drama and Music

Students wishing to take this course must complete an application form in the School of Art, Drama and Music before March 31 to guarantee consideration.

*Enrolment is limited.*

**DRAMA 3F03 OPERA II: ROMANTIC TO MODERN**

An analysis of selected operatic works from 1850 to the present, tracing the evolution of opera as a theatrical and musical form.

Three lectures; one term

Prerequisite: One of DRAMA 2D06, 2M06. DRAMA 3I03 is recommended.

*Offered in alternate years.*

**DRAMA 3FF3 STUDIES IN OPERA**

Previous topics include: Giuseppe Verdi, The Gramophone and the Voice. Consult the School of Art, Drama and Music concerning topic to be offered.

Three lectures; one term

Prerequisite: One of DRAMA 2D06, 2M06. One of DRAMA 3F03, 3I03 is recommended.

*Offered in alternate years.*

*DRAMA 3FF3 may be repeated, if on a different topic, to a total of six units.*

**DRAMA 3G03 PERFORMANCE HISTORY BEFORE 1800**

An examination of issues in the study of Western theatrical tradition.

Three lectures; one term

Prerequisite: One of DRAMA 2D06, 2M06

*Offered in alternate years.*

**DRAMA 3GG3 COMPARATIVE THEATRE**

A comparison of two or more theatrical traditions.

Three lectures; one term

Prerequisite: One of DRAMA 2D06, 2M06

*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 of IV of a programme in Drama or Literature or Art History. DRAMA 2X06 is recommended.

Cross-list: ART HIST 3CC3, COMP LIT 3L03, ENGLISH 3CC3

*Offered in alternate years.*

**DRAMA 3I03 OPERA I: RENAISSANCE TO ROMANTIC**

An analysis of selected operatic works from 1600 to 1850, exploring the nature of opera as a theatrical and musical form.

Three lectures; one term

Prerequisite: One of DRAMA 2D06, 2M06

*Offered in alternate years.*

**DRAMA 3J03 TOPICS IN FILM**

Previous topics include: Genre Studies, Film Comedy. Consult the School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

Cross-list: ART HIST 4S03

*DRAMA 3J03 may be repeated, if on a different topic, to a total of six units.*

**DRAMA 3L03 MODERN EUROPEAN THEATRE HISTORY**

A study of the major influences that have shaped the growth of modern theatre movements in Europe from the late nineteenth century to the present.

One seminar (two hours); one term

Prerequisite: Six units of Level II Drama

*Offered in alternate years.*

**DRAMA 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 3R03 THE AMERICAN CINEMA I**

A survey of some of the predominant features of the American Cinema from its beginning to 1950. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06; or permission of the School of Art, Drama and Music

Cross-list: ART HIST 3F03

**DRAMA 3RR3 THE AMERICAN CINEMA II**

A survey of some of the predominant features of the American Cinema from 1950 to the present day. Emphasis will be placed both on the artistic value of the films and on their social significance and impact.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06; or permission of the School of Art, Drama and Music

Cross-list: ART HIST 3FF3

**DRAMA 3T03 TOPICS IN NATIONAL CINEMAS I**

Previous topics include: Soviet and East European Cinema. Consult School of Art, Drama and Music concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

Cross-list: ART HIST 3T03 and Modern Languages 3T03

*DRAMA 3T03 may be repeated, if on a different topic, to a total of six units.*

**DRAMA 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: ART HIST 3TT3

*DRAMA 3TT3 may be repeated, if on a different topic, to a total of six units.*

**DRAMA 3Z03 INDEPENDENT STUDY IN PRACTICAL THEATRE**

Students who wish to undertake independent study must consult the Director of the School of Art, Drama and Music prior to registration.

One term

Prerequisite: Registration in a programme in Drama and permission of the School of Art, Drama and Music

**DRAMA 4A06 PRINCIPLES OF STAGE DIRECTING**

Play analysis, schedule planning, rehearsal techniques, technical stagecraft required to bring a play to performance. Direction of a play for performance under the supervision of the instructor.

Class meets twice a week, total five hours; two terms

Prerequisite: DRAMA 2A06 and one of 3A03, 3AA3, 3D03, 3E03; and registration in Level IV of an Honours programme in Drama

Students wishing to take this course must complete an application form in the School of Art, Drama and Music before March 31 to guarantee consideration.

*Enrolment is limited and is based on academic achievement.*

The School of Art, Drama and Music reserves the right to limit any student's involvement in the Lunch Hour theatre season.

**DRAMA 4B03 INDEPENDENT STUDY IN DRAMA II**

Students who wish to undertake independent study must consult the Director of the School of Art, Drama and Music prior to registration.

One term

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 DRAMA AND THEATRE**

Senior seminar: An examination of theoretical documents from the Greeks to the present.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in Drama

Offered in alternate years.

*Enrolment is limited.*

**DRAMA 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.

Cross-list: ART HIST 4FF3

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. With the approval of the Director of the School of Art, Drama and Music, a limited number 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 2H06	GREEK AND ROMAN THEATRE AND DRAMA
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 4J03	PERSPECTIVES IN DANCE:
	DANCE IN CONTEMPORARY SOCIETY
MOD LANG 3G03	GERMAN DRAMA (IN ENGLISH)
MOD LANG 4L03	SURVEY OF SPANISH THEATRE (IN ENGLISH)
WOMEN ST 3B03	TOPICS IN WOMEN AND THE ARTS I:
	THEATRE AND FILM

**ECONOMICS****Faculty as of January 15, 1996****Chair**

Alan Harrison

**Associate Chair**

Stephen R.G. Jones

**Professors Emeriti**

Syed Ahmad/M.A., LL.B. (Aligarh), M.Sc. (Econ.), D.Sc. (Econ.) (London)  
 R. Craig McIvor/B.A. (Western), M.A., Ph.D. (Chicago), F.R.S.C.  
 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.

**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)  
 Frank T. Denton/B.A., M.A. (Toronto), F.R.S.C., F.S.S.  
 Martin Dooley/B.A. (Indiana), M.S., Ph.D. (Wisconsin-Madison)  
 David H. Feeny/B.A. (Northern Illinois), M.A., Ph.D. (Wisconsin-Madison)  
 Peter J. George/B.A., M.A., Ph.D. (Toronto)  
 Alan Harrison/B.A., M.A., Ph.D. (Essex)  
 James A. Johnson/M.A., Ph.D. (Minnesota)  
 Stephen R.G. Jones/B.A. (Cambridge), Ph.D. (California-Berkeley)  
 Atif A. Kubursi/B.A., (American University, Beirut), M.A., 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.A. Math. (Waterloo), M.A., Ph.D. (Western)  
 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), 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. Eng. (Calif. Inst. of Tech.), A.B., M.A., Ph.D.  
 (California-Berkeley)  
 Donald A. Dawson/A.M. (Chicago), Ph.D. (Western), N.D.C.

#### Assistant Professors

Peter J. McCabe/A.B. (Boston College), Ph.D. (Northwestern)  
 Alok Johri/B.A. (Delhi), M.A. (Delhi School of Economics), Ph.D. (Boston)

#### Associate Members

M. Luke Chan/(Business) B.Sc. (University of Prince Edward Island), M.A.,  
 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)  
 Gregory L. Stoddart/(Clinical Epidemiology and Biostatistics) B.A.  
 (Western), Ph.D. (British Columbia)

#### 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 a permission slip 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.

#### 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 hours; two terms

Antirequisite: ECON 1B03 and 1BB3

##### ECON 1B03 INTRODUCTORY MICROECONOMICS

An introduction to the method and theory of microeconomics for engineering students. The analysis will involve mathematics and will be applied to contemporary problems.

Three hours; one term

Prerequisite: Registration in an Engineering or Science programme

Antirequisite: ECON 1A06

##### ECON 1BB3 INTRODUCTORY MACROECONOMICS

An introduction to the method and theory of macroeconomics for engineering students. The analysis will involve mathematics and will be applied to contemporary problems.

Three hours; one term

Prerequisite: Registration in an Engineering or Science programme

Antirequisite: ECON 1A06

##### ECON 2A03 ECONOMICS OF LABOUR-MARKET ISSUES

This course applies economic analysis to issues of importance in the labour market. Topics vary and may include: women in the Canadian labour market; discrimination in hiring and promotion; unemployment; job loss and workplace closing; work sharing.

Three hours; one term

Prerequisite: ECON 1A06, or ECON 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 hours; one term

Prerequisite: ECON 1A06 with a grade of at least C-, or ECON 1B03 and 1BB3 with an average of at least 4.0 and MATH 1K03 (or OAC Calculus) and one of MATH 1L03 or STATS 1L03 or 2D03 (or OAC Finite Math)

Not open to students with credit or registration in ECON 3O06, CHEM ENG 4C03, COMMERCE 2QA3, GEOG 2LL3, 2N03, POL SCI 2F06; 3N06, PSYCH 2G03, 2R03, SOCIOLOGY 2Y03, 3H06, or any Statistics course other than STATS 1A03, 1CC3, 1L03 or 2D03; 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 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-, or ECON 1B03 and 1BB3 with an average of at least 4.0

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 hours; one term

Prerequisite: ECON 1A06 with a grade of at least C-, or ECON 1B03 and 1BB3 with an average of at least 4.0

##### ECON 2E03 DEFICIT REDUCTION AND THE NATIONAL DEBT

This course explores the ways in which monetary and fiscal policies affect national income and its distribution. Particular attention is paid to deficit reduction, tax reform, income-support measures and unemployment.

Three hours; one term

Prerequisite: ECON 1A06 with a grade of at least C-, or ECON 1B03 and 1BB3 with an average of at least 4.0

##### ECON 2F03 GLOBALIZATION AND ECONOMIC DEVELOPMENT

This course explores the political economy of development. Topics include: globalization, armaments and questions of equity and sustainability in the growth process.

Three hours; one term

Prerequisite: ECON 1A06 with a grade of at least C-, or ECON 1B03 and 1BB3 with an average of at least 4.0

##### ECON 2G03 INTERMEDIATE MICROECONOMICS I

Elements of consumer behaviour; production and cost, price and output determination under various market structures; employment of inputs.

Three hours; one term

Prerequisite: ECON 1A06 or 1B03 with a grade of at least C-, and OAC Calculus or MATH 1K03 or equivalent. Students without credit in MATH 1M03 or equivalent are strongly advised to take it concurrently with ECON 2G03.

Antirequisite: ECON 2X03 or 2L06

##### ECON 2GG3 INTERMEDIATE MICROECONOMICS II

Price and output determination under various noncompetitive market structures; factor input markets; general equilibrium; welfare; topics in consumer theory.

Three hours; one term

Prerequisite: ECON 2G03 or 2X03

Antirequisite: ECON 2L06

##### ECON 2H03 INTERMEDIATE INCOME AND EMPLOYMENT THEORY I

National income accounting, determinants of national income, employment, the rate of interest and the price level; introduction to open economy.

Three hours; one term

Prerequisite: ECON 1A06 or 1BB3 with a grade of at least C-; 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 hours; one term

Prerequisite: ECON 2H03

Antirequisite: ECON 2M06

**ECON 2K03 ECONOMIC HISTORY OF CANADA**

A survey of the changing structure of the Canadian economy from the colonial period to the present; early significance of primary production for export markets; emerging domestic markets and industrialization; government's role in promoting the development of the national economy.

Three hours; one term

Prerequisite: At least C- in ECON 1A06, or ECON 1B03 and 1BB3 with an average of at least 4.0

**ECON 2N03 PUBLIC POLICY TOWARD BUSINESS**

The economic effects of federal competition policy and the regulation of business by all levels of government. The impacts of government ownership and bailout activity on the Canadian business environment are also analyzed.

Three hours; one term

Prerequisite: ECON 1A06 with a grade of at least C-, or ECON 1B03 and 1BB3 with an average of at least 4.0

Antirequisite: ECON 3N03

**ECON 2T03 ECONOMICS OF TRADE UNIONISM AND LABOUR**

Topics include the economics of the labour market, of trade unionism, of work, the impact of trade unions on the labour market, economic theories of strikes and trade unions and the state.

Three hours; one term

Prerequisite: ECON 1A06, or ECON 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. A variety of market structures are examined.

Three hours; one term

Prerequisite: ECON 1A06 or ECON 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 hours; 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); one of ECON 3G03 or MATH 2A06, 2G03, 2L03

**ECON 3AA3 ADVANCED ECONOMIC THEORY II**

Comparative static and dynamic analysis of macroeconomic models.

Three hours; one term

Prerequisite: MATH 1M03 and an average of at least 7.0 in ECON 2G03 or 2X03, 2GG3 (2L06), 2H03, 2HH3 (or 2M06); one of ECON 3G03 or MATH 2A06, 2G03, 2L03

**ECON 3B03 PUBLIC SECTOR ECONOMICS: EXPENDITURES**

Theory and practice of public finance. Topics are selected from growth of the public sector, market failure, theory of public goods, incentive mechanisms, logic of group decisions and the political process, theory of benefit-cost analysis, intergovernmental fiscal relations, government budgeting.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

Antirequisite: ECON 3C06

**ECON 3C03 PUBLIC SECTOR ECONOMICS: TAXATION**

Theory and practice of public finance: analysis and comparison of the efficiency, equity and distribution effects of the taxation of income, wealth and expenditure, analysis of social insurance, intergovernmental fiscal relations.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

Antirequisite: ECON 3C06

**ECON 3D03 LABOUR ECONOMICS**

Introduction to the economics of the labour market; demand for labour by the firm and industry; supply of labour by the individual; investment in human capital.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

**ECON 3E03 TOPICS IN LABOUR ECONOMICS**

Topics will vary from year to year. The following are given as examples: economic goals and effects of unions; labour mobility; labour force participation; wage differentials; discrimination; unemployment.

Three hours; one term

Prerequisite: ECON 3D03, and ECON 2B03 or 3O06 or an equivalent Statistics course

**ECON 3F03 METHODS OF INQUIRY IN ECONOMICS**

This course develops skills for investigating a research question in economics, through workshops (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 hours; one term

Prerequisite: One of OAC Finite Math, MATH 1B03 or 1L03, 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)

Antirequisite: MATH 2A06, 2G03, 2L03

*Not open to students with credit or registration in ECON 3A03 or 3AA3.*

**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 hours; 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 MONETARY ECONOMICS AND FINANCIAL ORGANIZATION: THEORY AND POLICY**

Objectives, organization and operation of the financial sector; financial intermediaries in the capital market; mechanism of international payments; monetary theory and policy concerning Canadian allocative and stability objectives.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

**ECON 3L03 MARXIAN ECONOMICS**

An examination of the foundations of Marxist economic thought; Marxism as a theory of the capitalist system; the place of Marxian doctrine in contemporary economic analysis.

Three lectures; one term

Prerequisite: One of ECON 2G03, 2L06, 2X03

**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 hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

**ECON 3M03 INTRODUCTION TO GAME THEORY**

An introduction to the theory of games, including strategic, extensive and coalitional games. Applications in economics, political science and evolutionary biology are discussed.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

*Not open to students with credit in ECON 3Y03, if the topic was Introduction to Game Theory.*

**ECON 3O06 ECONOMIC STATISTICS**

Statistical analysis as a basic research technique in economics, emphasizing estimation and statistical inferences, including linear regression models. Applications are drawn from micro and macroeconomics. Computer-oriented exercises are employed throughout the course.

Three lectures; two terms

Prerequisite: Registration in an Honours Economics programme. One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06; one of OAC Finite Math, MATH 1L03 or STATS 1L03 or 2D03

Antirequisite: STATS 3D06

Not open to students with credit or registration in ECON 4G03.

### ECON 3P03 LINEAR ECONOMIC MODELS

Application and interpretation in economics of linear programming, game theory and inter-industry analysis.

Three hours; one term

Prerequisite: One of OAC Finite Math, MATH 1B03 or 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 3S03 INDUSTRIAL ORGANIZATION

A study of the structure, conduct and performance of industrial markets.

Three lecture; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

Antirequisite: ECON 3N06

### ECON 3T03 ECONOMIC DEVELOPMENT:

#### AGRICULTURE AND POPULATION

Analysis of the economies of less developed countries. Topics include structural change and its measurement, dual economies, agriculture, technical change, institutional change, health, nutrition.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

Antirequisite: ECON 3J06

### ECON 3TT3 ECONOMIC DEVELOPMENT: TRADE, FOREIGN INVESTMENT AND INTERNATIONAL FINANCE

Analysis of the economies of less developed countries. Topics include the role of exports, effective protection, commercial policy, financial development, direct investment, savings and income distribution.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06

Antirequisite: ECON 3J06

### ECON 3U03 ANALYSIS OF ECONOMIC DATA II

Elaboration of regression techniques developed in ECON 2B03. Problems of inference and interpretation in the analysis of economic data. Introduction to forecasting in economics.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06; and ECON 2H03 or 2M06, and ECON 2B03

Not open to students with credit or registration in ECON 3O06 or 4G03.

### ECON 3W03 NATURAL RESOURCES

Competitive and socially optimal exhaustion of nonrenewable resources; market failure as illustrated by mineral cartels, fisheries and forestry; environmental economics.

Three hours (lectures and seminars); one term

Prerequisite: One of ECON 2G03, 2X03, 2L06, and MATH 1M03

### ECON 3X03 URBAN MODELS AND POLICY ANALYSIS I

A survey of modern literature on urban social structure. Topics include morphology, adjustments to change, and such phenomena as sudden urban growth and the decline of central cities.

Two lectures (one hour), one tutorial (two hours); one term

Prerequisite: One of ECON 2G03, 2X03, 2L06, or GEOG 2B03

Antirequisite: Registration in a Geography programme or GEOG 3X03

Cross-list: GEOG 3X03

### ECON 3Y03 SELECTED TOPICS I

Topics will vary from year to year depending on student interests and faculty availability. Students should consult the Department on topics to be offered.

Three hours; one term

Prerequisite: Permission of the Department

### ECON 3YY3 SELECTED TOPICS II

In 1996-97, the topic will be *The Economics of Aging*.

A study of the demography of aging (including the effects of population aging on the labour force), the macroeconomic aspects of national pension and health plans in the context of an aging population, and the microeconomics of retirement and income security in old age.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06

### ECON 3Z03 HEALTH ECONOMICS

Analysis of allocation of resources in health care. Topics include markets for health care, insurance, biomedical research, technology assessment, organization and public policy.

Three hours; one term

Prerequisite: One of ECON 2G03, 2X03, 2L06. ECON 2B03 or another course in statistics is recommended.

### ECON 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; one term

Prerequisite: ECON 2GG3, 2HH3, 3U03 or 3O06, 3F03

### ECON 4E03 TOPICS IN MICROECONOMICS

Applications of advanced microeconomic theory. Consult the Economics Department for 1994-95 topic.

Three hours; one term

Prerequisite: At least C- in ECON 3A03

### ECON 4F03 TOPICS IN MACROECONOMICS

Applications of advanced macroeconomic theory. Consult the Economics Department for 1996-97 topic.

Three hours; one term

Prerequisite: At least C- in ECON 3AA3

### ECON 4G03 ECONOMETRICS I

Development of regression models appropriate to economics. Illustrations from applied micro- and macroeconomics.

Three hours; one term

Prerequisite: ECON 2G03 or 2X03 (or 2L06), and ECON 2H03 (or 2M06), and at least C- in ECON 3O06 or STATS 2D03 and 2MB3 (or 2M03)

### ECON 4GG3 ECONOMETRICS II

Special topics in econometrics, including identification in simultaneous equations models in micro- and macroeconomics and topics in the analysis of time series.

Three hours; one term

Prerequisite: ECON 4G03

### ECON 4M06 DIRECTED RESEARCH I

A reading and/or research programme supervised by a Department member. A major paper is required. Students should consult the Department concerning admission.

Prerequisite: Permission of the Department

### ECON 4N03 DIRECTED RESEARCH II

As per ECON 4M06.

Prerequisite: Permission of the Department

### ECON 4X03 URBAN MODELS AND POLICY ANALYSIS II

A survey of modern literature on urban issues. Topics include welfare criteria, externalities, public goods and fiscal policies.

Two lectures (one hour), one tutorial (two hours); one term

Prerequisite: ECON 3X03 or GEOG 3X03

Cross-list: GEOG 4X03

## ELECTRICAL AND COMPUTER ENGINEERING

### Faculty as of January 15, 1996

#### Chair

D.R. Conn

#### 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.

#### 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., F.I.E.E.E., P.Eng.

Radek M. Biernacki/M.Sc., Ph.D. (Warsaw)/part-time

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), NSERC Industrial Research Chair in Monolithic Microwave Integrated Circuits, BNR/NSERC Chair, P.Eng.

Mohamed A. El-Kady/B.Sc. (Eng.), M.Sc. (Eng.) (Cairo), Ph.D. (McMaster), S.M.I.E.E.E., P.Eng./part-time

Raymond D. Findlay/B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng. F.I.E.E.E.

Simon Haykin/B.Sc., Ph.D., D.Sc. (Birmingham), F.R.S.C., F.I.E.E.E.

John Litva/B.Sc. (British Columbia), M.Sc., Ph.D. (Western Ontario)/NSERC Industrial Research Chair in Communication Antennas  
 David L. Parnas/B.S., M.S., Ph.D. (Carnegie), Dr.h.c. (ETH Zuerich), F.R.S.C., F.A.C.M., NSERC/Bell Industrial Research Chair in Software Engineering  
 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.  
 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., F.Inst.P., F.S.S.

#### Associate Professors

David W. Capson/B.Sc.Eng. (New Brunswick), M.Eng., Ph.D. (McMaster), P.Eng.  
 Stephen H. Chisholm/B.A.Sc. (Toronto), Ph.D. (London)  
 Chandra M. Kudsia/B.Sc. (Delhi), M.Eng. (McMaster), Ph.D. (Concordia), P.Eng./part-time  
 T.-Q. Luo/B.Sc. (Peking), Ph.D. (M.I.T.)  
 Peter M. Smith/B.Eng./Mgt., M.Eng., Ph.D. (McMaster), P.Eng.  
 Terence D. Todd/B.A.Sc., M.A.Sc., Ph.D. (Waterloo)

#### Assistant Professors

Youssef H. Dableh/B.Sc.Eng., M.Sc.Eng. (New Brunswick), Ph.D. (McMaster), P.Eng./part-time  
 Qu Jin/B.Eng., M.Eng. (Dalian Maritime), Ph.D. (McMaster)/part-time  
 Henry K.Y. Leung/B.Math. (Waterloo), M.Sc. (Toronto), M.Eng. Ph.D. (McMaster)/part-time  
 Daniel C. McCrackin/B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.  
 Anthony Vaz/B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng.  
 Denise Voit/B.Math. Co-op, M.Math. (Waterloo), Ph.D. (Queen's)/part-time  
 Ke-Li Wu/B.Sc., M.Sc. (East China Institute of Technology), Ph.D. (Laval)/part-time

#### 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 (Computer Science & Systems), 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 (Computer Science & Systems), 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 (Computer Science and Systems), B.A. (Alabama), M.A. (Emory), Ph.D. (Queen's, Belfast)  
 Donald B. MacHattie (Faculty of Eng.), B.Sc. (Queen's), M.Sc. (Toronto), Ph.D. (McMaster)  
 Ali-Reza Montazemi (Business) H.N.D. (Teesside Polytechnic, U.K.), M.Sc. (Southampton), Ph.D. (Waterloo)  
 Claude Nahmias (Nuclear Medicine), B.Sc. (Cairo), Ph.D. (Surrey)  
 Lionel David Pengelly (Medicine), B.A.Sc. (Toronto), M.Sc., Ph.D. (McGill), P.Eng.  
 Skipper Poehlmann (Computer Science & Systems), B.S. (Niagara), B.Sc. (Brook), M.Sc., Ph.D. (McMaster), P.Eng.  
 Sanzheng Qiao (Computer Science & Systems), B.S., M.S. (Shanghai Teacher's College), M.S., Ph.D. (Cornell)  
 David A. Thompson (Engineering Physics), B.Sc., Ph.D. (Reading)  
 Patrick C. Yip (Mathematics & Statistics), B.Sc. (Memorial), Ph.D. (McMaster)  
 Jeffery I. Zucker (Computer Science & Systems), B.Sc. (Witwatersrand), Ph.D. (Stanford)

#### COMP ENG 2KA3 COMPUTATIONAL METHODS

Computational techniques for solving electrical engineering problems; linear and non-linear equations; eigen decompositions; numerical integration, differentiation; differential equations; interpolation; numerical stability and computational efficiency.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ENGINEER 1D04, MATH 1H05, 1N06, and registration or credit in ELEC ENG 2BA3

Antirequisite: COMP SCI 2SB3

#### COMP ENG 2YA3 DATA STRUCTURES AND COMPUTER ALGORITHMS

Data structures; lists, stacks, trees, file management; sorting algorithms; semi-numeric algorithms; graph algorithms.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ENGINEER 1D04, and registration in a Computer Engineering programme

Antirequisite: COMP SCI 2MD3

#### COMP ENG 3HB3 DIGITAL COMPUTER PRINCIPLES

Elements of digital computers; register transfer logic; memory; operation, organization and control of central processor unit.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: COMP ENG 2HA3

Antirequisite: ENGINEER 4C03, PHYSICS 4DA3, 4D06

#### COMP ENG 3HC3 MICROPROCESSOR SYSTEMS

Microprocessor architecture, programming, timing, memory interfacing and interrupt handling using 8086; peripheral interfaces including handshaking, PPI, UART, keyboards, CRT, timers and event counters; system bus structures.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in COMP ENG 3HB3

#### COMP ENG 3KB3 SIMULATION AND OPTIMIZATION I

Optimization-oriented computer-aided engineering; CAD systems; optimization fundamentals and algorithms; non-linear equations; approximation practice; adjoint network gradients; sensitivities, tolerances.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: COMP ENG 2KA3 and ELEC ENG 2DA3

#### COMP ENG 3VA3 SOFTWARE ENGINEERING

Software life-cycle; planning; requirements analysis; the design process and methods; design tools; testing; maintenance; software reliability. Application of design methods in a group project.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: COMP ENG 2YA3 and registration in a Computer Engineering programme

Antirequisite: COMP SCI 3EA3

#### COMP ENG 4HD3 ADVANCED COMPUTER DESIGN

Advanced topics in computer design: processor control; I/O implementation; processor and memory acceleration; instruction set design for high level languages; virtual machines; multiprocessing.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: COMP ENG 3HB3

Not open to students with credit or registration in COMP SCI 3MG3.

#### COMP ENG 4HE3 ADVANCED REAL TIME COMPUTING SYSTEMS

Real time systems, jobs and tasks; disk management; real time implementation; multiprocessor systems.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: COMP ENG 3HB3

#### COMP ENG 4HF3 COMPILER DESIGN AND IMPLEMENTATION

Lexical analysis; scanner construction; syntax analysis and syntax-directed translation; compiler compilers; intermediate code generation; code generation and optimization.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration in Level IV Computer Engineering or Computer Science

Cross-list: COMP SCI 4TB3

Enrolment is limited.

## COMPUTER ENGINEERING...

**Courses** If no prerequisite is listed, the course is open.

#### COMP ENG 2HA3 DIGITAL CIRCUITS

Number systems; Boolean algebra, switches, logic gates, simplification of Boolean functions, combinational logic, flipflops, analysis and design of clocked sequential circuits.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration in a programme in Computer Engineering or Electrical Engineering or Engineering Physics or Physics

**COMP ENG 4JA4 THESIS PROJECT**

An experimental investigation and design project to be carried out by the student, to test initiative, grasp of the subject and capacity for independent work.

Both terms

Prerequisite: Registration in Level IV of Computer Engineering or Level V of Computer Engineering and Management

Antirequisite: COMP SCI 4ZP6

**COMP ENG 4KC3 SIMULATION AND OPTIMIZATION II**

Analog IC and system simulation; advanced optimization techniques; design centring, tolerancing and tuning; use of professional CAD software; VLSI and MMIC applications.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: COMP ENG 3KB3

**COMP ENG 4MA3 COMPUTER COMMUNICATION NETWORKS**

Modern communication networks; switching methods; open systems interconnection architecture; design of communication subnetworks; local and metropolitan area networks; communication protocols; Fiberoptic systems; integrated services digital networks.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3AA3

**COMP ENG 4WA3 OPERATING SYSTEMS**

Concepts of operating systems; process coordination, memory management, file systems; introduction to distributed systems and computer networks.

Two lectures, one tutorial; second term

Prerequisite: COMP ENG 2YA3 or COMP SCI 2MD3 and 3MG3, and registration in a Computer Engineering programme.

Antirequisite: COMP SCI 3MH3 and COMP ENG 3WA3

**ELECTRICAL ENGINEERING ...****ELEC ENG 2BA3 ELECTRICAL SCIENCE**

Electrostatic fields; Coulomb's Law, electric flux, potential; capacitance; conductors and dielectrics, polarization; magnetic fields; magnetic flux, magnetic circuits, forces and torques; energy concepts; inductance.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: MATH 1H05, 1N06, PHYSICS 1E03, and registration in a programme in Computer Engineering or Electrical Engineering

**ELEC ENG 2DA3 CIRCUITS AND SYSTEMS I**

Mesh and nodal analysis of networks; transient response; steady-state response for sinusoidal inputs using phasors; power in AC circuits; network theorems; dependent sources; transformers; polyphase circuits.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: MATH 1H05, 1N06, PHYSICS 1E03, and registration in a programme in Computer Engineering or Electrical Engineering

**ELEC ENG 2FA3 ELECTRONICS I**

Diodes, bipolar junction transistors, field effect transistors, operational amplifiers: principles of operation; electrical characteristics; circuit models; basic application circuits.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 2BA3 and 2DA3

**ELEC ENG 3AA3 TELECOMMUNICATIONS SYSTEMS I**

Introduction to modern communication systems; data networks, protocol architectures, switching methods, physical communications, amplitude modulation, angle modulation, generation of AM and FM, digital modulation.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 3DB3

**ELEC ENG 3BB3 ELECTROMAGNETIC FIELDS AND WAVES**

Scalar and vector potential fields; Maxwell's equations, boundary conditions, electromagnetic energy and Poynting's theorem, transmission lines; waves.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2BA3

**ELEC ENG 3CA3 FEEDBACK CONTROL SYSTEMS I**

Models of physical systems; transfer functions and block diagrams, characteristics of feedback systems, frequency response, Nyquist criterion for stability.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ELEC ENG 2DA3 and registration or credit in ELEC ENG 3DB3

**ELEC ENG 3DB3 CIRCUITS AND SYSTEMS II**

Introduction to discrete time signals and systems: z-transforms, discrete and continuous time convolution, frequency response in discrete time systems, Fourier series, Fourier transforms, two-port networks.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2DA3

**ELEC ENG 3FB3 ELECTRONICS II**

Diodes, transistors, operational amplifiers: dynamic operation; dynamic circuit models; multitransistor circuits; frequency response and switching speed; negative feedback; computer software for electronic circuit analysis.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2FA3

**ELEC ENG 3FC3 ELECTRONICS III**

Non-linear operational amplifier circuits; signal generation; active filters; power amplifiers; power supplies; A/D and D/A conversion; analog multiplexers, sample and hold.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 3FB3

**ELEC ENG 3NA3 AC POWER CONCEPTS**

Polyphase circuits; transformers; voltage control and regulation; introduction to polyphase machines; synchronous generators and motors, squirrel-cage induction motors; applications to small industrial plants.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 2BA3 and 2DA3

**ELEC ENG 3SA3 SMALL MOTORS AND DRIVES**

Small motors; direct current, single-phase induction, wound rotor induction, hysteresis, universal, stepper and permanent magnet motors. Elementary speed control techniques.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: Registration or credit in ELEC ENG 3NA3

**ELEC ENG 4AB3 COMMUNICATION SYSTEMS II**

Communication systems in noisy and imperfect channels; random processes; noise in CW modulation systems including AM, DSBSC and SSB; digital signals and digital communications, multiplexing; technology issues.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3AA3, 3BB3 and STATS 3X03

**ELEC ENG 4AC3 DIGITAL COMMUNICATIONS**

Fundamental limits on performance; detection and estimation; digital modulation techniques; error control coding.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ELEC ENG 3AA3, 4AB3 and MATH 3K03

**ELEC ENG 4CB3 FEEDBACK CONTROL SYSTEMS II**

Design and compensation of control systems using frequency response as well as s-plane methods; Controllability and observability; state variable feedback; asymptotic observers; design of digital control systems; nonlinear systems analysis.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3CA3

**ELEC ENG 4EA3 DIGITAL SIGNAL PROCESSING**

Discrete time systems; z-transforms; Fourier transforms; digital filters; effects of finite register length; least squares filters; matched filters.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ELEC ENG 3AA3 and 3DB3

**ELEC ENG 4FD3 ELECTRONICS IV**

Integrated circuits: fabrication technologies; design rules; passive and active components; analog and digital circuit design principles; amplifier and logic circuit limitations; computer software aids.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3FC3

**ELEC ENG 4JA4 THESIS PROJECT**

An experimental investigation and design project to be carried out by the student, to test initiative, grasp of the subject, and capacity for independent work.

Both terms

Prerequisite: Registration in Level IV of Electrical Engineering or Level V of Electrical Engineering and Management

**ELEC ENG 4NB3 POWER TRANSMISSION AND DISTRIBUTION**

Transmission lines and cables; transformers and distribution stations; power flow control; voltage control; generation system economics; simulations.

Two lectures, one tutorial, one lab (three hours) every other week

Prerequisite: ELEC ENG 3BB3 and 3NA3

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### ELEC ENG 4QA3 TECHNICAL WRITING AND ORAL COMMUNICATION

Writing for, and speaking to, technical and management audiences: resumes, letters of inquiry, technical correspondence, technical description and definition; writing instructions; preparing audiovisual aids.

One lecture, one seminar, one tutorial (three hours); first term

Prerequisite: Registration in Level IV of Computer Engineering or Electrical Engineering, and registration in COMP ENG 4JA4 or ELEC ENG 4JA4

### ELEC ENG 4RA3 TRANSMITTING AND RADIATING SYSTEMS

Principles of transmission lines, matching and Smith charts; waveguides and resonant cavities; antenna radiation; dipole antennas; antenna arrays.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3BB3

### ELEC ENG 4SB3 POWER ELECTRONICS

Power circuits with switches; basic rectifier circuits; commutation; trijunctions; inverters; choppers; inverter control.

Two lectures, one tutorial, one lab (three hours) every other week; first term

Prerequisite: ELEC ENG 3FB3

### ELEC ENG 4UA3 BIOMEDICAL ELECTRONIC INSTRUMENTATION

Generation and nature of bioelectric potentials; electrodes and other transducers; principles of instrumentation; electrical safety; neuromuscular and cardiovascular instrumentation; ultrasonics and other medical imaging.

Two lectures, one tutorial, one lab (three hours) every other week; second term

Prerequisite: ELEC ENG 3FB3 or ENGINEER 3N03 or PHYSICS 3B06

## ENGINEERING (GENERAL)

### Department Note:

Enrolment in these courses by students in programmes other than Engineering, Engineering and Society or Engineering and Management may be limited.

### Courses *If no prerequisite is listed, the course is open.*

#### ENGINEER 1A00 SAFETY TRAINING

Introduction to safety guidelines at McMaster University, acceptable safety conduct and positive safety attitudes and practices in laboratories and Workplace Hazardous Materials Information System (WHMIS).

Two hours, first week; first term

Prerequisite: Registration in an Engineering programme

THIS COURSE MUST BE PASSED BEFORE REGISTERING IN LEVEL II ENGINEERING.

#### ENGINEER 1C04 ENGINEERING DESIGN AND COMMUNICATION

Graphical, written and oral communication in the context of engineering design. The engineer and society. Design projects by individuals and groups, design skills workshops.

Two lectures, one graphics lab (three hours), one design lab (two hours); first term

Prerequisite: Registration in an Engineering programme

#### ENGINEER 1D04 ENGINEERING COMPUTATION

Problem solving using computational techniques. The development of algorithms and their application using a structured computer language to solve problems in analysis, design and elementary optimization. Software packages.

Three lectures, one tutorial (two hours); second term

Prerequisite: Registration in an Engineering programme

Antirequisite: COMP SCI 1MA3

#### ENGINEER 2C03 ELECTRICAL CIRCUITS AND MEASUREMENTS

Electrostatics and applications, electrical quantities and circuit elements, Kirchhoff's laws and network theory; transient response of circuits, simple measurement devices and transducers; characteristics of motors.

Two lectures, one lab or tutorial; second term

Prerequisite: PHYSICS 1E03, and registration in MATH 2M06, or MATH 2P04 and 2Q04

#### 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 or second term

Prerequisite: Completion of at least 12 units of Level I Chemistry, Mathematics or Physics

Antirequisites: ENGINEER 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 2S03 MECHANICS FOR ELECTRICAL ENGINEERING

Three dimensional statics. Equivalent force systems in statics and dynamics. Three dimensional and planar kinematics. Principles of mechanics: momenta, work and energy. Dynamics of particles and planar motion of solid bodies.

Three lectures; first term

Prerequisite: PHYSICS 1D03 and registration in any programme in Electrical Engineering

### ENGINEER 2V04 THERMODYNAMICS

An introduction to the principles of macroscopic, microscopic and statistical thermodynamics and the application of these principles to engineering.

Two lectures; both terms

Prerequisite: CHEM 1A06 or 1E03 and credit or registration in MATH 2M06, or MATH 2P04 and 2Q04

### 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

Antirequisites: ENGINEER 2O03, 3R03, MATLS 3P03

### ENGINEER 4A03 ENGINEERING AND SOCIAL RESPONSIBILITY

The historical development of the engineering profession's concern for social responsibility. Engineering as a cultural activity. The scope and limitations of engineering ethics. The role of the engineering profession in the social control of technological change.

One lecture, one tutorial, one seminar; second term

Prerequisite: Registration in Level III or above in any Engineering programme except Engineering and Society

### ENGINEER 4B03 ENGINEERING ECONOMICS

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 or students registered in Engineering and Management programmes.

### ENGINEER 4C03 REAL-TIME COMPUTER INTERFACING

Organization of real-time computers; instrumentation and interfacing for data acquisition and control; computer communication and local area networks; diagnostics for real-time operations.

Two lectures, one lab (three hours); first term

Prerequisite: Registration in Level IV of Manufacturing Engineering

Antirequisite: COMP ENG 3HB3 or PHYSICS 4D06



**ENGINEER 4H03 ENGINEERING: ITS HISTORY, PHILOSOPHY AND INFLUENCE ON CIVILIZATION**

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. Two lectures, one tutorial (two hours); second term  
Prerequisite: Registration in Level III, IV, or V of any Engineering programme except Engineering and Society

**ENGINEER 4J03 MATERIALS FABRICATION**

Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. Processing methods for a wide range of materials, including metals, ceramics and plastics. The analytical basis for understanding and optimizing materials processes. Exercises in mathematical modelling and the use of software packages to optimize processes. Three lectures; first term  
Prerequisite: MECH ENG 3A03 or MATLS 3P03

**ENGINEER 4U03 UNIT OPERATIONS AND PROCESSES IN ENVIRONMENTAL ENGINEERING**

Offered jointly by the Departments of Chemical Engineering and Civil 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); first term  
Prerequisite: CHEM ENG 2O04 or 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 any programme in the Faculty of Engineering or any Honours or Major 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**

To be appointed

**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 section *Faculty of Engineering* in this calendar. These programmes lead to the B.Eng.Society degree.

**Operating Committee, as of July 1, 1995:**

**Programme Director**

H.M. Jenkins

- M. Shoukri (*Dean of Engineering*)
- R.G. Drysdale (*Associate Dean of Engineering*)
- D. Gayme (*Mechanical Engineering and Society, Student*)
- K. Groen (*Mechanical Engineering and Society, Student*)
- A.A. Harms (*Engineering Physics*)
- S. Haykin (*Electrical and Computer Engineering*)
- R. Hendriks (*Civil Engineering and Society, Student*)
- R.C. Hudspith (*Mechanical Engineering*)
- R.M. Korol (*Civil Engineering*)
- T.E. Marlin (*Chemical Engineering*)
- S. Panagiotou (*Philosophy*)
- M. Pazuki (*Mechanical Engineering and Society, Student*)
- L. Pho (*Electrical Engineering and Society, Student*)
- D.S. Wilkinson (*Materials Science and Engineering*)

**Courses If no prerequisite is listed, the course is open.**

**ENGSOCTY 2X03 INQUIRY IN AN ENGINEERING CONTEXT I**

Inquiry seminars are non-disciplinary courses that develop an approach to the study of issues of public concern. In terms of the design process, inquiry focuses on the problem definition stage, in which formulating questions, researching underlying issues, and analyzing opposing arguments are essential. The first seminar will involve teaching the students how to use the university and community resources in research, how to write a research paper, and how to express ideas orally. One lecture, one tutorial, one seminar; first term  
Prerequisite: Registration in an Engineering and Society programme

**ENGSOCTY 2Y03 CASE STUDIES IN THE HISTORY OF TECHNOLOGY**

History and philosophy of technology, from antiquity to modern times, with a special emphasis on the cultural aspects of technology, are addressed on a case study basis. Two lectures, one tutorial; second term  
Prerequisite: Registration in an Engineering and Society programme

**ENGSOCTY 3X03 INQUIRY IN AN ENGINEERING CONTEXT II**

This inquiry seminar builds on the skills developed in the first seminar, focusing on a specific issue related to the role of engineering and technology in society. The seminar will be devoted to the study of one topic such as: automation and employment, technology and the quality of life, the deteriorating environment, or the information society. Students will focus on specific aspects and share their findings in a seminar format. One lecture, one seminar (two hours); second term  
Prerequisite: ENGSOCTY 2X03

**ENGSOCTY 3Y03 THE CULTURE OF TECHNOLOGY**

A study of the nature and structure of technology, the nature of culture, and the role and place of different groups, including engineers, in a culture dominated by technology. One lecture, one tutorial, one seminar; first term  
Prerequisite: ENGSOCTY 2Y03

**ENGSOCTY 3Z03 ENVIRONMENTAL STUDIES**

Course covers aspects of environmental studies such as: environmental assessment, energy and elemental cycles, sustainable development, solid and hazardous waste management, air and water quality control, and environmental legislation. Two lecture, one tutorial; second term  
Prerequisite: Registration in Level III of an Engineering and Society Programme or the Honours Geography and Environmental Science (B.Sc.) Programme

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### 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. One lecture, one seminar (two hours); two terms  
Prerequisite: ENGSOCTY 3X03

### ENGSOCTY 4Z03 THE SOCIAL CONTROL OF TECHNOLOGY

The dominant mechanisms of the social control of technology will be studied, with a specific emphasis on the role of the engineering profession. Includes an examination of assessment methods and the role of ethics as one approach to social responsibility in engineering. One lecture, one tutorial, one seminar; one term  
Prerequisite: ENGSOCTY 3Z03

## ENGINEERING PHYSICS

### Faculty as of January 15, 1996

#### Chair

P. Mascher

#### Professors Emeriti

John A. Davies/B.A., M.A., Ph.D. (Toronto), F.R.S.C., F.D.R.S.  
Terence J. Kennett/B.Sc., M.Sc., Ph.D. (McMaster)  
John S. Kirkaldy/B.Sc., M.A.Sc., (British Columbia), Ph.D. (McGill), F.R.S.C., F.A.S.M., P.Eng.

#### Professors

Edward A. Ballik/B.Sc. (Queen's), D.Phil. (Oxford), P.Eng.  
Jen-Shih Chang/B.Edu.Eng., B.Eng., M.Eng. (Musashi Inst. of Tech.), Ph.D. (York)  
Archie A. Harms/B.Sc. (British Columbia), M.Sc.Eng., Ph.D. (Washington), P.Eng.  
Harold K. Haugen/B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)  
Derek C. Houghton/B.Sc. (Birmingham), Ph.D. (Cambridge)/part-time  
David P. Jackson/B.Sc., M.A., M.A.Sc., Ph.D. (Toronto)/part-time  
Krish V.S. Krishnan/B.Tech. (Madras), M.S., Ph.D. (Rochester)/part-time  
John G. Simmons/B.Sc. (London), M.Sc. (Temple University), Ph.D., D.Sc. (London), BNR/NSERC Chair in Microelectronic and Optoelectronic Materials and Devices  
Anthony J. Spring Thorpe/B.Sc., Ph.D. (Sheffield)/part-time  
David A. Thompson/B.Sc., Ph.D. (Reading) C.Eng

#### Associate Professors

Alexander A. Berezin/B.Sc., M.Sc., Ph.D. (Leningrad State)  
Daniel T. Cassidy/M.Sc. (Queen's), B.Eng., Ph.D. (McMaster), P.Eng.  
Sylvain Charbonneau/B.Sc., M.Sc., (Ottawa), Ph.D. (Simon Fraser)/part-time  
James S. Forster/B.Eng., Ph.D. (Liverpool), part-time  
William J. Garland/B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.  
Thomas E. Jackman/B.Sc., M.Sc., Ph.D. (Guelph)/part-time  
Paul E. Jessop/B.Sc. (Waterloo), M.A., Ph.D. (Harvard)  
Adrian H. Kitai/B.Eng. (McMaster), Ph.D. (Cornell), P.Eng.  
Hui Chun Liu/B.Sc. (Lanzhou), M.Sc., Ph.D. (Pittsburgh), part-time  
Peter Mascher/M.Eng., Ph.D. (Technical University of Graz), P.Eng.  
Sean McAlister/B.Sc., M.Sc., (Natal), Ph.D. (Cambridge)/part-time  
Michael S. Miigram/B.A.Sc., M.Sc., Ph.D. (Toronto)/part-time  
L. David Pengelly/B.A.Sc. (Toronto), M.Sc., Ph.D. (McGill), P.Eng.  
John S. Preston/B.Eng. (McMaster), M.Sc., Ph.D. (Toronto), P.Eng.  
Klaus F. Schoepf/Dipl. Phys, Ph.D. (Innsbruck)/part-time

#### Assistant Professor

J.D. Huizinga/B.Sc., M.Sc., Ph.D. (Groningen, The Netherlands)/part-time

### COURSES If no prerequisite is listed, the course is open.

#### ENG PHYS 2A03 ELECTRICAL SCIENCE I

An introduction to electricity and magnetism for Engineering Physics students. Two lectures, one tutorial, one lab (three hours), every other week; first term  
Prerequisite: PHYSICS 1E03, and credit or registration in MATH 2Q04

#### ENG PHYS 2E04 ELECTRICAL SCIENCE II

Analysis of ac circuits and ac power. Maxwell's equations and electromagnetic theory. Introductory modern physics. Three lectures, one tutorial, one lab (three hours), every other week; second term  
Prerequisite: Registration or credit in ENG PHYS 2A03

#### 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, carrier drift and diffusion; doped semiconductors; non-equilibrium carrier effects; optical properties of semiconductors. Two lectures, one tutorial, one lab (three hours), every other week; second term  
Prerequisite: ENG PHYS 2A03 and 2E04 or PHYSICS 1E03 and either MATH 2M06 or MATH 2P04 and 2Q04; or PHYSICS 2B06

#### ENG PHYS 3003 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: MATH 2M06, or MATH 2P04 and 2Q04, any of which may be taken concurrently

#### ENG PHYS 3W04 ACQUISITION AND ANALYSIS OF EXPERIMENTAL INFORMATION

A systems approach to measurement in which synthesis of topics such as Fourier transforms, signal processing and enhancement, data reduction, modelling and simulation is undertaken. Two lectures; both terms  
Prerequisite: Credit or registration in MATH 3C06 or 3C03 and 3D03

#### ENG PHYS 3X03 HUMAN PHYSIOLOGY

Basic introduction and working knowledge of the human body. Includes study of the cellular level of organization. Three lectures; second term  
Prerequisite: Completion of a minimum of 30 units above Level I in any Engineering or Science Programme  
Antirequisite: BIOLOGY 3U03, 3U03, 3U06 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 thermal hydraulics; 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. Two lectures one tutorial; 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. Two lectures, one tutorial; 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.

Two lectures, one tutorial; first term

Prerequisite: PHYSICS 3N03, or ENG PHYS 3E03

**ENG PHYS 4H06 SPECIAL STUDIES IN ENGINEERING PHYSICS**

A special programme of studies to be arranged by mutual consent of the professor, departmental chair, and the student. A student elects to work with a professor carrying out literature surveys, experiments, theoretical investigations, etc. A written report is required.

Two tutorials, one lab (three hours); both terms

Prerequisite: Registration in final level of an Engineering Physics programme and a C.A. 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

Prerequisite: Registration in Level IV or V of any programme in Engineering or Physics

**ENG PHYS 4L03 NUCLEAR REACTOR THERMALHYDRAULICS**

Introduction to two phase flow and nuclear reactor thermalhydraulics systems. Condensation and boiling phenomena and heat transfer mechanisms. Two phase flow apparatus and diagnostics techniques. Modelling of two phase flow by homogeneous and separated flow models.

Two lectures, one lab; second term

Prerequisite: CHEM ENG 2O04 or 3O04 or ENG PHYS 3O03 or MECH ENG 3O04

**ENG PHYS 4N03 PRINCIPLES OF FUSION ENERGY**

Fusion phenomenon 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; first 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 electro-optics; solid state electronics; nuclear engineering. Two labs (three hours); both terms

Prerequisite: Registration in Level IV Engineering Physics or Engineering Physics and Management

**ENG PHYS 4Z03 SEMICONDUCTOR DEVICE PHYSICS**

Physical, chemical and metallurgical processes for fabrication of modern semiconductor devices. Doping, chemical vapour deposition, oxidation, diffusion, epitaxy, implantation, ion etching, metal and dielectric deposition.

Two lectures, one tutorial (two hours); second term

Prerequisite: Credit or registration in ENG PHYS 4E03

**PHYSICS 3B06 ELECTRONICS**

Network theory and filters, semiconductor devices, amplifier circuits, D.C. power supplies, integrated circuits, operational amplifiers and digital circuits.

Two lectures; both terms; one lab (two hours); both terms

Prerequisite: ENG PHYS 2A03 and 2E04, or PHYSICS 2B06

**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); both terms

Prerequisite: ENG PHYS 2A03 and 2E04, or PHYSICS 2B06

Antirequisite: COMP ENG 3HB3, PHYSICS 4DA3, 4DB3

**ENGLISH****Faculty as of January 15, 1996****Chair**

Donald C. Goellnicht

**Professors Emeriti**

Alwyn Berland/M.A. (Chicago), M.Litt. (Cambridge.)  
 Andrew W. Brink/B.A., M.A. (Toronto), Ph.D. (London)  
 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)  
 W.J.B. Owen /M.A. (New Zealand and Oxford), Ph.D. (Wales), D.Litt. (McMaster), F.R.S.C.  
 F. Norman Shrive/C.D., B.A. (McMaster), M.A. (Toronto), Ph.D. (Queen's)

**Professors**

Maqbool Aziz/B.A., M.A. (Punjab), D.Phil. (Oxford)  
 Carl P.A. Ballstadt/B.A., M.A. (Western), Ph.D. (London)  
 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)  
 Thomas H. Cain/B.A., M.A. (Toronto), Ph.D. (Wisconsin)  
 Joan Coldwell/B.A., M.A. (London), Ph.D. (Harvard)  
 John Ferns/B.A., M.A. (Oxford), Dipl.Ed. (Nottingham), M.A., Ph.D. (Western)  
 Antony Hammond/B.A. (New Zealand), M.A., Ph.D. (Auckland)  
 Brian John/B.A., M.A., Dipl.Ed., Ph.D. (Wales)  
 James King/B.A. (Toronto), M.A., Ph.D. (Princeton), F.R.S.C.  
 Laurel A. Means/B.A., M.A. (Arkansas), M.A., Ph.D. (Toronto)  
 Richard E. Morton/B.A. (Wales), B.Litt. (Oxford)  
 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)  
 Ronald W. Vince/ B.A. (McMaster), M.A. (Rice), Ph.D. (Northwestern)  
 Chauncey D. Wood/A.B. (Union College), M.A., Ph.D. (Princeton)

**Associate Professors**

Joseph Adamson/B.A. (Trent), M.A., Ph.D. (Toronto)  
 David L. Clark/B.A., M.A., Ph.D. (Western)  
 James Dale/B.A., M.A., Ph.D. (Cambridge)  
 Jeffery Donaldson/B.A., M.A., Ph.D. (Toronto)  
 Donald C. Goellnicht/B.A. (Queen's), M.A., Ph.D. (McMaster)  
 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)  
 Norman Rosenblood/B.A. (Western), M.A. (McMaster), Ph.D. (Pittsburgh)  
 Anne Savage/B.A. (Calgary), Ph.D. (London)  
 Joseph T. Sigman/B.A. (King's College, Wilkes-Barre), M.A., Ph.D. (Pennsylvania)  
 Mary Silcox/B.A. (Western), M.A., Ph.D. (Queen's)  
 Peter Walmsley/B.A., M.A. (Toronto), Ph.D. (Cambridge)  
 Lorraine M. York/B.A., M.A., Ph.D. (McMaster)

**Assistant Professors**

Sylvia Bowerbank/B.A. (McMaster), B.Educ. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)  
 Roger L. Hyman/B.A. (York), M.A., Ph.D. (Toronto)

**Associate Member**

John R. Roy/(Director, Geriatric Psychiatry, Chedoke-McMaster Hospital)  
 M.B., Ch.B., F.R.C.P. (Glasgow and Edinburgh), M.R.C.P. (Psychiatry), F.R.C.P. (C)

**Department Notes:**

1. The following are courses open as electives to students registered in Level II and above of any university programme.

ENGLISH 2C03	Contemporary Canadian Fiction
ENGLISH 2D03	Biblical Traditions in Literature
ENGLISH 2E03	Twentieth-Century British Literature
ENGLISH 2F03	Studies in American Literature
ENGLISH 3A03	Techniques of Expository Writing
ENGLISH 3B03	Psychoanalytic Approaches to Literary Texts
ENGLISH 3E03	Shakespeare: Selected Plays

ENGLISH 3F03	Creativity and Human Interaction
ENGLISH 3HH3	Topics in Poetry
ENGLISH 3II3	Topics in Prose
ENGLISH 3P03	Modern Drama in English
ENGLISH 3XX3	Topics in Drama
ENGLISH 3Z03	Contemporary Canadian Poetry

Students may also wish to apply to the Departmental Counsellor for permission to take other Level II and III English courses.

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 a 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

Prerequisite: OAC English 1

#### ENGLISH 2A06 BRITISH LITERATURE

A chronological survey of British Literature. One Shakespeare play will be included.

Two lectures, one tutorial; two terms

Prerequisite: Registration in a programme in English or permission of the Department

#### 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 Department

#### 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 2D03 BIBLICAL TRADITIONS IN LITERATURE

A study of the influence of the Bible on Western literature, especially English. Approaches may include the examination of symbolism, imagery, typology, doctrinal themes and narrative structures.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: COMP LIT 2D03

#### ENGLISH 2E03 TWENTIETH-CENTURY BRITISH LITERATURE

A study of selected works of twentieth-century British Literature with an emphasis on the historical, intellectual, ideological and aesthetic contexts.

Three lectures; one term

Prerequisite: Registration in Level II and above

*Not available to students with credit or registration in ENGLISH 2I06 or 3H06.*

#### ENGLISH 2F03 STUDIES IN AMERICAN LITERATURE

A study of some of the most important writers who developed American literature as a distinctive mode of writing in English.

Three lectures; one term

Prerequisite: Registration in Level II and above

*Not available to students with credit or registration in ENGLISH 2H06.*

#### ENGLISH 2G06 CANADIAN LITERATURE

Major aspects of the development of Canadian literature from the late 18th century to the mid-20th century. French-Canadian work in translation will be used for comparative purposes.

Three lectures; two terms

Prerequisite: Registration in a programme in English or permission of the Department

#### 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 Department

#### 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 Department

Antirequisite: ENGLISH 3H06

#### ENGLISH 3A03 TECHNIQUES OF EXPOSITORY WRITING

A course designed to provide practical training in the writing of clear, coherent, persuasive prose. Although there will be some study of contemporary prose models, the main work of the course will consist of brief but frequent writing assignments.

(Students whose writing problems are remedial in nature should not attempt this course.)

Two hours (lecture), one hour (tutorial); one term

Prerequisite: Registration in Level II and above

*Enrolment is limited.*

#### 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 Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 4E06

#### 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: ART HIST 3CC3, DRAMA 3H03, and COMP LIT 3L03

#### ENGLISH 3E03 SHAKESPEARE: SELECTED PLAYS

A study of a representative selection of plays.

Three lectures; one term

Prerequisite: Registration in Level II and above

Not available to students with credit or registration in ENGLISH 3K06.

#### ENGLISH 3F03 CREATIVITY AND HUMAN INTERACTION

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: 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 Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 4B06

#### ENGLISH 3H06 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 Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 2I06

**ENGLISH 3HH3 TOPICS IN POETRY**

Previous topics include: Contemporary British Poetry, Women Poets of the 20th century. 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 3I03 STUDIES IN 16TH-CENTURY LITERATURE**

A study of the prose and poetry of the first phase of the English Renaissance, with some emphasis on the work of More and Sidney, and subsidiary reading of continental writers influential in England, such as Petrarch, Pico, Erasmus, Castiglione, Machiavelli and Montaigne.

Three lectures; one term

Prerequisite: Registration in Level III or IV of a programme in English or permission of the Department

Cross-list: COMP LIT 3J03

**ENGLISH 3I13 TOPICS IN PROSE**

Previous topics include: William Faulkner, James Joyce. 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 Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 2V06/2VV6

**ENGLISH 3K06 SHAKESPEARE**

An extensive critical reading and discussion of selected plays.

Three lectures; two terms

Prerequisite: Registration in Level III or IV of a programme in English or permission of the Department

**ENGLISH 3L06/3LS6 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 Department

Antirequisite: ENGLISH 3D03 or 3DD3

*Note: Students who wish to take the above course in fulfillment of the language requirement must register in it as ENGLISH 3LS6 in which case it may not be used to fulfil the English area requirement.*

**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 Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 4L03

**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 Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 4M03

**ENGLISH 3N06 THE BRITISH NOVEL**

This course, in assessing and analyzing approximately 12 novels, will trace the history of English fiction to the 20th century. The course focuses on the varieties of narrative forms, while also exploring the intellectual, cultural and psychological contexts of fiction.

Three lectures; two terms

Prerequisite: Registration in Level III or IV of a programme in English or permission of the Department

Antirequisite: ENGLISH 4N06

**ENGLISH 3P03 MODERN DRAMA IN ENGLISH**

A representative selection of plays by modern British, Irish and North American dramatists will be examined in order to study the relationship between drama and society in our age, as well as conventions and experiments in the contemporary theatre.

Three lectures; one term

Prerequisite: Registration in Level II and above

**ENGLISH 3Q03 THE HISTORY AND THEORY OF CRITICISM**

A survey of the main developments in the theory and practice of literary criticism from Plato to the early 20th century.

Three lectures; one term

Prerequisite: Registration in Level III or IV of a programme in English or permission of the Department

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 Level III or IV of a programme in English or permission of the Department. English 3Q03 is recommended.

Cross-list: COMP LIT 3QQ3

**ENGLISH 3T03 SPENSER**

The main work of the course will be a close study of *The Faerie Queene*, but *The Shepheardes Calendar*, *Epithalamion* and *Prothalamion* will also be read.

Three lectures; one term

Prerequisite: Registration in Level III or IV of a programme in English or permission of the Department

**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 Level III or IV of a programme in English or permission of the Department

**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 3Z03 CONTEMPORARY CANADIAN POETRY**

The development of Canadian poetry from the 1940's to the present. Parallel developments in French-Canadian poetry (studied in translation) will also be considered.

Three lectures; one term

Prerequisite: Registration in Level II and above

**ENGLISH 4X03 HONOURS ESSAY**

In consultation with members of the English Department, students will prepare an essay on an approved topic.

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. 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 4AC3 ARISTOPHANIC COMEDY AND LATER DRAMA**

A study of Aristophanic comedy and of some later European drama which follows the Aristophanic model—from Aristophanes and Plautus to Ionesco, Orlon and Stoppard.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4AM3 ANDREW MARVELL**

A study of Marvell's times and his place in them, as well as a critical study of the poems, using traditional and current approaches.

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 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, focussing 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 4CN3 BEYOND CANADIAN NATIONALISM**

Critical readings of selected major works that reflect the international outlook of some Canadian writers.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4CV3 REALISM AND THE AMERICAN CIVIL WAR**

A multi-media investigation of the influence of the American Civil War on American literature, music and art.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4CW3 FEMINIST LITERARY THEORY AND CANADIAN WOMEN POETS**

A discussion of several contemporary Canadian women poets from the perspective of feminist literary theory.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4DE3 STUDIES IN VICTORIAN FICTION: CHARLES DICKENS AND GEORGE ELIOT**

A critical reading of selected novels by Dickens and Eliot, with consideration of their development, their contribution to the novel as genre, and their insights into Victorian society and the modern world.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4DH3 D.H. LAWRENCE**

A study of selected works by D.H. Lawrence, focusing upon several novels with some attention to his shorter fiction, poetry and non-fictional prose.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4DV3 DREAMS, VISIONS AND ALLEGORY IN MIDDLE ENGLISH LITERATURE**

A study of the evolution of the modes of literary dreams, visions and allegory through texts inherited from classical culture and their development within the medieval world view.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4EC3 LITERATURE AND CULTURE OF THE LATER ELIZABETHAN COURT**

A study of some texts, portraiture and music by or associated with courtiers, and their deployment as instruments of political power or resistance to it.

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 18TH-CENTURY ENGLISH SATIRE**

Close readings of the satiric writings of Dryden, Swift and Pope, with attention to the nature and function of satire and its development from classical literature.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4EW3 THE ART AND THOUGHT OF EVELYN WAUGH**

An examination of the development of Waugh's fiction, with attention also given to his non-fictional prose in diaries and letters.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4FA3 FAUST IN DRAMA, OPERA, NOVEL AND FILM**

A study of the Faust myth, its origins and different expressions in various periods and media.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4FT3 THE FAIRY TALE**

A study of the fairy tale from the structuralist, psychoanalytic, and sociological points of view, concentrating on the tales of the Brothers Grimm in translation and considering the importance of fairy tales in acculturation and their symbolic significance.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4GF3 GENRE FICTION**

A study of examples from three genres rarely considered academically respectable (children's fiction, science fiction and the detective novel) in an attempt to examine the nature of genre fiction.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4GH3 THE POETRY OF GEORGE HERBERT**

Close readings of most of Herbert's English poems, with attention to the poetical and theological concerns of early 17th-century England.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4HF3 HEMINGWAY AND FAULKNER**

A study of selected novels of Hemingway and Faulkner, focussing primarily on psychological, racial and gender issues.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4HM3 HAWTHORNE AND MELVILLE**

An examination of selected works of the two most important novelists of the "American Renaissance". The focus will be the psychological import of certain insistent patterns of characterization, imagery, and themes.

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 4PT3 PSYCHOANALYTIC AND OTHER CRITICAL APPROACHES TO FICTION**

The application of psychoanalytic and other theories to several novels and short stories to explore the ways in which unconscious phantasy gives rise to and organizes such literary elements as conflict, character, symbol and form.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4QP3 19TH- AND 20TH-CENTURY QUÉBÉCOIS POETRY IN TRANSLATION**

An examination of the work of the major québécois poets of the last two centuries, beginning with the poetry of the land and ending with "poets of the revolution".

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4RN3 THE REGIONAL NOVEL IN THE EARLY NINETEENTH CENTURY**

A study of the regional novel with individual works by Maria Edgeworth, Jane Austen, Walter Scott, John Galt and J. Fenimore Cooper.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4SA3 THE LITERATURE OF SOUTHEAST ASIA**

A study of contemporary literature in English from Malaysia and Singapore. Readings will include the novel, short story and poetry.

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 is 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 slip is required.*

**ENGLISH 4WB3 WILLIAM BLAKE'S POETRY AND DESIGNS**

A study of the work of William Blake, his prose tractates, letters, poems, illustrations and visual designs.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4WC3 THE WITCHCRAFT CONTROVERSY IN PRINT AND ON STAGE, 1565-1656**

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 4WH3 WRITERS IN HOLLYWOOD**

The course will examine some of the relationships between literature and film by studying selected novels by William Faulkner, F. Scott Fitzgerald and Raymond Chandler, films based on these novels, and films for which these writers wrote the scripts.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4WN3 WOMEN AND NATURE IN CANADIAN LITERATURE**

A study of fiction and poetry by Canadian women, exploring some of the issues raised by the long tradition of identifying nature as female.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 4WP3 WAR AND PEACE IN LITERATURE**

A close study of selected literary works in English that focus on the experience of war and the search for peace, especially in relation to the American Civil War, the First and Second World Wars and the Vietnam War.

Seminar (two hours); one term

Prerequisite: Registration in Level IV of an Honours programme in English  
*Enrolment is limited. Departmental permission required.*

**ENGLISH 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

### Courses *If no prerequisite is listed, the course is open.*

#### ENVIR SC 1A06 INTRODUCTION TO ENVIRONMENTAL SCIENCE

Characteristics of the geosphere and biosphere and major environmental issues; earth composition, structure and tectonics, climate, hydrology, and geomorphology, atmospheric and environmental chemistry, ecosystems and population biology, and environmental toxicology. This course is specifically designed for students in Natural Science I, and those students in Social Sciences I who are planning on entering the B.A. Geography-Environmental Studies Programme.

Three lectures, or two lectures, one tutorial (three hours); two terms

Prerequisite: Registration in a Level I programme, or Level II of Honours Geography and Environmental Science, Honours Science (Complementary Studies Option), General Science, or permission of the course coordinator. An average of at least 75% in two Science, Mathematics, Geography or Environmental Science OAC's is strongly recommended.

#### 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 CHEM 2N03 and registration in Honours Science (Environmental Science Option) or a programme in Chemical Engineering

Antirequisite: CHEM 3A03, CHEM 2M05

#### ENVIR SC 4I03 MINERALS AND SOCIETY

Case studies of mineral structures and properties with implications of practical importance. Gem and other economic minerals; workplace and environmental hazards.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level IV Science or Engineering or Arts and Science

Cross-list: GEOLOGY 4I03

*Enrolment is limited.* However, students enrolled in a Geology programme, or Honours Science (Environmental Science Option) will be admitted. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

#### ENVIR SC 4W03 ENVIRONMENTAL ANALYSIS: A CASE HISTORY APPROACH

Geochemical analysis applied to environmental problems. Geophysical signatures of buried aquifers and hazardous waste. Biological techniques in environmental reconstruction and assessment. Geological hazards.

Three lectures; one term

Prerequisite: Registration in Level IV Science or Engineering or Arts and Science

Cross-list: GEOLOGY 4W03

*Enrolment is limited.* However, students enrolled in a Geology programme, or Honours Science (Environmental Science Option) will be admitted. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.

## FRENCH

### Faculty as of January 15, 1996

#### Chair

Madeleine Jeay

#### Professors Emeriti

Pierre-Marie Conlon/B.A., M.A. (Auckland), D. de l'U. (Paris), F.R.S.C.,  
W. Norman Jeeves/B.A. (Cambridge), L. è sL. (Bordeaux)  
Arthur W. Patrick/M.A. (Manitoba), D. de l'U. (Paris-Sorbonne)  
G. Derek West/B.A. (Oxford), Ph.D. (London)

#### 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)  
César Rouben/L ès S. (Paris-Sorbonne), B.A. (Sir George Williams),  
M.A., Ph.D. (McGill)

#### Associate Professors

Marie-Madeleine Ahmed/L. ès L., M ès L., D. de l'U (Paris-Sorbonne)  
William F. Hanley/B.A. (Toronto), M. ès L. (Paris-Sorbonne), D.Phil.  
(Oxford)  
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 Moyal/B.A. (McGill), M.A., Ph.D. (Toronto)  
Elaine Nardocchio/B.A. (St. Francis-Xavier), M.A. (Middlebury), Ph.D.  
(Laval)  
Brian S. Pocknell/ M.A. (Manchester), D. de l'U. (Paris-Sorbonne)  
Anna St. Leger Lucas/B.A. (Nottingham), M.A. Ph.D. (British Columbia)  
Gary A. Warner/B.A. (London), L. ès L., D. de l'U. (Caen)

#### Assistant Professors

Vincent A. Betti/B.A., L. ès L. (Laval)  
Suzanne Crosta/B.A., M.A. (McMaster), Ph.D. (Toronto)  
Jane A.C. Rush/B.A. (Toronto), M.A., Ph.D. (U.C.L.A.)  
John C. Stout/B.A. (British Columbia), Ph.D. (Princeton)

#### Lecturer

Daniel Simeoni/L. ès L., M. ès L. (Paris X), CAPES, D.E.A. (Paris VII)

#### Instructors

Hélène Gallier-Morgan, D.U.E.L., Lic. ès Lettres, Matrise ès Lettres,  
D.E.A. (Sorbonne)  
Pierre Hery/D.U.E.L. (Rennes), L. ès L., M.A. (Nanterre)/part-time  
Pauline Pocknell/B.A. (Manchester), B.Ed. (O.T.E.C.), M.A. (McMaster)/  
part-time  
François Rougêt/L. ès L., M.A., D.E.A., D. de l'U. (Paris X)/part-time  
Simone Venisse-Fam/L. ès L., M.A. (Paris-Sorbonne), Ph.D. (Montréal)/  
part-time

### Department Notes:

- The Department reserves the right to refuse admission to any of its language courses to a student who has, in the opinion of the Department, a level of competence unsuited to that course.
- Students should note that the Department has classified its language courses under the following categories:  
**Introductory Level Language Courses**  
FRENCH 1N06, 1NN6, 1Z06  
**Intermediate Level Language Courses**  
FRENCH 1A06, 2M06  
**Advanced Level Language Courses**  
FRENCH 2B03, 2BB3, 2C03, 2G03, 3C03, 3CC3, 3F03, 3GG3,  
3H03, 4A03, 4BB3
- French courses requiring registration in a programme in French are also available to students in programmes in which French is a required component. As with French programme students, the Department of French reserves the right to place students on a waiting list for limited enrolment course offerings.

### 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. All students must take the French Language Placement Test. The Département reserves the right to place students in the course most appropriate to their abilities or to refuse permission for them to register in a French course.

Antirequisite: FRENCH 2M06

#### FRENCH 1N06 INTENSIVE FRENCH GRAMMAR

A course designed to further the command of the written language. It is intended to be a review of basic grammar and will include intensive computer-aided drilling, vocabulary building and composition.

Four tutorials; two terms

Prerequisite: OAC French with a grade of less than 80 percent

Antirequisite: FRENCH 1NN6

All students must take the French Language Placement Test. The Department reserves the right to place students in the course most appropriate to their abilities or to refuse permission for them to register in a French course.



**FRENCH 1NN6 INTENSIVE FRENCH GRAMMAR**

A course designed to further the command of the written language. It is intended to be a review of basic grammar and will include intensive computer-aided drilling, vocabulary building and composition.

Four tutorials; two terms

Prerequisite: FRENCH 1Z06

Antirequisite: FRENCH 1N06

**FRENCH 1Z06 BEGINNER'S INTENSIVE FRENCH**

An intensive course for developing basic skills in both written and spoken French. The normal sequel to this course is FRENCH 1NN6.

Five hours (including lab practice); two terms

Antirequisite: OAC French. Not open to Francophones. Students with prior knowledge of the language, as determined by a placement test, may be required to take an appropriate alternative.

*Enrolment is limited.*

**FRENCH 2B03 FRENCH LANGUAGE PRACTICE I**

A course designed to improve competence in oral and written expression. Written proficiency includes the study of vocabulary, grammar and composition. The oral component will stress listening, comprehension and conversational proficiency.

Three lectures, one tutorial; one term

Prerequisite: FRENCH 1A06 or 2M06

Antirequisite: FRENCH 2A03 or 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 2A03 or 2C03

**FRENCH 2C03 FRENCH LANGUAGE PRACTICE: ORAL**

Development of conversational skills.

Three tutorials; one term

Prerequisite: FRENCH 1A06 or 2M06

Antirequisite: FRENCH 2B03 or 2BB3. Not available to Francophone students with native fluency.

*Enrolment is limited.*

**FRENCH 2D03 INTRODUCTION TO THE CIVILIZATION OF FRENCH CANADA**

The study of the socio-political, cultural, religious, and linguistic evolution of early French Canada, of modern Quebec, and of the French-Canadian diaspora.

Three lectures; one term

Prerequisite: FRENCH 1A06 or 2M06

**FRENCH 2E03 LITERATURE OF QUEBEC**

Selected novels, plays, and poems representative of the main currents of 20th-century Quebec literature.

Three lectures; one term

Prerequisite: FRENCH 1A06 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 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 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 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 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

Antirequisite: FRENCH 1A06

**FRENCH 2N03 INTRODUCTION TO THE CIVILIZATION OF FRANCE**

The study of contemporary France through a selection of texts and audiovisual materials.

Three lectures; one term

Prerequisite: FRENCH 1A06 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 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 2M06

**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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level

**FRENCH 3BB3 CONTEMPORARY QUEBEC THEATRE**

Contemporary experimental theatre, and representative playwrights such as Marcel Dube and Michel Tremblay.

Three lectures; one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level

**FRENCH 3C03 FRENCH LANGUAGE PRACTICE: WRITTEN**

Advanced grammar and composition; introduction to stylistics.

Two lectures; two terms

Prerequisite: FRENCH 2A03 or 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: One of either FRENCH 2A03 and 2G03 or 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.

Two tutorials; two terms

Prerequisite: FRENCH 2C03 or registration in Level III or IV programme in French. 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 3I03 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 and registration in Level III or IV of a programme in French

**FRENCH 3K03 18TH-CENTURY FRENCH LITERATURE I**

The early 18th century with emphasis on Montesquieu, Marivaux and Prevost, and on the early writings of Voltaire.

Three lectures; one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**FRENCH 3Q03 17TH-CENTURY FRENCH LITERATURE I**

A study of selected plays by Corneille, Moliere and Racine.

Three lectures; one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**FRENCH 3QQ3 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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**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: One of FRENCH 1A06 or 2M06

**FRENCH 4A03 FRENCH LANGUAGE PRACTICE**

Advanced stylistics and composition.

Two lectures, term one; one lecture, term two

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 and registration in Level III or IV of a programme in French

**FRENCH 4F03 TOPICS IN 18TH-CENTURY FRENCH LITERATURE**

Previous topics include: Voltaire. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level including FRENCH 3K03 or 3KK3, and registration in a programme in French

*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 and registration in Level III or IV of a programme in French

*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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

*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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**FRENCH 4LL3 TOPICS IN FRENCH AFRICAN AND CARIBBEAN FRENCH LITERATURES**

Previous topics include: Contemporary Writers. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level, including 3Z03, and registration in a programme in French

*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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**FRENCH 4N03 TOPICS IN THE FRENCH NOVEL**

Previous topics include: Emile Zola. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

*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: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**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, and registration in a programme in French  
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 trouveres, 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: Folktales of French Canada, Acadia, Women Writers of Quebec. Consult the Department concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

FRENCH 4U03 may be repeated, if on a different topic, to a total of six units.

**FRENCH 4X03 LINGUISTICS AND MODERN FRENCH LITERARY CRITICISM (FROM STRUCTURALISM TO SEMIOTICS)**

General linguistics applied to literary analysis. Includes narrative structures, pragmatics and sign theory.

Seminar (two hours); one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

**FRENCH 4Y03 TOPICS IN 20TH-CENTURY FRENCH LITERATURE**

Previous topics include: Women's Writing, The essay. Consult the Department concerning topic to be offered.

Seminar (three hours); one term

Prerequisite: One of FRENCH 1A06 or 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French

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****Faculty as of January 15, 1996****Chair**

S. Martin Taylor

**Associate Chair**

Pavlos S. Kanaroglou

**Professors Emeriti**

Andrew F. Burghardt/A.B. (Harvard), M.A., Ph.D. (Wisconsin)

R. Lloyd G. Reeds/M.A., Ph.D. (Toronto)

**Professors**

Brian T. Bunting/M.A. (Sheffield), Ph.D. (London)

John A. Davies/B.A. (Bristol), M.Sc. (McGill), Ph.D. (London)

John J. Drake/M.A. (Oxford), M.Sc., Ph.D. (McMaster)

John E. Eyles/B.A., M.Sc. (L.S.E.), Ph.D. (London)

Derek C. Ford/M.A., D.Phil. (Oxford), F.R.S.C.

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)

Leslie J. King/M.A. (New Zealand), Ph.D. (Iowa), F.R.S.C.

Kao-Lee Liaw/B.S. (National Taiwan), M.A. (Kansas State), Ph.D. (Clark)

S. Brian McCann/B.Sc. (Wales), Ph.D. (Cambridge)

Yorgos Y. Papageorgiou/Dipl. Arch. Eng. (National Technical, Athens), M.C.P., Ph.D. (Ohio State), D.Sc. (Louvain)/Professor of Economics

Wayne R. Rouse/B.Sc. (McMaster), M.Sc., Ph.D. (McGill)

S. Martin Taylor/B.A. (Bristol), M.A., Ph.D. (British Columbia)

Ming-ko Woo/M.A. (Hong Kong), Ph.D. (British Columbia)

**Associate Professors**

William P. Anderson/M.A., Ph.D. (Boston)

Vera Chouinard/B.A. (Western), M.A. (Toronto), Ph.D. (McMaster)

Carolyn H. Eyles/B.Sc. (East Anglia), M.Sc. Ph.D. (Toronto)

Pavlos S. Kanaroglou/B.Sc. (Athens), M.A., M.Sc., Ph.D. (McMaster)

**Assistant Professor**

Susan J. Elliott/M.A. Ph.D. (McMaster)

**Associate Members**

Donald C. Cole/(Clinical Epidemiology and Biostatistics) B.Sc., M.D. (Toronto), DOHS, FRCP (C), M.Sc. (McMaster)

Jonathan Lomas/(Clinical Epidemiology and Biostatistics), B.A. (Oxford), M.A. (Western), MAP (Toronto)

William A. Morris/(Geology), B.Sc. Ph.D. (Leeds)

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)

Norman F. White/(Psychiatry), M.D.C.M. (McGill), D.Psych. (McGill), F.R.C.P. (C) (Royal College)

**Instructional Assistants**

Walter Peace/M.A. (McMaster)

Susan Vajoczki/M.Sc. (McMaster)

**Department Notes:**

1. \* Indicates a Science course.

2. Students are advised that not all courses will be offered in every year.

**COURSES If no prerequisite is listed, the course is open.****GEOG 1B06 HUMAN GEOGRAPHY**

The spatial organization of people, their settlements and their activities. Topics range from global patterns of population and resources to individual spatial decisions.

Two lectures, one lab alternate weeks, one tutorial (one hour) alternate weeks; two terms

**GEOG 1C03\* CLIMATOLOGY**

An introduction to the global pattern of weather, climate, and surface waters and climate change.

Two lectures, one lab; one term

Antirequisite: GEOG 1A06

**GEOG 1G03\* GEOMORPHOLOGY**

An introduction to earth surface process and landforms, providing a basic understanding of the physical environment and its potential for use and abuse by humans.

Two lectures, one lab; one term

Antirequisite: GEOG 1A06

**GEOG 2A03 LOCATIONAL ANALYSIS**

Spatial location theory and spatial analysis methods as related to the siting of resource, manufacturing, and service activities.

Two lectures; one lab (two hours), one term

Prerequisite: GEOG 1B06

**GEOG 2B03 URBAN ECONOMIC GEOGRAPHY**

Economic-geographical analysis applied to urban problems at different scales of aggregation. Topics include urbanization, urban spatial structure, major urban externalities and urban size.

Three lectures; one term

Prerequisite: GEOG 1B06

**GEOG 2C03 CHINA: PEOPLE AND LAND IN TRANSITION**

Studies of the natural environment, cultural-historical setting, resources and economic development of China. Emphasis is placed upon the changing relationship between the people and the environment.

Three lectures, one term

**GEOG 2D03 URBAN HISTORICAL GEOGRAPHY**

The historical development of cities with particular reference to old world origins, and focusing on North America since 1850.

Two lectures, one lab (two hours); one term

**GEOG 2E03 CANADA**

The geography of Canada emphasizing the economic and social geography of regions and current development issues.  
Three lectures; one term

**GEOG 2F03\* EARTH'S SURFACE CLIMATES**

The surface heat and water balance of natural and man-modified landscapes.  
Two lectures, one lab (two hours); one term

Prerequisite: One of GEOG 1A06, 1C03 or ENVIR SC 1A06

**GEOG 2K03\* INTRODUCTION TO SOIL AND LAND USE STUDIES**

The composition, morphology, and environmental relationships of soils and their use and abuse by man.  
Three lectures; one term

Prerequisite: One of GEOG 1A06, 1G03, ENVIR SC 1A06, GEOL 1C03

**GEOG 2LL3\* GEOGRAPHIC INFORMATION PROCESSING**

An introduction to the use of the microcomputer for the illustration and statistical analysis of geographical data.  
Prerequisite: Registration in a Geography programme

Prerequisite: (Beginning in 1996-97) STATS 1CC3; registration in a Geography programme  
*Not offered in 1996-97.*

**GEOG 2N03\* APPLIED SPATIAL STATISTICS**

An introduction to the use of the micro-computer for geographical data analysis. Descriptive and inferential statistical methods specific to spatial data will be discussed.  
Two lectures; one lab (two hours); one term

Prerequisite: One of GEOG 2LL3, STATS 1CC3; registration in a Geography or Geology programme

**GEOG 2P03 THE UNITED STATES OF AMERICA**

The physical and economic geography of the United States.  
Three lectures; one term

**GEOG 2RR3 RESEARCH METHODS IN SOCIAL GEOGRAPHY**

An introduction to research methods in social geography. Emphasis is placed on the application of various methods to understanding human spatial behaviour.  
Two lectures, one lab (two hours); one term

Prerequisite: GEOG 1B06

Antirequisite: GEOG 2R03

**GEOG 2T03\* FLUVIAL GEOMORPHOLOGY**

The effects of moving water on the earth's surface: principles of sediment entrainment, fluvial flow, stream transport, and analysis of resulting landforms, such as terraces and deltas.  
Two lectures, one lab (two hours); one term

Prerequisite: One of GEOG 1A06, 1C03, 1G03, ENVIR SC 1A06, GEOLOGY 1A03, 1C03

**GEOG 2W03\* HYDROLOGY IN CANADA**

A discussion of fresh water resources, including both surface and ground-water.  
Three lectures; one term

Prerequisite: One of GEOG 1A06, 1C03, 1G03, ENVIR SC 1A06, GEOLOGY 1C03

**GEOG 2Y03 URBAN AND REGIONAL DEVELOPMENT**

Contemporary trends in urban and regional development, emphasizing debates on the causes of change and the policies used to address development problems.  
Two lectures; one tutorial (one hour); one term

Prerequisite: GEOG 1B06

**GEOG 3C03\* ENVIRONMENTAL HAZARDS**

Geological and man-induced hazards affecting settlements and the natural environment will be discussed.  
Two lectures, one lab; one term

Prerequisite: One of GEOG 2LL3, STATS 1CC3, ENGSOCTY 3Z03

**GEOG 3E03\* FIELD METHODS IN PHYSICAL GEOGRAPHY**

Field methods, including survey design, sampling, experiments, measurements, data collection, and presentation and the use and care of equipment.  
One lecture, one lab (three hours); one term

Prerequisite: One of GEOG 2LL3, STATS 1CC3 and a grade of at least C+ in one of ENVIR SC 1A06, GEOG 1A06, 1C03, 1G03

**GEOG 3EE3 FIELD STUDY IN HUMAN GEOGRAPHY**

Introduction to field study design, data collection methods and data processing. Offered in the summer following Level II. Details announced in January. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.  
Prerequisite: GEOG 2N03 or 2NN3 and permission of the Department

**GEOG 3F03\* PHYSICAL CLIMATOLOGY**

The physical basis of large scale climate and mechanisms of climatic change.  
Two lectures, one lab (two hours); one term

Prerequisite: GEOG 2F03, and either registration in a programme in the Faculty of Science or one of GEOG 2LL3, STATS 1CC3, COMP SCI 1MA3, 1MC3

**GEOG 3G03 POPULATION GROWTH AND DISTRIBUTION**

Facts, theories, and major issues about the growth and distribution of human population.  
Three lectures; one term

Prerequisite: GEOG 1B06

**GEOG 3I03\* PLANETARY AND LUNAR GEOLOGY AND GEOMORPHOLOGY**

The geology and surface morphology of planets and moons of the solar system, with particular reference to the rocky bodies. Comparative studies are emphasized.  
Three lectures; one term

Prerequisite: One of GEOG 1A06, 1C03, 1G03, ENVIR SC 1A06, GEOLOGY 1A03, 1C03 and successful completion of at least 12 units of Level II (or above) Science courses  
Cross-list: GEOLOGY 3I03

**GEOG 3J03\* RESOURCE MANAGEMENT**

A discussion of natural resource scarcity, resource allocation, preservation/conservation issues, models of resource management and resource policies in Canada.  
Two lectures, one lab; one term

Prerequisite: GEOG 2N03 or 2NN3; one of MATH 1A06, 1A03, 1C06, 1C03, 1M03

**GEOG 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 Japanese Studies programme

Cross-list: JAPANESE ST 3JJ3

**GEOG 3K03\* SOILS AND LAND USE IN CANADA**

The development of the major soil forms in Canada, their classification, capability and conservation. The application of soils studies to land use planning.  
One lecture; one tutorial; one lab (three hours); one term

Prerequisite: GEOG 2K03

**GEOG 3L03\* MULTIVARIATE ANALYSIS IN GEOGRAPHY**

Management and analysis of multivariate data sets in human and physical geography, with an emphasis on multiple regression.  
Two lectures, one lab (two hours); one term

Prerequisite: One of GEOG 2N03, ECON 2B03, SOCIOL 2Y03

**GEOG 3M03\* GLACIAL AND PERIGLACIAL GEOMORPHOLOGY**

The nature and development of glaciers, glacial landform systems and periglacial processes.  
Two lectures, one lab (two hours); one term

Prerequisite: GEOG 2T03

**GEOG 3N03\* GEOGRAPHICAL INFORMATION SYSTEMS**

Functionality and application of both raster-based and vector-based geographical information systems.  
Two lectures; one lab (two hours); one term

Prerequisite: GEOG 2N03 or 2NN3

Antirequisite: GEOG 3NN3

**GEOG 3O03\* EXPLANATION IN GEOGRAPHY**

The history of modes of explanation in geography, focusing on the application of the scientific model, and with an emphasis on the formulation of a research proposal.  
Two lectures, one lab (two hours); one term

Prerequisite: GEOG 2NN3 or 2N03

Prerequisite: GEOG 2NN3 or 2N03

**GEOG 3P03\* BIOGEOGRAPHY: ENVIRONMENTAL CHANGE AND THE BIOSPHERE**

Past, present and future natural and anthropogenic changes in the environment are examined in terms of their impact on plant and animal communities.  
Three lectures; one term

Prerequisite: One of GEOG 1A06, 1C03, 1G03, ENVIR SC 1A06, Level I

Biology, Level I GEOLOGY

**GEOG 3Q03 INDUSTRIAL GEOGRAPHY**

Principles underlying the locational decisions of manufacturing firms and the growth and decline of industrial regions, with examples from the Hamilton area.

Two lectures, one lab; one term

Prerequisite: GEOG 1B06 or ECON 1A06

**GEOG 3R03 GEOGRAPHY OF A SELECTED WORLD REGION**

The study of an area outside North America which will include topics in physical and human geography.

Three lectures; one term

Prerequisite: One of GEOG 1A06, 1B06, 1C03, 1G03

*GEOG 3R03 may be repeated, if on a different topic, with permission of the Department.*

**GEOG 3T03 GEOGRAPHY OF PLANNING**

A review of historical and contemporary approaches to city and regional planning problems.

Two lectures, one lab (two hours); one term

Prerequisite: One of GEOG 2A03, 2B03, 2R03, 2Y03

**GEOG 3U03\* ENVIRONMENTAL ISSUES: THE CANADIAN CONTEXT**

The application of ecological principles and methods to the analysis of problems in the natural and built environments of Canada.

Two lectures, one lab; one term

Prerequisite: Registration in an Honours Geography, Biology, Geology, or Engineering and Society programme

**GEOG 3UU3\* ENVIRONMENTAL IMPACT ASSESSMENT**

Technical and policy issues involved in the production and the appraisal of environmental impact assessments.

Two lectures, one lab; one term

Prerequisite: Registration in an Honours Geography, Biology, Geology or Engineering and Society programme

**GEOG 3W03\* HYDROLOGY**

Principles of hydrology and their applications in physical geography.

Two lectures, one lab (two hours); one term

Prerequisite: Enrolment in Level III (or above) of a Science programme or one of GEOG 2LL3, STATS 1CC3 and one of GEOG 1A06, 1C03, 1G03

**GEOG 3X03 URBAN MODELS AND POLICY ANALYSIS I**

A survey of modern literature on urban spatial structure. Topics include morphology, adjustments to change, and such phenomena as sudden urban growth and the decline of central cities.

Two lectures; one lab (two hours); one term

Prerequisite: GEOG 2B03 or ECON 2G03 or 2L06

Antirequisite: Registration in an Economics programme or ECON 3X03

Cross-list: ECON 3X03

**GEOG 3Z03 URBAN SOCIAL GEOGRAPHY**

The social geography of North American cities. Topics include commuting, segregation, inner-city gentrification, suburban development.

Lectures and seminars; one term

Prerequisite: GEOG 2R03 or 2RR3. GEOG 2Y03 and 2D03 are recommended.

**GEOG 4A03\* KARST GEOMORPHOLOGY AND HYDROGEOLOGY**

Karst rocks, equilibria and kinetics of their aqueous dissolution; cavern genesis and porosity in aquifers; speleothem chronology; features of surface landforms; practical applications.

Three lectures; one term

Prerequisite: GEOG 2T03

**GEOG 4B09\* SENIOR THESIS FOR CO-OP STUDENTS**

A thesis based upon a research project carried out under the direction of a member of the Geography Department.

Prerequisite: Registration in the Honours Geography and Environmental Science Co-op Programme. Approval of the project must be obtained from the Chair of the Department at least six weeks prior to the beginning of the research project.

**GEOG 4CC3\* REVIEW PAPER**

The student will conduct a comprehensive review of a selected topic in Geography. The review paper is due before the final examination period.

One seminar (two hours); first term

Prerequisite: GEOG 3O03 and registration in Level IV of an Honours programme in Geography

Antirequisite: GEOG 4VV6 or 4C06

**GEOG 4C06\* SENIOR THESIS**

A thesis based on a research project carried out under the direction of a Faculty member.

One seminar (two hours), every other week; two terms

Prerequisite: A grade of at least B+ in GEOG 3O03, a Cumulative Average of at least 6.0 and permission of the course coordinator

Antirequisite: GEOG 4VV6 or 4CC3

**GEOG 4D03\* COASTAL GEOMORPHOLOGY**

The dynamics and morphologies of the shore zone.

Two lectures, one lab; one term

Prerequisite: GEOG 2T03

**GEOG 4E03\* FIELD COURSE**

Detailed study of a particular aspect of physical geography in the field. Held in the two weeks prior to Fall registration; report to be submitted before the end of first term. Various topics and locations: details announced in March. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: Permission of the instructor, which is given only if the appropriate Level II and Level III courses have been passed

**GEOG 4F03 URBAN DEVELOPMENT AND POLICY ISSUES**

Current debates on urban development and policy issues. Emphasis on the political economy of urban change.

Three lectures; one term

Prerequisite: GEOG 2Y03, or permission of the instructor

**GEOG 4H03\* LAND USE AND TRANSPORTATION**

Methods for the analysis and prediction of transportation and land use patterns in cities, with applications to urban planning and pollution problems.

Three lectures; one term

Prerequisite: GEOG 2N03 or 2NN3

Cross-list: CIV ENG 4H03

**GEOG 4KK3\* APPLIED PEDOLOGY**

Application of soil science to environmental problems; land conservation, ecosystem and crop productivity, waste disposal, forest fires and terrain stability.

Three lectures; one term

Prerequisite: GEOG 2K03 or 3K03

**GEOG 4NN3\* GEOGRAPHIC INFORMATION SYSTEMS MANAGEMENT AND APPLICATIONS**

Analytical, operational, and institutional issues faced by the implementation of geographic information systems.

Two lectures; one lab (two hours) one term

Prerequisite: GEOG 3NN3 or 3N03

**GEOG 4P03\* ADVANCED BIOGEOGRAPHY: METHODS OF ENVIRONMENTAL RECONSTRUCTION**

Selected topics and methods of reconstructing past environmental conditions using evidence from historical records, tree-rings and plant fossils.

Two lectures, one lab (two hours); one term

Prerequisite: GEOG 3P03

**GEOG 4Q03\* CLIMATES IN HIGH LATITUDES**

Aspects of the heat and water balance climatology of terrestrial ecosystems in northern areas, with emphasis on the Canadian sub-arctic and tundra.

Three lectures; one term

Prerequisite: GEOG 2F03

**GEOG 4R03\* MODELS IN CLIMATOLOGY**

Discussion of global climatic models and their application.

Three lectures; one term

Prerequisite: GEOG 3F03 and one of MATH 1A03, 1A06, 1C03, 1C06 or 1M03

**GEOG 4S03 GEOGRAPHY OF HEALTH CARE**

The environmental determinants of health and the spatial dimensions of health care delivery.

Two seminars; one term

Prerequisite: Registration in Level IV of an Honours Geography programme or an Honours Gerontology programme

**GEOG 4T03 REGIONAL ANALYSIS AND PLANNING**

Examination of processes and policies that influence urban form and the associated effects on natural environment.

Three lectures; one term

Prerequisite: GEOG 2B03 and 3T03

**GEOG 4U03 SELECTED PROBLEMS IN URBAN PLANNING**

An examination of planning as a public decision process, with emphasis on land use conflicts and their resolution in the Hamilton region.

Two seminars (two hours); one term

Prerequisite: GEOG 3T03

**GEOG 4VU6\* THESIS IN ENVIRONMENTAL ISSUES**

Students will select research topics in environmental science and prepare a thesis. Group work will be emphasized.

One seminar (two hours); two terms

Prerequisite: GEOG 3O03 and either GEOG 3U03 or 3UU3

Antirequisite: GEOG 4C06 or 4CC3

**GEOG 4W03\* HYDROLOGIC MODELLING**

A survey of deterministic and stochastic models in hydrology.

Two lectures, one lab (two hours); one term

Prerequisite: GEOG 3W03

**GEOG 4X03 URBAN MODELS AND POLICY ANALYSIS II**

A survey of modern literature on urban issues. Topics include welfare criteria, externalities, public goods and fiscal policies.

Two lectures, one lab (two hours); one term

Prerequisite: GEOG 3X03

Cross-list: ECON 4X03

**GEOG 4Z03 THE LANDSCAPE OF URBAN HOUSING**

Historical-geographical patterns in the way housing landscapes are produced, occupied and used. The effects of planning and housing policy on the landscape.

Lectures and seminars; one term

Prerequisite: GEOG 3Z03. GEOG 3T03 and 3N03 are recommended.

**GEOLOGY****Faculty as of January 15, 1996****Chair**

William A. Morris

**Professors Emeriti**

Brian J. Burley/B.Sc. (London), M.Sc. (British Columbia), Ph.D. (McGill)

Denis M. Shaw/B.A., M.A. (Cambridge) Ph.D. (Chicago), F.R.S.C.

Gerd E.G. Westermann/B.Sc. (Braunschweig), Dipl. Geol., Dr. rer. nat. (Tubingen)

**Professors**

Paul M. Clifford/B.Sc. (Southampton), Ph.D. (London)

James H. Crockett/B.Sc. (New Brunswick, Oxford), Ph.D. (M.I.T.)

Alan P. Dickin/M.A. (Cambridge), D. Phil. (Oxford)

H. Douglas Grundy/B.Sc., Ph.D. (Manchester)

James R. Kramer/B.Sc. (M.I.T.), M.Sc., Ph.D. (Michigan)

Robert H. McNutt/B.Sc. (New Brunswick), Ph.D. (M.I.T.)/part-time

Gerard V. Middleton/B.Sc., A.R.C.S., Ph.D., D.I.C. (London), F.R.S.C.

Michael J. Risk/B.Sc. (Toronto), M.Sc. (Western), Ph.D. (Southern California, L.A.)

Henry P. Schwarcz/B.A. (Chicago), M.S., Ph.D. (California Institute of Technology), F.R.S.C.

Roger G. Walker/B.A., D.Phil. (Oxford), F.R.S.C.

**Associate Professor**

William A. Morris/B.Sc. (Leeds), Ph.D. (Open University)

**Assistant Professors**

Pierre Brassard/B.A., M.Sc. (Concordia), Ph.D. (INRS)

W. Jack Rink/B.Sc., Ph.D. (Florida State)

**Associate Members**

W. Brian Clarke/Physics B.A. (Dublin), Ph.D. (McMaster)

Derek C. Ford/Geography M.A., D.Phil. (Oxford), F.R.S.C.

Carolyn H. Eyles/Geography B.Sc. (East Anglia), M.Sc., Ph.D. (Toronto)

S. Brian McCann/Geography B.Sc. (Wales), Ph.D. (Cambridge)

**Senior Demonstrator**

Kenneth B. MacDonald/B.A., B.Ed. (Mount Allison)

**Department Notes:**

1. Geology is becoming increasingly specialized. As a result, preparation for employment and research work can involve some difficult decisions about courses. This is particularly true as work on environmental problems becomes steadily more important. As a guide and help to students, the Department of Geology has a pamphlet (available in the departmental office) which gives details of possible course streams leading towards careers in environmental science, as well as towards the more traditional areas of energy and mineral resources.

2. 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.
3. GEOLOGY 4QQ3 and GEOLOGY 4S03 are available to students registered in Level III or IV of any programme provided the stated prerequisites have been met.

**Courses If no prerequisite is listed, the course is open.****GEOLOGY 1C03 EARTH PROCESSES**

An introduction to geology through study of dynamic geological processes, particularly global plate tectonics.

Two lectures, one lab (three hours); one term

Prerequisite: Open. An OAC in Chemistry or Physics is recommended.

**GEOLOGY 2B04 OPTICAL CRYSTALLOGRAPHY AND MINERALOGY**

Elementary optical theory with applications to, and descriptive study of, the common rock-forming minerals. The latter part of Geology 2B06.

Two lectures, one lab (two hours); in parts of both terms

Prerequisite: Open only to students registered in Ceramic Engineering

**GEOLOGY 2B06 OPTICAL CRYSTALLOGRAPHY AND MINERALOGY**

Elementary crystallography prerequisite to optical crystallography. Elementary optical theory with applications to, and descriptive study of, the common rock-forming minerals.

Two lectures, one lab (two hours); two terms

Prerequisite: Registration in a Geology or B.Sc. Earth Science programme; or permission of the Department

**GEOLOGY 2C03 EARTH HISTORY**

The principles of stratigraphy and continental evolution, as illustrated by the geology of Ontario and other classic localities.

Two lectures, one lab (three hours); one term

Prerequisite: GEOLOGY 1C03 or ENVIR SC 1A06

**GEOLOGY 2D03 STRUCTURAL GEOLOGY**

A survey of the geometry of fractures and folds, their associated small-scale features, and their simple kinematic and dynamic analysis.

Two lectures, one lab (three hours); one term

Prerequisite: GEOLOGY 1C03 or ENVIR SC 1A06

**GEOLOGY 2E01 HAND SPECIMEN PETROGRAPHY**

An introduction to the study of mineral and rock suites in hand specimen with emphasis on field associations.

One lab (two hours); one term

Prerequisite: GEOLOGY 1C03 or ENVIR SC 1A06

**GEOLOGY 2EE2 FIELD CAMP**

A field camp of about two weeks duration held immediately after the April-May Examinations, normally taken at the very end of Level II by students in all Geology and combined programmes. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: GEOLOGY 2E01 or permission of the Chair

Antirequisite: GEOLOGY 3E02

**GEOLOGY 2I03 SOLID EARTH GEOPHYSICS**

Application of physical methods to understanding large-scale processes in the Earth. Plate tectonics, structure of Earth's interior, rock magnetism, seismology, gravitation, natural radioactivity, heat flow.

Two lectures, one tutorial; one term

Prerequisite: PHYSICS 1A06 or 1B06 or 1C06

Cross-list: PHYSICS 2I03

**GEOLOGY 2J03 INTRODUCTORY PALEONTOLOGY**

Uses of paleontology; importance in geologic 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: GEOLOGY 1C03 or ENVIR SC 1A06; or permission of the instructor

**GEOLOGY 2K03 ENVIRONMENTAL SYSTEMS**

Biogeochemical cycles applied to the environment; consideration of toxicity, anthropogenic perturbations; use of simple partitioning models.

Two lectures, one tutorial (two hours); one term

Prerequisite: Registration in B.Sc. Earth Science, any Honours programme in the Faculty of Science or any programme in the Faculty of Engineering; or permission of the instructor

Antirequisite: CIV ENG 2J03

**GEOLOGY 3A03 EXPLORATION GEOPHYSICS A: GEOPHYSICAL MAPPING METHODS**

Interpretation of geophysical survey data for regional geological mapping. Techniques covered are magnetics, gravity and radiometrics. Introduction to image processing and model interpretation.

Two lectures, one lab (two hours); one term

Prerequisite: GEOLOGY 2I03 or PHYSICS 2I03; or permission of the instructor

*Alternates with Geology 3B03.*

**GEOLOGY 3B03 EXPLORATION GEOPHYSICS B: GEOPHYSICAL SURVEYS OF THE SUBSURFACE**

Introduction to seismic reflection and refraction, ground probing radar, EM; electrical methods for mapping rocks and fluids in the subsurface. Introduction to digital signal processing.

Two lectures, one lab (two hours); one term

Prerequisite: GEOLOGY 2I03 or PHYSICS 2I03; or permission of the instructor

*Alternates with Geology 3A03.*

*Offered in 1996-1997.*

**GEOLOGY 3C03 IGNEOUS AND METAMORPHIC PETROLOGY**

Petrography of igneous and metamorphic rocks and discussion of their origin. Laboratory studies on rock suites.

Two lectures, one lab (two hours); one term

Prerequisite: GEOLOGY 2B06

Antirequisite: GEOLOGY 3CC6

**GEOLOGY 3F03 SEDIMENTARY FACIES AND ENVIRONMENTS**

A course in the field aspects of sedimentary rocks and the depositional environments of clastic and carbonate systems.

Three lectures, one term

Prerequisite: GEOLOGY 2C03 or permission of the instructor

**GEOLOGY 3G03 MINERALOGY**

Topics in x-ray crystallography and mineralogy and an introduction to crystal chemistry.

Two lectures, one tutorial; one term

Prerequisite: GEOLOGY 2B06

**GEOLOGY 3I03 PLANETARY AND LUNAR GEOLOGY AND GEOMORPHOLOGY**

The geology and surface morphology of planets and moons of the solar system with particular reference to the rocky bodies. Comparative studies are emphasized.

Three lectures; one term

Prerequisite: One of GEOG 1A06, 1C03, 1G03, ENVIR SC 1A06, GEOLOGY 1A03, 1C03, and completion of at least 12 units of Level II (or above) Science courses

Cross-list: GEOG 3I03

**GEOLOGY 3J03 PALEONTOLOGY**

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: GEOLOGY 2J03

**GEOLOGY 3K03 GEOLOGY RESEARCH PROJECT**

Prerequisite: Registration in Level III of a Geology programme and permission of the Chair of the Department.

Two terms

*May not be taken concurrently with GEOLOGY 4K06.*

*See heading Courses Requiring Permission in the Faculty of Science section of the Calendar.*

**GEOLOGY 3Q03 GEOCHEMISTRY**

Chemistry of the earth including cosmochemistry, global cycles, ocean chemistry, radiogenic and stable isotope systematics, geochronology, analytical techniques.

Three lectures; one term

Prerequisite: CHEM 2P06 or 2R03

**GEOLOGY 3S03 SEDIMENTARY PETROLOGY**

Petrology of sediments and sedimentary rocks. Laboratory includes textural analysis of sediments and examination of sedimentary rocks suites in hand specimen and thin section.

Two lectures, one lab (two hours); one term

Prerequisite: GEOLOGY 2B06

*Not offered in 1996-97.*

**GEOLOGY 4A03 ADVANCED FIELD COURSE IN GEOLOGY**

Advanced field studies generally held between May and August; report

to be submitted by the end of September. A list of approved field camps will be published by the Department. Students enrolling in this course must pay both the incidental fees, as prescribed by the Department, and the regular tuition fees.

Prerequisite: GEOLOGY 2EE2 or 3E02 or permission of the instructor

**GEOLOGY 4B03 IGNEOUS PETROLOGY**

Advanced theory of igneous rocks.

Three lectures, one term

Prerequisite: Permission of the Chair

*See heading Courses Requiring Permission in the Faculty of Science section of the Calendar*

*Not offered in 1996-97.*

**GEOLOGY 4BB3 METAMORPHIC PETROLOGY**

Advanced theory and practice on metamorphic rocks.

Two lectures, one lab (three hours); one term

Prerequisite: Permission of the Chair

*See heading Courses Requiring Permission in the Faculty of Science section of the Calendar*

*Not offered in 1996-97.*

**GEOLOGY 4C03 CLIMATE CHANGE: A GEOLOGICAL PERSPECTIVE**

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 Science or Engineering or Arts and Science.

*Enrolment is limited.* However, students enrolled in a Geology programme or Honours Science (Environmental Science Option) will be admitted. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the *Calendar*.

**GEOLOGY 4D03 ECOLOGY AND GEOLOGY OF CORAL REEFS**

A survey of recent and ancient reef systems in Canada and elsewhere. Emphasis is on the economic and environmental importance of reefs to Third World countries.

Two lectures, one seminar; one term

Prerequisite: GEOLOGY 2J03 and 3J03 or completion of at least 12 units of Level III Biology

**GEOLOGY 4E03 METALLIC MINERAL DEPOSITS**

Geology, geochemistry and genesis of ore deposits; environmental and economic aspects.

Three lectures; one term

Prerequisite: Registration in a Level III or IV of a Geology programme

**GEOLOGY 4EE3 ORE MICROSCOPY**

Reflected and transmitted light study of ore mineral assemblages.

One lab (three hours); two terms

Prerequisite: GEOLOGY 2B06

*Not offered in 1997-98.*

**GEOLOGY 4I03 MINERALS AND SOCIETY**

Case studies of mineral structures and properties with implications of practical importance. Gem and other economic minerals; workplace and environmental hazards.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level IV Science or Engineering or Arts and Science

*Enrolment is limited.* However, students enrolled in a Geology programme or Honours Science (Environmental Science Option) will be admitted. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the *Calendar*.

Cross-list: ENVIR SC 4I03

**GEOLOGY 4J03 DYNAMIC MODELS OF EARTH ENVIRONMENTS**

Physical principles applicable to geological environments and hazards: the flow of air, water, mud and ice; bending, flow, and fracture of rocks. Models of sediment transport, landslides, volcanic eruptions, earthquakes, and meteorite impacts.

Three lectures; one term

Prerequisite: GEOLOGY 2I03 or PHYSICS 2I03 or permission of the instructor

*Not offered in 1996-97.*

**GEOLOGY 4K06 GEOLOGY THESIS**

Prerequisite: Registration in Level IV of a Geology programme and permission of the Chair of the Department

*See heading Courses Requiring Permission in the Faculty of Science section of the Calendar*

**GEOLOGY 4M03 BASIN ANALYSIS AND PETROLEUM GEOLOGY**  
Principles of formation and development of sedimentary basins, with applications to fossil fuels. Seismic and sequence stratigraphy of basin fill, as controlled by tectonics, eustasy and climate: thermal history of basins. Three lectures; one term  
Prerequisite: GEOLOGY 3F03

**GEOLOGY 4MM3 SEDIMENTOLOGY: CHEMICAL PROCESSES**  
A review of equilibrium models and surface reactions. Topics covered are weathering, carbonate systems, evaporites, clays, iron minerals, phosphates, and diagenesis. Three lectures; one term  
Prerequisite: GEOLOGY 2C03, and CHEM 2P06 or 2R03  
Alternates with GEOLOGY 4S03.  
*Offered in 1996-97.*

**GEOLOGY 4QQ3 ENVIRONMENTAL GEOCHEMISTRY**  
Geochemistry of the earth's surface. Weathering, atmospheric processes, soil processes, aqueous speciation, and global cycles are related to environmental quality and problems. Three lectures; one term  
Prerequisite: GEOLOGY 3Q03

**GEOLOGY 4S03 PHYSICAL OCEANOGRAPHY**  
Energy budget of the ocean; optical oceanography, ocean dynamics. Examples for the Great Lakes. Three lectures; one term  
Prerequisite: Credit or registration in, at least 15 units of Level III Science courses  
Alternates with GEOLOGY 4MM3.  
*Not offered in 1996-97.*

**GEOLOGY 4T03 PLATE TECTONICS**  
Principles of plate tectonics, with application to regional and historical geology. Three lectures; one term  
Prerequisite: GEOLOGY 2C03; credit or registration in GEOLOGY 3C03 or 3CC6

**GEOLOGY 4W03 ENVIRONMENTAL ANALYSIS:  
A CASE HISTORY APPROACH**  
Geochemical analysis applied to environmental problems. Geo-physical signatures of buried aquifers and hazardous waste. Biological techniques in environmental reconstruction and assessment. Geological hazards. Three lectures; one term  
Prerequisite: Registration in Level IV Science or Engineering or Arts and Science  
*Enrolment is limited.* However, students enrolled in a Geology programme or Honours Science (Environmental Science Option) will be admitted. See the heading *Limited Enrolment Courses* in the *Faculty of Science* section of the Calendar.  
Cross-list: ENVIR SC 4W03

## GERMAN

Courses and programmes in German are administered within the Department of Modern Languages of the Faculty of Humanities.

### Department 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, 3ZZ3, 4CC3
- German programme students with native fluency are not permitted to enrol in GERMAN 2G03.

**Courses** *If no prerequisite is listed, the course is open.*

**GERMAN 1B06 INTRODUCTION TO GERMAN STUDIES**  
An intensive review of the grammatical structures of German and an introduction to composition, together with oral practice. There will also be an introduction to the culture and civilization of the German-speaking peoples. Four hours (including lab); two terms  
Prerequisite: OAC German or permission of the Department  
Antirequisite: GERMAN 1A03, 1AA3 or 2AA3, 1A06 or 2Y06

**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 take an appropriate alternative.*

**GERMAN 2A03 TWENTIETH-CENTURY LITERATURE**  
A discussion of works and authors from Naturalism to the 1980's, with emphasis on shorter prose texts. Three lectures; one term  
Prerequisite: GERMAN 1AA3 or 1B06 or 2AA3, or permission of the Department

**GERMAN 2AA3 INTRODUCTION TO GERMAN LITERATURE**  
Lectures outline the development of German literature against its cultural background and readings of literary texts. Three hours (one hour first term; two hours second term)  
Prerequisite: GERMAN 1Z06 or 1B06  
Antirequisite: GERMAN 1AA3

**GERMAN 2E03 GERMAN GRAMMAR**  
A systematic review of grammar; this knowledge will be applied to writing short essays and translations. Three hours; one term  
Prerequisite: One of GERMAN 1A03, 1B06 or 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 1Z06 and registration in an Honours programme requiring German  
*Enrolment is limited.*

**GERMAN 2Z06 INTERMEDIATE GERMAN**  
A course designed to further proficiency in spoken and written German. The course makes extensive use of unedited German materials for 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 1A03, 1AA3 or 1B06

**GERMAN 3A03 BAROQUE AND ENLIGHTENMENT LITERATURE**  
Discussion of selected works from the beginning of the 17th to the end of the 18th century within their historical and intellectual contexts. Three lectures; one term  
Prerequisite: Nine units of German above Level I

**GERMAN 3B03 THE AGE OF GOETHE I**  
From Sturm und Drang to Weimar Classicism. Three lectures; one term  
Prerequisite: Nine units of German above Level I  
*Offered in alternate years.*

**GERMAN 3Z03 ADVANCED ORAL AND WRITTEN LANGUAGE PRACTICE I**  
A practically-oriented course designed to increase the student's facility in using German as a means of oral and written communication. Students will be required to express their views on a variety of topics in written 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 3ZZ3 ADVANCED ORAL AND WRITTEN LANGUAGE PRACTICE II**  
A continuation of the approach used in GERMAN 3Z03. Three lectures; one term  
Prerequisite: GERMAN 3Z03



**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 3ZZ3

**GERMAN 4G03 THE AGE OF GOETHE II**

Romanticism from Novalis to Heine.

Three lectures; one term

Prerequisite: Nine units of German above Level I

Offered in alternate years.

**GERMAN 4HH3 HISTORY OF THE GERMAN LANGUAGE**

Selected texts from major works on the development of the German language as well as selected texts from major writers of the Middle and Old High German periods.

Three lectures; one term

Prerequisite: Nine units of German above Level I

Offered in alternate years.

**GERMAN 4II3 INDEPENDENT STUDY**

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Prerequisite: 18 units of German above Level I and permission of the Department

**GERMAN 4T03 SPECIAL TOPICS IN GERMAN LITERATURE**

Previous topics include: German Symbolism and Expressionism; German Literature 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

GERMAN 4T03 may be repeated, if on a different topic, to a total of 6 units.

**GERMAN 4TT3 MODERN LITERATURE AND THE ARTS**

An examination of the German literary Symbolism, Expressionism, and Surrealism in their wider artistic and European contexts, including painting, music and film.

Seminar (two hours); one term

Prerequisite: Nine units of German above Level I

**GERONTOLOGY****Faculty as of January 15, 1996****Director**

C.J. Rosenthal

**Professors**

Michael J. MacLean/(*Gerontology/Social Work*) B.A. (*St. Thomas*), M.A. (*Sussex*), Ph.D. (*London*) /part-time

Carolyn J. Rosenthal/(*Gerontology/Sociology*) B.A. (*Toronto*), M.A., Ph.D. (*McMaster*)

Ellen B. Ryan/(*Psychiatry/Gerontology*) B.A., M.A. (*Brown*), Ph.D. (*Michigan*)

**Associate Professors**

Margaret Denton/(*Gerontology/ Sociology*) B.A., M.A., Ph.D. (*McMaster*)

John Hirdes/(*Health Studies & Gerontology, University of Waterloo*) B.Sc., M.A., Ph.D. (*Waterloo*)/part-time

Kalervo I. Kinanen/(*Social Work*) dip S.W. (*Helsinki*), B.A. (*McMaster*) M.S.W. (*British Columbia*)/part-time

Olga Roman/(*Nursing*) B.N. (*McGill*), M.Sc. (*Boston*), Ph.D. (*Toronto*) part-time

**Assistant Professors**

Anju Joshi/B.A., M.A. (*Dalhousie*)

Sheree D. Meredith/(*Gerontology/Social Work*) B.A. (*Trent*), M.S.W. (*Wilfrid Laurier*)

**Lecturer**

Tamara L. Horton/B.A. (*Spring Arbor*), M.S.W. (*Michigan*)

**Associate Members**

Larry W. Chambers/(*Clinical Epidemiology and Biostatistics*) B.A. (*McMaster*), M.Sc. (*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*)

Gurmit Singh/(*Pathology*) B.Sc., Ph.D. (*Dalhousie*)

**Note:**

Gerontology Programmes at McMaster University are administered by the Faculty of Social Sciences through the Office of Gerontological Studies, and are co-ordinated and supervised by an interdisciplinary Committee of Instruction. Students wishing to register in a programme in Gerontological Studies must obtain *written approval* of the Chair of the Committee of Instruction of Gerontology Programmes.

**Committee of Instruction:****Chair**

C. Rosenthal (*Gerontology/Sociology*)

J. Aronson (*Social Work*)

A. Beckingham (*Nursing*)

D. Counts (*Anthropology*)

M. Denton (*Gerontology/Sociology*)

A. Hicks (*Kinesiology*)

J. Johnson (*Dean*) Ex-officio

A. Laver (*Occupational Therapy*)

B. Spencer (*Economics*)

J. Synge (*Sociology*)

I. Turpie (*Medicine and Geriatric Medicine*)

(Student Representative)

**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 2AA3 AGING, HEALTH AND SOCIETY**

This course will examine aging and health including physical, mental, social and functional health, the social construction of aging and health, models of health care and the informal and formal systems of care.

Three hours (lectures and discussions); one term

Prerequisite: GERONTOL 1A06 or its equivalent; and registration in a Gerontology programme

Antirequisite: GERONTOL 2A03

**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 or its equivalent

**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

**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 or its equivalent; and enrolment 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 a 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, PSYCH 1A06 and registration in a Gerontology programme

Cross-list: PSYCH 3DD3

*Students in a Psychology Programme (except those in Gerontology and Psychology) must register for this course as 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 a 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; registration in a 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 3C03; registration in a Gerontology Second Degree programme or Level III or IV of 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 a Gerontology Second Degree programme or Level III or IV of any Gerontology 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: ANTHROP 1A03 and three other 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. Students who write a thesis in the other subject of their combined programme must arrange for six additional units of Gerontology courses or courses from Course List 1 in place of GERONTOL 4A06.

Prerequisite: One of GERONTOL 2C03, 3C03 and GERONTOL 3G03; registration in Level IV of the 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: GERONTOL 3B03; registration in a Gerontology Second Degree programme or Level III or IV of any Gerontology programme

*Enrolment is limited.*

**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 the Combined Honours Programme in Gerontology and Another Subject or any B.A. in 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 the Combined Honours Programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme

**GERONTOL 4E03 ADVANCED SEMINAR IN GERONTOLOGY**

This course will focus on the process of research in gerontology. Presentations on different approaches to studying social aspects of aging (feminist methodology, historical methods, policy analysis, qualitative and quantitative methods) will be made by gerontological researchers about their research in progress.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level IV of the Combined Honours programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme; and three units of Research Methods

**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 Gerontology as a Second Degree programme

**GERONTOL 4G03 DIRECTED STUDY FOR SECOND DEGREE STUDENTS**

The student will select a topic in gerontology for an in-depth investigation under the supervision of a faculty member and write a paper. This investigation could take several forms such as library research, field study, or a supervised experience in an applied setting.

Prerequisite: Registration in the Gerontology as a Second Degree programme

**GERONTOL 4I03 PHYSICAL ACTIVITY, LEISURE AND AGING**

An examination of the concepts and theories of physical activity and leisure with respect to aging and vitality in later life.

Three hours (lectures); one term

Prerequisite: Registration in a Gerontology as a Second Degree programme or Level III or IV of any Gerontology programme

Cross-list: KINESIOL 4I03

**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 elderly people.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject or any B.A. in Gerontology as a Second Degree programme

Cross-list: SOC WORK 4A03

*Enrolment is limited.*

**Course List 1: Other Designated Gerontology Courses**

Students should check the prerequisites for these courses in the *Course Listings* section of the Calendar.

ANTHROP 3Z03	Medical Anthropology: The Biomedical Approach
ECON 3D03	Labour Economics
ECON 3Z03	Health Economics
GEOG 4S03	Geography of Health Care
HTH SCI 3B03	Science, Health and Society
PHILOS 3C03	Advanced Bioethics
RELIG ST 2M03	Death and Dying: Comparative Views
RELIG ST 2N03	Death and Dying: Western Experience
RELIG ST 2WW3	Health, Healing and Religion
SOC WORK 3C03	Social Aspects of Health and Disease
SOC WORK 4E03	Women and Social Welfare
SOCIOL 3CC3	Special Topics in Sociology of the Family and the Life Cycle
SOCIOL 3G03	Sociology of Health Care
SOCIOL 3HH3	Sociology of Health
SOCIOL 3X03	Sociology of Aging
SOCIOL 4P03	Issues in the Sociology of Aging

Other courses may qualify as Gerontology courses. Students wishing to designate a course not in Course List 1 must consult the Chair of the Committee of Instruction, prior to registration.

**GREEK**

(SEE CLASSICS, GREEK)

**HEALTH SCIENCES****Faculty Note:**

Health Sciences courses are normally available only to students registered in Nursing (A, B and NP (C) Stream), Oncology or Midwifery, as applicable.

**Courses****HTH SCI 1A06 HUMAN BIOCHEMISTRY**

The biochemistry and nutrition of the human body in health and disease. Term I's major topic is production of energy from glucose and fat. Vitamins and minerals related to glucose and fat metabolism are also discussed. Term II covers electrolyte balance, body pH, proteins, enzymes, protein malnourishment and nucleic acids. A final section deals with nutritional patterns for each stage of life.

Lectures/problem-based tutorial (three hours); two terms

Prerequisite: Registration in Level I of the B.Sc.N. (A) Stream; or Level III of the B.Sc.N. (B) Stream; or permission of the instructor

**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; one term

Prerequisite: Registration in Level II of the B.Sc.N. NP (C) Stream or permission of the instructor

Antirequisite: HTH SCI 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 course is available as an elective for students who have advanced credit for all of the required physiology. Independent study: two hours lecture equivalent/four hours lab equivalent; one term

Prerequisite: Registration in the B.Sc.N. programme and permission of the instructor

**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; 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

**HTH SCI 2B08 HUMAN BIOLOGICAL SCIENCE II**

First term examines reproductive anatomy and physiology in the first half and the central and peripheral nervous system, anatomy and physiology in the second half.

The first half of second term examines clinical microbiology and principles of pathology and the latter half of the second term examines pharmacological principles.

Two lectures (two hours each), two tutorials (two hours each), one lab (two hours), every other week; two terms

Prerequisite: 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; 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

**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, one term

Prerequisite: HTH SCI 1CC7, registration in Level III of the B.Sc.N. NP (C) Stream or permission of the instructor

Antirequisite: HTH SCI 2B08

**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; 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

**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; one lab (three 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

**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 3A04

**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 IV of the B.Sc.N. (B) Stream; or registration in Level II of the Midwifery Education programme; or permission of instructor  
Antirequisite: HTH SCI 3B04

**HTH SCI 3L02 INTRODUCTION TO THE RESEARCH PROCESS**

Introduction to principles and methods of the clinical research process. Concepts of research design, implementation, analysis and application to health care settings are studied in this context.

Lectures, tutorials (two hours); one term

Prerequisite: Registration in Level III of the B.Sc.N. (A) or (B) or NP (C) Stream; or registration in the Paediatric or Adult Oncology programme; or permission of the instructor

**HTH SCI 3LL4 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 Level III of the Midwifery Education programme or permission of the instructor  
Antirequisite: HTH SCI 3L04

**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 and permission of the instructor and permission of the Coordinator of Studies (Nursing)

*Students will not normally be permitted to apply more than one independent study course in the Health Sciences toward their elective requirements for the B.Sc.N. 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 4L02 RESEARCH PROJECT**

Students participate in a research study. Concepts of research design, implementation and analysis are studied.

Approximately two hours per week; two terms

Prerequisite: HTH SCI 3A03, HTH SCI 3L02 and registration in Level IV of the B.Sc.N. (A) or (B) or NP (C) Stream; or permission of the instructor  
Antirequisite: HTH SCI 4L04

**HEALTH AND SOCIETY**

(SEE MINORS AND THEMATIC AREAS OF STUDY)

**HEBREW**

(SEE RELIGIOUS STUDIES, HEBREW)

**HISPANIC STUDIES**

Courses and programmes in Hispanic Studies are administered within the Department of Modern Languages of the Faculty of Humanities.

**Department Note:**

Students should note that the Department has classified its Hispanic language courses under the following categories:

**Introductory Level Language Course**

HISPANIC 1Z06

**Intermediate Level Language Courses**

HISPANIC 1A06, 2A03, 2Z06

**Advanced Level Language Courses**

HISPANIC 2A03, 3D03, 3DD3, 4DD3

**COURSES** *If no prerequisite is listed, the course is open.***HISPANIC 1A06 INTERMEDIATE SPANISH**

A course designed to further the student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be upon composition, expansion of vocabulary, and the more advanced aspects of the language.

Three hours; two terms

Prerequisite: OAC Spanish or permission of the Department

Antirequisite: HISPANIC 2Z06.

*Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.*

**HISPANIC 1Z06 BEGINNER'S INTENSIVE SPANISH**

A course designed to cover the rudiments of the language in both written and oral forms. This course also provides preparation for more advanced work in Spanish. This course is enhanced by a CALL (Computer-Aided Language Learning) module.

Four hours (including lab practice); two terms

Antirequisite: OAC Spanish or equivalent

*Enrolment is limited.*

*Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.*

**HISPANIC 2A03 LANGUAGE PRACTICE I**

A course devoted to the expansion of vocabulary; the improvement of comprehension, and the achievement of greater confidence and versatility in the language by using different and creative forms of communication.

Three hours; one term

Prerequisite: HISPANIC 1A06; or 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 I**

A survey of Spanish American literature from the fifteenth to the nineteenth century. The most significant cultural currents and representative writers will be studied with the purpose of understanding the development of literary genres and the cultural, political and social context in which they flourished.

Three lectures; one term

Prerequisite: HISPANIC 1A06 or 1Z06

Antirequisite: HISPANIC 2C03

**HISPANIC 2LL3 SPANISH AMERICAN LITERATURE AND CIVILIZATION II**

A survey of Spanish American literature from Modernism (1880) to the present. The most significant periods and representative writers will be studied with the purpose of understanding both the development of the literary genres and the cultural, political and social context in which they flourished.

Three lectures; one term

Prerequisite: HISPANIC 2L03

Antirequisite: HISPANIC 2C03

**HISPANIC 2Z06 INTERMEDIATE SPANISH**

A course designed to further the student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be upon composition, expansion of vocabulary, and the more advanced aspects of the language.

Three hours; two terms

Prerequisite: HISPANIC 1Z06

Antirequisite: HISPANIC 1A06

**HISPANIC 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 4DD3 SYNTAX**

A course which provides opportunities to develop a deeper awareness of style through the study of syntax. Elements of syntax and translation will be included.

Three hours; one term

Prerequisite: HISPANIC 3DD3

**HISPANIC 4I13 INDEPENDENT STUDY**

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area in which the student has demonstrated competence.

Tutorials; one term

Prerequisite: 18 units of Hispanic Studies above Level I and permission of the Department

**HISPANIC 4LL3 SPANISH AMERICAN NOVEL**

A study of the novel of the Twentieth Century with emphasis on the Boom generation.

Three lectures; one term

Prerequisite: Nine units of Hispanic Studies above Level I

Offered in alternate years.

**HISPANIC 4M03 THE SPANISH NOVEL OF THE 20TH CENTURY**

Representative Spanish novels of the post-civil war period.

Three lectures; one term

Prerequisite: Nine units of Hispanic Studies above Level I

Offered in alternate years.

**HISPANIC 4MM3 CERVANTES AND HIS TIMES**

An analytical study of the Quijote and of some of Cervantes' other works within the context of the intellectual history of the 16th century.

Three lectures; one term

Prerequisite: Nine units of Hispanic Studies above Level I

Offered in alternate years.

**HISPANIC 4NN3 THE SPANISH NOVEL OF THE 19TH CENTURY**

A study of the novel of the second half of the 19th century in the context of the stylistic trends and intellectual history of the period.

Three lectures; one term

Prerequisite: Nine units of Hispanic Studies above Level I

Offered in alternate years.

**HISPANIC 4SS3 THE SPANISH-AMERICAN SHORT STORY**

A study of the evolution of the Spanish-American short story from Quiroga to Garcia Marquez.

Three lectures; one term

Prerequisite: Nine units of Hispanic Studies above Level I

Offered in alternate years.

**HISPANIC 4T03 TOPICS IN HISPANIC LITERATURE**

Previous topics include: The Enlightenment in Spain, The Spanish American Essay. Consult the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Nine units of Hispanic Studies above Level I

HISPANIC 4T03 may be repeated, if on a different topic, to a total of six units.

## HISTORY

### Faculty as of January 15, 1996

**Chair**

Robert H. Johnston

**Professors Emeriti**

Ezio Cappadocia/B.A., M.A. (Toronto), Ph.D. (Chicago)

Alan Cassels/M.A. (Oxford), Ph.D. (Michigan), F.R.H.S.

Charles M. Johnston/B.A. (McMaster), M.A., Ph.D. (Pennsylvania)

John H. Trueman/B.A., M.A. (Toronto), Ph.D. (Cornell)

**Professors**

James D. Alsop/B.A. (Winnipeg), M.A. (Western), Ph.D. (Cambridge), F.R.H.S.

Paul S. Fritz/B.A. (Queen's), M.A. (Wisconsin), 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)

Harvey A. Levenstein/B.A. (Toronto), M.S., Ph.D. (Wisconsin)

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**

David P. Barrett/B.A., M.A., M.Phil. (Toronto), Ph.D. (London)

Edmond M. Beame/B.A. (Cornell), Ph.D. (Illinois)

John P. Campbell/M.A. (Glasgow), A.M., Ph.D. (Yale)

Ruth Frager/B.A. (Rochester), M.A., Ph.D. (York)

J. Michael Gauvreau/B.A. (Laurénian), M.A., Ph.D. (Toronto)

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)

Thomas E. Willey/B.A. (Butler), M.A., Ph.D. (Yale)

**Assistant Professors**

Virginia Aksan/B.A. (Allegheny College), MLS (Berkeley), M.A., Ph.D. (Toronto)

Kenneth Cruikshank/B.A. (Carleton), M.A., Ph.D. (York)

Evan W. Haley/A.B. (Dartmouth), Ph.D. (Columbia)

Martin Horn/B.A. (Western), M.A. (McMaster), Ph.D. (Toronto)

**Instructor**

Paul Doerr/B.A., M.A., Ph.D. (Waterloo)/part-time

**Associate Member**

Peter J. George/(Economics) B.A., M.A., Ph.D. (Toronto)

### Department Notes:

1. The Department of History offers two Level I courses, each of which is designed to introduce the student to the study of History at the university level through the examination of an important aspect of the development of western civilization. HISTORY 1A06 is recommended for those students who anticipate entering B.A. or Honours 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.
2. Enrolment in any Level IV History course will be limited to twelve students. Students must be registered in an Honours History programme to enrol in any Level IV History course. 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).
3. Students interested in Ancient History are advised to examine the courses in Classics offered by the Department of Classics.

**COURSES** *If no prerequisite is listed, the course is open.***HISTORY 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 2B06 CHINA: FROM LATE IMPERIAL TIMES TO THE PRESENT**

The history of China from the 17th century to the present, with emphasis on the 19th and 20th centuries. The course will focus on political developments, social and cultural change, and China's relations with the outside world.

Three lectures; two terms

Prerequisite: Registration in Level II and above

**HISTORY 2C06 EUROPE AND THE WORLD, 1870-1992**

An introduction to major historical developments in European politics, society and culture, from the age of imperialism to the end of the Cold War. Three lectures; two terms  
Prerequisite: Registration in Level II and above  
Antirequisite: HISTORY 1C06  
*Alternates with History 3J06*

**HISTORY 2E06 THE ISLAMIC WORLD, 600-1800**

A survey of the history of the Islamic world, its spread through Africa, Europe and Asia, and the nature of Muslim institutions and societies. Three lectures; two terms  
Prerequisite: Registration in Level II and above  
Cross-list: RELIG ST 2006

**HISTORY 2H06 UNITED STATES HISTORY**

The history of the United States from the Colonial Era to the Second World War. Three lectures; two terms  
Prerequisite: Registration in Level II and above  
*Enrolment is limited.*

**HISTORY 2I06 EUROPE IN THE MIDDLE AGES**

A survey of European History from A.D. 400-1400. Particular attention will be given to the attempts at political and social organization which led to the birth of Europe. Three lectures; two terms  
Prerequisite: Registration in Level II and above

**HISTORY 2J06 THE HISTORY OF CANADA**

A study of the major social and political forces that have contributed to the development of modern Canada. Three lectures; two terms  
Prerequisite: Registration in Level II and above  
*Enrolment is limited.*

**HISTORY 2L06 THE HISTORY OF GREECE AND ROME**

Greece from the rise of the city-states to Alexander; Rome from the Middle Republic through the early Empire. Attention will be given to the political, military and social developments in the light of both literary and archaeological evidence. (No Greek or Latin required). Three lectures; two terms  
Prerequisite: Registration in Level II and above  
Cross-list: CLASSICS 2G06

**HISTORY 2N06 BRITISH HISTORY, 1500-1950**

Emphasis will be placed on the main political, religious, economic and social developments. Three hours (lectures and discussion groups); two terms  
Prerequisite: Registration in Level II and above

**HISTORY 3A03 IMPERIAL ISLAM: THE OTTOMANS**

A study of the political, economic and social history of the Ottoman Empire, with an emphasis on its influence on the cultures of both Asia and Europe. Three hours (lectures and discussion); one term  
Prerequisite: Registration in Level II and above

**HISTORY 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: JAPANESE 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 3E06 SELECTED TOPICS IN THE RECENT HISTORY OF THE UNITED STATES**

American society, politics, and foreign relations from World War I to the present, with considerable emphasis on social history, including the history of women, minorities, labour, and radicalism. Three hours (lectures and discussion); two terms  
Prerequisite: HISTORY 2H06

**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 1D06, 2I06, 2L06

**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 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 "German problem"; the post World War I settlement and its failure to prevent another world war; the shaping of present-day Europe by World War II. Three lectures; one term  
Prerequisite: Registration in Level II and above  
*Enrolment is limited.*

**HISTORY 3I16 THE HISTORY OF WARFARE, 1865-1945**

A survey of the development of military, naval, and air doctrine and technology before the start of the nuclear age, with particular emphasis on the relationship between prewar theory and wartime experience during the two World Wars. Three lectures; two terms  
Prerequisite: Six units of History

**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 3L03 MODERN CANADA: THE GREAT TRANSFORMATION, 1890-1929**

An intensive examination of themes in the social, economic, cultural, and political history of industrial Canada. Three lectures; one term  
Prerequisite: HISTORY 2J06  
*Alternates with HISTORY 3M03.*

**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, 2I06, 2L06, RELIGIOUS STUDIES 2E06, or six units of Classics.  
Cross-list: CLASSICS 3LL3

**HISTORY 3M03 MODERN CANADA: FROM DEPRESSION TO REFERENDUM, 1929-1980**

An intensive thematic study of Canadian developments in society, politics and culture from the Great Depression to the Quebec Referendum. Three lectures; one term  
Prerequisite: HISTORY 2J06  
*Alternates with HISTORY 3L03.*

**HISTORY 3MM3 TOPICS IN ROMAN HISTORY**

Studies of Roman history and institutions during the Republic or the Empire. Consult the Department for the topic to be offered.

Three lectures; one term

Prerequisite: One of HISTORY 1L06, 2L06, 3VV3, CLASSICS 2K03, 2V03

Cross-list: CLASSICS 3MM3

*History 3MM3 may be repeated, if on a different topic, to a total of six units.*

**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 3QQ3 WAR AND SOCIETY IN EARLY MODERN ENGLAND, 1485-1713**

A thematic study of the nature of English warfare and its relationship to society during the period in which England developed as a major military and naval power.

Three hours (lectures and discussion groups); one term

Prerequisite: HISTORY 2N06

**HISTORY 3R03 RELIGION AND POLITICS IN THE AGE OF THE REFORMATION**

An examination of both the Protestant and Catholic movements of the 16th century with particular attention to their political and social implications.

Three lectures; one term

Prerequisite: Registration in Level II and above

**HISTORY 3RR3 WAR AND SOCIETY IN 20TH-CENTURY BRITAIN**

A comparison of the impact of World War I on Britain with that of World War II.

Three hours (lectures and discussion groups); one term

Prerequisite: Registration in Level II and above

**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

Prerequisite: HISTORY 2N06

**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 3UU3 GREEK SOCIETY**

Advanced study of selected aspects of the social life of Greece, based on contemporary literature, documents and artifacts.

Three lectures; one term

Prerequisite: HISTORY 1L06 or 2L06, or six units of Classics, including CLASSICS 2K03 or 2U03

Cross-list: CLASSICS 3UU3

*Alternates with HISTORY 3VV3.*

**HISTORY 3VV3 ROMAN SOCIETY**

Advanced study of selected aspects of the social life of Rome, based on contemporary literature, documents and artifacts.

Three lectures; one term

Prerequisite: HISTORY 1L06 or 2L06, or six units of Classics, including CLASSICS 2K03 or 2V03

Cross-list: CLASSICS 3VV3

*Alternates with HISTORY 3UU3.*

**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

*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 4A06 SPECIAL TOPICS IN BRITISH HISTORY (1688-1830)**

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 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 3KK6 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

*Alternates with HISTORY 4G06.*

*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 2L06, 3LL3, 3UU3, CLASSICS 2K03, 2U03, 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: HISTORY 2B06 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, 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 4M06 SPECIAL TOPICS IN THE HISTORY OF THE RENAISSANCE AND THE REFORMATION**

Seminar (two hours); two terms

Prerequisite: One of HISTORY 2A06 or 3R03, 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 2M06, 3FF3, 3HH3, 3I03, 3J06, 3W03, and registration in Level III or IV of any Honours programme in History

*Enrolment is limited.*

**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, 2L06, 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 4S06 SPECIAL TOPICS IN THE HISTORY OF THE MIDDLE AGES**

Selected themes in the history of England and the Continent.

Seminar (two hours); two terms

Prerequisite: Six units from HISTORY 2I06, 2L06, 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, 3L03 and registration in Level III or IV of any Honours programme in History

*Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06*

*Enrolment is limited. Departmental permission required.*

**HISTORY 4U06 INDEPENDENT RESEARCH**

A reading and/or research programme under the supervision of one member of the Department. A major paper is required, as well as a formal oral examination.

Prerequisite: Registration in Level IV of any Honours programme in History and the attainment of a CA of at least 9.0, and permission of the Department

*Enrolment is limited. Departmental permission required.*

**HISTORY 4W06 THE NORTH AMERICAN CITY, 1700 TO THE PRESENT**

An examination of: founders' designs; practices and influence of business communities; the impact of technologies and architecture; spatial organization of class and ethnicity; shelter and urban services; differences between Canadian and American cities.

Seminar (two hours); two terms

Prerequisite: HISTORY 2H06 or 2J06, and registration in Level III or IV of any Honours programme in History. HISTORY 3BB3 is recommended.

Antirequisite: HISTORY 4CC6

*Students may take only two of HISTORY 4B06, 4CC6, 4H06, 4T06 and 4W06.*

*Enrolment is limited. Departmental permission required.*

**HISTORY 4Y06 THE SECOND WORLD WAR**

Emphasis will be placed on the military and diplomatic aspects of the subject.

Seminar (two hours); two terms

Prerequisite: HISTORY 3I16 or 3I03 and registration in Level III or IV of any Honours programme in History

*Enrolment is limited. Departmental permission required.*



## HUMANITIES (GENERAL)

### Lecturers

Jill LeBlanc/B.A. (McMaster), M.A., Ph.D. (Toronto)  
Geoffrey Rockwell/B.A. (Haverford College), M.A., Ph.D. (Toronto)

### COURSES *If no prerequisite is listed, the course is open.*

#### HUMAN 2C03 CRITICAL THINKING

This course aims to improve skills in analyzing and evaluating arguments and presentations found in everyday life and academic contexts, and to improve critical judgement.

Two lectures; one tutorial; one term

Prerequisite: Registration in Level II and above

Antirequisite: ARTS&SCI 1B06, PHILOS 2R03

HUMAN 2C03 is administered by the Department of Philosophy

#### HUMAN 2E03 INTRODUCTION TO COMPUTERS IN THE HUMANITIES

An introduction to issues in Humanities Computing. Students will study the history and present state of computing and information technology with particular attention given to issues around communication and human interaction. In this context, students will also learn skills such as how to use MS-DOS, word processing, electronic mail, how to browse the Internet, and how to search a database. No previous experience with computers is necessary.

Prerequisite: Registration in Level II or above of a programme in the Faculty of Humanities

HUMAN 2E03 is administered by Dr. G. Rockwell, TSH, Room 312  
*Enrolment is limited.*

#### HUMAN 2F03 SELECTED INTERDISCIPLINARY TOPICS IN MEDIEVAL LIFE AND CULTURE

The course will focus on themes to promote discussion and analysis of the roles played by women and men in the Middle Ages. It will explore some of the following topics: the history of health care and life cycles; the depiction of women by Latin and vernacular writers; female/male roles in the realm of spirituality; women as patrons and performers, authors, musicians and artists in medieval society; gender issues in legislation and law enforcement.

Three lectures; one term

Prerequisite: Registration in Level II or above

HUMAN 2F03 is administered by the Department of History for 1996-97.

#### HUMAN 3F03 QUANTITATIVE METHODS IN THE HUMANITIES

An introduction to the fundamentals of quantitative research in the humanities. In the context of humanities research, students will learn to use text-analysis tools and how to design and program a database. Students will be expected to use these tools to work on projects related to their specific discipline.

Prerequisite: HUMAN 2E03

Alternates with HUMAN 3G03.

HUMAN 3F03 is administered by Dr. G. Rockwell, TSH, Room 312  
*Enrolment is limited.*

#### HUMAN 3G03 MULTIMEDIA IN THE HUMANITIES

This course is for students in the humanities who want to study computer-based multimedia and create multimedia works. Students will discuss how to evaluate multimedia works, create such works, and consider the application of multimedia technology to the humanities.

Prerequisite: HUMAN 2E03

Alternates with HUMAN 3F03.

HUMAN 3G03 is administered by Dr. G. Rockwell, TSH, Room 312  
*Enrolment is limited.*

## INDIGENOUS STUDIES

### COURSES *If no prerequisite is listed, the course is open.*

#### 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 2B03 INTRODUCTION TO INDIGENOUS PEOPLES' HISTORY

An examination of the forces which shaped the history of the Indigenous peoples of Canada since the pre-contact period with Europeans, with special emphasis on eastern woodland peoples, the Iroquois Confederacy, and the Council of Three Fires.

Three hours (lecture and seminar); one term

Prerequisite: 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 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 Métis. 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

An intensive examination of selected political, economic, or social problems faced by selected indigenous peoples.

Three hours (lecture and seminar); one term

Prerequisite: A Level II Indigenous Studies Course

#### INDIG ST 3D03 CONTEMPORARY NATIVE LITERATURE IN CANADA

A study of significant works by Native writers who give voice to their 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

#### INDIG ST 3E03 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 (lecture and seminars); one term

Prerequisite: INDIG ST 1A06

## CAYUGA ...

#### CAYUGA 1Z06 BEGINNERS' INTENSIVE CAYUGA

This course will emphasize the spoken Cayuga language, including correct pronunciation, word formation, verb analysis and an introduction to the written form.

Three hours (lecture and seminars); two terms

**CAYUGA 2Z06 INTERMEDIATE CAYUGA**

This course expands on the vocabulary and the oral skills for the Cayuga 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 BEGINNERS' INTENSIVE MOHAWK**

This course will emphasize the spoken Mohawk language, including correct pronunciation, word formation, verb analysis and an introduction to the written form.

Three hours (lecture and seminars); two terms

**MOHAWK 2Z06 INTERMEDIATE MOHAWK**

This course expands on the vocabulary and the oral skills for the Mohawk 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

**OJIBWA...****OJIBWA 1Z06 BEGINNERS' INTENSIVE OJIBWA**

This course will emphasize the spoken Ojibwa language, including correct pronunciation, word formation, verb analysis and an introduction to the written form.

Three hours (lecture and seminars); two terms

**OJIBWA 2Z06 INTERMEDIATE OJIBWA**

This course expands on the vocabulary and the oral skills for the Ojibwa language. In addition, the course reviews the written component of the language.

Three hours (lecture and seminars); two terms

Prerequisite: OJIBWA 1Z06

**OJIBWA 3Z06 ADVANCED OJIBWA**

An in-depth study of the structure and the literature of the Ojibwa language and a comparison of the Central dialect with other Ojibwa dialects.

Three hours (lecture and seminars); two terms

Prerequisite: OJIBWA 2Z06

## INTERNATIONAL JUSTICE AND HUMAN RIGHTS

(SEE THEME SCHOOL ON INTERNATIONAL JUSTICE AND HUMAN RIGHTS)

## ITALIAN

Courses and programmes in Italian are administered within the Department of Modern Languages of the Faculty of Humanities.

### Department Note:

Students should note that the Department has classified its Italian language courses under the following categories:

#### Introductory Level Language Courses

ITALIAN 1Z06, 1ZZ6

#### Intermediate Level Language Courses

ITALIAN 1A06, 2Z06

#### Advanced Level Language Courses

ITALIAN 2A03, 2D03, 3D03, 3DD3, 4M03

### Courses *If no prerequisite is listed, the course is open.*

**ITALIAN 1A06 INTERMEDIATE ITALIAN**

An intensive review of the grammatical structures of Italian and an 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 the course.*

**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 take an appropriate alternative.*

**ITALIAN 2A03 INTENSIVE ORAL PRACTICE IN ITALIAN**

A conversation course designed to improve oral and aural proficiency in Italian.

Two hours; two terms

Prerequisite: ITALIAN 1A06 or 2Z06, and registration in an Honours programme requiring Italian

*Enrolment is limited.*

**ITALIAN 2D03 ADVANCED ITALIAN**

This course is designed to improve and increase the student's written proficiency through intensive exercises, compositions, and analysis of unaltered linguistic data.

Two hours; two terms

Prerequisite: ITALIAN 1A06 or 2Z06

**ITALIAN 2F03 CONTEMPORARY ITALIAN LITERATURE AND CULTURE**

This course will study Italian literature from Fascism and the Second World War, focusing on Neorealism in literature and film, and on major contemporary authors, from Moravia to Calvino.

Three lectures; one term

Prerequisite: ITALIAN 1A06, or registration or credit in ITALIAN 2Z06

**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 ITALIAN STYLISTICS**

An introduction to the study of Italian stylistics through an intensive and systematic analysis of Italian clause, sentence and discourse structure.

Three hours; one term

Prerequisite: ITALIAN 2A03 and 2D03

**ITALIAN 3DD3 INTENSIVE LANGUAGE PRACTICE**

An intensive oral language practice course, designed for the systematic comparison and interpretation of Italian and English discourse strategies.

Two hours; two terms

Prerequisite: ITALIAN 2D03, and registration in an Honours programme requiring Italian

*Enrolment is limited.*

**ITALIAN 3N03 EARLY TWENTIETH-CENTURY ITALIAN LITERATURE AND CULTURE**

This course will study Italian literature and drama with emphasis on D'Annunzio, Svevo, Pirandello and the Hermetic school of poetry.

Three lectures; one term

Prerequisite: Nine units of Italian above Level I

*Offered in alternate years.*

**ITALIAN 3R03 DANTE**

This course will focus on the *Divina Commedia*, with special reference to its historical and literary significance.

Three lectures; one term

Prerequisite: Nine units of Italian above Level I

Antirequisite: MOD LANG 3B03

**ITALIAN 3RR3 BOCCACCIO AND PETRARCH**

A study of Petrarch's *Canzoniere* and Boccaccio's *Decameron*.

Three lectures; one term

Prerequisite: Nine units of Italian above Level I

Antirequisite: MOD LANG 3B03

**ITALIAN 4G03 NINETEENTH-CENTURY ITALIAN LITERATURE AND CULTURE**

This course will study Italian poetry, fiction and drama, with special emphasis on the works of Foscolo, Manzoni, Leopardi, Carducci, Verga, Fogazzaro and Pascoli.

Three lectures; one term

Prerequisite: Nine units of Italian above Level I

*Offered in alternate years.*

**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.

Tutorials; one term

Prerequisite: 18 units of Italian above Level I and permission of the Department

**ITALIAN 4M03 INTENSIVE COMPOSITION, STYLISTICS AND ORAL PRACTICE IN ITALIAN**

An advanced language study course designed to develop the student's skills in composition, stylistics and conversation. Practice materials will be drawn from 20th-century literary works for the purpose of language study.

Two hours; two terms

Prerequisite: ITALIAN 3D03

**ITALIAN 4R03 RENAISSANCE**

A study of the literature of the Renaissance.

Three lectures; one term

Prerequisite: Nine units of Italian above Level I

Antirequisite: MOD LANG 3SS3

*Offered in alternate years.*

**ITALIAN 4T03 TOPICS IN ITALIAN LITERATURE**

Previous topics include: Italian Criticism, Utopian Genres, Italian Theatre. Consult the Department concerning topic to be offered.

Three lectures; one term

Prerequisite: Nine units of Italian above Level I

*Offered in alternate years.*

*ITALIAN 4T03 may be repeated, if on a different topic, to a total of six units.*

**JAPANESE**

Japanese language and literature 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.

**Committee of Instruction**

**Director**

Koichi Shinohara (*Religious Studies*)

Nobuko Adachi (*Modern Languages*)

Eiko Virginia Ariga (*Modern Languages*)

David Barrett (*History*)

Kenneth S. Chan (*Economics*)

J.S. Chang (*Engineering Physics*)

Phyllis Granoff (*Religious Studies*)

J. Johnson (*Dean*) *Ex officio*

K. L. Liaw (*Geography*)

Richard Stubbs (*Political Science*)

Noriko Yokokura (*Modern Languages*)

**JAPANESE ...**

**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 take 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 3Z26 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 3Z26, 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 3Z26, 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 3J03 JAPANESE ART**

An introduction and discussion of major aspects of the visual arts of Japan.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: ART HIST 3J03

**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 3P03 ESOTERIC BUDDHISM IN EAST ASIA**

An examination of the doctrine, ritual, and art of Esoteric (Tantric) Buddhism in China and Japan. Emphasis will be on the teachings of Kukai (774-835) and the Japanese Shingon tradition.

Two lectures, one tutorial; one term

Cross-list: RELIG ST 3P03

**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

**KINESIOLOGY****Faculty as of January 15, 1996****Chair**

Digby Sale

**Professors Emeriti**

Frank J. Hayden/B.A. (Western), M.A., Ph.D. (Illinois)

Alan J. Smith/B.S.A., M.Ed. (Toronto), D.Ed. (SUNY, Buffalo)

**Professors**

Peter Donnelly/Dip.Ed. (City of Birmingham College), B.A. (Hunter College, N.Y.), M.S., Ph.D. (Massachusetts)

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)

Digby G. Sale/B.P.H.E. (Toronto), M.A. (Western), Ph.D. (McMaster)

Janet L. Starkes/B.A. (Western), M.Sc., Ph.D. (Waterloo)

**Associate Professors**

Cameron J. Blimkie/B.A., B.P.E. (McMaster), M.A., Ph.D. (Western)

Nicola Cipriano/B.P.H.E., M.Sc. (Lakehead)

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), Ph.D. (Ohio State)

Neil McCartney/B.Ed. (Exeter), Ph.D. (McMaster)

Cindy Riach/B.A., B.P.H.E., B.Ed., M.Sc. (Queen's), Ph.D. (Waterloo)

Philip G. White/B.Sc. (London), Cert.Ed. (Carnegie), M.Sc., Ph.D. (Waterloo)

**Assistant Professors**

Nancy B. Bouchier/B.A., M.A., Ph.D. (Western)

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)

David C. Wilson/B.Ed. (Bristol), M.A. (York)

**Part-time Instructors**

Patti Blair, B.P.E. (McMaster)

Brian Lisson, B.R.L.S. (Brock)

**Associate Members**

Oded Bar-Or/(Pediatrics) M.D. (Hebrew Un., Jerusalem)

Scott Garner/(Medicine) B.Sc. (Med.) (Manitoba), M.D. (Manitoba)

Janice A. Harvey/(Student Health Services) B.Sc. (Waterloo), M.D.,

C.C.F.P. (McMaster), Dip.Sp.Med. (Western)

John Hay/(O.T./PT) B.A., B.P.H.E. (Queen's), M.A. (Alberta), 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)

**Department Notes:**

- Not all Level III and IV Kinesiology courses are taught every year.
- Students registered in Kinesiology may take only 6 units of courses cross-listed with Kinesiology for elective credit. Courses are KINESIOL 3P03 cross-list SOCIOL 3DD3; KINESIOL 3Q03 cross-list SOCIOL 3EE3; KINESIOL 4I03 cross-list GERONTOL 4I03.
- With the permission of the department, the following courses **may be taken** as elective credit by undergraduates **not** in Kinesiology: KINESIOL 3P03, 3Q03, 4E03, 4L03, 4M03. KINESIOL 3SS3 and 4J03 may also be taken as elective credit by undergraduates not in Kinesiology. No permission is required but enrolment may be limited. **All other Kinesiology courses are open only to students registered in the B. Kin. programme.**
- Enrolment in some Level III and IV elective Kinesiology courses is limited and some require a prerequisite or permission of the instructor.
- Registration in all courses marked \*\* listed as selected topics and independent research 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*.

**Courses****KINESIOL 1A06 ANATOMY/PHYSIOLOGY**

Macroscopic and microscopic anatomy and physiology of the skeletal, muscular, nervous, cardiovascular, and respiratory systems. The basic anatomy of the integumentary, immune, digestive, endocrine, and urogenital systems will also be presented.

Three hours (lectures, labs); two terms

**KINESIOL 1B06 INQUIRY IN KINESIOLOGY**

This course introduces students to the discipline of Kinesiology, and provides an understanding of the philosophical and procedural assumptions inherent in Kinesiology sub-disciplinary research.

Three hours (lectures, tutorials, computer labs); two terms

**KINESIOL 1E06 PSYCHOMOTOR BEHAVIOUR**

The behavioural and psychological principles underlying motor control and motor learning, and how those principles vary from infancy to old age.

Three hours (lectures, labs); two terms

**KINESIOL 2A06 BIOMECHANICS**

An introduction to the concepts of kinematics and kinetics of the musculoskeletal system in humans, and an exploration of the concepts of motor control of human movement with a focus on muscular contraction and the technique of electromyography.

Three hours (lectures, lab); two terms

**KINESIOL 2B06 SOCIO-HISTORICAL APPROACHES TO SPORT AND HUMAN MOVEMENT IN CANADA**

An examination of the origins and development of sport and recreational human movement in Canada, together with a consideration of the background and processes associated with various issues in sport and physical recreation.

Three hours (lectures); two terms

**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

**Levels III & IV****Note:**

Previous Level III and IV Physical Education courses are now listed as Kinesiology courses. **Students having credit in a Level III or IV Physical Education course may not take the corresponding course under the Kinesiology designation.**

**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 (lecture); one term

**KINESIOL 3B03 PHYSICAL ACTIVITY FOR CHALLENGED POPULATIONS**

Physical activity and movement designed to meet the needs, interests, and abilities of individuals referable to special physical activity programmes. Three lectures; one term  
Corequisite: Registration in PR89

**KINESIOL 3C03 STATISTICS AND RESEARCH DESIGN**

Introduction to research design and scientific method; elementary statistics. Three hours (lecture); 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 tutorial; one term

**KINESIOL 3F03 MANAGEMENT CONCEPTS AND PROGRAMME DELIVERY IN HUMAN MOVEMENT WORK ENVIRONMENTS**

A macro perspective of administration concepts, tasks and related issues in the delivery of programmes and services within human movement contexts of work, play, sport/athletics, rehabilitation, education and aesthetics. Three hours (lectures, seminars); one term

**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 3K03 SPORTS INJURIES**

Common athletic injuries will be discussed under the following headings: mechanism of injury, prevention, preliminary assessment, tissue healing, basic taping techniques, and emergency care. Two lectures, one lab; one term  
*Enrolment is limited. Priority will be given to Level IV Kinesiology students.*

**KINESIOL 3L03 ORGANIZATIONAL BEHAVIOUR AND THE APPLICATION TO HUMAN MOVEMENT WORK ENVIRONMENTS**

An examination of concepts and issues of organizational behaviour in a variety of work environments. Three hours (lectures and seminars); one term  
Prerequisite: KINESIOL 3F03 or PHYS ED 3F03, or may be taken as a B.A. elective in Level III or IV of Social Work  
*Enrolment is limited.*

**KINESIOL 3M03 FOUNDATIONS OF ATHLETIC COACHING**

An examination of the principles governing athletic coaching with emphasis placed on the behavioural aspects. Three hours (lectures); one term

**KINESIOL 3P03 SPORT AND SOCIAL DEVELOPMENT**

Macro-analysis of sport and culture, considering the place of sport and leisure in cultural transmission and cultural change. Three hours (lectures and discussion); one term  
*With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.*  
Cross-list: SOCIOL 3DD3

**KINESIOL 3Q03 SPORT AND SOCIALIZATION**

Analysis of the process of becoming involved in sport, sustaining and changing that involvement, and retirement. Three hours (lectures and discussion); one term

*With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.*

Cross-list: SOCIOL 3EE3

*Not offered in 1996-97.*

**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. Course work includes experiential workshops.

Three-hours (lectures; seminars); one term

*This course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.*

*Enrolment is limited.*

**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: Permission of the instructor

*Enrolment is limited.*

**KINESIOL 4B03 PHYSICAL ACTIVITY AND CORONARY HEART DISEASE**

An examination of the role of physical activity in the prevention and rehabilitation of coronary heart disease.

Three lectures; one term

**KINESIOL 4C06 HUMAN PERFORMANCE PHYSIOLOGY**

Factors affecting human physical performance, with emphasis upon procedures for maximizing sport performance.

Two lectures, one lab; two terms

Prerequisite: Registration in Level IV

*Enrolment is limited.*

*Not offered in 1996-97.*

**KINESIOL 4D03 OUTDOOR EDUCATION**

An introduction to skills, pedagogy and perspectives of outdoor education. This course involves a 9 day canoe/camping field component before classes start.

Three hours (lectures, tutorials, field experiences); one term

(Approximate cost of field component is \$320.00)

*Enrolment is limited.*

**KINESIOL 4E03 NEURAL CONTROL OF HUMAN DEVELOPMENT**

Neuromuscular control mechanisms underlying human movement. Topics include basic neuroanatomy, mechanisms of sensation and regulation of voluntary movement.

Two lectures, one lab; one term

*With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.*

*Enrolment is limited.*

**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, to get a description of the courses being 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 WIDERNESS TRAVEL**

An introduction to Canadian winter travel skills (traditional and contemporary), travel literature and pedagogy of travel guiding. Part of the course requirement is a mandatory five-day traditional winter travel experience during the February mid-term recess.

Three hours (lectures, tutorials, field experiences); one term

Prerequisite: KINESIOL 4D03 or PHYS ED 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 (lectures, labs, presentations); one term

**KINESIOL 4I03 PHYSICAL ACTIVITY, LEISURE AND AGING**

An examination of concepts and theories of physical activity and leisure with respect to aging and vitality in later life.

Three hours (lectures); one term

Prerequisite: Registration in Level III or IV Kinesiology, or Gerontology programme

Cross-list: GERONTOL 4I03

**KINESIOL 4J03 PERSPECTIVES IN DANCE: DANCE IN CONTEMPORARY SOCIETY**

A survey of modern dance forms of the 20th century and their relationship to education, therapy, injuries, technology and aesthetics. Students view films, attend performances and participate in dance workshops.

Three hours (lectures, seminars); one term

This course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.

**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 4L03 COMPARATIVE SPORT (SELECTED TOPICS)**

Contemporary physical education and sport in selected countries; with special attention given to international sports competition.

Two lectures, one seminar; one term

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.

Enrolment is limited.

**KINESIOL 4M03 SPORT PSYCHOLOGY**

Principles of sport psychology are applied to individual and team performance issues. Research is emphasized and topics include: personality, motivation, arousal, perception, biofeedback, the process of competition, children in sport, and ethics in sport psychology.

Two lectures, one lab; one term

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Kinesiology.

Enrolment is limited.

**KINESIOL 4N03 ATHLETIC COACHING: TRAINING AND PLANNING PERSPECTIVES**

Analysis of the periodization model and factors facilitating athletic performance.

Three hours (lectures); one term

Prerequisite: KINESIOL 3M03

Corequisite: PR88

Enrolment is limited.

**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 or permission of the instructor

Enrolment is limited.

Not offered in 1996-97.

**KINESIOL 4R03\*\* INDEPENDENT RESEARCH COURSE**

Investigation of a selected theoretical or applied problem mutually acceptable to instructor and student.

Prerequisite: Registration in Level IV and permission of the Undergraduate Coordinator and supervising instructor

**KINESIOL 4S03 PHYSICAL ACTIVITY IN CHRONIC HEALTH IMPAIRMENTS**

Focus on current issues in adaptives, including sections on aging, chronic health impairments, and the role of physical activity.

Three hours (two lectures, one seminar); one term

Prerequisite: KINESIOL 3B03, PR89

Enrolment is limited.

**KINESIOL 4T03 GENDER, SPORT AND LEISURE**

The influence of sport and leisure on the social construction of masculinity and femininity.

Three hours (seminars); one term

Prerequisite: Registration in Level III or IV Kinesiology, or a Sociology programme or permission of the instructor

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**

The abilities and limitations of human performance are examined with respect to how we interact with objects in our 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 and group discussion of case studies.

Three hours (lectures); one term

Not open to students with credit in PHYS ED 4F03 or KINESIOL 4F03 if the topic was Posture and Gait.

Enrolment is limited.

**KINESIOL 4X03 CONSUMERISM AND HEALTH**

Skills necessary to critically evaluate health-related research will be developed with student investigations of topical controversies in health care.

Three hours (lectures and seminar presentations); one term

Not open to students with credit in PHYS ED 4F03 or KINESIOL 4F03 if the topic was Consumerism and Health.

Enrolment is limited.

**KINESIOL 4Y03 NUTRITION AND METABOLISM**

This course focuses on the interactions between metabolic pathways and their regulation and the impact of nutrition on human performance in health and disease.

Three hours (lectures); one term

**KINESIOL 4Z03 SELECTED TOPICS IN ADMINISTRATIVE STUDIES**

A senior level seminar course which explores selected topics related to administrative theory and practice in human movement work environments.

Three hours (seminars and presentations); one term

Prerequisite: KINESIOL 3F03 and 3L03

Enrolment is limited.

**PRACTICUM COURSES****KINESIOLOGY...**

Throughout the four levels of the B.KIN. programme, each student must complete a minimum of 12 units of practicum. See programme notes for further information.

One unit of practicum will normally comprise 24 hours; these hours may be compressed into one week (Camp or Orientation Week), spread over a term (Field Work Placement) or, more usually, extend over a six-week period of four hours per week.

Students may also choose to take practicum courses offered in the form of fieldwork or leadership experiences, e.g. Cardiac Rehabilitation, Outdoor Education, Administration, Adapted Physical Activity, Coaching, Coaching Apprenticeship. These fieldwork practicum are typically worth 1 unit.

**Level I: Three units**

CPR/First Aid (1CA1), Fitness (1F01), and Basic Aquatic Skills (1S01). Students may receive advance credit if they have current certification in CPR Heartsaver, Standard First Aid and the Bronze Medallion award or higher from the Royal Life Saving Society.

**Level II: Three units**

Dance (2D01), Body Awareness (2E01), and Play (2P01).

**Levels III and IV: Six units****PHYSICAL EDUCATION ...**

Entry in either 1992 or 1993:

Students who entered the Physical Education programme in 1992-93 and 1993-94 must complete a minimum of 11 units of practicum plus CPR/First Aid (1CA0) and swimming (1S00). Normally six of these units are completed in Levels III and IV.

# LABOUR STUDIES

Faculty as of January 15, 1996

## Director

V. Walters

## Professors

W. Lewchuk/M.A. (Toronto), Ph.D. (Cambridge)

V. Walters/B.A., M.A. (Sheffield), Ph.D. (McGill)

## Associate Professors

R. Storey/B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)

C. Yates/B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)

## Assistant Professors

O. Rafferty/ B.A. (Western), M.A., Ph.D. (McMaster)

D. Wells/B.A. (Western), M.A. (British Columbia), Ph.D. (Toronto)

## Associate Members

R. Adams/(Business) B.A. (Pennsylvania State), M.A., Ph.D. (Wisconsin)

P. Daenzer/(Social Work) B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)

A. Robb/(Economics) B.A., M.A. (British Columbia), Ph.D. (Essex)

P. Sugiman/(Sociology) B.A., M.A., Ph.D. (Toronto)

## NOTE:

Enrolment in Labour Studies Programmes is limited. Students wishing to enrol in Labour Studies Programmes must make written application to the Chair of the Committee of Instruction **before April 15** for fall admission. The following courses may be taken for elective credit by qualified students registered in any programme: however, enrolment in these courses is limited and permission of the instructor is required.

LABR ST 2A06	Trade Unions
LABR ST 2C03	Theoretical Foundations of the Labour Movement
LABR ST 3A03	Economics of Labour Market Issues
LABR ST 3AA3	Current Labour 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

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

V. Walters (Sociology)

R. Adams (Business)

B. Basadur (Business)

P. Daenzer (Social Work)

J. Johnson (Dean) *ex officio*

W. Lewchuk (Economics/Labour Studies)

J. Rose (Business)

R. Storey (Labour Studies/Sociology)

P. Sugiman (Sociology)

D. Wells (Labour Studies/Political Science)

C. Yates (Labour Studies/Political Science)

## Courses *If no prerequisite is listed, the course is open.*

### LABR ST 1A03 AN INTRODUCTION TO THE CANADIAN LABOUR MOVEMENT

An examination of the impact of economic, social, cultural and political factors on the historical evolution, structure and actions of the Canadian working class and labour movement.

Lectures and discussions; one term

### 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 2A06 TRADE UNIONS

An overview of the functioning of contemporary unions in Canada. Areas studied will include: union administration, union policy and the impact of unions on working conditions and on Canadian society.

Lectures and discussion; two terms

Prerequisite: Registration in a Labour Studies programme or permission of the instructor

Antirequisite: LABR ST 2A03

### LABR ST 2B03 SOCIAL WELFARE I

An examination of social welfare policy and the income security system in Canada in historical perspective.

Lectures and discussion; one term

Prerequisite: Registration in a Labour Studies programme

Cross-list: Term I of SOC WORK 2B06.

(Students not in a Social Work 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: Term II of SOC WORK 2B06

### LABR ST 2C03 THEORETICAL FOUNDATIONS OF THE LABOUR MOVEMENT

An examination of political, sociological and economic explanations of labour behaviour in industrial society. The focus will be on attempts to explain why labour has tended to organize as well as the different strategies which labour has pursued to achieve its goals.

Lectures and discussion; one term

Prerequisite: Registration in a Labour Studies programme or permission of the instructor

Antirequisite: LABR ST 1B03

### LABR ST 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 ECON 1B03 and 1BB3; registration in a Labour Studies programme or permission of the instructor

Cross-list: ECON 2A03

### LABR ST 3AA3 CURRENT LABOUR ISSUES

Content may vary. Topics may include the nature of recent changes in the workplace; forces leading to restructuring including technological change, globalization of production, changes in skill and training, etc.; consequences for workplace relations; management and union responses; the role of governments.

Prerequisite: LABR ST 2A06; registration in a Labour Studies programme or permission of the instructor

### 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 ECON 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; registration in a Labour Studies programme or permission of the instructor

Cross-list: COMMERCE

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 Director of Labour Studies concerning the topics to be examined.

Three hours (seminar); one term

Prerequisite: LABR ST 2A06; registration in a Labour Studies programme or permission of the instructor

*May be repeated, if on a different topic, to a total of six units.*

*Generally offered in alternate years.*

**LABR ST 3I03 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

**LABR ST 4A09 FIELD EXPERIENCE**

Combined field experience and seminars to develop practical and research skills relating to labour issues. Students spend a minimum of the equivalent of one day per week in a labour union, government agency or other appropriate organization. This course includes formal and directed study of research methodology appropriate for the field placement seminar.

Two terms

Prerequisite: Registration in Level IV Specialist in Labour Studies, Level IV of a Combined Honours in Labour Studies and Another Subject, or Level IV of an Honours in Labour Studies

**LABR ST 4B03 HONOURS SEMINAR**

The seminar will provide an opportunity for in-depth study of selected topics relating to labour issues.

Seminar; one term

Prerequisite: Registration in Level IV Specialist in Labour Studies, Level IV of a Combined Honours in Labour Studies and Another Subject, or Level IV of an Honours in Labour Studies with a Minor in Another Subject

**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. Open to students in Level IV of a Commerce programme with the permission of the instructor, the Chair of the Labour Studies Committee of Instruction and the Undergraduate Student Advisor of the School of Business.

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. Open to students in Level IV of a Commerce programme with the permission of the instructor and the Chair of the Labour Studies Committee of Instruction and the Undergraduate Student Advisor of the School of Business.

Cross-list: COMMERCE 4BH3

**LATIN**

(SEE CLASSICS, LATIN)

**LINGUISTICS**

**COURSES** *If no prerequisite is listed, the course is open.*

**LINGUIST 1A06 THE STUDY OF LANGUAGE**

A survey intended to acquaint the student with the numerous disciplines that deal with language and many of the crucial concepts and techniques developed within them. The course will enable the student to pursue higher studies in either linguistics or other language-related disciplines.

Two lectures, one tutorial; two terms

**LINGUIST 2A03 THE MAKING OF THE EUROPEAN LINGUISTIC LANDSCAPE**

The history of language use in Europe from the fall of the Roman Empire to the flowering of linguistic nationalism.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: 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: LINGUIST 3B03

Cross-list: ANTHROP 2AA3

**LINGUIST 2L03 PHONETICS**

A study of the sounds of language and the articulatory capabilities of man.

Three lectures; one term

Prerequisite: Registration in Level II and above

Cross-list: ANTHROP 2L03

**LINGUIST 2LL3 LANGUAGES OF THE WORLD**

An introduction to population linguistics: the study of the languages of the world in their relations to geography, history, culture and migrations of peoples. The course considers three major classifications of languages—typological, genetic, and areal—and the problems related to them.

Three hours (lectures and discussion); one term

Prerequisite: Registration in Level II and above

Cross-list: ANTHROP 2LL3

**LINGUIST 2M03 PHONOLOGY**

A study of the patterns of distinctive sounds in the world's languages.

Three lectures; one term

Prerequisite: ANTHROP 2L03 or LINGUIST 2L03

Cross-list: ANTHROP 2M03

**LINGUIST 2Q03 LINGUISTICS AND THE STUDY OF CULTURE**

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

Cross-list: ANTHROP 2Q03

**LINGUIST 3I03 SYNTAX**

A study of the human capacity to form words into sentences. The emphasis will be upon generative transformational grammar.

Three lectures; one term

Prerequisite: 12 units of Linguistics including LINGUIST 1A06

Cross-list: 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: ANTHROP 3I03 or LINGUIST 3I03

Cross-list: ANTHROP 3I13

**LINGUIST 3M03 MORPHOLOGY**

The study of word formation in languages of the world: a critical survey of current theories and issues.

Three lectures; one term

Prerequisite: ANTHROP 3I03 or LINGUIST 3I03

Cross-list: 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: FRENCH 2H03 or LINGUIST 1A06

Cross-list: ANTHROP 3PL3

*Offered in alternate years.*

**LINGUIST 3X03 SOCIOLINGUISTICS I**

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: Registration in Level II and above

Antirequisite: LINGUIST 3A06

Cross-list: ANTHROP 3X03



**LINGUIST 3XX3 SOCIOLINGUISTICS II**

An introduction to the sociology of language with particular emphasis on the social situation of the major European languages. Topics covered include diversity of languages/typology, language contacts (pidgins, creoles and lingua francas), language planning (bilingualism and multilingualism) and language and culture.

Three lectures; one term  
Prerequisite: LINGUIST 3X03  
Antirequisite: LINGUIST 3A06  
Cross-list: ANTHROP 3XX3

**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 an Anthropology or Linguistics programme; or permission of the Programme Coordinator  
Cross-list: ANTHROP 4BL3

**LINGUIST 4I13 INDEPENDENT STUDY**

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Tutorials; one term  
Prerequisite: 18 units of Linguistics above Level I and permission of the Department

**LINGUIST 4L03 FIELD LINGUISTICS**

An advanced course in techniques of linguistic field research. The field situation is simulated by using an actual target language.

Prerequisite: 12 units of Linguistics or Anthropology above Level I  
Cross-list: ANTHROP 4L03

**LINGUIST 4T03 GENERATIVE GRAMMAR: MIND AND CULTURE**

An examination at an advanced level of Chomsky's generative grammar as a paradigm for the study of minds and cultures.

Seminar (three hours); one term  
Prerequisite: One of LINGUIST 2L03, 2Q03, or 3I03  
Antirequisite: ANTHROP/LINGUIST 2T03  
Cross-list: ANTHROP 4T03

**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 THEORETICAL LINGUISTICS**

Topics include: Advanced Computational Linguistics; Linguistic Typology; Advanced Philology.

Seminar (two hours); one term  
Prerequisite: Registration in Level III or IV of a Linguistics programme; or permission of the Programme Coordinator  
*LINGUIST 4XX3 may be repeated, if on a different topic, to a total of six units.*

**MANUFACTURING ENGINEERING**

(SEE MECHANICAL ENGINEERING,  
MANUFACTURING ENGINEERING)

**MATERIALS SCIENCE AND ENGINEERING**

Faculty as of January 15, 1996

**Chair**

M.B. Ives

**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.  
D. Alan R. Kay/B.Sc.; Ph.D. (Glasgow), F.C.I.M.  
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.

Walter W. Smeltzer/B.Sc. (Queen's), Ph.D. (Toronto), D.H.C. (Dijon), F.R.S.C., F.A.S.M., P.Eng.

**Professors**

J. David Embury/B.Sc. (Manchester), Ph.D. (Cambridge), F.R.S.C., P.Eng.  
Michael J. Graham/B.Sci., Ph.D. (Liverpool)/part-time  
Gordon A. Irons/B.A.Sc. (Toronto), Ph.D. (McGill), F.C.I.M., P.Eng., Dofasco/NSERC Research Chair in Metal Processing  
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.  
Wei-Kao Lu/B.S. (Chen-Kung), Ph.D. (Minnesota)  
S.R. MacEwen/B.A.Sc., Ph.D. (Toronto)/part-time  
Patrick S. Nicholson/B.Sc. (Leeds), M.Sc., Ph.D. (California, Berkeley), F.A.Cer.S., P.Eng.  
Gary R. Purdy/M.Sc. (Alberta), Ph.D. (McMaster), D.H.C. (Grenoble), F.R.S.C., P.Eng.  
Barry A. Strathdee/B.A.Sc., Ph.D. (Toronto), P.Eng./part-time  
S.V. Mani Subramanian/B.Sc. (Banaras), M.Met., Ph.D. (Sheffield)/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.

**Associate Professors**

Prasad A. Apte/Ph.D. (McMaster)/part-time  
Adrian Kitai/B.Sc. (McMaster), Ph.D. (Cornell), P.Eng.  
Anthony Petric/B.A.Sc. (Toronto), Ph.D. (Ecole Polytechnique), P.Eng.

**Assistant Professors**

Gu Xu/M.Sc., Ph.D. (Pittsburgh), D.E.S. (Columbia)  
Shiping Zhu/B.Eng. (Zhejiang), Ph.D. (McMaster)

**Courses** *If no prerequisite is listed, the course is open.*

**MATLS 1A03 INTRODUCTION TO MATERIALS**

Introduction to fundamental concepts of bonding and atomic structure of condensed materials, with applications to silicate minerals, glasses, polymeric materials, and metals and alloys.

Two lectures, one tutorial; first term  
Prerequisite: Registration in or completion of Natural Sciences I  
Antirequisite: Registration in the Faculty of Engineering, or ENGINEER 2O03

**MATLS 2B06 THERMODYNAMICS OF MATERIALS**

The first three Laws of thermodynamics applied to materials processing. Solution thermodynamics, aqueous electrochemistry, solid electrolytes, and an introduction to kinetics.

Three lectures, one tutorial, both terms  
Prerequisite: CHEM 1A06 or 1E03  
Antirequisite: CHEM 2P06

**MATLS 2H03 MEASUREMENTS AND COMMUNICATION**

Methods of technical communication, involving oral and written practice; basic experimental methods of acquiring, analyzing and presenting data.

Two labs (three hours); first term: one lab (three hours); second term  
Prerequisite: COMP SCI 1MA3 or 1MC3 or ENGINEER 1D04, and CHEM 1A06 or 1E03, and registration in a programme administered by the Department of Materials Science and Engineering  
Antirequisite: MATLS 2H02

**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: MATLS 2A02 or ENGINEER 2O03

**MATLS 3A03 HEAT TRANSFER**

Basic concepts in heat transfer and its application to materials processing. Conduction, convection and radiation. Problem solving techniques.

Two lectures, two tutorials; one term  
Prerequisite: MATH 2M06; or MATH 2O03 and one of MATH 2A03, 2G03  
Antirequisite: MATLS 3E06

**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 2C04 and CHEM 2P06

**MATLS 3E04 MASS TRANSFER**

Phenomenological and mechanistic approaches to diffusion; boundary conditions; diffusion in fluids; point defects in solids.  
Three lectures, two tutorials; one term.

Prerequisite: MATH 2M06; or MATH 2O03 and one of MATH 2A03, 2G03  
Antirequisite: MATLS 3E06

**MATLS 3I05 THERMODYNAMICS OF MATERIALS II**

Solution thermodynamics and its relationship to binary and ternary equilibrium diagrams. Surface energy; homogeneous and heterogeneous nucleation. Stability or predominance area diagrams; use of computerized thermodynamics data bases.

Two lectures, one laboratory (three hours) term one: two lectures, one tutorial; second term

Prerequisite: MATLS 2B06

Antirequisite: MATLS 3D06

**MATLS 3P03 MECHANICAL BEHAVIOUR OF MATERIALS**

Elastic and plastic deformation, creep, fatigue and fracture of engineering materials. Basic concepts of fracture mechanics, materials selection by use of computer based databases of material properties.

Two lectures, one tutorial; one term

Prerequisite: ENGINEER 2O03 or MATLS 1A03 or 2A02 and ENGINEER 2P04

Antirequisite: ENGINEER 3P03, 3R03

**MATLS 3T04 PHASE TRANSFORMATIONS**

Review of thermodynamics, binary phase diagrams and solid state diffusion. Role of interfaces; solidification, diffusional and martensitic transformations; oxidation. Metallographic examination will be featured in laboratory work.

Three lectures or tutorial, one lab (three hours); one term

Prerequisite: MATLS 2G04 or 2X02 and MATLS 2A02 or ENGINEER 2O03

Corequisite: MATLS 3E04 (or 3E06), 3I05 (or 3D06)

Antirequisite: MATLS 4E03

**MATLS 4A02 SEMINARS AND PLANT VISITS**

Seminars and discussions will be lead by technical personnel from industry. Corresponding plant visits will be made by the class and reported both in written and oral form.

One seminar/tutorial/plant visit (three hours); both terms.

Prerequisite: Registration in the final level of a programme administered by the Department of Materials Science and Engineering

**MATLS 4B04 MATERIALS PROCESSING II**

Fundamentals of processing, building on a knowledge of heat and mass transfer. High temperature processing of materials, focussing on heat sources, solid state processing of powders and liquid state processing.

Three lectures, one lab or tutorial (three hours); first term

Prerequisite: MATLS 3A03 or 3E04 or 3B03

**MATLS 4C04 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.

Two lectures; both terms

Prerequisite: MATLS 2C04 or 3B03; 3E06 or 3E04

**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 2P06 or CHEM ENG 2F04 or MATLS 2B06

**MATLS 4E03 PHASE TRANSFORMATIONS**

The thermodynamics, kinetic and crystallographic aspects of phase transformations, with applications to the preparation and processing of materials. Solidification, recrystallization and heat treatment of steels, aluminum alloys and non-metallic materials. This course comprises the lecture portion of MATLS 3T04.

Three lectures; second term

Prerequisite: MATLS 3D03 or 3D06; MATLS 3E06 or 3E04; registration in Materials Engineering and Management

Antirequisite: MATLS 3T04

Last offered in 1996-1997.

**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 Material Science and Engineering

**MATLS 4L02 METHODS OF CHARACTERIZATION**

Quantitative microscopy, image analysis, failure analysis. Electron microscopy, dielectric, ultrasonic, dynamic, mechanical and calorimetric methods for characterizing materials and their properties.

One lecture, one lab (three hours); first term

Prerequisite: MATLS 3I05 (or 3D06), 3E04 (or 3E06), 3T04 (or 3G03)

Antirequisite: MATLS 4L04

**MATLS 4N03 KINETICS AND REACTOR ANALYSIS IN METALLURGICAL SYSTEMS**

Homogeneous and heterogeneous kinetics. Ideal and non-ideal reactor models. Mixing and turbulence. Interfacial reactions in two and three phase systems. Statistical process control.

Three lectures; first term

Prerequisite: MATLS 3E06, or 3E04, which may be taken concurrently with the permission of the instructor

**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 ENG 3Q03 and either ENGINEER 2O03 or MATLS 2A02 or 2G04

**MATLS 4R04 CERAMIC SCIENCE**

Microstructural development and properties of traditional ceramics. Acidic, basic, neutral and nonoxidizing refractories; ferro-electric, piezo-electric and ferromagnetic ceramics; superionic and structural ceramics.

Three lectures; second term

Prerequisite: GEOLOGY 2B06, MATLS 3B03, 3I05, and 4B04 which may be taken concurrently

Antirequisite: CERAMICS 4R03

**MATLS 4S04 GLASS SCIENCE**

Theoretical and experimental aspects of silicates, metallic glasses, and glass ceramics. Modern concepts, and application of non-crystalline solids in optical communication, electrical conductor, and as high strength materials.

Three lectures; first term

Prerequisite: MATLS 3B03, 3I05 and 4B04 which may be taken concurrently

Antirequisite: CERAMICS 4S03

**MATLS 4T03 PROPERTIES AND PROCESSING OF COMPOSITES**

Intrinsic properties of matrix and fibre materials; mechanics and thermodynamics of interfaces; mechanical properties and fabrication of engineering composites.

Two lectures, one tutorial; second term

Prerequisite: MATLS 3E06 or 3E04 and ENGINEER 3P03 or MATLS 3P03

**MATLS 4Z04 INDUSTRIAL PROJECTS**

Projects, in cooperation with industry, involving materials design, in manufacturing, complemented by lectures in group problem solving and design methodology.

One lecture, one lab (three hours); first term: Two labs (three hours); both terms

Prerequisite: Registration in Level IV or V of Materials Engineering, Ceramic Engineering or Metallurgical Engineering

**MATHEMATICS AND STATISTICS****Faculty as of January 15, 1996****Chair**

Eric T. Sawyer

**Associate Chair**

Ernest R. Mead

**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)

Gunter W.A. Bruns/Dr.rer.nat. (Berlin)

Charles W. Dunnett/M.B.E., B.A. (McMaster), M.A. (Toronto), D.Sc. (Aberdeen)

Gerard Field/B.Sc., Ph.D. (London)

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)

William J. McCallion/B.A., M.A. (McMaster)

James P. Stewart/B.Sc. (Toronto), M.S. (Stanford), Ph.D. (Toronto)

**Professors**

- N. Balakrishnan/B.Sc., M.Sc. (Madras), Ph.D. (I.I.T., Kanpur)/Graduate Advisor, Statistics  
 Claude E. Billigheimer/B.A., B.Sc., M.A. (Melbourne), Ph.D. (Toronto)  
 John M. Chadam/B.A. (Toronto), S.M., Ph.D. (MIT)  
 Tae Ho Choe/B.S., B.Sc., M.A. (Kyungpook), Ph.D. (Florida)  
 Joseph Csima/Dipl. Math. (Eotvos, Budapest), Ph.D. (Toronto)  
 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  
 Ian Hambleton/B.Sc., M.Sc. (Toronto), Ph.D. (Yale)  
 Hans P. Heinig/B.Sc. (McMaster), M.A. (Western), Ph.D. (Toronto)  
 Fred M. Hoppe/B.Sc. (Toronto), M.Sc. (Weizmann Institute of Science), M.A., Ph.D. (Princeton)  
 Manfred Kolster/Dipl. (Hamburg), Dr. rer. nat. (Saarbrücken), Habil. (Munster)  
 Peter D.M. Macdonald/B.Sc., M.Sc. (Toronto), D.Phil. (Oxford)  
 Maung Min-Oo/B.Sc. (Rangoon), Dipl. Math., Dr.rer.nat., Habil. (Bonn)  
 S. Gopal Mohanty/B.A. (Utkal), M.A. (Panjab), Ph.D. (Alberta)  
 Gregory H. Moore/B.A. (Berkeley), M.A., M.Sc., Ph.D. (Toronto)  
 Bruno J.W. Mueller/B.Sc. (Göttingen), M.Sc., Ph.D. (Mainz)  
 Andrew J. Nicas/B.Sc. (McGill), M.A., Ph.D. (Princeton)  
 Carl R. Riehm/B.A. (Toronto), Ph.D. (Princeton)  
 Alexander Rosa/M.S. (Kiev State), Ph.D. (Slovak Acad. Sciences)  
 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  
 Moti L. Tikui/B.A. (Kashmir), M.A. (Punjab), M.Sc. (Patna), Ph.D., D.Sc. (Aberdeen)  
 McKenzie Y.-K. Wang/A.B. (Princeton), Ph.D. (Stanford)/Graduate Advisor, Mathematics  
 Patrick C. Yip/B.Sc. (Memorial), Ph.D. (McMaster)

**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.)  
 Jean-Pierre Gabardo/B.Sc. (Université de l'Etat a Mons), Ph.D. (Maryland)  
 Pengfei Guan/B.Sc. (Zhejiang), Ph.D. (Princeton)  
 Bradd Hart/B.Math. (Waterloo), Ph.D. (McGill)/Undergraduate Advisor  
 Thomas R. Hurd/B.Sc. (Queen's), D.Phil. (Oxford)  
 Zdislav V. Kovarik/M.Sc. (Charles, Prague), Ph.D. (Toronto)  
 Ernest R. Mead/B.A., M.A., Ph.D. (Western), A.S.A.  
 Anthony Peirce/B.Sc., (Orange Free State), M.Sc. (Witwatersrand), M.A., Ph.D. (Princeton)  
 Matthew A. Valerioté/B.Math. (Waterloo), Ph.D. (Berkeley)  
 Román Viveros-Aguilera, B.A. (Veracruzana, Mexico), M.A. (National Politechnic Inst., Mexico), Ph.D. (Waterloo)  
 Gail S.K. Wolkowicz/B.Sc., M.Sc. (McGill), Ph.D. (Alberta)

**Assistant Professors**

- Andrew S. Dancer/B.A., D.Phil. (Oxford)  
 Miroslav Lovric/B.S. (Zagreb), M.S., Ph.D. (Ohio State)  
 S. Feng/B.A.Sc., M.Sc. (Beijing), Ph.D. (Carleton)  
 Anton M. Jopko/B.Sc., M.Sc., Ph.D. (McMaster), Dipl. Educ. (Aithouse)/part-time

**Associate Members**

- Frantisek Franek/(Computer Science and Systems) 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/ (Computer Science and Systems) B.Sc. (Toronto), Ph.D. (Brown)  
 William F. Smyth/(Computer Science and Systems) B.A. (Toronto), M.Sc. (Ottawa), Ph.D. (Curtin), C.Eng., F.B.C.S., F.I.C.A.

**External Member**

- Ron A. Kerman/Brock University, B.A., M.A. (Manitoba), Ph.D. (Toronto)

**Department Note:**

\*Indicates course is not necessarily offered every session; consult the Chair of the Department or the Associate Dean of Science (Studies).

**MATHEMATICS ...**

**Courses** If no prerequisite is listed, the course is open.

- MATH 1A03 CALCULUS 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  
 Antirequisite: MATH 1A06, 1AA6, 1C03, 1C06, 1N03, 1N06, ARTS&SCI 1D06
- MATH 1AA3 CALCULUS II**  
 The continuation of MATH 1A03. Topics will include applications of the integral, sequences and series, power series, differential equations, partial derivatives.  
 Three lectures, one tutorial; one term  
 Prerequisite: MATH 1A03 or 1C03  
 Antirequisite: MATH 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS & SCI 1D06
- MATH 1B03 LINEAR ALGEBRA I**  
 Vectors, matrices, determinants, vector spaces, complex numbers; with applications.  
 Three lectures, one tutorial; one term  
 Prerequisite: OAC Mathematics Course  
 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, 1A06, 1AA6, 1C03, 1N03, 1N06, ARTS & SCI 1D06.  
 Students transferring to the Faculty of Science do not retain credit for this course. Students considering upper year mathematics courses should take MATH 1A03.
- MATH 1N03 CALCULUS FOR ENGINEERING I**  
 Differential calculus, the definite integral, techniques of integration, applications.  
 Three lectures, one tutorial; one term  
 Prerequisite: Registration in Engineering I  
 Antirequisite: MATH 1A03, 1N06
- MATH 1NN3 CALCULUS FOR ENGINEERING II**  
 Applications of integration, differential equations, sequence and series, differential calculus of several variables, applications.  
 Three lectures, one tutorial; one term  
 Prerequisite: MATH 1N03  
 Antirequisite: MATH 1AA3, 1N06
- MATH 2A03 CALCULUS III**  
 Functions of several variables, chain rule, Taylor's formula, extremal problems, Lagrange multipliers; multiple integrals, change of variables formula, line and surface integrals, Green's, Gauss' and Stokes' theorems.  
 Three lectures; one term  
 Prerequisite: One of MATH 1AA3, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS&SCI 1D06 and credit or registration in one of MATH 1B03, 1H05  
 Antirequisite: MATH 2A06, 2G03, 2L03, 2N03
- MATH 2AA3 ADVANCED CALCULUS**  
 Topics will include: Inverse and implicit function theorems, vector fields and their flows, linear systems of differential equations with constant coefficients, exponentiation of matrices, differential forms and Stokes' theorem with applications to physics and geometry.  
 Three lectures; one term  
 Prerequisite: MATH 2A03 and 1B03  
 Antirequisite: MATH 2A06

**MATH 2C03 DIFFERENTIAL EQUATIONS**

Ordinary differential equations, Laplace transforms, series solutions, partial differential equations, separation of variables, proofs of existence and uniqueness theorems.

Three lectures; one term

Prerequisite: One of MATH 1AA3, 1A06, 1AA6, 1C06, 1N06, 1NN3 or ARTS&SCI 1D06, and one of MATH 1B03, 1H05

Antirequisite: MATH 2O03

**MATH 2D03\* PROSPECTS IN MATHEMATICS**

This course will investigate the motivation and solution of some of the important problems in mathematics.

Three lectures; one term

Prerequisite: MATH 1B03 and one of MATH 1AA3, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS & SCI 1D06

**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, 1A06, 1AA6, 1C06, 1N06, 1NN3 or ARTS&SCI 1D06 and credit or registration in one of MATH 1B03, 1H05

*Enrolment is limited. However, all students in programmes requiring this course will be admitted. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar*

**MATH 2K03 FINANCIAL MATHEMATICS**

Nominal and effective rates of interest and discount, forces of interest and discount, compound interest, annuities certain; amortization, sinking funds; bonds, security evaluation, determination of yields.

Three lectures; one term

Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1M03, 1N03, 1N06 or ARTS & SCI 1D06

**MATH 2L03 INTERMEDIATE CALCULUS AND DIFFERENTIAL EQUATIONS FOR BUSINESS AND THE SOCIAL SCIENCES**

Functions of several variables, partial differentiation, chain rule, and extremal problems. First and second order differential equations, difference equations.

Three lectures; one term

Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1M03, 1N06, 1NN3 or ARTS & SCI 1D06, and one of MATH 1B03, 1L03, STATS 1L03, OAC Finite Mathematics

Antirequisite: MATH 2A03, 2G03, 2N03

*Not open to students registered in Science or Engineering programmes or with credit in MATH 2A06.*

**MATH 2M06 ENGINEERING MATHEMATICS II**

Ordinary differential equations, Laplace transforms, Fourier series, vector calculus, orthogonal curvilinear coordinates, integral theorems, with engineering applications.

Three lectures; two terms

Prerequisite: MATH 1H05 and one of MATH 1N06 or 1NN3

**MATH 2O03 DIFFERENTIAL EQUATIONS**

Ordinary differential equations with constant coefficients, series solutions, special methods; Laplace transforms, Fourier series; introduction to partial differential equations.

Three lectures; one term

Prerequisite: One of MATH 1AA3, 1A06, 1AA6, 1C06, 1N06, 1NN3 or ARTS & SCI 1D06, and one of MATH 1B03, 1H05

Antirequisite: MATH 2C03

**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.

Four lectures or three lectures and one tutorial, every other week; one term

Prerequisite: One of MATH 1B03, 1H05 and either one of MATH 1N06, 1NN3 or registration in Honours Neural Computation

**MATH 2Q04 ADVANCED CALCULUS FOR ENGINEERING**

Vector algebra, curves, partial differentiation, multiple integrals, Green's Theorem, line and surface integrals, integral theorems, scalar and vector potentials, orthogonal curvilinear coordinates, introduction to partial differential equations.

Four lectures or three lectures and one tutorial, every other week; one term

Prerequisite: Either MATH 1H05 and one of MATH 1N06, 1NN3; or registration in Honours Neural Computation and credit or registration in MATH 1B03

**MATH 2R03 LINEAR ALGEBRA II**

Abstract vector spaces, basis and dimension, linear transformations, linear equations, inner product spaces, eigenvalues, spectral theorems, Jordan canonical form.

Three lectures; one term

Prerequisite: One of MATH 1AA3, 1A06, 1AA6, 1C06, 1N06, 1NN3, ARTS&SCI 1D06 and one of MATH 1B03, 1H05

Antirequisite: MATH 2B06, 2J06

**MATH 2S03 LINEAR ALGEBRA II**

Canonical forms, determinants, bilinear forms, groups of linear transformations, other topics selected by the instructor.

Three lectures; one term

Prerequisite: MATH 2R03

Antirequisite: MATH 2B06, 2J06, 2T03

**MATH 2T03 APPLIED LINEAR ALGEBRA**

Canonical forms, norms, matrix decomposition theorems, sensitivity analysis, Markov chains, iterative methods, applications selected by the instructor.

Three lectures; one term

Prerequisite: MATH 2R03

Antirequisite: MATH 2B06, 2J06, 2S03

**MATH 3A03 REAL ANALYSIS I**

The real number system, metric spaces, compactness, sequences and series, continuity, differentiability, the Riemann-Stieltjes integral, uniform convergence.

Three lectures; one term

Prerequisite: MATH 2A06

Prerequisite: (Beginning in 1997-98) MATH 2A03, 2C03 and credit or registration in MATH 2R03

Antirequisite: MATH 3A06

Students intending to register in MATH 3AA3 who have not completed MATH 2B06 should register in MATH 2R03 concurrently with MATH 3A03.

**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 and either credit in MATH 2B06 or credit or registration in MATH 2S03 or 2T03

Antirequisite: MATH 3A06

**MATH 3B03 INTRODUCTION TO DIFFERENTIAL GEOMETRY**

Curves and surfaces, Gaussian curvature, geodesics, parallel transport, Gauss-Bonnet theorem, selected topics by the instructor.

Three lectures; one term

Prerequisite: One of MATH 2A03, 2A06 or 2G03 and one of MATH 2B06, 2J06, 2S03 or 2T03

**MATH 3C03 MATHEMATICAL PHYSICS I**

Linear algebra and eigenvalue problems; partial differential equations, orthogonal functions, Fourier series, Legendre functions, spherical harmonics.

Three lectures; one term

Prerequisite: One of MATH 2A03, 2A06, 2G03 or 2Q04 and one of MATH 2C03, 2O03, 2P04. One of PHYSICS 2B06, 2C03, 2D03, 2G03 is recommended.

Antirequisite: MATH 3V06

*Not open to students with credit or registration in MATH 3FF3, 3J04.*

**MATH 3D03 MATHEMATICAL PHYSICS II**

Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.

Three lectures; one term

Prerequisite: MATH 3C03

Antirequisite: MATH 3K03, 3V06.

Not open to students with credit or registration in MATH 3J04, 3X03

*Not open to students registered in Honours Mathematics and Physics*

**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: One of MATH 2B06, 2S03 or 2T03

**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 I**  
 Systems of linear differential equations using Jordan canonical form, planar autonomous systems, elementary existence and uniqueness. Asymptotic and structural stability and bifurcation theory. Applications are stressed.  
 Three lectures, one term  
 Prerequisite: One of MATH 2A06, 2G03 and one of MATH 2C03, 2O03 and either credit in one of MATH 2B06, 2J06 or registration in MATH 2R03  
 Prerequisite: (Beginning 1997-98) MATH 2A03; 2C03 and credit or registration in MATH 2R03  
 Antirequisite: MATH 3F06

**MATH 3FF3      ADVANCED DIFFERENTIAL EQUATIONS II**  
 Modelling and derivation of elementary differential equations. Classification: Green's functions, Sturm-Liouville theory, orthogonal expansions, Fourier series and transforms, conservation laws, waves and solitons.  
 Three lectures, one term  
 Prerequisite: MATH 3F03  
 Antirequisite: MATH 3F06

**MATH 3G03\*     PROBLEM SOLVING**  
 Principles of problem solving and application to solutions of mathematical problems. Practice in developing problem-solving skills on problems from various areas of mathematics.  
 Three lectures; one term  
 Prerequisite: Credit in at least 12 units of Level II Mathematics or Statistics, and the permission of the instructor  
*Enrolment is limited. See the heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.*

**MATH 3H03\*     NUMBER THEORY**  
 Selected topics from: congruences 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 3L03      INTRODUCTION TO MATHEMATICAL LOGIC**  
 Propositional and first order logic, deduction systems, completeness and compactness theorems, model theory.  
 Three lectures; one term  
 Prerequisite: One of MATH 2B06, 2J06, 2S03, 2T03

**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, 2A06, 2G03, 2Q04 and one of MATH 2C03, 2O03, 2P04. One of COMP SCI 1MA3, 1MC3, 1SA3, 1ZA3, 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 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 3A03  
 Antirequisite: MATH 3T03, 4A06

**MATH 3Z03      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 one of MATH 2AA3, 2A06 and one of MATH 2B06, 2S03, 2T03

**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: One of MATH 2A03, 2A06, 2G03 and one of MATH 2B06, 2J06, 2S03, 2T03

**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 4F03\*     SET THEORY**  
 Ordinal and cardinal arithmetic, equivalents of the axiom of choice, the Zermelo-Frankel axiom system, the continuum hypothesis, independence.  
 Three lectures; one term  
 Prerequisite: One of MATH 2B06, 2J06, 2S03, 2T03  
 Alternates with MATH 4S03.  
 Offered in 1997-98

**MATH 4I03\*     BANACH AND HILBERT SPACES**  
 An introduction to  $L_p$ , Banach and Hilbert spaces, bounded linear operators, functionals, open mapping and closed graph theorems, duality, Riesz representation theorems; and other topics.  
 Three lectures; one term  
 Prerequisite: MATH 4K03

**MATH 4J03      GRAPH THEORY**  
 Graphs, trees, bipartite graphs, connectivity, graph colouring, matrix representations, applications.  
 Three lectures; one term  
 Prerequisite: One of MATH 2A03, 2A06, 2G03 and one of MATH 2B06, 2J06, 2S03, 2T03

**MATH 4K03      MEASURE THEORY AND PROBABILITY**  
 Introduction to the theory of measure and integration with applications to probability theory.  
 Three lectures; one term  
 Prerequisite: One of MATH 3AA3, 3A06 or a grade of at least A- in MATH 3O06

**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 4QQ3 NUMERICAL LINEAR ALGEBRA**

Matrix norms; decompositions including LU, QR and SVD; sensitivity analysis. Eigenvalue and least squares problems. Sparse, Vandermonde and Toeplitz systems. Iterative methods, subspace methods. Three lectures; first term  
Prerequisite: MATH 3Q03

**MATH 4RR3\* OPTIMIZATION**

Nonlinear programming and unconstrained optimization; trust region methods. Constrained optimization and penalty methods. Characterizations of optimality. Lagrange multiplier techniques and quadratic programming. Three lectures; one term  
Prerequisite: MATH 3R03 and one of MATH 2A03, 2A06, 2G03, 2L03 or 2N03

**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 2B06, 2J06, 2S03 or 2T03  
Antirequisite: COMP SCI 4TC3  
Alternates with MATH 4F03.  
Offered in 1996-97.

**MATH 4T03 INTRODUCTION TO TOPOLOGY**

Topological spaces, connectedness, compactness, metric spaces, separability, fundamental groups and covering spaces, selected topics by the instructor. Three lectures; one term  
Prerequisite: MATH 3A03, 3E03  
Antirequisite: MATH 3P03

**MATH 4V03 APPLIED MATHEMATICAL ANALYSIS**

Lebesgue integration, distribution theory, Fourier Analysis, partial differential equations, integral equations, calculus of variations; additional topics. Three lectures; one term  
Prerequisite: One of MATH 3D03, 3FF3, 3F06  
Antirequisite: MATH 4V06

**MATH 4W03 DIRECTED READING**

Directed reading in areas of mathematics of interest to the student and the instructor.  
Prerequisite: Permission of the Chair of the Department  
See the heading *Courses Requiring Permission in the Faculty of Science* section of the Calendar.

**MATH 4X03 COMPLEX ANALYSIS II**

Conformal maps, analytic continuation, harmonic functions, the Riemann mapping theorem, Riemann surfaces. Three lectures; one term  
Prerequisite: MATH 3X03  
Antirequisite: MATH 4A06

**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, 2R06, STATS 1CC3, 2D03, 2M03, 2MA3, 2MB3, 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: OAC Mathematics course or MATH 1K03  
*Not open to students with credit in STATS 1A03, 1C03 or any Level II or above Statistics course.*  
See 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.*

**STATS 2A03\* ADVANCED STATISTICAL REASONING**

Statistical inference procedures and methods for describing the relationships between variables are explained through a variety of examples from different fields. Three lectures; one term  
Prerequisite: STATS 1A03  
*Not open to students with credit or registration in STATS 1CC3, 2D03, 2MA3, 2MB3, 2R06*  
*Not open to students registered in the Faculty of Science.*

**STATS 2D03 PROBABILITY THEORY**

Combinatorics, independence, conditioning; Poisson-process; discrete and continuous distributions with statistical applications; expectation, transformations, order statistics. Distribution of sample mean and variance, moment-generating functions, central limit theorem. Three lectures; one term  
Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1M03 and credit or registration in MATH 1B03.  
*Not open to students with credit or registration in STATS 2A03, 2MA3, 2R06*  
*Students with credit in STATS 1L03 may not retain this credit if STATS 2D03 is taken.*

**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, 1AA6, 1C03, 1C06  
Antirequisite: ECON 2B03, PSYCH 2R03  
*Not open to students with credit or registration in COMMERCE 2QA3, 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, 2R06, STATS 2R06  
*Not open to students with credit or registration in COMMERCE 2QA3, STATS 2A03, 2MA3.*

**STATS 2R06 INTRODUCTORY STATISTICS WITH APPLICATIONS**

Descriptive statistics, plotting data, computation of measures for data, probability, random variables, hypothesis testing, parameter estimation, analysis of variance, chi-square tests, distribution-free tests. Three lectures; two terms  
Prerequisite: OAC Calculus or MATH 1K03  
Antirequisite: PSYCH 2R03, 2R06, 2RR3, STATS 2D03, 2MB3  
*Not open to students with credit or registration in COMMERCE 2QA3, ECON 2B03, 3O06, STATS 1A03, 1CC3, 1L03, 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, 2A06, 2G03, 2L03, 2N03, 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.*  
*Offered in 1996-97.*

**STATS 3H03\* ACTUARIAL MATHEMATICS II**  
Multiple life functions, multiple decrement models, valuation theory for pension plans.  
Three lectures; one term  
Prerequisite: STATS 3G03

**STATS 3N03 STATISTICAL METHODS FOR ENGINEERING**  
Introduction to statistical methods and applications: data analysis and statistical methods.  
Three lectures; one term  
Prerequisite: Registration or credit in Levels III, IV or V Engineering or registration in Level III or IV of a programme in the Department of Materials Science and Engineering.  
Antirequisite: STATS 3Y03

**STATS 3S03\* SURVEY SAMPLING**  
Survey design; simple random sampling; stratified sampling; proportional allocation; ratio estimation; cluster sampling; systematic sampling and sample size determination. A project associated with current research is required.  
Three lectures; one term  
Prerequisite: STATS 2D03 and 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 one of MATH 2A03, 2A06, 2G03 or 2N03

**STATS 3X03 ENGINEERING MATHEMATICS IV**  
Further topics of interest for electrical engineering, emphasizing probability theory.  
Three lectures; one term  
Prerequisite: MATH 2P04 and 2Q04

**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 one of MATH 3AA3, 3A06 or 3Q06

**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,  $T^2$  and others; regression, correlation, factor analysis, general linear hypothesis.  
Three lectures; first term  
Prerequisite: STATS 3D06, and one of MATH 2B06, 2J06, 2S03 or 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 STATISTICAL COMPUTING**  
Practical problems from design of experiments, linear models, regression, sampling, multivariate analysis and industrial statistics, will be considered using statistical software packages.  
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, 1996

#### Chair

M.A. Elbestawi

#### Professors Emeriti

W. Roy Newcombe/B.Sc. (*Mount Allison*), M.E. (*Nova Scotia Tech.*), P.Eng.  
James N. Siddall/B.E. (*Saskatchewan*), S.M. (*M.I.T.*), P.Eng.

#### Professors

Mohammed A. Dokainish/B.Sc. (*Cairo*), M.A.Sc., Ph.D. (*Toronto*), P.Eng.  
Mohammed Elbestawi/B.Sc. (*Alexandria*), M.Eng., Ph.D. (*McMaster*), P.Eng.  
Ross L. Judd/B.E.Sc. (*Western*), M.Eng. (*McMaster*), Ph.D. (*Michigan*), P.Eng.  
Brian Latto/B.Sc. (*London*), Ph.D. (*Glasgow*), P.Eng., C.Eng.  
George F. Round/B.Sc., Ph.D., D.Sc. (*Birmingham*), F.C.I.C., P.Eng.  
Mamdouh Shoukri/B.Sc. (*Cairo*), M.Eng., Ph.D., (*McMaster*), P.Eng.  
Robert Sowerby/B.Sc., A.C.G.I. (*London*), M.Sc., Ph.D., D.Sc. (*Manchester*), P.Eng.  
David S. Weaver/M.A.Sc. (*Toronto*), Ph.D. (*Waterloo*), P.Eng.

#### Associate Professors

Albert M.C. Chan/B.Sc. (*Alberta*), M.Eng., Ph.D. (*McMaster*)/Part-time  
Mateusz P. Sklad/M.Sc., Ph.D. (*Warsaw*)

#### Assistant Professors

Gary Bone/B.Sc. App. Sc. (*Queens*), M.Eng., Ph.D. (*McMaster*)  
Robert C. Hudspeth/B.Eng., M.Eng. (*McMaster*), P.Eng.  
Allan Spence/B.Math., M.A.Sc. (*Waterloo*), Ph.D. (*British Columbia*), P.Eng.  
Anthony Vaz/B.A. Sc., M.A.Sc., Ph.D. (*Toronto*) 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.  
Ali-Reza Montazemi/ (*Business*) H.N.D. (*Teeside Polytechnic, U.K.*), M.Sc. (*Southampton*), Ph.D. (*Waterloo*)  
W.F. Skipper Poehlman/ (*Computer Science and Systems*) 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.

**External Member****Professor**

Hoda A. ElMaraghy/(Windsor)B.Sc. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.

**Department Note:**

Enrolment in Mechanical Engineering courses by students in programmes other than those administered by the Department may be limited.

**MANUFACTURING ENGINEERING ...****Courses** *If no prerequisite is listed, the course is open.***MANUFACT 2C03 MECHANICAL ENGINEERING DESIGN I**

One to three projects in small teams involving modelling, analysis, synthesis and computing, with emphasis on analysis. Individual reports are required with complete assembly and detail drawings.

Two lectures, one lab (three hours) alternating weeks and one lab (three hours) every week; second term

Prerequisite: ENGINEER 1C04, 1D04, 2P04

**MANUFACT 3M02 MANUFACTURING LABORATORY I**

Laboratory exercises in metalworking practices, measurements and solid mechanics.

Two labs (three hours); both terms

Prerequisite: Registration in Manufacturing Engineering

**MANUFACT 4A03 COMPUTER AIDED MANUFACTURING**

Computer integrated manufacturing systems. Coding and classification, group technology. Computerized process planning. Robotics and sensors. Assembly. Design for manufacturability and assembly. Flexible manufacturing. Simulation of manufacturing processes.

Two lectures, one lab (three hours); second term

Prerequisite: Registration in Level III or Level IV of a programme administered by the Department of Mechanical Engineering.

**MANUFACT 4M04 PROJECT**

A major project in the area of manufacturing engineering. It may be of a design or experimental nature.

One lab (three hours), first term, three labs (three hours); second term

Prerequisite: Registration in Level IV of Manufacturing Engineering

**MANUFACT 4P02 MANUFACTURING LABORATORY II**

Laboratory exercises in metalworking practices, solid mechanics and controls.

One lab (three hours); both terms

Prerequisite: MANUFACT 3M02

**MECHANICAL ENGINEERING ...****Courses** *If no prerequisite is listed, the course is open.***MECH ENG 2A03 KINEMATICS OF MECHANISMS**

Computations and projects in mechanical engineering. Introduction to the design of mechanisms. Analysis and synthesis of cams, gears and planar mechanisms. Force analysis of machine members.

Two lectures, one lab (three hours); first term

Prerequisite: MATH 1H05, 1N06, 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**

One or two projects in small teams involving modelling, analysis, synthesis and computing, with emphasis on analysis. Individual reports are required with complete assembly and detail drawings.

Two lectures, one lab (three hours) alternating weeks and one lab (three hours) every week; second term

Prerequisite: ENGINEER 1C04, 1D04, 2P04

**MECH ENG 2W04 ENGINEERING THERMODYNAMICS**

Introduction to the principles of thermodynamics, application in engineering. Basic concepts: energy systems, cycles, properties of pure substances, entropy. Laws of thermodynamics, power and refrigeration cycles.

Three lectures, one tutorial; second term

Prerequisite: CHEM 1A06 or 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.

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; first term

Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

**MECH ENG 3D03 MECHANICAL ENGINEERING THERMODYNAMICS**

The thermodynamic laws, as developed in MECH ENG 2W04, are re-examined. Applied thermodynamics including advanced engineering thermodynamic processes, psychrometry, and an introduction to combustion, compressible flow and environmental problems are considered.

Three lectures; first term

Prerequisite: ENGINEER 2W04 or MECH ENG 2W04

**MECH ENG 3E04 MECHANICAL ENGINEERING DESIGN II**

Uncertainties, statistical considerations. Design of machine components. The laboratories consist of problems, case studies and the use of computer graphics and CAD packages for machine design problems.

Three lectures, one lab (three hours); second term

Prerequisite: ENGINEER 2P04, 2Q04, MECH ENG 3A03

**MECH ENG 3F03 MODELLING AND NUMERICAL SOLUTIONS**

An introductory course in numerical analysis covering such topics as: Solution of both differential and non-linear equations, matrices and systems of linear equations. One lecture period, every other week, devoted to the modelling of mechanical systems.

Three lectures; first term

Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering.

**MECH ENG 3M02 COMPOSITE LABORATORY**

Laboratory exercises in fluid mechanics, thermodynamics and solid mechanics.

One lab (three hours); both terms

Prerequisite: Registration in a programme administered by the Department of Mechanical Engineering

**MECH ENG 3O04 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: ENGINEER 2W04 or MECH ENG 2W04, MATH 2M06, MECH ENG 3O04

**MECH ENG 4C03 INDUSTRIAL ENGINEERING**

Technical and economic considerations in organizing and planning the production process. Characteristics of job, batch and mass manufacturing systems. Plant layout, work standards and work measurements, means of increasing productivity. Operations research. Concepts and methods in inventory control and statistical quality control.

Three lectures; first term

Prerequisite: MATH 3V06, or MATH 3I03 and STATS 3Y03

**MECH ENG 4D03 MANUFACTURING PROCESSES (METAL REMOVAL)**

Fundamentals of metal removing processes. Characteristics of the various types of operations. Optimizing working conditions for best economy, best precision and surface quality. Characteristics of corresponding production equipment. Accuracy of machine tools, stability, life, reliability. Numerical control and adaptive control of machine tools.

Three lectures; second term

Prerequisite: MECH ENG 3C03



**MECH ENG 4G03 MECHANICAL ENGINEERING DESIGN III**

A course in mechanical design, design optimization, design for manufacturability, computer-aided design, reliability and failure analysis, major design project.

Two lectures, one tutorial (two hours); first term

Prerequisite: MECH ENG 3E04

**MECH ENG 4K03 INTRODUCTION TO ROBOTIC MECHANICS**

Spatial descriptions and transformations, manipulator kinematics, inverse kinematics, Jacobians, dynamics.

Three lectures; second term

Prerequisite: MECH ENG 2A03, 4Q03, 4R03

**MECH ENG 4L03 INDUSTRIAL DESIGN**

Introduction for engineering students to the techniques of industrial design, case studies and introduction to illustration techniques.

Three lectures; second term

Prerequisite: MECH ENG 2C03, 3E04

**MECH ENG 4M04 PROJECT**

A major project related to any option or branch of engineering. It may be of a design or experimental nature.

One lab (three hours), first term; three labs (three hours); second term

Prerequisite: Registration in Level IV Mechanical Engineering, or in Level V Mechanical Engineering and Management or Mechanical Engineering and Society

**MECH ENG 4P02 COMPOSITE LABORATORY**

Laboratory exercises in vibrations analysis, machine structures, controls, heat transfer, gas dynamics, fluid mechanics and thermodynamics.

One lab (three hours); both terms

Prerequisite: MECH ENG 3M02, and registration in a programme administered by the Department of Mechanical Engineering

**MECH ENG 4Q03 MECHANICAL VIBRATIONS**

Transient and steady state vibration of single- and multi-degree of freedom systems. Dynamic vibration absorber. Vibrations of continuous beams. Balancing and critical speeds of shafts.

Two lectures, one tutorial (two hours); first term

Prerequisite: MATH 2M06, 3V06, or MATH 3I03 and STATS 3Y03, ENGINEER 2Q04, MECH ENG 3A03

**MECH ENG 4R03 CONTROL SYSTEMS**

Control systems in a design context with emphasis on digital computer control techniques. Continuous linear systems with analog control, discrete time systems, digital control and the use of microcomputers.

Three lectures; first term

Prerequisite: MATH 3V06 or MATH 3I03 and STATS 3Y03

**MECH ENG 4S03 FLUID MECHANICS II**

Introduction to potential flows, internal and external laminar and turbulent incompressible flows. Introduction to compressible flows and hydraulic machines.

Two lectures, one lecture/tutorial; first term

Prerequisite: MECH ENG 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. Approaches to modelling including numerical simulation techniques for the design and analysis of the performance of thermo-fluid systems.

Three lectures; second term

Prerequisite: MECH ENG 3R03, 3D03, 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 (kinematics and stress analysis) used on SUN workstations.

Two lectures, one lab (three hours); first term

Prerequisite: Registration in Level IV Manufacturing Engineering or Mechanical Engineering or permission of the department

**ENGINEER 4J03 MATERIALS FABRICATION**

Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. See *Engineering (General)* for course description.

**MIDWIFERY****Faculty as of January 15, 1996****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/B.A.A.N. (Ryerson), M.Sc. (Toronto), R.M.

**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 two-hour small group tutorial.

Two terms

Prerequisite: Registration in the Midwifery Education Programme

Antirequisite: MIDWIF 1A03

**MIDWIF 1B03 MIDWIFERY CARE I-CLINICAL SKILLS INTENSIVE**

Structured learning experiences are completed to prepare for MIDWIF 1E09. Students will learn fundamental clinical skills and theoretical information.

Four weeks

Prerequisite: MIDWIF 1A06

Antirequisite: MIDWIF 1B12

**MIDWIF 1E09 MIDWIFERY CARE I-CLINICAL PRACTICUM**

A clinical placement is completed which focuses on assessment skills of prenatal and postnatal clients and observation of births. Included is a weekly situation-based, small group tutorial which will focus on thorough assessment of situations and integration of basic knowledge with clinical observations.

Eight weeks

Prerequisite: MIDWIF 1B03

Antirequisite: MIDWIF 1B12

**MIDWIF 2B12 MIDWIFERY CARE II**

Students are provided with an extended period of clinical experience within a midwifery practice. The course begins with a seven to ten day intensive workshop. A weekly tutorial based on case situations and self-study materials will cover topics in preconception, antepartum, intrapartum, postpartum and newborn care.

One term

Prerequisite: MIDWIF 1B03, 1E09

**MIDWIF 2C12 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 2B12

**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

## 210 MODERN LANGUAGES

### 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: MIDWIF 2B12

### MIDWIF 3B12 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 2C12

### 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 childbirth 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: MIDWIF 3B12

### 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

Co-requisite: MIDWIF 3A09

Prerequisite: HTHSCI 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: MIDWIF 3B12

Co-requisite: MIDWIF 3C12

### MIDWIF 3F03 FINAL SYSTHESIS 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: HTHSCI 3LL4

## MODERN LANGUAGES

### Faculty as of January 15, 1996

#### Chair

George Thomas

#### Professors Emeriti

Antonio G. Alessio/D.Litt. (Genoa) (Italian)

Karl Denner/M.A. (Kentucky), Ph.D. (Johns Hopkins), (German)

#### Professors

John D. Browning/B.A., M.Phil. (London), Ph.D. (Essex) (Hispanic Studies)

Samuel D. Cioran/B.A. (McMaster), Ph.D. (Toronto) (Russian)

Stelio Cro/L. en L. (Buenos Aires), Dott. Ling. e Lett. (Venice) (Italian)

Nina Kolesnikoff/M.A. (Moscow State), Ph.D. (Alberta) (Russian)

Walter Smyrniw/B.A. (McMaster), M.A., Ph.D. (Toronto) (Russian)

Gerhart Teuscher/Dip. -Uebersetzer (Mainz-Germersheim), M.A. (Toronto), Ph.D. (State University of New York, Buffalo) (German)

George Thomas/B.A., Ph.D. (London) (Russian)

#### Associate Professors

Joseph Adamson/B.A. (Trent), M.A., Ph.D. (Toronto) (Comparative Literature)

María del C. Cerezo/B.A. (Puerto Rico), M.A. (McGill), Ph.D. (Toronto) (Hispanic Studies)

Gerald Chapple/B.A. (McMaster), A.M., Ph.D. (Harvard) (German)

Gabriele Erasmi/B.A. (Yale), M.A., Ph.D. (Minnesota) (Italian)

Fiorino Minelli/B.A., M.A. (Western), Ph.D. (Brown) (Hispanic Studies)

Hans H. Schulte-Assessor (Munich), Dr. phil. (Augsburg) (German)

María M. Stroinska/M.A. (Warsaw), Ph.D. (Edinburgh) (German and Linguistics)

M. Jean Wilson/B.A. (McMaster), B.Ed., M.A., Ph.D. (Toronto) (German and Comparative Literature)

#### Assistant Professor

Vittorina Cecchetto/B.A., M.A., Ph.D. (Toronto) (Italian)

#### Senior Language Preceptors

Nobuko Adachi/M.A. (Illinois) (Japanese)

Eiko Virginia Ariga/M.A. (Toronto), M.A. (Texas) (Japanese)

Ping-Mei Law/B.A., M.A. (Toronto) (Hispanic Studies)

Anna L. Moro/M.A. (Toronto) (Italian)

Rüth Thomas/Staatsexamen (Bochum), M.A. (McMaster) (German)

#### Research Associates

Inga Dolinina/M.A., Ph.D. (Leningrad) (Linguistics)

Branka Popovic/M.A., Ph.D. (Belgrade) (German and Linguistics)

#### Associate Members

John Colarusso/(Anthropology) B.A. (Cornell), M.A. (Northwestern), Ph.D. (Harvard)

Thomas E. Willey/(History) B.A. (Butler), M.A., Ph.D. (Yale)

### COURSES If no prerequisite is listed, the course is open.

#### MOD LANG 2A03 INTRODUCTION TO LITERARY STUDIES

An examination of the fundamental questions about the nature of literature and the purpose and methodology of literary studies, focusing on the interdisciplinary and cultural aspects of literature.

Three lectures; one term

Prerequisite: Registration in Level II and above

#### MOD LANG 2B03 SURVEY OF ITALIAN LITERATURE (IN ENGLISH)

This course will study the development of Italian literature from its beginnings to the present with emphasis on major authors and works. This will include some account of its influence upon other European literatures.

Three lectures; one term

Prerequisite: Registration in Level II and above

#### MOD LANG 2H03 MASTERWORKS OF GERMAN LITERATURE (IN ENGLISH)

A survey of major works from a variety of genres, by Goethe, Kleist, Heine, Büchner, Mann, Rilke, Brecht and others.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

#### MOD LANG 3A03 LITERATURE AND POLITICS IN GERMANY 1914-45 (IN ENGLISH)

A study of the literary responses to the social, political and cultural upheaval from the beginning of the First World War to the end of the Second. The course will involve a close scrutiny of the forms and functions of political rhetoric, manifestos and *littérature engagée*.

Three lectures; one term

Prerequisite: Registration in Level II and above

#### MOD LANG 3B03 TRECENTO (IN ENGLISH)

This course will study the literature of 14th-century Italy.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: ITALIAN 3R03 and 3RR3

Offered in alternate years.

#### MOD LANG 3G03 GERMAN DRAMA (IN ENGLISH)

A study of representative plays by major dramatists of the German-speaking world, from the 18th century to the present.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

#### MOD LANG 3J03 THE METAMORPHOSES OF DON JUAN (IN ENGLISH)

The development of the myth of Don Juan from its origins to the present.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

#### MOD LANG 3JJ3 THE LITERATURE OF THE DELINQUENT (IN ENGLISH)

A study of the picaresque mode in European literature from 1550 to 1800. This is tantamount to a study of the origins and early development of the novel as a genre.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

**MOD LANG 3K03 20TH-CENTURY RUSSIAN LITERATURE (IN ENGLISH)**

A study of Russian literature of the 1920s and 1930s with special attention to Akhmatova, Bulgakov and Sholokhov.

Three lectures; one term

Prerequisite: Registration in Level II and above

Alternates with MOD LANG 3R03.

**MOD LANG 3KK3 CONTEMPORARY RUSSIAN LITERATURE (IN ENGLISH)**

A study of contemporary Russian literature since 1955, with special attention to Pasternak, Solzhenitsyn and Yevtushenko.

Three lectures; one term

Prerequisite: Registration in Level II and above

Alternates with MOD LANG 3RR3.

**MOD LANG 3P03 LITERATURE AND POLITICS IN SPANISH AMERICA (IN ENGLISH)**

An exploration of the ways in which politics and aesthetics combine in Spanish American literature. Emphasis will be on the 20th-century works, but writings from previous centuries will also be included.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

**MOD LANG 3R03 19TH-CENTURY RUSSIAN LITERATURE I (IN ENGLISH)**

A study of the major prose of Gogol and Turgenev.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 2R03

Alternates with MOD LANG 3K03

**MOD LANG 3RR3 19TH-CENTURY RUSSIAN LITERATURE II (IN ENGLISH)**

A study of the major novels by Dostoevsky and Tolstoy.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: MOD LANG 2RR3

Alternates with MOD LANG 3KK3

**MOD LANG 3SS3 THE RENAISSANCE EPIC (IN ENGLISH)**

Ariosto's Orlando Furioso and Tasso's Jerusalem Delivered.

Three lectures; one term

Prerequisite: Registration in Level II and above

Antirequisite: ITALIAN 4R03

Offered in alternate years.

**MOD LANG 3T03 TOPICS IN NATIONAL CINEMAS I (IN ENGLISH)**

Previous topics include: Soviet and East European Cinema. Consult Department concerning topic to be offered.

Two lectures, plus one weekly film screening; one term

Prerequisite: DRAMA 2X06

MOD LANG 3T03 may be repeated, if on a different topic, to a total of six units.

Cross-list: ART HISTORY 3T03 and DRAMA 3T03

**MOD LANG 3W03 GERMAN WOMEN WRITERS (IN ENGLISH)**

A study of selected works by German women writers from the eighteenth century to the present.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

**MOD LANG 4I13 INDEPENDENT STUDY**

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Tutorials; one term

Prerequisite: Registration in Level IV of a programme in Literary Studies or Modern Languages and permission of the Department

**MOD LANG 4L03 SURVEY OF SPANISH THEATRE (IN ENGLISH)**

A study of the development of Spanish drama and stage from Lope to Lorca.

Three lectures; one term

Prerequisite: Registration in Level II and above

Offered in alternate years.

**MOHAWK**

(SEE INDIGENOUS STUDIES)

**MOLECULAR BIOLOGY AND BIOTECHNOLOGY**

The Molecular Biology and Biotechnology courses are administered within the Faculty of Science through a Committee of Instruction, and draw on the Departments Biochemistry, Biology and Pathology and the McMaster Institute for Molecular Biology and Biotechnology. Information and counselling may be obtained from the Programme Coordinator.

**Courses If no prerequisite is listed, the course is open.****MOL BIOL 4F03 MOLECULAR ASPECTS OF DEVELOPMENT**

Mammalian embryonic development will be examined at the cellular and molecular level. Topics include genetic control of cell determination, pattern formation, morphogenesis, and neurogenesis.

Three lectures; one term

Prerequisite: One of BIOCHEM 3A03, 3AA3, 3B03, 3BB3, 3G03, 3GG3, and BIOLOGY 3NN3 or permission of the instructor

**MOL BIOL 4H03 MOLECULAR BIOLOGY OF CANCER**

Cancer at the cellular and molecular level. Topics include: properties of cancer cells, activation of proto-oncogenes, function of oncoproteins, transgenic mouse models, and tumour viruses.

Two lectures; one tutorial; one term

Prerequisite: One of BIOLOGY 3H03, 3HH3, BIOCHEM 3A03, 3B03, 3G03; or permission of instructor

**MOL BIOL 4J03 MOLECULAR IMMUNOLOGY**

The molecules of the immune system will be examined in detail. Topics will include the regulation, biosynthesis and structure of immunoglobulins, major histocompatibility complex loci products and T cell receptors.

One tutorial (three hours); one term

Prerequisite: One of BIOLOGY 4I03, 3X03 and one of BIOLOGY 3H03, BIOCHEM 3A03, 3B03, 3G03; or permission of the instructor  
Cross-list: BIOCHEM 4J03

**Related Courses**

BIOCHEM 2A06	Principles of Biochemistry
3B03	Nucleic Acid Structure and Function
3BB3	Protein Structure and Enzyme Mechanism
3C03	Cellular Biochemistry
3L03	Biochemistry Laboratory
4A03	Recent Advances in Biochemistry and Molecular Biology
4B06	Senior Thesis
4D03	Biotechnology and Genetic Engineering
4E03	Gene Expression
4G03	Biotechnology and Genetic Engineering Laboratory
4I03	Structural and Mechanistic Aspects of Macromolecules
4M03	Membrane Structure and Function
4P03	Research Project
4Q03	Biochemical Pharmacology
BIOLOGY 2B03	Cell Biology
2C03	Genetics
2D03	The Plant Kingdom
2E03	The Animal Kingdom
3C03	Microbial Physiology and Regulation
3E03	Introductory Microbiology
3H03	Molecular Biology of the Nucleus
3HH3	Molecular Organization of the Eukaryotic Cytoplasm
3I03	Eukaryotic Genetics
3NN3	Developmental Biology
3O03	Microbial Genetics
3V03	Techniques in Molecular Genetics
3X03	Introductory Immunology
3Y03	Plant Development
4B03	Plant Metabolism and Molecular Biology
4C09	Senior Thesis
4F06	Senior Project
4I13	Advanced Topics in Immunology
4M03	Molecular Aspects of Eukaryotic Chromosomes
4R03	Human Genetics
4V03	Virology
CHEM 2N03	Analytical Chemistry
2O06	Organic Chemistry
2R03	General Physical Chemistry
3D03	Organic Chemistry
3F03	Bio-Organic Chemistry

## MUSIC

Courses and programmes in Music are administered within the School of Art, Drama and Music of the Faculty of Humanities.

### Notes:

- All Music courses except 1A06, 1B06, 2A03, 2AA3, 2B06, 3T03, 3U03, 3Y03, and 4X03 have limited enrolments. Priority in limited enrolment courses is given to Music students, according to their programme and level.
- The following courses may be taken by undergraduates not in a Music programme. Those with an asterisk have limited enrolment. Non-music students interested in asterisked courses should consult the School of Art, Drama and Music and take the qualifying tests (*if necessary*) as early as possible. These are modelled on the Royal Conservatory of Music (Toronto) Grade 2 test in rudiments of music theory and the Grade 9 performance-level ear-training test.

MUSIC 1A06	Introduction to Music
MUSIC 1B06	History of Music (c. 500-1750)
MUSIC 1CC3*	Harmony
MUSIC 1D03*	General Musicianship
MUSIC 2A03	Topics in Western Music
MUSIC 2AA3	Popular Music
MUSIC 2B06	History of Music (c. 1750-1914)
MUSIC 2C03*	Modal Counterpoint
MUSIC 2CC3*	Harmony
MUSIC 2D03*	General Musicianship
MUSIC 2H03*	Analysis
MUSIC 3AA3	Kodály and Orff Methods
MUSIC 3T03	Canadian Music
MUSIC 3U03	Jazz
MUSIC 3Y03	History of Music (c. 1914 to the Present)
MUSIC 4X03	Music of the World's Cultures

- Lesson fees are charged to students taking MUSIC 2E03, 3E03 or 4E03 if the course is not a specific requirement for their programme.
- Returning students in an Alternative 1 Honours programme requesting a change into an Alternative 2 Honours programme (to include MUSIC 1E06 or 2E06) must do so in writing by March 15. New students requesting an Alternative 2 Honours programme should do so as soon as possible before the beginning of classes in September.

**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 MUSIC (C. 500-1750)

A survey of medieval, renaissance, and baroque music. Includes consideration of performance practices, and influences of the other arts and of socio-political developments.

Three lectures; two terms

Prerequisite: Registration in a Music programme; or MUSIC 1A06 and permission of the School of Art, Drama and Music

### MUSIC 1CC3 HARMONY

The analysis and writing of functional harmony. Includes study of music by J.S. Bach and others.

Two lectures; two terms

Prerequisite: Registration in a Music programme, or qualifying tests

### MUSIC 1D03 GENERAL MUSICIANSHIP

Sight-singing and dictation.

Two lectures, one lab; two terms

Prerequisite: Registration in a Music programme, or qualifying tests

### MUSIC 1E03 SOLO PERFORMANCE

The technique and repertoire of any orchestral instrument, the piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

One half-hour lesson weekly; two terms

Prerequisite: Registration in a Music programme

Antirequisite: MUSIC 1E06

### MUSIC 1E06 SOLO PERFORMANCE

Intensive study of the technique and repertoire of any orchestral instrument, the piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

One hour lesson weekly; two terms

Prerequisite: Registration in Music I, and permission of the School of Art, Drama and Music

Antirequisite: MUSIC 1E03

### MUSIC 1G03 ENSEMBLE PERFORMANCE

McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.

Prerequisite: Successful audition required. Academic credit available only to students registered in a Music programme.

### MUSIC 2A03 TOPICS IN WESTERN MUSIC

A detailed study of one or more composers or aspects of Western music. Topics may include: Bach, Beethoven, Classicism, Romanticism, Opera, Concerto.

Three lectures; one term

Prerequisite: MUSIC 1A06

Antirequisite: Registration in a Music programme

*MUSIC 2A03 may be repeated, if on a different topic, to a total of six units.*

### MUSIC 2AA3 POPULAR MUSIC

A study of the 20th-century popular music culture. Topics may include: ragtime (Joplin), Broadway musicals (Gershwin), 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 2B06 HISTORY OF MUSIC (C. 1750-1914)

A survey of classical, romantic, and postromantic music.

Three lectures; two terms

Prerequisite: MUSIC 1B06

Antirequisite: MUSIC 2A06

### MUSIC 2C03 MODAL COUNTERPOINT

The analysis and writing 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; two terms

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 GENERAL MUSICIANSHIP

Keyboard Harmony.

Two lectures; two terms

Prerequisite: Registration in a Music programme, or qualifying tests

### MUSIC 2E03 SOLO PERFORMANCE

A continuation of MUSIC 1E03.

One half-hour lesson weekly; two terms

Prerequisite: MUSIC 1E03 or 1E06, and registration in Level II of a Music programme

Antirequisite: MUSIC 2E06

### MUSIC 2E06 SOLO PERFORMANCE

Intensive study of the technique and repertoire of any orchestral instrument, the piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

One hour lesson weekly; two terms

Prerequisite: A grade of at least A- in MUSIC 1E06 and registration in Level II of a B.Mus. programme. Under exceptional circumstances, students may use MUSIC 1E03 as a prerequisite in place of 1E06. Students interested in this option, please see Note 4, above.

Antirequisite: MUSIC 2E03

### 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. Academic credit available only to students registered in a Music programme.

### MUSIC 2H03 ANALYSIS

The traditional forms of music as found in works by composers such as Bach, Mozart, Beethoven, and Brahms.

Three lectures; one term

Prerequisite: MUSIC 1CC3

**MUSIC 3AA3 KODÁLY AND ORFF METHODS**

A survey of the Kodály and Orff methods of music education. Three lectures; one term

Prerequisite: MUSIC 1A06 or 3A03 or 18 units of Music

**MUSIC 3B03 TOPICS IN MUSIC HISTORY: EARLY MUSIC (MIEVIAL TO BAROQUE)**

Previous topics include: Scarlatti's Keyboard Sonatas, Choral Music of Bach and Handel, The Renaissance Madrigal. Consult the School of Art, Drama and Music concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: MUSIC 2B06, registration in Honours Music, and 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.*

**MUSIC 3BB3 TOPICS IN MUSIC HISTORY: MUSIC OF THE ROMANTIC ERA**

Previous topics include: Liszt's Symphonic Poems, Nineteenth-Century Piano Music. Consult the School of Art, Drama and Music concerning topic to be offered.

Seminar (two hours); one term

Prerequisite: MUSIC 2B06, registration in Honours Music, and 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.*

**MUSIC 3C03 TONAL COUNTERPOINT**

Studies in baroque music, leading to analysis and writing of inventions.

Seminar (two hours); one term

Prerequisite: MUSIC 2C03 and 2CC3, registration in Honours Music, and permission of the School of Art, Drama and Music

**MUSIC 3CC3 TONAL COUNTERPOINT**

A continuation of MUSIC 3C03, emphasizing analysis and writing of fugues.

Seminar (two hours); one term

Prerequisite: MUSIC 3C03, registration in Honours Music, and permission of the School of Art, Drama and Music

**MUSIC 3E03 SOLO PERFORMANCE**

A continuation of MUSIC 2E03.

One half-hour lesson weekly; two terms

Prerequisite: MUSIC 2E03 and registration in Level III of a Music programme  
Antirequisite: MUSIC 3E06

**MUSIC 3E06 SOLO PERFORMANCE**

Intensive study of the technique and repertoire of any orchestral instrument, the piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

One hour lesson weekly; two terms

Prerequisite: A grade of at least A- in MUSIC 2E06, and registration in Level III of a B.Mus. programme

Antirequisite: MUSIC 3E03

**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. Academic credit available only to students registered in a Music programme.

**MUSIC 3H03 ANALYSIS**

Techniques of analysis applied to selected works of the 20th century.

Seminar (two hours); one term

Prerequisite: MUSIC 2CC3 and 2H03, registration in Honours Music, and permission of the School of Art, Drama and Music

*Offered in alternate years.*

**MUSIC 3J03 ORCHESTRATION**

A study of the orchestral 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, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 4K03.*

**MUSIC 3L03 WOODWIND METHODS**

A study of the basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. No previous study of woodwinds required. The instruments studied differ from those studied in MUSIC 4L03.

Two lectures, one lab; one term

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 4L03.*

**MUSIC 3M03 STRING METHODS**

A study of the basic techniques of playing string instruments. String literature for various educational levels. No previous study of strings required. The instruments studied differ from those studied in MUSIC 4M03.

Two lectures; two terms

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 4M03.*

**MUSIC 3N03 VOCAL METHODS**

A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral Literature. No previous study of voice required. Techniques and materials focus on the primary and junior levels.

Two lectures; one term

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 4N03.*

**MUSIC 3O03 CONDUCTING**

Fundamental conducting techniques applied to works selected from the standard repertoire.

Two lectures, term one; one lecture, term two

Prerequisite: MUSIC 2D03, registration in Honours Music, and permission of the School of Art, Drama and Music

**MUSIC 3P03 PERCUSSION METHODS**

A study of the basic techniques of playing percussion instruments. Percussion literature for various educational levels. No previous study of percussion required.

Two lectures; one term

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

Antirequisite: MUSIC 4P03

**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, registration in Honours Music, and permission of the School of Art, Drama and Music

*Offered in alternate years.*

**MUSIC 3T03 CANADIAN MUSIC**

A historical survey of music in Canada, in the context of social and political developments, from ca. 1600 to the present.

Two lectures, one tutorial; one term

Prerequisite: MUSIC 1A06 or completion of 18 units of Music including MUSIC 1B06

*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: MUSIC 1A06 or completion of 18 units of Music including MUSIC 1CC3

**MUSIC 3V03 MUSIC EDUCATION SEMINAR**

A study of musical aesthetics as it relates to music education and to the formation of a philosophy of music education.

Seminar (two hours); one term

Prerequisite: Registration in Level III of an Honours Music programme, and permission of the School of Art, Drama and Music

*Offered in alternate years.*

**MUSIC 3Y03 HISTORY OF MUSIC (C. 1914 TO THE PRESENT)**

A survey of 20th-century music.

Three lectures; one term

Prerequisite: MUSIC 2B06

**MUSIC 4B03 TOPICS IN MUSIC HISTORY:  
MUSIC OF THE CLASSICAL ERA**

Previous topics include: Beethoven's Piano Sonatas, Mozart and Opera. Consult the School of Art, Drama and Music concerning topic to be offered. Seminar (two hours); one term  
Prerequisite: MUSIC 2B06, registration in Honours Music, and permission of the School of Art, Drama and Music  
*Alternates with MUSIC 4BB3.*

*MUSIC 4B03 may be repeated, if on a different topic, to a total of six units.*

**MUSIC 4BB3 TOPICS IN MUSIC HISTORY:  
MUSIC OF THE 20TH CENTURY**

Previous topics include: The Evolution of the Avant-garde, Music Since 1945. Consult the School of Art, Drama and Music concerning topic to be offered. Seminar (two hours); one term  
Prerequisite: MUSIC 3Y03, registration in Honours Music, and 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.*

**MUSIC 4C03 HARMONY AND COUNTERPOINT**

Advanced studies in classical and romantic music.

Seminar (two hours); one term

Prerequisite: MUSIC 3C03, registration in Honours Music, and permission of the School of Art, Drama and Music

*Offered in alternate years.*

**MUSIC 4E03 SOLO PERFORMANCE**

A continuation of MUSIC 3E03.

One half-hour lesson weekly; two terms

Prerequisite: MUSIC 3E03, and registration in Level IV of a Music programme

Antirequisite: MUSIC 4E06

**MUSIC 4E06 SOLO PERFORMANCE**

Intensive study of the technique and repertoire of any orchestral instrument, the piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

One hour lesson weekly; two terms

Prerequisite: A grade of at least A- in MUSIC 3E06, and registration in Level IV of a B.Mus. programme

Antirequisite: MUSIC 4E03

**MUSIC 4G03 ENSEMBLE PERFORMANCE**

McMaster Chamber Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the School of Art, Drama and Music.

Prerequisite: MUSIC 3G03 and successful audition. Academic credit available only to students registered in a Music programme.

**MUSIC 4H03 ANALYSIS**

Advanced studies in analysis.

Seminar (two hours); one term

Prerequisite: MUSIC 2B06, 2CC3, 2H03, registration in Honours Music, and permission of the School of Art, Drama and Music

*Offered in alternate years.*

**MUSIC 4I03 AESTHETICS AND CRITICISM**

Philosophies of music. A discussion of major theories from the ancient Greeks to the present.

Seminar (two hours); one term

Prerequisite: MUSIC 3Y03, registration in Honours Music, and permission of the School of Art, Drama and Music

*Offered in alternate years.*

**MUSIC 4K03 BRASS METHODS**

A study of the basic techniques of playing brass instruments. Brass literature for various educational levels. No previous study of brass required. The instruments studied differ from those studied in MUSIC 3K03.

Two lectures, one lab; one term

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 3K03.*

**MUSIC 4L03 WOODWIND METHODS**

A study of the basic techniques of playing woodwind instruments. Woodwind literature for various educational levels. No previous study of woodwinds required. The instruments studied differ from those studied in MUSIC 3L03.

Two lectures, one lab; one term

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 3L03.*

**MUSIC 4M03 STRING METHODS**

A study of the basic techniques of playing string instruments. String literature for various educational levels. No previous study of strings required. The instruments studied differ from those studied in MUSIC 3M03.

Two lectures; two terms

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 3M03.*

**MUSIC 4N03 VOCAL METHODS**

A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral literature. No previous study of voice required. Techniques and materials focus on the intermediate and senior levels and beyond.

Two lectures; one term

Prerequisite: Registration in Honours Music, and permission of the School of Art, Drama and Music

*Alternates with MUSIC 3N03.*

**MUSIC 4O03 CONDUCTING**

A continuation of MUSIC 3O03.

One lecture, term one; two lectures, term two

Prerequisite: MUSIC 3O03, registration in Honours Music, and permission of the School of Art, Drama and Music

**MUSIC 4P03 PERCUSSION METHODS**

A continuation of MUSIC 3P03.

Two lectures; one term

Prerequisite: MUSIC 3P03, registration in Honours Music, and permission of the School of Art, Drama and Music

**MUSIC 4Q03 PIANO LITERATURE AND PEDAGOGY**

Study of piano repertoire and teaching methods for various age groups.

Three lectures; one term

Prerequisite: Registration as a piano major in Level IV of an Honours Music programme, and permission of the School of Art, Drama and Music

**MUSIC 4S03 SPECIAL STUDIES**

Advanced supervised study in any area offered and approved by the School of Art, Drama and Music.

Times to be arranged between the student and instructor; one term

Prerequisite: Registration in Level IV of an Honours Music programme, and permission of the School of Art, Drama and Music

*Students requesting this course must submit a written proposal to the School of Art, Drama and Music by April 15th.*

**MUSIC 4U03 JAZZ IMPROVISATION**

Study and performance of jazz improvisations in various styles.

Two hours; one term

Prerequisite: MUSIC 3U03 and permission of the instructor

*Offered in alternate years.*

**MUSIC 4X03 MUSIC OF THE WORLD'S CULTURES**

A survey of music traditions of non-European cultures, e.g., far Eastern, Indian, African.

Three lectures; one term

Prerequisite: MUSIC 1A06, or 18 units of Music including MUSIC 1B06

*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 (Computer Science and Systems) and draws on the Departments of Psychology, Mathematics and Statistics and Computer Science.

**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.

Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1N06 or ARTS&SCI 1D06 and one of MATH 1B03 or 1H05 and one of COMP SCI 1MA3 or 1MC3

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	2E03	Elementary Biochemistry
BIOLOGY	2B03	Cell Biology
	2C03	Genetics
	4T03	Neurobiology
CHEM	2D03	Organic Chemistry
COMP SCI	3GA3	Introduction to Computer Graphics
	3SD3	Computer Simulation Techniques
	3TA3	Introduction to Automata and Formal Language Theory
	4IB3	Introduction to Artificial Intelligence
	4TC3	Recursive Function Theory and Computability
MATH	2E03	Introduction to Modelling
	2P04	Differential Equations for Engineering
	4S04	Theory of Computation
PSYCH	2E03	Sensory Processes
	2F03	Fundamentals of Neuroscience
	2H03	Human Learning and Cognition
	3FA3	The Neurobiology of Learning and Memory
	3J03	Neurophysiology of Vision
	3WW3	Psychophysics
	4V03	Selected Topics in Human Learning; Cognition and Perception
	4I03	Models in Brain and Cognitive Sciences
STATS	3D06	Mathematical Statistics

**NEW MATERIALS AND THEIR IMPACT ON SOCIETY**

(SEE THEME SCHOOL ON NEW MATERIALS AND THEIR IMPACT ON SOCIETY)

**NURSE PRACTITIONER**

(SEE NURSING, NURSE PRACTITIONER (C) STREAM)

**NURSING****Regular Faculty as of January 15, 1996****Associate Dean of Health Sciences (Nursing) and Director of the School of Nursing**

Andrea Baumann

**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.

**Professors**

Andrea Baumann/B.Sc.N. (Windsor), M.Sc.N. (Western), Ph.D. (Toronto), R.N.  
Ann Beckingham/M.A., B.Sc.N., Ph.D. (Fielding Institute), 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), 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.

**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), R.N.  
Barbara Brown/B.A., B.Sc.N. (Windsor), M.Sc.N. (Toronto), R.N.  
Carolyn Byrne/M.H.Sc. (McMaster), R.N.  
Patricia Caulfield/B.Sc.N. (Western), M.Sc. (McMaster), R.N.  
Donna Ciliska/B.Sc.N., M.Sc.N. (Western), Ph.D. (Toronto), R.N.  
Alba DiCenso/B.Sc.N., M.Sc. (McMaster), Ph.D. (Waterloo), R.N.  
Joan Eagle/B.Sc.N. (McMaster), M.N. (Washington), M.Sc. (McMaster), R.N.  
Patricia Ellis/B.Sc.N. (Wagner), M.Sc. (Maryland), R.N.  
Mary Fawcett/B.Sc.N., M.H.Sc. (McMaster), CN(C) (CNA), R.N.  
Jocelyn Hezekiah/B.N. (McGill), M.Ed. (Toronto), Ph.D. (Alberta), 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), R.N.  
Ann Mohide/B.Sc.N. (Toronto), M.H.Sc., M.Sc. (McMaster), R.N.  
Ruth Pallister/B.S.N. (British Columbia), M.N. (Washington), R.N.  
Janet Pinelli/B.S. (Boston), M.Sc.N. (Toronto), R.N.  
Elizabeth Rideout/B.N. (New Brunswick), M.H.Sc. (McMaster), M.Sc. (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.  
Joanne Runions/B.N. (McGill), M.H.Sc. (McMaster), Ph.D. (Toronto), R.N.  
Helen Thomas/B.N.Sc. (Queen's), M.Sc. (Waterloo), R.N.  
Catherine Tompkins/B.Sc.N. (Western), M.Ed. (Toronto), Ph.D. (California), R.N.  
Leslie Van Dover/B.N. (New Brunswick), M.Sc.N. (Western), Ph.D. (Michigan), R.N.  
Robin Weir/B.Sc.N. (Western), M.Sc. (Boston), M.Ed., Ph.D. (Toronto), 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), R.N.  
Cheryl Boblin-Cummings/B.Sc.N. (Alberta), M.Ed. (Alberta), R.N.  
Denise Bryant-Lukosius/B.Sc.N. (McMaster), H.Sc.N. (D'Youville), R.N.  
Barbara Carpio/B.Sc.N. (Alberta), M.Sc.N. (Toronto), R.N.  
Dauna Crooks/B.Sc.N. (Toronto), M.Sc.N. (Western), 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.  
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.  
Charlotte Noesgaard/B.N. (McGill), M.Sc.N. (Western), R.N.  
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), R.N.  
Dyanne Semogas/B.N. (McGill), M.N. (Washington), R.N.  
Jennifer Skelly/M.H.Sc., M.Sc. (McMaster), Ph.D. (Toronto), R.N.  
Susan E. Smith/B.N. (Calgary), M.Sc. (Hawaii), R.N.  
Wendy Sword/B.Sc.N., M.Sc. (T) (McMaster), R.N.  
Ruta Valaitis/B.A., B.Sc.N. (Windsor), M.H.Sc. (McMaster), R.N.

**Lecturers**

Michelle Drummond-Young/B.Sc.N., M.H.Sc. (McMaster), R.N.  
Wendy Goodine/B.Sc.N. (McMaster), R.N.  
Jeannette LeGris/B.N. (Manitoba), M.H.Sc. (McMaster), R.N.

**The Aga Khan University Based Faculty**

Irmajeau Bajnok/B.Sc.N. (Alberta), M.Sc.N., Ph.D. (Western)  
Susan Beaton/B.A. (Newcastle), M.Ed. (Manchester)  
Katherine Doyle/B.N. (McGill), M.A. (British Columbia)  
Eleanor Fiorino/B.Sc.N. (Toronto), M.Ed. (OISE)  
Marilyn Lee/B.A., B.Sc.N. (St. Louis), M.N. (S. Carolina)  
Johanna Majoob/B.Sc.N. (Western)  
Ruth McMurtry/B.Sc.N. (Saskatchewan), M.Sc. (Calgary)  
Grace Stanley/B.N. (McGill), M.N. (Calgary)  
Lorraine Tinevez/B.Sc.N. (Alberta), M.P.H. (Hawaii)

**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 8 parts:
  - Basic (A) Stream:** Those courses taken only by students registered in the B.Sc.N. programme, (A) Stream.
  - 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.
  - Diploma RN/NP (C) Stream:** Those courses taken only by students registered in the B.Sc.N. Nurse Practitioner programme, (C) Stream
  - Northern Nursing Courses:** Those courses taken only by students registered in the Northern Nursing programmes.
  - Nursing Leadership/Management Courses:** Those courses taken by nurses enrolled in the Nursing Management programme or by Diploma R.N. (B) stream students with permission of the coordinator.
  - Paediatric Oncology Courses:** Those courses taken by nurses enrolled in the Paediatric Oncology programme.
  - Adult Oncology Courses:** Those courses taken by nurses enrolled in the Adult Oncology programme.
- Normally, registration in all courses above Level I will require satisfactory completion of the prerequisite Nursing courses **with a grade of at least C-** in graded courses or a 'pass' in clinical practice courses. (See the *Faculty of Health Sciences, School of Nursing, Academic Regulations* section in this Calendar.)
- Normally, Level I, II, III, and IV courses are available to Level I, II, III, and IV B.Sc.N. (A) and (B) Stream students respectively.
- The Northern Nursing courses are open to nurses who have been selected by Health Canada, Medical Services Branch and McMaster University as qualified to enrol in the Northern Nursing programmes. A candidate must be currently registered as a nurse in a province or territory in Canada and must be employed by Health Canada, Medical Services Branch or a Band council.
- The Nursing Leadership/Management courses are open to students registered in the Nursing Leadership/Management programme, which was previously administered and is currently endorsed by the Canadian Nurses and Canadian Hospital Associations. 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 in determining health and illness and on caring as a focal concept of professional nursing. Understanding of the nursing process and beginning level skills in assessment, communication and nursing care behaviours are stressed.

Two and one half hours (lecture/problem-based tutorials); four hours (clinical lab); one term

Prerequisite: Registration in Level I of the B.Sc.N. (A) Stream

**NURSING 1G04 INTRODUCTION TO NURSING AND HEALTH II**

Study of concepts and theories related to specific priority health issues. Introduction to basic principles of population health. Study of skills in health assessment, including physical examination. A clinical practice component comprises one-half of the term. A continuation of NURSING 1F04.

Two and one half hours (lecture/problem-based tutorials); four hours (clinical lab); one term

Prerequisite: NURSING 1F04

**NURSING 2L03 GUIDED NURSING PRACTICE I**

Nursing concepts basic to health and illness are examined across the continuum of individual and family growth and development. Planned and guided experiences are provided in acute care institutions, including adult medical and surgical, paediatric and maternal newborn settings. This course is evaluated on a "Pass/Fail" basis.

Nine hours (clinical lab); one term

Prerequisite: NURSING 1F04, 1G04

Normally to be taken concurrently with NURSING 2M03.

**NURSING 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 through application to a variety of patient situations.

Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 1F04, 1G04

Normally to be taken concurrently with NURSING 2L03.

**NURSING 2N03 NURSING CONCEPTS IN HEALTH AND ILLNESS II**

Integration of nursing, biological, psychological, and social sciences theory in problem-based tutorials. A continuation of Nursing 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.

Antirequisite: NURSING 3X07

**NURSING 3Y04 GUIDED NURSING PRACTICE IV**

A continuation of NURSING 3X04 with emphasis on integration of scientific mechanisms.

Twelve hours (clinical lab); 13 weeks

Prerequisite: NURSING 3X04

Normally to be taken concurrently with NURSING 3T03 and NURSING 3U02.

Antirequisite: NURSING 3Y07

**NURSING 4J07 GUIDED NURSING PRACTICE V**

This course focuses on the application of theory and concepts to clinical practice, including the introduction to the leader/manager role in patient care. Students are individually placed in a variety of health-care settings. This course is evaluated on a "Pass/Fail" basis.

Twenty-four hours (clinical lab, including tutorials); 12 weeks

Prerequisite: NURSING 3Y04, 3Y07

Normally to be taken concurrently with NURSING 4E03.

**NURSING 4K07 GUIDED NURSING PRACTICE VI**

A continuation of Nursing 4J07. This course is evaluated on a "Pass/Fail" basis.

Prerequisite: NURSING 4J07

Normally to be taken concurrently with NURSING 4F03.

**DIPLOMA RN (B) STREAM ...****NURSING 3L05 THEORIES AND SKILLS FOR PRIMARY HEALTH CARE**

Advanced theories and skills in client assessment and therapeutic communication relevant to community-based primary health care are developed through small group tutorials, self-study packages, skills practice in the clinical skills lab and standardized patients. This course is evaluated on a "Pass/Fail" basis.

Five hours (problem-based tutorials); one term

Prerequisite: Registration in Level III of the B.Sc.N. (B) Stream.

Normally to be taken concurrently with NURSING 3S03

Antirequisite: NURSING 3L04, 3LL2, 3MM3



**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 3S03*

Antirequisite: NURSING 3L04, 3L05, 3V05

**NURSING 3M05 GUIDED NURSING PRACTICE I**

An applied nursing practice experience in a community-based health care setting with an emphasis on the development of expanded role skills in areas such as health promotion, client education, client assessment and client treatment and support. 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 3S03*

Antirequisite: NURSING 3L04, 3L05, 3V05

**NURSING 4S06 GUIDED NURSING PRACTICE III**

An applied nursing practice course in which the focus is on the integration of theory and concepts in a variety of interdependent health care settings. This course will allow the development of independent decision-making capacity in a selected area of clinical practice. This course is evaluated on a "Pass/Fail" basis. Twelve hours (clinical lab), two hours (tutorials); 13 weeks

Prerequisite: NURSING 3M05

*Normally to be taken concurrently with NURSING 4E03.*

**NURSING 4T06 GUIDED NURSING PRACTICE IV**

A continuation of NURSING 4S06. This course is evaluated on a "Pass/Fail" basis. Twelve hours (clinical lab), two hours (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).*

Antirequisite: NURSING 3S04

**NURSING 3T03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV**

A problem-based course in which students integrate theories from biological, physical, psychological, social and nursing sciences and apply them to health care situations. A continuation of Nursing 3S03. Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 3S03 or registration in Level III of B.Sc.N. NP (C) Stream

*Normally to be taken concurrently with NURSING 3Y04 (for (A) Stream students) or NURSING 3M05 (for (B) Stream students).*

Antirequisite: NURSING 3Q03, 3T04

**NURSING 4A02 CURRENT TRENDS AND ISSUES IN NURSING**

Issues facing the profession, and the implications of current changes in the health field for future nursing practice. Two hours (lecture/student presentations) every week; one term

Prerequisite: Registration in Level IV of the B.Sc.N. (A) or (B) Stream or Level III of the B.Sc.N. NP (C) Stream, or permission of the instructor

**NURSING 4E03 ADVANCED NURSING CONCEPTS I**

A problem based course in which students focus on theories and concepts related to client/patient care e.g., leadership and management, education of clients/patients, students, and staff. Student participation includes selecting appropriate situations and related theories for study, and identifying interventions and evaluation strategies. Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 3T03 (for (A) and (B) Streams) and NURSING 3Y04 (for (A) Stream)

*Normally taken concurrently with NURSING 4J07 (for (A) Stream) or NURSING 4S06 (for (B) 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

**NURSE PRACTITIONER (C) STREAM...****Note:**

Distance education modalities are employed in all courses with the exception of NURSPRAC 4C10. Students must attend McMaster for the clinical laboratory components of the programme.

**NURSPRAC 4A05 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS I**

This course assists the students to determine and monitor health status and disease symptomology of individuals and families throughout the age spectrum. Students will conduct a full range of health assessment towards the goals of providing comprehensive primary health care based on advanced clinical decision making and diagnostic reasoning skills. Three hours (tutorial), three hours (clinical lab); one term

Prerequisite: Registration in Level IV of the B.Sc.N. NP (C) Stream; registration in or completion of NURSING 4P03

**NURSPRAC 4AA5 ADVANCED HEALTH ASSESSMENT AND DIAGNOSIS II**

Continued application of advanced clinical decision making and diagnostic reasoning skills related to the care of individuals across their lifespan, families and the needs of diverse communities. Three hours (tutorial), three hours (clinical lab); one term

Prerequisite: NURSPRAC 4A05; registration in Level IV of the B.Sc.N. NP (C) Stream

**NURSPRAC 4C10 NURSE PRACTITIONER INTEGRATIVE PRACTICUM**

This course will build on students' knowledge and experience gained in previous courses and will focus on methods to integrate theory and clinical practice. 29 hours; 13 weeks

Prerequisite: NURSPRAC 4A05, 4AA5, 4P03, 4R03, 4T05, 4TT5; registration in Level IV of the B.Sc.N. NP (C) Stream

Corequisite: NURSPRAC 4S03

**NURSPRAC 4P03 REQUIRED SELECTED TOPICS (PATHOPHYSIOLOGY FOR NURSE PRACTITIONERS)**

This course uses a systems approach to examine concepts in pathophysiology as a basis for advanced nursing practice in primary health care. The course will provide a comprehensive overview of etiology, pathogenesis and clinical manifestation of diseases in adults and children found in primary care. Three hours (tutorial); one term

Prerequisite: HLTH 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 4S03 NURSE PRACTITIONER SEMINAR**

This course is taken with NURSPRAC 4C10 and allows the students to discuss and apply theories regarding the management of clients' clinical manifestations, and to critically examine how theory integrates with practice. Six hours; 13 weeks

Prerequisite: NURSPRAC 4A05, 4AA5, 4B03, 4R03, 4T05, 4TT5; registration in Level IV of the B.Sc.N. NP (C) Stream

Corequisite: NURSPRAC 4C10

**NURSPRAC4T05 THERAPEUTICS IN PRIMARY HEALTH CARE I**

The course is designed to develop the knowledge, skill and competencies required of a nurse practitioner in managing health and injury through a variety of clinical therapeutic strategies, including counselling, pharmacology and complementary modalities.

Three hours (tutorial), three hours (clinical lab); one term

Prerequisite: HTH SCI 1C07, 2C07; registration in Level IV of the B.Sc.N. NP (C) Stream; registration in or completion of NURSPRAC 4A05, 4P05

**NURSPRAC4TT5 THERAPEUTICS II**

This course continues to develop advanced counselling skills and pharmacologic modalities and to examine the effectiveness and efficiency of non-traditional approaches to healing and general well being.

Three hours (tutorial), three hours (clinical lab); one term

Prerequisite: NURSPRAC 4T05; registration in Level IV of the B.Sc.N. NP (C) Stream, and registration in or completion of NURSPRAC 4AA5

**NORTHERN CLINICAL COURSES...****Note:**

Students who are admitted to the Post Diploma Stream of the B.Sc.N. programme will be granted credit for the following courses.

**NURSING 3A01 PRIMARY HEALTH CARE IN NORTHERN COMMUNITIES**

An introductory course to examine principles of primary health care, the concept of health and transcultural issues as the foundation for a holistic assessment which is relevant to First Nations people.

Twelve hours (lecture/problem-based tutorial) in seven weeks

Prerequisite: Registration in the Northern Clinical programme

To be taken concurrently with NURSING 3B07.

When taken with NURSING 3B07, equivalent to NURSING 3T03 and 3L05

**NURSING 3B07 ASSESSMENT AND MANAGEMENT OF HEALTH AND ILLNESS ACROSS THE LIFESPAN**

A comprehensive approach to nursing practice through advanced clinical assessment skills and history taking will be developed with the focus on the newborn, child, pregnant female, adult and family.

78 hours (lecture/problem-based tutorial), 36 hours (clinical lab) in seven weeks

Prerequisite: Registration in the Northern Clinical programme

To be taken concurrently with NURSING 3A01.

When taken with NURSING 3A01, equivalent to NURSING 3T03 and 3L05

**NURSING 3C03 ADVANCED CLINICAL SKILLS FOR EMERGENCY CARE**

The student will develop the advanced clinical and decision-making skills necessary to provide emergency care to the child and adult. Advanced skills for the management of injury and acute episodic illness will be developed throughout the course.

42 hours (lecture) in seven weeks

Prerequisite: Registration in the Northern Clinical programme

**NURSING 3D06 ADVANCED CLINICAL PRACTICE**

The purpose of the six week supervised clinical practicum is to enable the nurse to apply and integrate knowledge and skills into nursing practice in Medical/Surgical, Paediatrics, Obstetrics and Emergency Care.

30 hours (clinical lab) per week for six weeks

Prerequisite: Registration in the Northern Clinical programme

Equivalent to NURSING 4S06

**NORTHERN COMMUNITY NURSING COURSES...****NOTE:**

Students who are admitted to the Post-Diploma Stream of the B.Sc.N. programme will be granted credit for these courses.

**NURSING 3E03 ASSESSING THE HEALTH OF COMMUNITIES**

Conceptual models of community health nursing will be explored, with a focus on the community-based component of the role and the process of community assessment.

60 hours (lecture/problem-based tutorial) in 2 weeks

Pre-requisite: Registration in the Northern Community Nursing programme

**NURSING 3F03 HEALTH EDUCATION: A COMMUNITY HEALTH STRATEGY**

Health education for the protection and promotion of health will be the focus of this course. The application of health education models within First Nations and Northern Communities will be explored.

60 hours (lecture/problem-based tutorial) in 2 weeks

Prerequisite: Registration in the Northern Community Nursing programme

**NURSING 3G03 PROMOTING HEALTHY COMMUNITIES: THE COMMUNITY DEVELOPMENT PROCESS**

This course focuses on the process of community development and the planning and implementation of community based programmes designed to enhance the health of populations.

60 hours (lecture/problem-based tutorial) in 2 weeks

Pre-requisite: NURSING 3F03

**NURSING 3H03 EXPLORING SOLUTIONS FOR COMMON ISSUES IN FIRST NATIONS AND NORTHERN COMMUNITIES**

The focus of the course will be the role of the community health nurse in the application of primary and tertiary interventions aimed at reducing the problems, preventing recurrence and enhancing community health.

60 hours (lecture/problem-based tutorial) in 2 weeks.

Pre-requisite: NURSING 3G03

**NURSING 3K08 COMMUNITY HEALTH NURSING PRACTICUM**

The purpose of this course is to provide nurses with the opportunity to consolidate the knowledge and skills of community health nursing in their own community.

Prerequisite: Registration in the Northern Community Nursing programme.

Work Study practicum to be completed in the nurses' home community over the nine month programme.

**PAEDIATRIC ONCOLOGY COURSES...****NURSING 3P03 NURSING CONCEPTS IN HEALTH AND ILLNESS III**

Bio-psycho-social sciences and nursing theory are integrated and applied to health care situations through problem-based learning. Concepts and theories will focus on assisting the child, family and community in responding to the oncological process.

Three hours (lecture/ problem-based tutorials); one term

Prerequisite: Registration in Paediatric Oncology programme

Antirequisite: NURSING 3S04

Equivalent to Nursing 3S03

**NURSING 3Q03 NURSING CONCEPTS IN HEALTH AND ILLNESS IV**

A problem-based course in which students integrate theories from biological, physical, psychological, social and nursing sciences and apply them to paediatric haematology-oncology situations. A continuation of Nursing 3P03.

Three hours (lecture/problem-based tutorials); one term

Prerequisite: NURSING 3P03; registration in the Paediatric Oncology programme

Antirequisite: NURSING 3T03

**NURSING 3V05 THEORIES AND SKILLS FOR PRIMARY HEALTH CARE**

Advanced theories and skills in client assessment and therapeutic communication relevant to hospital-based secondary and tertiary care and community-based paediatric oncology health care. This course is evaluated on a "Pass/Fail" basis.

Five hours (problem-based tutorials); one term

Prerequisite: Registration in the Paediatric Oncology programme

Equivalent to NURSING 3L05

**NURSING 3W05 GUIDED NURSING PRACTICE I**

An applied nursing practice experience in a hospital or community-based paediatric haematology-oncology setting with an emphasis on the development of expanded role skills in areas such as illness-response, health maintenance and promotion, client education, client assessment and client treatment and support. This course is evaluated on a "Pass/Fail" basis.

Eight hours (clinical lab), two hours (tutorials); one term.

Prerequisite: NURSING 3V05; registration in the Paediatric Oncology programme

Equivalent to NURSING 3M05

**ADULT ONCOLOGY COURSES...****NURSING 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: Registration in the Adult Oncology programme

Antirequisite: NURSING 3S04

Equivalent to 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 to education, prevention, early detection and research. This course is a continuation of 3CC3.

Three hours (problem-based tutorials, lectures, self-study); one term  
Prerequisites: NURSING 3CC3; registration in the Adult Oncology programme  
Equivalent to NURSING 3T03

**NURSING 3GG5 ADULT ONCOLOGY NURSING PRACTICE I**

An applied nursing practice course with a focus on the acquisition of advanced theories and skills in client assessment and communication relevant to the role of the nurse in a variety of adult oncology health care situations. This course is evaluated on a "Pass/Fail" basis/

Five hours (small group, clinical skills labs, standardized patients, self-directed study)  
Prerequisite: NURSING 3CC3; registration in the Adult Oncology programme  
Equivalent to NURSING 3L05

**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 is on the development of knowledge and expanded role skills related to 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; registration in the Adult Oncology programme  
Equivalent to NURSING 3M05

**NURSING LEADERSHIP/MANAGEMENT COURSES...**

**NURSING 4B06 INTRODUCTION TO NURSING LEADERSHIP/MANAGEMENT**

Introduction to theories and methods of leadership and management integrating the nursing and management disciplines. Given in both distance education and problem-based tutorial formats. A certificate 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, 1996

Associate Dean (OT/PT)

B. Cooper

Chair, Bachelor of Health Sciences (OT) Programme

P. Salvatori

Chair, Bachelor of Health Sciences (PT) Programme

C. Gowland

Associate Professors

Barbara A. Cooper/Dip. P&OT (Toronto), B.A. Honours, M.H.Sc. (McMaster), Ph.D. (Wisconsin-Milwaukee)

Carolyn A. Gowland/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Hallie M. Groves/Dip. RT (British Columbia), B.Sc. (British Columbia), M.Sc., Ph.D. (McMaster)

Michael R. Pierrynowski/B.Sc. (Waterloo), M.Sc. (Waterloo), Ph.D. (Simon Fraser)

Mary C. Law/B.Sc. OT (Queen's), M.Sc. (McMaster)

Mary K. Tremblay/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Assistant Professors

Susan E. Baptiste/Dip. OT (England), M.H.Sc. (McMaster)

Beverley M. Clarke/Dip. PT (Manitoba), B.A., M.Sc. (McMaster)

Jean M. Crowe/Dip. PT (Australia), B.Sc. PT (Toronto), M.H.Sc. (McMaster)

Mary Edwards/B.Sc. OT (Toronto), M.H.Sc. (McMaster)

Elsbeth Finch/B.Sc. P&OT (McGill), M.H.Sc. (McMaster)

Vicki Galea/B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)

John A. Hay/B.A. (Queen's), M.A. (Alberta), Ph.D. (McMaster)

Hélène Larin/B.Sc. PT (Montréal), M.Sc. (North Carolina), M.Ed., Ph.D. (Toronto)

Alison Laver/Dip. COT (Oxford), Ph.D. (Surrey)

Lori Letts/B.Sc. OT (Western), M.A. (Waterloo)

Julia A. Lockhart/B.Sc. OT (Queen's), M.Ed. (Brock)

Cheryl Missiuna/B.Sc. OT (Western), M.Sc. (Calgary), Ph.D. (Toronto)

Ellenore M.J. Palmer/B.Sc. (Western), B.Sc. PT (Toronto), M.Sc. (Toronto)

Janice M. Perkins/Dip. PT (England), B.Sc., M.Sc. (Nova Scotia)

Nancy A. Pollock/B.Sc. OT (Queen's), M.Sc. (McGill)

Penny S. Salvatori/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Patricia E. Solomon/Dip. PT (Manitoba), M.H.Sc. (McMaster), Ph.D. (Waterloo)

Paul Stratford/Dip. PT, M.Sc. (McMaster)

Laurie R. Swanson/Dip. P&OT (Toronto), B.Sc. (Toronto), M.Sc. (McMaster)

Joyce Tryssenaar/B.Sc. OT (Western), M.Ed. (Brock)

Muriel G. Westmorland/Dip. OT (England), M.H.Sc. (McMaster)

Seanne Wilkins/Dip. P.&OT, B.Sc. OT, M.Sc. (Toronto)

Renee M. Williams/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Lecturers

Laura Babiski/B.Sc. OT (Toronto), M.H.Sc. (McMaster)

Linda Brett/B.A. (Toronto), B.Ed. (Queen's), B.H.Sc. PT (McMaster)

Maryann Dancsak/B.Sc. PT (McGill), M.Sc. PT (Western)

Lynne Geddes/B.Sc. PT (Western), M.R.E. (Toronto)

Bonny F.M. Jung/B.Sc. OT (Toronto), M.Ed. (Brock)

Joan Mlynarczyk/B.A. (York), B.Sc. PT (Toronto), M.A. (Indiana)

In addition, a number of part-time faculty teaching in the B.H.Sc. (O.T. and P.T.) programmes have appointments in the School of Rehabilitation Science. If further information is requested, please contact the School at (905) 525-9140, ext. 22867.

**Note:**

Occupational Therapy and Physiotherapy courses are open only to students who are registered in the Bachelor of Health Sciences Second Degree Programme in Occupational Therapy or Physiotherapy.

**OCCUPATIONAL THERAPY ...**

**Courses**

**Unit I - Occupation and Health Across the Life Span**

**OCCUP TH 1T15 PROBLEM-BASED TUTORIAL I**

Students are introduced to small groups and problem-based learning using a variety of health problems in order to explore the biological, psychological, and social determinants of health. The role of the Occupational Therapist in a wide range of settings is explored.

Five hours (tutorial); 14 weeks

**OCCUP TH 1L17 SKILLS LAB I**

Students develop basic communication skills, physical assessment skills, an understanding of normal human movement and activity analysis, within the framework of current models of OT practice.

Seven hours (lab); 14 weeks

**OCCUP TH 1S13 INQUIRY SEMINAR I**

Students in both the Occupational Therapy and Physiotherapy Programmes investigate issues of importance to both professions. Themes for exploration include determinants of health, health policy, the history, development, and future directions of the professions.

Three hours (lecture/seminar); 14 weeks

**Unit II - Occupation and Health in Childhood and Adolescence****OCCUP TH 1T23 PROBLEM-BASED TUTORIAL II**

Students explore various clinical problems encountered in the practice of paediatric occupational therapy.  
Five hours (tutorial); eight weeks

**OCCUP TH 1L24 SKILLS LAB II**

Students develop skills in assessment, program planning, and intervention with children and adolescents.  
Seven hours (lab); eight weeks

**OCCUP TH 1S23 INQUIRY SEMINAR II**

Students investigate various conceptual issues related to child health during infancy, childhood and adolescence, from a developmental perspective.  
Five hours (lecture/seminar); eight weeks

**OCCUP TH 1C26 FIELDWORK EDUCATION I**

Students integrate knowledge and skills into clinical practice in a paediatric setting under supervision of a qualified therapist.  
35-40 hours (fieldwork); six weeks

**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 with physically disabled adult populations.  
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 II**

Students integrate knowledge and skills into clinical practice in an adult rehabilitation setting under the supervision of a qualified therapist.  
35-40 hours (fieldwork); six weeks

**Unit IV - Occupation and Mental Health in Adulthood****OCCUP TH 2T43 PROBLEM-BASED TUTORIAL IV**

Students explore various clinical problems encountered in the practice of adult mental health.  
Five hours (tutorial); eight weeks

**OCCUP TH 2L44 SKILLS LAB IV**

Students develop engagement, assessment and treatment skills for mentally ill populations.  
Seven hours (lab); eight weeks

**OCCUP TH 2S43 INQUIRY SEMINAR IV**

Students investigate various conceptual issues related to adult mental health.  
Five hours (lecture/seminar); eight weeks

**OCCUP TH 2C46 FIELDWORK EDUCATION III**

Students integrate knowledge and skills into clinical practice in a mental health setting under the supervision of a qualified therapist.  
35-40 hours (fieldwork); six weeks

**Unit V - Occupation and Health in Older Adulthood****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 IV**

Under the supervision of a qualified occupational therapist, students integrate and apply their knowledge and skills in clinical practice with older persons.  
35-40 hours (fieldwork); six weeks

**Unit VI - 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); 10 weeks

**OCCUP TH 2L63 SKILLS LAB VI**

Within the broad framework of the Management Sciences, students study management theory and organizational behaviour, and develop management and organizational analysis skills.  
Fourteen hours (seminar); 3 weeks

**OCCUP TH 2I65 INDEPENDENT STUDY I**

Student study focuses on scientific inquiry through research related to occupational therapy/physiotherapy. Such research may involve literature searches, simple research design or proposal preparation, or participation in ongoing research with a faculty member.  
Ten-twelve hours; 14 weeks

**OCCUP TH 2S63 INQUIRY SEMINAR VI**

Students focus on population health/community health issues. Students identify their own learning needs, arrange resource sessions accordingly, and select a community health problem for in-depth study.  
Four hours (lecture/seminar); 10 weeks

**Unit VII****OCCUP TH 2C76 FIELDWORK ELECTIVE**

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 Fieldwork Education Co-ordinator.  
35-40 hours (fieldwork); six weeks

**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 assessment and treatment of peripheral musculoskeletal systems. In addition, students begin to acquire a basic level of knowledge of psychological and sociological determinants of health. The problems will provide an opportunity to gain knowledge of the roles and functions of physiotherapy as related to specific conditions.  
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. Students are responsible for completing modules in the clinical setting.  
Seven hours (lab); 14 weeks

**PHYSIOTH 1S13 INQUIRY SEMINAR I**

Students in the Occupational Therapy and Physiotherapy Programmes investigate issues of importance to both professions; history, determinants of health, health policy, and profession-specific concepts.  
Three hours (lecture/seminar); 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 I**

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**

**PHYSIOTH1T33 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

**PHYSIOTH1L34 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

**PHYSIOTH1S33 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

**PHYSIOTH1C36 CLINICAL EDUCATION II**

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**

**PHYSIOTH2T43 PROBLEM-BASED TUTORIAL**

Students study the pathology, etiology, assessment and physiotherapeutic management of cardiac and pulmonary conditions. Criteria for establishing causation are also addressed.  
Five hours (tutorial); eight weeks

**PHYSIOTH2L44 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

**PHYSIOTH2S43 INQUIRY SEMINAR IV**

Seminars focus on issues important to the practice of physiotherapy with cardiopulmonary patients. Themes include exercise physiology, exercise testing and prescription, and compliance with exercise.  
Five hours (seminar); eight weeks

**PHYSIOTH2C46 CLINICAL EDUCATION III**

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**

**PHYSIOTH2T53 PROBLEM-BASED TUTORIAL**

Students study the pathology, etiology, assessment and physiotherapeutic treatment of clients of all ages with neurological problems.  
Five hours (tutorial); eight weeks

**PHYSIOTH2L54 CLINICAL SKILLS LAB V**

Students acquire basic level skills to assess and treat clients with neurological conditions.  
Seven hours (lab); eight weeks

**PHYSIOTH2S53 INQUIRY SEMINAR V**

Seminars focus on issues important to the practice of physiotherapy with clients who manifest neurological problems. Themes include functioning from cell to society, and incorporate the impairment, disability and handicap paradigm.  
Five hours (lecture/seminar); eight weeks

**PHYSIOTH2C56 CLINICAL EDUCATION IV**

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 Integration**

**PHYSIOTH2T64 PROBLEM-BASED TUTORIAL**

Students study pathology, etiology, assessment and management of clients of all ages through the integration of complex multi-system priority health problems using a population health/community perspective. Issues involving quality management, health economics, and professional practice are also included.  
Six hours (tutorial); 10 weeks

**PHYSIOTH2L63 CLINICAL SKILLS LAB VI**

Within the broad framework of the Management Sciences, students study management theory and organizational behaviour, and develop management and organizational analysis skills.  
Fourteen hours (seminar); 3 weeks

**PHYSIOTH2I65 INDEPENDENT STUDY**

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

**PHYSIOTH2S63 INQUIRY SEMINAR VI**

Seminars focus on population health/community health issues. Students identify their own learning needs, arrange resource sessions accordingly, and select a community health problem for in-depth study.  
Four hours (lecture/seminar); 10 weeks

**Unit VII Clinical Elective**

**PHYSIOTH2C76 CLINICAL EDUCATION V**

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

**OJIBWA**

(SEE INDIGENOUS STUDIES)

**ONCOLOGY**

(SEE NURSING)

**PEACE STUDIES**

(SEE MINORS AND THEMATIC AREAS OF STUDY)

**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 (nine hours); two terms

Prerequisite: Credit or registration in PHARMAC 3A06

**PHARMAC 4A03 DRUG AND SIGNAL TRANSMISSION I**

Introduction to the effects of drugs on communication by chemical signals in biological systems.

One tutorial (one hour), one tutorial (two hours); one term

Prerequisite: PHARMAC 3A06

**PHARMAC 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

**PHARMAC4C03 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

**PHARMAC4D03 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

**PHARMAC4E03 EPIDEMIOLOGY OF EFFECTS OF DRUGS AND TOXICANTS**

Methods for collection of data and its analysis regarding action of drugs, toxicants and environmental chemicals in animal and human populations.

One tutorial (one hour), one tutorial (two hours); one term

Prerequisite: PHARMAC 3A06

**PHARMAC4F09 SENIOR THESIS**

A thesis based upon a research project carried out under the direction of a member of the Faculty.

Prerequisite: PHARMAC 3A06

**PHILOSOPHY****Faculty as of January 15, 1996****Chair**

Wilfrid Waluchow

**Professors Emeriti**

Horace A. Dulmage/B.A., B.D. (*McMaster*), Ph.D. (*Chicago*)

James H. Noxon/B.A., M.A. (*Queen's*), Ph.D. (*Edinburgh*)

John E. Thomas/B.A., B.D. (*McMaster*), M.A., Ph.D. (*Duke*)

**Professors**

Nicholas Griffin/B.A. (*Leicester*), Ph.D. (*Australian National*)

Gary B. Madison/B.A. (*St. Joseph's College*), M.A. (*Marquette*), Ph.D. (*Paris*)

Evan Simpson/A.B. (*Amherst*), Ph.D. (*Duke*)

**Associate Professors**

Samuel Ajzenstat/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*)

David L. Hitchcock/B.A. (*McMaster*), Ph.D. (*Claremont*)

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*)

Michael Radner/B.A. (*Carleton College, Minn.*), M.A., Ph.D. (*Minnesota*)

Mark Vorobej/B.A. (*Carleton*), M.A., Ph.D. (*Toronto*)

Wilfrid Waluchow/B.A., M.A. (*Western*), D.Phil. (*Oxford*)

**Assistant Professors**

Elisabeth Boetzkas/B.A., M.A. (*Alberta*), Ph.D. (*Calgary*), MTh. (*Newman Theological College, Edmonton*)

Jill LeBlanc/B.A. (*McMaster*), M.A., Ph.D. (*Toronto*)

Marina Vitkin/B.A. (*Manitoba*), M.A., Ph.D. (*Toronto*)

**Associate Members**

Caroline Bayard/*(French)* Lès L., M., ès L. (*Toulouse*), M.A., Ph.D. (*Toronto*)

Kenneth M. Blackwell/*(Russell Archivist, Mills Library)*, B.A. (*Victoria*), M.L.S. (*Western*), M.A. (*McMaster*), Ph.D. (*Guelph*)

**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.

**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 two or more of Plato, Hobbes, Mill, Marx, and Nietzsche, focusing on rival views of human nature and the state, social conflict, inequality and justice.

Two lectures, one tutorial; two terms

Antirequisite: PHILOS 1D06

**PHILOS 1D06 PROBLEMS IN PHILOSOPHY**

A critical investigation of philosophical arguments concerning God, politics, morality, human nature, knowledge and art.

Two lectures, one tutorial; two terms

Antirequisite: PHILOS 1B06

**PHILOS 2A06 ANCIENT GREEK PHILOSOPHY**

A study of Western philosophical thought from its earliest beginnings to the triumph of Christianity in the Roman Empire, with emphasis on Plato and Aristotle.

Three lectures; two terms

Prerequisite: Registration in Level II and above

Cross-list: CLASSICS 2P06

**PHILOS 2B03 INTRODUCTORY LOGIC**

Sentential and quantification logics are introduced and applied to arguments in English.

Three lectures; one term

Prerequisite: Registration in Level II and above

**PHILOS 2C06 DESCARTES TO HUME**

A study of 17th- and 18th-Century European and British philosophy, dealing with the major philosophical issues raised by the 17th-Century scientific revolution.

Three lectures; two terms

Prerequisite: Registration in Level II and above

**PHILOS 2D03 MORAL ISSUES**

An introduction to moral philosophy, accenting biomedical ethics. Issues such as abortion, human experimentation, euthanasia, and genetic screening will be investigated.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

Cross-list: RELIG ST 2C03

*Enrolment is limited to 500 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 2M03 SCIENTIFIC METHOD**

Theory structure and justification in the sciences compared to reasoning in pseudosciences (e.g. theories of paranormal or 'psi' phenomena).

Three lectures; one term

Prerequisite: Registration in Level II and above

*Offered in alternate years.*

**PHILOS 2N03 BUSINESS ETHICS**

An analysis of ethical issues arising in contemporary business life. Sample topics include: fair and unfair competition; responsibilities towards employees, society and the environment; honesty and integrity in business; the moral status of corporations.

Two lectures, one tutorial; one term

Prerequisite: Registration in Level II and above

**PHILOS 2R03 REASONING**

An introduction to important types of reasoning, including philosophical reasoning, with emphasis on concepts rather than techniques and some exposure to commonly used symbolic notation.

Three lectures; one term

Prerequisite: Registration in a programme in Philosophy

Antirequisite: HUMANITIES 2C03 or ARTS & SCI 1B06

*Other students who want a Reasoning course are advised to take HUMANITIES 2C03.*

**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 3D03 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.

Three lectures; one term

Prerequisite: Six units of Philosophy and registration in Level III or IV of any programme

*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 a programme in Philosophy, with a Cumulative Average of at least 6.0 and permission of the Department

**PHILOS 4A03 THE RATIONALISTS**

A critical study of selected texts of one or more Rationalist philosophers. Seminar (Two and one half 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 and one half hours); one term

Prerequisite: PHILOS 3G03, and registration in Level III or IV of any programme

*Offered in alternate years.*

**PHILOS 4C03 PLATO**

A critical examination of Plato's writings with reference to selected central philosophical issues.

One lecture, one seminar (two hours); one term

Prerequisite: PHILOS 2A06 and registration in Level III or IV of any programme

Cross-list: CLASSICS 4C03

*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 Wittgenstein, Quine, and Davidson.

Seminar (two and one half hours); one term

Prerequisite: PHILOS 2B03, and registration in Level III or IV of a programme in Philosophy

*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 and one half 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 and one half 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.*

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### 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 and one half 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 and one half hours); one term

Prerequisite: One of PHILOS 2A06, 2C06

Offered in alternate years.

### PHILOS 4J03 ARISTOTLE

A systematic study of Aristotle's major doctrines.

Seminar (two and one half hours); one term

Prerequisite: PHILOS 2A06 and registration in Level III or IV of any programme

Cross-list: CLASSICS 4J03

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 an Honours programme in Philosophy 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, 1996

#### Chair

D.W.L. Sprung

#### Associate Chair

B.D. Gaulin

#### 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

Dennis G. Burke/B.E., M.Sc. (Saskatchewan), Ph.D. (McMaster)

Martin W. Johns/M.A. (McMaster), Ph.D. (Toronto), D.Sc. (Brandon), F.R.S.C.

Terence J. Kennett/M.Sc., Ph.D. (McMaster)

John A. Kuehner/B.Sc. (Bishop's), M.A. (Queen's), Ph.D. (Liverpool), F.R.S.C.

Carman C. McMullen/M.Sc., Ph.D. (McMaster)

Yukihisa Nogami/B.Sc., D.Sc. (Kyoto)

Melvin A. Preston/B.A., M.A. (Toronto), Ph.D. (Birmingham), D.Sc. (McMaster), C.D., F.R.S.C.

Robert G. Summers-Gill/M.A. (Saskatchewan), Ph.D. (California)

Anatole B. Volkov/B.S. (North Carolina), M.S., Ph.D. (Wisconsin)

Derek Walton/B.Sc.A. (Toronto), Ph.D. (Harvard)

#### Professors

Edward A. Ballik/B.Sc. (Queen's), D.Phil. (Oxford)

A. John Berlinsky/B.Sc. (Fordham), M.Sc., Ph.D. (Pennsylvania)

Rajat K. Bhaduri/M.Sc. (Calcutta), Ph.D. (McMaster)

I. David Brown/B.Sc., Ph.D. (London), F.C.I.C.

John A. Cameron/B.A. (Toronto), Ph.D. (McMaster)

Jules P. Carbotte/B.Sc. (Manitoba), M.Sc., Ph.D. (McGill), D.Sc. (Waterloo), F.R.S.C.

David R. Chettle/B.Sc., M.Sc., Ph.D. (Birmingham)

W. Brian Clarke/B.A. (Dublin), Ph.D. (McMaster)

Malcolm F. Collins/M.A., Ph.D. (Cambridge)

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.

William E. Harris/B.Sc. (Alberta), M.Sc., Ph.D. (Toronto)

Harold K. Haugen/B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)

Geraldine A. Kenney-Wallace/L.R.I.C., A.R.I.C. (London), M.Sc., Ph.D.

(British Columbia), F.R.S.C.

William V. Prestwich/B.Sc., Ph.D. (McMaster)

Ralph E. Pudritz/B.Sc. (British Columbia), M.Sc. (Toronto), Ph.D. (British Columbia)

Donald W.L. Sprung/B.A. (Toronto), Ph.D., D.Sc. (Birmingham), F.R.S.C.

Carl V. Stager/B.Sc. (McMaster), Ph.D. (M.I.T.)

Peter G. Sutherland/B.Sc. (McGill), M.S., Ph.D. (Illinois)

David W. Taylor/B.A., D.Phil. (Oxford)

Thomas Timusk/B.A. (Toronto), Ph.D. (Cornell), F.R.S.C.

James C. Waddington/B.Sc. (Queen's), Ph.D. (McMaster)

#### Associate Professors

Bruce D. Gaulin/B.Sc. (McGill), Ph.D. (McMaster)

Catherine Kallin/B.Sc. (British Columbia), A.M., Ph.D. (Harvard)

David E. Venus/B.Sc. (Queen's), Ph.D. (Toronto)

Douglas L. Welch/B.Sc., Ph.D. (Toronto)

Françoise M. Winnik/Dipl. d'Ing. Chimie (Mulhouse), M.Sc., Ph.D. (Toronto)

#### Assistant Professors

Stéphane Flibotte/B.Sc., M.Sc., Ph.D. (Montreal)

Neil McKay/B.Sc. (Queen's), M.Sc., Ph.D. (McMaster)/part-time

Christine D. Wilson/B.Sc. (Toronto), Ph.D. (California Institute of Technology)

#### Associate Members

Thomas J. Farrell (Radiology) B.Sc., B.Ed. (Toronto), M.Sc. (Western), Ph.D. (McMaster)

Michael S. Patterson (Radiology) B.Sc. (Queen's), M.Sc. (McMaster), Ph.D. (Toronto)

Andrew J. Rainbow (Radiology) 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)

#### Senior Demonstrator

J. Everett Cairns/B.Eng., M.Sc. (McMaster)

### Department Notes:

1. The Department reserves the right to withdraw a Level III or IV course which is not specifically required in a Physics programme if the registration falls below four.
2. Students in Level III or IV of Physics programmes will find a number of relevant electives among the offerings of the Department of Biology, the Department of Engineering Physics and the Department of Geology.

### ASTRONOMY...

**Courses** If no prerequisite is listed, the course is open.

#### ASTRON 1F03 INTRODUCTION TO ASTRONOMY AND ASTROPHYSICS

Topics include orbital motion, electromagnetic radiation, telescopes, the solar system, stars and stellar evolution, the Milky Way Galaxy, galaxies and quasars, the evolution of the universe.

Three lectures; one term

Prerequisite: OAC Calculus or equivalent

Antirequisite: PHYSICS 2F03, SCIENCE 2D03

Intended for Science students. Non-science students interested in these topics are directed to SCIENCE 2D03.

#### ASTRON 2E03 ASTRONOMY AND THE SOLAR SYSTEM

Basic observational astronomy. Historical development of ideas about the solar system. A modern view of the planets; the origin and evolution of the solar system.

Three lectures; one term

Prerequisite: One of PHYSICS 1A06, 1B06, 1C06 and one of MATH 1AA3, 1A06, 1AA6, 1C06 or ARTS & SCIENCE 1D06

Antirequisite: PHYSICS 2E03

Offered in alternate years.

Offered in 1997-98.

#### ASTRON 3X03 STARS AND STELLAR SYSTEMS

Observational properties of stars. Structure of our Galaxy; 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 and one of PHYSICS 2A03, 2B06, and one of PHYSICS 2H03, CHEM 2P06, 2R03, COMP SCI 1MA3 or 1MC3 is strongly recommended.

Antirequisite: PHYSICS 3X03

Alternates with ASTRON 3Y03.

Offered in 1997-98.



**ASTRON 3Y03 STELLAR STRUCTURE**

The physics of stellar interiors. The main sequence and the life cycle of a star. Stellar evolution, including white dwarfs, neutron stars, and black holes. Three lectures; one term  
Prerequisite: One of PHYSICS 2D03, 2G03 and one of PHYSICS 2A03, 2B06, and one of PHYSICS 2H03, CHEM 2P06, 2R03. COMP SCI 1MA3 or 1MC3 is strongly recommended.  
*Alternates with ASTRON 3X03.*  
*Offered in 1996-97.*

**PHYSICS ...**

**Courses** *If no prerequisite is listed, the course is open.*

**PHYSICS 1A06 MECHANICS, ELECTRICITY AND MODERN PHYSICS**

Lectures and laboratory work on mechanics, electricity, atomic and nuclear physics. Primarily intended for students proceeding in the physical sciences. Three lectures, one lab (three hours) every other week; two terms  
Prerequisite: At least 70% in OAC Physics  
Corequisite: MATH 1A03, 1AA3, SCIENCE 1A00. MATH 1B03 is highly recommended.  
Antirequisite: PHYSICS 1B06, 1C06

**PHYSICS 1B06 GENERAL PHYSICS I**

Lectures, demonstrations, and laboratory work in general physics. This course places less stress on the use of mathematics, and covers a wider range of topics, than Physics 1A06. Intended primarily for students proceeding in the life sciences. Three lectures, one lab (three hours) every other week; two terms  
Prerequisite: At least 60% in OAC Physics  
Corequisite: MATH 1A03; SCIENCE 1A00  
Antirequisite: PHYSICS 1A06, 1C06

**PHYSICS 1C06 INTRODUCTORY PHYSICS**

Lectures, demonstrations and laboratory work in physics, with particular stress on topics in mechanics; wave motion, optics and electricity, for students with less than 60% in, or without OAC Physics. Three lectures, one tutorial, one lab (three hours) every other week; two terms  
Corequisite: MATH 1A03; SCIENCE 1A00  
Antirequisite: PHYSICS 1A06, 1B06  
*Not open to students with a grade of at least 60% in OAC PHYSICS.*

**PHYSICS 1D03 INTRODUCTORY MECHANICS**

A course for engineering students. Statics, kinematics, Newtonian dynamics, energy. Three lectures; one lab (three hours) every other week; one term  
Prerequisite: Registration in Engineering 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 2A03 GENERAL PHYSICS II**

A sequel to Physics 1B06. Electricity and magnetism with an emphasis on applications to chemistry. Three lectures; one term  
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06, and one of MATH 1AA3, 1A06, 1AA6, 1C06, 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, 1B06, 1C06  
Corequisite: MATH 2A03 and either 2C03 or 2O03  
Antirequisite: PHYSICS 2A03

**PHYSICS 2C03 SPECIAL RELATIVITY AND PARTICLE PHYSICS**

Lorentz transformations, relativistic kinematics, collisions; an introduction to ideas of modern particle physics, fundamental interactions and the building blocks of matter. Three lectures, first term  
Prerequisite: Registration in an Honours programme in Physics or a programme in Engineering Physics or Honours Mathematics

**PHYSICS 2D03 MECHANICS**

Dynamics of a particle, central field problem, many-particle systems, the mechanics of rigid bodies, Lagrange's equations. Three lectures, second term  
Prerequisite: Registration in an Honours programme in Physics or a programme in Engineering Physics or Honours Mathematics  
Antirequisite: PHYSICS 2G03

**PHYSICS 2G03 MECHANICS OF A PARTICLE**

Vectorial treatment of the mechanics of a particle in three dimensions. Special Relativity. Two lectures, one tutorial; one term  
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06 and credit or registration in one of MATH 2C03, 2O03, 2N03  
Antirequisite: PHYSICS 2D03

**PHYSICS 2H03 THERMAL PHYSICS**

Introduction to heat and the kinetic theory of gases. Three lectures, one lab (three hours); one term  
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06 and one of MATH 1AA3, 1A06, 1AA6, 1C06, ARTS & SCI 1D06  
Antirequisite: CHEM 2P06, 2R03

**PHYSICS 2I03 SOLID EARTH GEOPHYSICS**

Application of physical methods to understand large scale processes in the Earth. Plate tectonics, structure of the Earth's interior, rock magnetism, seismology, gravitation, natural radioactivity, heat flow. Two lectures, one tutorial; one term  
Prerequisite: One of PHYSICS 1A06, 1B06, 1C06  
Cross list: GEOLOGY 2I03

**PHYSICS 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. Knowledge of Grade 12 Mathematics would be helpful.

**PHYSICS 2M03 MECHANICS**

An introduction to mechanics including kinematics, dynamics, and rotational dynamics. Three lectures; one tutorial; one term  
Prerequisite: Registration in Level II, III or IV of a Kinesiology/Physical Education programme  
*Same as first term of PHYSICS 1C06.*

**PHYSICS 3A03 RELATIVITY**

An introduction to general relativity. Three lectures; one term  
Prerequisite: PHYSICS 2C03 and registration in any Honours programme in Science or any programme in the Faculty of Engineering  
*Offered in alternate years.*  
*Offered in 1996-97.*

**PHYSICS 3B06 ELECTRONICS**

Network theory and filters, semiconductor devices, amplifier circuits, D.C. power supplies, integrated circuits, operational amplifiers and digital circuits. Two lectures, both terms; one lab (two hours); two terms  
Prerequisite: PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04

**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 1997-98.*

**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**

A 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 3K04 THERMODYNAMICS AND STATISTICAL MECHANICS**

The laws of thermodynamics, with emphasis on the mathematical structure of the theory; classical and quantum statistical mechanics.

Two lectures; two terms

Prerequisite: PHYSICS 2H03 and one of MATH 2A03, 2A06, 2G03 and one of MATH 2C03, 2Q03; or registration in Honours Chemistry and Physics  
Antirequisite: CHEM 4Y03

**PHYSICS 3M03 QUANTUM MECHANICS AND ITS APPLICATIONS I**

An introductory course in quantum mechanics with applications to natural phenomena.

Three lectures; one term

Prerequisite: PHYSICS 2B06 or ENG PHYS 2A03 and 2E04 or ENGINEER 2M04, and MATH 3C03 or 3I03; or registration in Honours Mathematics and Physics. MATH 3C03 or 3I03 may be taken concurrently.

**PHYSICS 3MM3 QUANTUM MECHANICS AND ITS APPLICATIONS II**

A continuation of Physics 3M03.

Three lectures; one term

Prerequisite: PHYSICS 3M03

**PHYSICS 3N03 PHYSICAL OPTICS**

Interference; Fraunhofer and Fresnel diffraction; Maxwell's equations and the electromagnetic character of light; polarization and double refraction; interference of polarized light; selected topics in modern optics.

Three lectures; one term

Prerequisite: One of MATH 2A03, 2A06, 2G03, 2Q04 and one of MATH 2C03, 2Q03, 2P04; and either PHYSICS 2B06 or both ENG PHYS 2A03 and 2E04

**PHYSICS 3O03 MODERN PHYSICS**

Phenomenological basis for quantum physics, topics from atomic and photon physics; wave phenomena; Schrödinger equation for one dimensional systems.

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**

Operator algebra. The Schrödinger equation. The square well, harmonic oscillator, barriers, perturbations, transition matrix elements, and selected three dimensional problems.

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, 1C06 or permission of the instructor.

Cross-list: BIOLOGY 3L03

**PHYSICS 4A03 SPECIAL TOPICS**

Independent study of the scientific literature, including the preparation of seminars and reports on assigned topics.

Two lectures or seminars; two terms

Prerequisite: Registration in a programme in which PHYSICS 4A03 is required or is a specified option

Antirequisite: PHYSICS 4A02

**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); two terms

Prerequisite: PHYSICS 2B06, or ENG PHYS 2A03 and 2E04

Antirequisite: COMP ENG 3HB3, PHYSICS 4DA3, 4DB3

**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; COMP SCI 1MA3 or 1MC3

**PHYSICS 4I01 SEMINAR II**

Preparation and presentation of report on second term work.

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

See the heading *Courses Requiring Permission in the Faculty of Science* section of the Calendar

**PHYSICS 4R06 RADIATION AND RADIOISOTOPE METHODOLOGY**

Lectures and laboratory work in the techniques and theory of the measurement of radiation. Topics include radioactivity and radioactive decay, solid state dosimetry, principles of radioactive detectors, counting statistics and data reduction, advanced multidetector systems.

One lecture, one lab (three hours) every other week; two terms

Prerequisite: Registration in Level IV of an Honours Medical and Health Physics programme or permission of the instructor

Antirequisite: PHYSICS 4R03, 4R04

**PHYSICS 4T03 INTRODUCTION TO MEDICAL PHYSICS**

Basic concepts in radiology, nuclear medicine, radiotherapy, physiological measurements and laser applications.

Three lectures; one term

Prerequisite: One of MATH 2A03, 2A06, 2G03, 2Q04 and one of MATH 2C03, 2Q03, 2P04; and either PHYSICS 3T03 or ENG PHYS 3D03

**MATH 3C03 MATHEMATICAL PHYSICS I**

Linear algebra and eigenvalue problems, partial differential equations, orthogonal functions, Fourier series, Legendre functions, spherical harmonics.

Three lectures; one term

Prerequisite: One of MATH 2A03, 2A06, 2G03, 2Q04 and one of MATH 2C03, 2Q03, 2P04. PHYSICS 2B06, 2C03, 2D03 or 2G03 are recommended.

Antirequisite: MATH 3J04, 3K03 or 3V06

**MATH 3D03 MATHEMATICAL PHYSICS II**

Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.

Three lectures; one term

Prerequisite: Mathematics 3C03

Antirequisite: MATH 3J04, 3K03, 3V06.

*Not open to students with registration in Honours Mathematics and Physics.*

## PHYSIOTHERAPY

(SEE OCCUPATIONAL THERAPY AND PHYSIOTHERAPY)

## POLISH

Courses in Polish are administered within the Department of Modern Languages of the Faculty of Humanities.

**Courses** *If no prerequisite is listed, the course is open.*

### POLISH 1Z06 BEGINNER'S POLISH

An introduction to basic conversational and written Polish, teaching the skills of listening, speaking, reading and writing.

Five hours (lectures and lab practice); two terms

*Students with prior knowledge of the language, as determined by a placement test, may be required to take an appropriate alternative.*

*Alternates with POLISH 2Z06.*

### POLISH 2Z06 INTERMEDIATE POLISH

A course designed to further the student's command of oral and written Polish. It will concentrate on developing conversational skills, as well as studying basic grammatical structures and rules of composition.

Four hours; two terms

Prerequisite: POLISH 1Z06

*Alternates with POLISH 1Z06.*

## POLITICAL SCIENCE

### Faculty as of January 15, 1996

#### Chair

Kim Richard Nossal

#### Professors Emeriti

Adam Bromke/M.A. (*St. Andrews*), Ph.D. (*Montreal and McGill*)

Marshall N. Goldstein/B.A. (*Florida*), Ph.D. (*North Carolina*)

Gordon P. Means/B.A. (*Reed College*), M.A., Ph.D. (*Washington*)

Derry Novak/B.A. (*Toronto*)

Peter J. Potichnyj/B.A. (*Temple*), M.A., Ph.D. (*Columbia*)

Klaus H. Pringsheim/B.A. (*California, Los Angeles*), M.A. (*Columbia*)

#### Professors

Michael M. Atkinson/B.A. (*Alberta*), M.A., Ph.D. (*Carleton*)

William M. Chandler/B.A. (*Cornell*), Ph.D. (*North Carolina*)

William D. Coleman/B.A. (*Carleton*), A.M., Ph.D. (*Chicago*)

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. Copps 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*)

Howard Aster/B.A. (*McGill*), M.A. (*Yale*), Ph.D. (*London*)

George B. Breckenridge/M.A. (*Glasgow and Duke*), Ph.D. (*Duke*)

Barbara A. Carroll/B.A. (*Manitoba*), M.A. (*Carleton*), Ph.D. (*American*)

Stefania Szlek Miller/M.A. (*McMaster*), Ph.D. (*Toronto*)

John W. Seaman/B.A. (*Mount Allison*), M.A. (*Dalhousie*), Ph.D. (*Toronto*)

Charlotte A. B. Yates/B.A. (*Winnipeg*), M.A. (*Queen's*), Ph.D. (*Carleton*)

#### Assistant Professors

Nibaldo H. Galleguillos/B.A. (*Chile*), M.A., Ph.D. (*Toronto*)

Tony Porter/B.A. (*McGill*), M.A., Ph.D. (*Carleton*)

Donald M. Wells/B.A. (*Western*), M.A. (*British Columbia*), Ph.D. (*Toronto*)

#### Lecturer

Karen Bird/B.A. (*Wilfrid Laurier*)

#### Associate Members

Roy Adams/(*Business*) B.A. (*Pennsylvania State*), M.A., Ph.D. (*Wisconsin*)

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*)

## Department Notes:

1. Political Science 1A06 is divided into a number of sections taught by different instructors. Course descriptions for the different sections of Political Science 1A06 are available from the Department of Political Science (Kenneth Taylor Hall, Room 527).

2. The Department of Political Science offers courses in four main areas: Canadian Politics, Comparative Politics, Political Theory, and International Politics. The courses are grouped as follows:

#### Canadian Politics:

POL SCI 2G06, 3C03, 3DD6, 3EE3, 3F03, 3FF3, 3GG3, 3HH3, 3II3, 3JJ3, 3NN6, 3Z06, 4CC3, 4K06, 4O06, 4P03, 4S06, 4W06.

#### Comparative Politics:

POL SCI 2B06, 2K06, 2M06, 2P06, 3B06, 3D03, 3F03, 3GG3, 3I03, 3J06, 3K06, 3L03, 3M06, 3P06, 3PP3, 3QQ3, 3RR3, 3V03, 3VV3, 3W03, 3WW3, 3X03, 3XX3, 3Y06, 3YY3, 4AA6, 4C06, 4F06, 4G06, 4J06, 4P03, 4Q06.

#### Political Theory:

POL SCI 2O06, 3A06, 3I06, 3O06, 3R03, 4BB6, 4DD6, 4E06, 4S06, 4U06.

#### International Politics:

POL SCI 2E06, 3AA3, 3BB3, 3EE3, 3E03, 3FF3, 4F06, 4M06, 4MM6.

The remaining courses are grouped as follows:

#### Research Methods:

POL SCI 3N06, 4H03

#### Other:

POL SCI 1A06, 3UU3, 4Z06

3. 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.

4. 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.

5. Students should be alerted to those Level II courses that are required to qualify for a number of Level III and Level IV courses. Students who wish to enter courses but who lack the necessary prerequisites must obtain the permission of the instructor.

6. POL SCI 2F06 or 3N06 and 2O06 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes.

7. Level III courses identified as *Enrolment is limited* have a limit of 50 students; priority will be given to Political Science students.

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 in order to students in the following categories: Level IV Honours and Combined Honours Political Science; Continuing Students who are in Level IV; Level III Honours Political Science programmes; B.A. in Political Science; Others.

All students 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 1A06 INTRODUCTION TO POLITICAL SCIENCE

An introduction to various areas of political science, including theories and systems.

Antirequisite: POL SCI 1B03 and 1C03

*See Department Note 1.*

### POL SCI 2B06 POLITICS IN THE U.S.A.

A study of the development, nature, and functioning of the political system of the U.S.A.

Three hours (lectures); two terms

### POL SCI 2E06 INTERNATIONAL POLITICS

A study of the institutions and processes of the international political system.

Three hours (lectures and tutorials); two terms

### POL SCI 2G06 POLITICS IN CANADA

A study of the development, nature and functioning of the political system of Canada.

Three hours (lectures and tutorials); two terms

**POL SCI 2006 POLITICAL THEORY**

An introduction to modes of thinking theoretically about politics, expressed in political philosophy, ethical theory, history of political thought, political science, and structuralism.

Three hours (lectures); two terms

*See Department Note 6.*

**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 lectures; two terms

Prerequisite: POL SCI 2006; or permission of the instructor

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: POL SCI 2E06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: POL SCI 2G06 or an Indigenous Studies course

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and discussion); one term

Prerequisite: A course in Political Science above Level I

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3DD6 POLITICAL PARTICIPATION AND ELITIST POLITICS IN CANADA**

An analysis of the impact of social structure, ideology, and political culture on structures of political participation and elitist politics in Canada.

Three hours (lectures and seminars); two terms

Prerequisite: POL SCI 2G06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3E03 THE POLITICS OF INTERNATIONAL ECONOMIC ORGANIZATIONS**

An analysis of the structure, function and politics of the principal multilateral organizations governing the postwar international economy.

Three lectures, one term

Prerequisite: POL SCI 2E06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: POL SCI 2E06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3F03 CONTEMPORARY SOCIAL MOVEMENTS**

An examination of selected social movements, primarily in Canada and the United States, including the labour, environmental, peace, feminist, indigenous rights, and religious fundamentalist movements.

Three hours (lectures and seminars); one term

Prerequisite: A course in Political Science above Level I

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: A Political Science course above Level I

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3GG3 POLITICS OF FEDERALISM**

An analysis of the constitutional framework, evolution, and structure of the federal system in Canada and/or other Western countries.

Three hours (lectures and seminars); one term

Prerequisite: A course in Political Science above Level I

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3I03 TOPICS IN AMERICAN POLITICS**

The study of a central component of the U.S. political system.

Three hours (lectures and seminars); one term

Prerequisite: A previous course in political science. Priority will be given to students who have completed POL SCI 2B06.

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: POL SCI 2G06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3J06 COMMUNICATIONS AND POLITICS**

An examination of the impact of the media and culture on contemporary politics.

Three hours (lectures and seminars); two terms

Prerequisite: A previous course in Political Science

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: POL SCI 2G06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3K06 POLITICS OF THE SOVIET UNION AND ITS SUCCESSOR STATES**

The study of the development and functions of the Soviet political system and its successor states, with concentration on Belarus, Russia and Ukraine, and a comparison with the Baltic states, Central Asia, and Transcaucasus.

Three lectures; two terms

Antirequisite: POL SCI 2K06

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and seminars); one term

Prerequisite: A previous course in political science. Priority will be given to students who have completed POL SCI 2B06.

*Not open to students with credit in POL SCI 3I03 if the topic was The American Presidency.*

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**POL SCI 3M06 POLITICS OF EASTERN EUROPE**

An analysis of the political structures, institutions and processes of East European political systems, with emphasis on Poland, the Czech Republic and Slovakia.

Three hours (lectures and seminars); two terms

Prerequisite: A course in Political Science above Level I

*Enrolment is limited. Priority is given to students in a Political Science programme.*

**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 (lectures and tutorials); two terms  
Prerequisite: POL SCI 1A06 or POL SCI 1B03 and 1C03  
Antirequisite: POL SCI 2F06  
See Department Note 6.

**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 (lectures and seminars); two terms  
Prerequisite: POL SCI 2G06  
Enrolment is limited. Priority is given to students in a Political Science programme.

**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 lectures; two terms  
Prerequisite: POL SCI 2O06 or PHILOS 1B06; or permission of the instructor  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3PP3 POLITICS IN GERMANY**

A study of the development of the German political system, including analysis of political culture, ideological traditions, parties, elites and the policy process. Three hours (lectures and seminars); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in programmes in Political Science and/or German Studies

**POL SCI 3QQ3 POLITICS IN FRANCE**

A study of the development and functioning of the French political system, including analysis of political culture, ideological traditions, parties, elites and the policy process. Three hours (lectures and seminars); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3RR3 POLITICS IN ITALY**

A study of the development and functioning of the Italian political system, including analysis of political culture, ideological traditions, parties, elites and the policy process. Three hours (lectures and seminars); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**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 (lectures and discussion); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**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 (lectures and seminars); one term  
Prerequisite: A course in Political Science above Level I or HISTORY 2N06  
Offered in alternate years.  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3WW3 ISSUES IN COMPARATIVE POLITICS**

An examination of emerging theoretical and substantive issues in a comparative context. Three hours (lectures and seminars); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3X03 POLITICS AND SOCIETY IN AFRICA**

An examination of the problems of democratic institutions in Sub-Saharan Africa. Three hours (lectures and discussion); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3XX3 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 discussion); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3YY3 ISSUES IN PUBLIC POLICY**

An examination of emerging theoretical and substantive issues in the field of public policy studies. Three hours (lectures and seminars); one term  
Prerequisite: A course in Political Science above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**POL SCI 3Z06 PUBLIC ADMINISTRATION**

An examination of the role of public administration in seeking collective solutions to common problems at all levels of government in Canada. Three hours (lectures and seminars); two terms  
Prerequisite: POL SCI 2G06, and one other Political Science course above Level I  
Enrolment is limited. Priority is given to students in a Political Science programme.

**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: POL SCI 2B06 or 3I03 and registration in Level IV of any programme. Students wishing to register in this course must seek the 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, and a course in Political Theory. Students wishing to register in this course must seek the permission of the Department.  
Enrolment is limited.

**POL SCI 4C06 SELECTED PROBLEMS IN COMMUNICATIONS AND POLITICS**

An examination of selected issues in communications and politics from a theoretical and comparative perspective. Three hours (seminar); two terms  
Prerequisite: POL SCI 3J06. Open only to Level IV Students. Students wishing to register in this course must seek permission of the Department.  
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, and a course in Political Theory. Students wishing to register in this course must seek the permission of the Department.  
Not open to students with credit in POL SCI 4U06 in 1995/96.  
Enrolment is limited.

**POL SCI 4F06 HUMAN RIGHTS: INTERNATIONAL AND NATIONAL**

An examination of the concept of human rights as reflected in international and national declarations and practices. Three hours (seminar); two terms  
Prerequisite: Six units of International Relations, and six units of Comparative Politics. Students wishing to register in this course must seek the permission of the Department.  
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. Students wishing to register in this course must seek the 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. Open only to Level IV students. Students wishing to register in this course must seek the permission of the Department.

Antirequisite: SOCIOL 4Z03

*Enrolment is limited.*

**POL SCI 4J06 COMPARATIVE POLITICS: EVOLUTION OF SOVIET TYPE SYSTEMS**

A comparative analysis of the political ideologies, institutions and practices of former communist political systems.

Three hours (seminar); two terms

Prerequisite: Six units of Comparative Politics. Students wishing to register in this course must seek the permission of the Department.

*Offered in alternate years.*

*Enrolment is limited.*

**POL SCI 4K06 ADVANCED TOPICS IN PUBLIC ADMINISTRATION**

An examination in depth of one or more of the important topics, problems, or perspectives in the study of public administration.

Three hours (seminar); two terms.

Prerequisite: POL SCI 3Z06; open only to Level IV students. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**POL SCI 4M06 ISSUES IN INTERNATIONAL POLITICS**

An examination of selected topics in international politics and foreign policy.

Three hours (seminar); two terms

Prerequisite: Registration in Level IV of any programme, and a course in International Relations. Students wishing to register in this course must seek the 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: Registration in Level IV of any programme, and a course in International Relations. Students wishing to register in this course must seek the 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: POL SCI 2G06. Open only to Level IV students. Students wishing to register in this course must seek the 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. Students wishing to register in this course must seek the 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. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**POL SCI 4U06 PROBLEMS OF POLITICAL PHILOSOPHY**

A study in detail and in depth of writings by a limited number of political thinkers, focusing upon one of the central problems of political philosophy.

Three hours (seminar); two terms

Prerequisite: A course in Political Theory. Students wishing to register in this course must seek the 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: POL SCI 2G06. Students wishing to register in this course must seek the 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.

Three hours (seminar); two terms

Prerequisite: Registration in Level IV of any Honours programme in Political Science. For registration in the summer, written permission of the Course Coordinator is also required.

**PORTUGUESE**

Courses in Portuguese are administered within the Department of Modern Languages, Faculty of Humanities.

**Courses** *If no prerequisite is listed, the course is open.***PORTUGUE 1Z06 BEGINNER'S INTENSIVE PORTUGUESE**

A course designed to cover the rudiments of the language as used in Portugal and Brazil in both written and oral forms.

Four hours (including lab practice); two terms

*Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.*

**PORTUGUE 1Z06 INTERMEDIATE PORTUGUESE**

A course designed to further a student's command of the language in its oral and written forms. There will be some review of basic grammar, but emphasis will be on composition, expansion of vocabulary and more advanced aspects of the language.

Three hours; two terms

Prerequisite: PORTUGUE 1Z06 or OAC Portuguese or permission of the Department

**PSYCHOLOGY****Faculty as of January 15, 1996****Chair**

Grant K. Smith

**Professors Emeriti**

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)

**Professors**

Lorraine G. Allan/B.A., M.A. (Toronto), Ph.D. (McMaster)

Ian M. Begg/B.A., M.A., Ph.D. (Western)

Lee R. Brooks/A.B. (Columbia), M.S., Ph.D. (Brown)

Mertice M. Clark/B.A., Ph.D. (McMaster)/part-time

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)

Terri L. Lewis/B.A. (Toronto), Ph.D. (McMaster)/part-time

Stephen W. Link/B.A. (Colorado), Ph.D. (Stanford)

Daphne M. Maurer/B.A. (Swarthmore), M.A. (Pennsylvania), Ph.D. (Minnesota)

G. Rolfe Morrison/B.Sc., M.Sc. (McGill), Ph.D. (Brown)

John R. Platt/B.A. (Kansas), Ph.D. (Texas)

Roy M. Pritchard/B.Sc., Ph.D. (Reading)

Ronald J. Racine/B.Sc. (Oregon), M.Sc., Ph.D. (McGill)

Larry E. Roberts/B.A., Ph.D. (Minnesota)

Shepard Siegel/A.B. (New York), M.S., Ph.D. (Yale)

Grant K. Smith/B.Sc., Ph.D. (McGill)

Harvey Weingarten/B.Sc. (McGill), M.S., M.Phil., Ph.D. (Yale)

Margo I. Wilson/B.A. (Alberta), M.A. (California), Ph.D. (London)/part-time

**Associate Professors**

Richard B. Day/B.A. (Massachusetts), M.A. (Iowa), Ph.D. (McMaster)

Bruce Milliken/B.A., Ph.D. (Waterloo)

Kathryn M. Murphy/B.A. (Western), M.A., Ph.D. (Dalhousie)

**Assistant Professors**

Sue Becker/B.A.; M.Sc. (Queens), Ph.D. (Toronto)

James R. Blackburn/B.Sc. (McGill), M.A., Ph.D. (British Columbia)

Judith M. Shedden/B.Sc. (Alberta), M.S., Ph.D. (Pittsburg)

Laurel J. Trainor/ARCT (Royal Conservatory of Toronto), B.Mus., M.A., Ph.D. (Toronto)

**Associate Members**

Marianne W. Kristofferson/ (*Psychiatry*) B.A., Ph.D. (*Cincinnati*)  
 Charles E. Cunningham/ (*Psychiatry*) B.A. (*California State*), M.A. (*San Diego State*), Ph.D. (*The American University*).  
 Christopher David Rólo/ (*Biology*), B.Sc., M.Sc. (*Guelph*), Ph.D. (*British Columbia*)  
 Henry Szechtman/ (*Biomedical Sciences*) B.Sc., Ph.D. (*Pittsburgh*)  
 William Sulis/ (*Psychiatry*) B.Sc. (*Carleton*), M.D., M.A., Ph.D. (*Western*), F.R.C.P.C.

**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 marked \*\* (i.e. 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 *Séssional 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 Psychology 4D06 (Psychology Thesis) with permission of the course coordinator: These students will be transferred to Honours Psychology (Specialist Option).
5. Two or more of the following seminars: PSYCH 4U03, 4UU4, 4V03 and 4VV3 will be offered each year. Interested students should consult the department advisors in March of the preceding year.

**COURSES** *If no prerequisite is listed, the course is open.*

**PSYCH 1A06 GENERAL PSYCHOLOGY**  
 A broad survey of the subject matter of psychology. Topics covered include physiological psychology, perception, learning, animal behaviour, development, cognition, psychopathology and social psychology. Three hours (lectures and tutorials); two terms

**PSYCH 2A03 THEORIES OF HUMAN DEVELOPMENT**  
 A general survey of human development with an emphasis on the childhood years. Three lectures; one term  
 Prerequisite: PSYCH 1A06  
*Not open to students with credit or registration in PSYCH 3G03.*

**PSYCH 2B03 PERSONALITY**  
 An introduction to the scientific study of personality which will consider theory, assessment and research in five approaches to personality: psychodynamic, biological, trait, behavioural and humanistic. Three lectures; one term  
 Prerequisite: PSYCH 1A06

**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 1A06

**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

**PSYCH 2F03 FUNDAMENTALS OF NEUROSCIENCE**  
 Fundamentals of nervous system and endocrine function in humans and animals, including neurophysiology, neural transmission and neuroanatomy. Prerequisite: PSYCH 1A06 and BIOLOGY 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, B.A. Psychology Major or B.Sc. Life Sciences  
 Antirequisite: PSYCH 2R06, 2R03, 2RR3  
*Not open to students with credit or registration in STATS 2R06 or equivalent*

**PSYCH 2H03 HUMAN LEARNING AND COGNITION**  
 The psychological study of knowledge and how people use it. Topics include pattern recognition, remembering and reasoning. Three lectures, one term  
 Prerequisite: PSYCH 1A06

**PSYCH 2O03 NEUROPSYCHOLOGY I**  
 Neural organization and the relationship between human brain function and behaviour. Three lectures; one term  
 Prerequisite: PSYCH 1A06  
 Antirequisite: PSYCH 2W06, 3F03  
*Not open to students with credit or registration in PSYCH 2F03.*

**PSYCH 2R03 RESEARCH DESIGN AND STATISTICS FOR PSYCHOLOGISTS I**  
 Statistical principles in the design and analysis of experiments in psychology. Parametric and non-parametric techniques for single sample and multi sample designs. Three lectures; one term  
 Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06 or MATH 1M03; a grade of at least C+ in PSYCH 1A06 and registration in a Psychology programme, B.Sc. Life Science or the Honours Science (Complementary Studies Option) programme  
 Antirequisite: PSYCH 2R06, STATS 2MA3, 2MB3 or 2R06  
*Not open to students with credit or registration in STATS 2D03.*

**PSYCH 2RR3 RESEARCH DESIGN AND STATISTICS FOR PSYCHOLOGISTS II**  
 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: PSYCH 2R03 and registration in a Psychology programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) programme  
 Antirequisite: PSYCH 2R06, 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 1A06

**PSYCH 2V03 CONTEMPORARY ISSUES IN EXPERIMENTAL PSYCHOLOGY**  
 This course discusses selected topics chosen from cognitive psychology, perception, learning and animal behaviour, and neurobiology. We consider how our current understanding has evolved, and why viewpoints have changed. Three lectures; one term  
 Prerequisite: Registration in Level II of an Honours Psychology programme, and a CA of 9.5 or greater

**PSYCH 3A03 AUDITION**  
 An introduction to auditory perception. The emphasis is on the application of classical and modern psychoacoustical methods to the development of theories of hearing. Three lectures; one term  
 Prerequisite: PSYCH 2E03 or 2V03 and registration in a Psychology programme, B.Sc. Life Science, or the Honours Science (Complementary Studies Option) programme

**PSYCH 3B03 SPECIAL POPULATIONS**  
 Selected topics in developmental disability, perceptual or cognitive handicap, or behavioural disorder. Three lectures; one term  
 Prerequisite: PSYCH 2A03 or 3N03

**PSYCH 3C06 SOCIAL PSYCHOLOGY LABORATORY**  
 Students collect, analyse and interpret data, and in the second term carry out a research project of their own design. Two lectures, one lab (three hours); two terms  
 Prerequisite: Registration in an Honours Psychology programme and PSYCH 2C03 and one of PSYCH 2R06, 2RR3, STATS 2R06  
*Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.*  
*Not offered in 1996-97.*

**PSYCH 3D03 SELECTED TOPICS IN SOCIAL PSYCHOLOGY**

Study of research on attitudes and attitude change, or social influence, or dyadic relations.

Three lectures; one term  
Prerequisite: PSYCH 2C03  
*Not offered in 1996-97.*

**PSYCH 3DD3 PSYCHOLOGICAL ASPECTS OF AGING**

An examination of the aspects of aging: sensation, perception, attention, memory, intelligence, communication, personality, attitudes and mental health.

Three hours (lectures and seminar); one term  
Prerequisite: PSYCH 1A06, GERONTOL 1A06 and registration in a Gerontology programme or a Psychology programme  
Cross-list: GERONTOL 3D03.

*Students in a Psychology programme (except those in Gerontology and Psychology) must register for this course as PSYCH 3DD3.*

**PSYCH 3E03 AUDITION LABORATORY**

Experimental investigation of the role of auditory processes in the perception of music. The emphasis is on all phases of experimentation including report writing.

One lab (three hours); one term  
Prerequisite: Registration in Level III or IV of an Honours Psychology programme and PSYCH 3A03, and one of PSYCH 2R06, 2RR3, STATS 2R06

*Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.*

**PSYCH 3FA3 THE NEUROBIOLOGY OF LEARNING AND MEMORY**

Learning and memory mechanisms will be discussed from several perspectives ranging from cognitive neuroscience to synaptic physiology.

Three lectures; one term  
Prerequisite: PSYCH 2F03 or 2V03  
Antirequisite: PSYCH 3FF3

**PSYCH 3G03 DEVELOPMENT DURING INFANCY**

Social and cognitive development in the first Two years of life. Topics include fetal development, development of perception, memory and concepts.

Three lectures; one term  
Prerequisite: 12 units of Level II Psychology including 2G03 or 2R03 and at least six units from PSYCH 2E03, 2F03, 2H03, 2T03 or 2V03

**PSYCH 3H03 INTELLECTUAL DEVELOPMENT AFTER INFANCY**

The development of perception, memory, language and concepts after infancy.

Three lectures; one term  
Prerequisite: PSYCH 3G03, and PSYCH 2G03, 2R06 or 2R03

**PSYCH 3I03 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.

*Enrolment is limited. See 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 1A06, and one of PSYCH 2G03, 2R06, 2R03, Statistics 2R06. Students with grades less than B- in PSYCH 2G03 are advised not to enrol in this course.

**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: PSYCH 2F03, 2T03 or 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: PSYCH 3N03  
Antirequisite: PSYCH 3N06

**PSYCH 3O03 NEUROPSYCHOLOGY II**

Neural organization and the relationship between human brain function and behaviour. A continuation of PSYCH 2O03.

Three lectures; one term  
Prerequisite: PSYCH 2O03 or 2F03  
Antirequisite: PSYCH 2W06

**PSYCH 3P03 PSYCHOLOGICAL TOPICS IN THINKING**

Areas to be examined include decision making, inference and problem solving. Particular attention will be paid to the informal reasoning and heuristics that are crucial to everyday decisions.

Three lectures; one term  
Prerequisite: PSYCH 2H03 or 2V03 and PSYCH 2G03 or 2R03 (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: Permission of the course coordinator  
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: Permission of the course coordinator  
Antirequisite: PSYCH 3Q03

**PSYCH 3R03 INTRODUCTION TO ANIMAL BEHAVIOUR**

The development, stimulus control, and function of behaviour as seen in evolutionary perspective. Instinctive behaviour, learned behaviour, and their interactions.

Three lectures; one term  
Prerequisite: Registration in a Psychology programme, B.Sc. Life Science, the Honours Science (Complementary Studies Option) 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: Permission of the instructor which must be obtained by the end of March, and PSYCH 3R03, and registration in an Honours programme in Psychology or Biology  
*Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.*

**PSYCH 3T03 SOCIOBIOLOGY**

Social behaviour of people and other animals from the perspective of evolutionary theory. Topics include aggression, altruism, kinship, parent-offspring interaction, sex and reproduction.

Three lectures; one term  
Prerequisite: One of ANTHROP 2D03, 2E03, BIOLOGY 2C03, 3J03, PSYCH 3R03



**PSYCH 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) programme

**PSYCH 3UU3 CHILDHOOD LANGUAGE DISORDERS**

Research on disabilities in reading, writing, spelling and speech during childhood will be discussed. A focus will be on the training implications for educational settings.

Three lectures; one term

Prerequisite: PSYCH 3U03

**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 PSYCH 2R06 or 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 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) 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.

Prerequisite: One of MATH 1A03, 1A06, 1AA6, 1C03, 1C06, 1N06 or ARTS&SCI 1D06 and one of MATH 1B03 or 1H05 and one of COMP SC 1MA3 or 1MC3

Cross-list: NEURCOMP 3W03

**PSYCH 3WW3 PSYCHOPHYSICS**

The course reviews, discusses, and illustrates how psychological 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 2R06 or 2RR3

**PSYCH 3Y03 SELECTED TOPICS IN BEHAVIOUR THEORY**

Issues of contemporary interest in animal learning and behaviour will be examined in depth.

Three lectures; one term

Prerequisite: PSYCH 2T03 or 2V03 and registration in a Psychology programme, B.Sc. Life Science or the Honours Science (Complementary Studies Option) programme

*PSYCH 3Y03 may be repeated, for a total of six units credit, if on a different topic and with permission of the instructor.*

*Not offered in 1996-97.*

**PSYCH 4A03 CONTEMPORARY TOPICS IN HISTORICAL PERSPECTIVE**

Discussion of the background and current status of several issues of contemporary interest.

Three hours (lectures and seminar); one term

Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CA of at least 6.0 and permission of the instructor See heading *Courses Requiring Permission* in the *Faculty of Science* section of the Calendar.

**PSYCH 4B03 HISTORY OF PSYCHOLOGY**

An historical account of the main lines of development of psychology.

Three lectures; one term

Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CA of at least 6.0

**PSYCH 4D06 PSYCHOLOGY THESIS**

Students conduct research projects with individual faculty members. Three copies of a completed thesis must be submitted by the end of 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 in March. 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.*)

See heading *Courses Requiring Permission* in the *Faculty of Science* section of the Calendar.

**PSYCH 4G03 NEUROSCIENCE LABORATORY**

Seminars and laboratory experience in current problems in neurobiology. Two hours, seminar; three hours lab; one term

Prerequisite: One of PSYCH 2E03; 2F03, BIOLOGY 3P03 and registration in Level IV of an Honours programme

*Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.*

**PSYCH 4I03 MODELS IN BRAIN AND COGNITIVE SCIENCES**

A discussion of the contemporary literature on computer models of neural and cognitive processes with practical exercises.

Three hours (seminar); one term

Prerequisite: Registration in an Honours Psychology programme; or an Honours B.Sc. programme

**PSYCH 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

Antirequisite: PSYCH 4QQ3

See heading *Courses Requiring Permission* 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

Antirequisite: PSYCH 4Q03

See heading *Courses Requiring Permission* 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

Three hours (Lecture and tutorial); one term

Prerequisite: BIOLOGY 3P03; or permission of the instructor. BIOLOGY 3HH3 and one of BIOLOGY 3UU3, PSYCH 2F03, 3FA3, 3FB3 and strongly recommended.

*Offered in alternate years.*

*Offered in 1996-97.*

**Note:**

Two or more of the following seminars (PSYCH 4U03, 4UU3, 4V03, 4VV3) will be offered each year. Interested students should consult the department advisors in March of the preceding year.

**PSYCH 4U03 SELECTED TOPICS IN BEHAVIOURAL NEUROSCIENCE**

An advanced self-directed learning seminar on a selected topic in behavioural neuroscience, e.g., biological controls of eating, affect or learning.

Students may consult the Psychology Department in March to determine the specific content.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Psychology, Biology or Biology/Psychology

Antirequisite: PSYCH 4F03

*Enrolment is limited. See heading Limited Enrolment Courses in the Faculty of Science section of the Calendar.*

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### PSYCH 4U03 SELECTED TOPICS IN COMPUTATIONAL NEUROSCIENCE

Contemporary literature on theoretical models of behaviour from the perspective of artificial life and computational neuroscience. Topics selected from collective intelligence, evolutionary computation, formal theory of computation, emergent computation.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme

Antirequisite: COMP SCI 3TA3

Not open to students with credit or registration in COMP SCI 4TC3

Enrolment is limited. See heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

### PSYCH 4V03 SELECTED TOPICS IN HUMAN LEARNING, COGNITION AND PERCEPTION

A seminar on topics of current interest in human learning and cognition. Students should consult the Department concerning the topics to be examined.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme

Enrolment is limited. See heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

### PSYCH 4V03 SELECTED TOPICS IN ANIMAL BEHAVIOUR

An advanced seminar focusing on one or a few contemporary research topics, such as hormonal influences on behavioural development; the role of parasites in behavioural evolution; game theoretical analyses of social phenomena; etc.

Three hours (seminar); one term

Prerequisite: Registration in Level IV of an Honours Psychology programme

Enrolment is limited. See heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

## RELIGIOUS STUDIES

### Faculty as of January 15, 1996

#### Chair

Stephen R. Westerholm

#### 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*)

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*)

#### Professors

Phyllis Granoff/B.A. (*Radcliffe College*), Ph.D. (*Harvard*)

Louis I. Greenspan/M.A. (*Dalhousie*), Ph.D. (*Brandeis*)

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*)

John C. Robertson/B.A. (*Texas Wesleyan College*), B.D. (*Southern Methodist University*), S.T.M., M.A., Ph.D. (*Yale*)

Koichi Shinohara/B.L., M.L. (*Tokyo*), Ph.D. (*Columbia*)

Paul Younger/A.B. (*LaFayette*), M.A. (*Banaras*), B.D. (*Serampore*), Th.M., M.A., Ph.D. (*Princeton*)

#### 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*)

Rosalind Lefeber/Ph.D. (*Harvard*), Ph.D. (*Toronto*)/part-time

Graeme MacQueen/B.A., M.A. (*McMaster*), Ph.D. (*Harvard*)

Zdravko Planinc/B.A., M.A. (*York*), A.M., Ph.D. (*Harvard*)

Adele Reinhardt/B.A. (*Toronto*), M.A., Ph.D. (*McMaster*)

Eileen Schuller/B.A. (*University of Alberta*), M.A. (*Toronto*), Ph.D. (*Harvard*)

S.R. Westerholm/B.A., M.A. (*Toronto*), D.Th. (*Lund*)

Wayne K. Whillier/B.A. (*Sir George Williams*), Ph.D. (*McMaster*)

#### Assistant Professor

Peter Widdicombe/B.A. (*Manitoba*), M.Phil. (*Oxford*), M.Div. (*Toronto*), D.Phil. (*Oxford*)

#### Associate Member

Virginia Aksan/*History* B.A. (*Allegheny College*), MLS (*Berkeley*), M.A., Ph.D. (*Toronto*)

### Department Notes:

Students are advised to consult both the Department's Handbook and the Undergraduate Timetable for a list of the courses offered in the current year.

### Fields of Study

The Department offers courses in four fields of study. Students are encouraged to specialize in any one of these fields. Level II, III and IV courses are allocated to the fields as follows:

#### I. ASIAN RELIGIONS

RELIG ST 2A03, 2J06, 2L03, 2P06, 2RR3, 2T03, 2TT3, 3AA3, 3E03, 3H03, 3I03, 3L03, 3P03, 3S03, 3U03, 3UU3, 4F03, 4G03;

SANSKRIT 3A06, 4B06

#### II. BIBLICAL STUDIES

RELIG ST 2B03, 2D06, 2DD3, 2EE3, 2GG3, 2HH3, 2NN3, 2VV3, 2YY3, 2Z03, 3M03, 3N03, 3R03, 3T03, 4B03, 4C03;

#### III. WESTERN RELIGIOUS THOUGHT

RELIG ST 2C03, 2CC3, 2H03, 2I03, 2II3, 2JJ3, 2KK3, 2R06, 2S06, 2U03, 2UU3, 2X03, 2XX3, 2Y03, 2ZZ3, 3D03, 3II3, 3KK3, 3LL3, 3MM3, 3NN3, 3YY3, 3Z03, 3ZZ3, 4D03, 4E03

#### IV. CONTEMPORARY AND COMPARATIVE RELIGIONS

RELIG ST 2AA3, 2BB3, 2K03, 2M03, 2N03, 2O06, 2Q03, 2QQ3, 2SS3, 2V03, 2W03, 2WW3, 3A03, 3B03, 3J06, 3JJ6

Students wishing to specialize in Asian Religions should consider beginning language training in Sanskrit and/or Japanese 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*) and/or Hebrew.

### 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 1I06 RELIGIOUS THEMES IN MODERN LITERATURE

An introduction to religious themes, imagery and issues through a study of selected modern literature.

Two lectures, one tutorial; two terms

#### RELIG ST 2A03 THE CONFUCIAN TRADITION

A study of selected passages from early Confucian writings on education, government, family and human civilization (The Analects, Mencius, Xunzi); some attention will be given to the "new" reading of Confucian classics that "Neo-Confucian" scholars proposed to meet the challenge of Buddhism.

Two lectures, one tutorial; one term

#### 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 religious heroines from 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 500 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

*For a study of the whole Hebrew Bible, RELIG ST 2D06, 2DD3, 2EE3, 3M03 are recommended.*

**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 RELIGIOUS 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 2NN3 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

**RELIG ST 2O06 AN INTRODUCTION TO THE HISTORY OF THE ISLAMIC WORLD**

A survey of the history of the Islamic world to 1800: the origins of Islam, its spread through Africa and into Europe, the development of the Ottoman Empire.

Three lectures; two terms

Prerequisite: Registration in Level II and above

Cross-list: HISTORY 2E06

**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 Unification Church, Scientology, Wicca, New Age Spirituality, 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 2TT3 TAOISM AND THE SEARCH FOR IMMORTALITY IN CHINA**

This course is an introduction to the Taoist tradition in China. The classics of "Philosophical Taoism", including the Lao-tzu and the Chuang-tzu will be studied followed by the scriptures of the medieval period which taught meditation, ritual and alchemy as paths to immortality.

Two lectures, one tutorial; one term

**RELIG ST 2U03 RELIGION AND MORALITY 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 POPULAR CULTURE**

An examination of the impact of the Bible on popular culture in films, novels and songs. Among the issues to be discussed are 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 RELIGIOUS THEMES IN SHAKESPEARE**

This course will study the presentation of religious controversies and the use of religious reference and symbolism in several of Shakespeare's plays.

Two lectures, one tutorial; one term

**RELIG ST 3A03 SACRAL POETRY IN RELIGIOUS TRADITIONS**

This course provides an in depth critical study in English translation of sacral poetry, from ancient, middle and modern sources, including scriptural texts; mystical writings and secular authors.

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 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 3I13 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

Prerequisite: RELIG ST 2U03 or 2UJ3 or permission of the instructor.

Antirequisite: RELIG ST 2I03

**RELIG ST 3J06 RELIGION AND MODERN SOCIETY**

An introduction to the thoughts and theories of scholars who have studied the relation between religion and society. In the first term, the emphasis will be on pre-World War II writings. In the second term, the empirical materials of the sociology of religion since World War II will be surveyed.

Two lectures, one tutorial; two terms

Prerequisite: Any course in Anthropology, Philosophy, Religious Studies or Sociology

Cross-list: SOCIOL 3M06

Enrolment is limited.

**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**

Concerning the uses of power, the desire for self-realization and happiness, mortality and varieties of spiritual transcendence. Readings in Hobbes, Marcel, Fromm, Frankl, William James and Eliade.

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 3P03 ESOTERIC BUDDHISM IN EAST ASIA**

An examination of the doctrine, ritual, and art of Esoteric (Tantric) Buddhism in China and Japan. Emphasis will be on the teachings of Kukai (774-835) and the Japanese Shingon tradition.

Two lectures, one tutorial; one term

Prerequisite: Open; some prior study of Buddhism is recommended.

Cross-list: JAPAN ST 3P03

**RELIG ST 3R03 DEATH AND THE AFTERLIFE IN EARLY JUDAISM AND CHRISTIANITY**

An examination of the variety of ways in which physical death and the afterlife were understood in biblical and post-biblical Judaism as well as in the New Testament and early Christianity. Among the topics to be considered are the netherworld, immortality and resurrection, as well as the relationship of these concepts to issues of faith and morality.

Two lectures, one tutorial; one term

**RELIG ST 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 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 3YY3 RELIGION AND THE CULTURE OF THE TWENTIETH CENTURY II**

Religion in the post war period. Topics include: theological revival and the end of ideology; the sixties and neo marxism; religion and the post modern; fundamentalism; religious extremism and the global village.

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 4B03 ADVANCED SEMINARS IN EARLY JUDAISM**

This seminar will concentrate on the study of special topics in Early Judaism.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

**RELIG ST 4C03 ADVANCED SEMINAR IN EARLY CHRISTIANITY**

This seminar will concentrate on the study of special topics in Christianity.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

**RELIG ST 4D03 ADVANCED SEMINAR IN WESTERN RELIGIOUS THOUGHT**

This seminar will concentrate on the study of special topics in Western Religious Thought.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

**RELIG ST 4E03 ADVANCED SEMINAR IN RELIGION AND POLITICS**

This seminar will concentrate on the study of special topics in Religion and Politics.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

**RELIG ST 4F03 ADVANCED SEMINAR IN EAST ASIAN RELIGIONS**

This seminar will concentrate on the study of special topics in East Asian Religions.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the instructor

**RELIG ST 4G03 ADVANCED SEMINAR IN SOUTH ASIAN RELIGIONS**

This seminar will concentrate on the study of special topics in South Asian religions.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and written permission of the 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

**RELIG ST 4W06 GUIDED READING IN RELIGIOUS STUDIES**

Independent study on a topic approved by the instructor.

Two terms

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and permission of the instructor

**RELIG ST 4Y03 GUIDED READING IN RELIGIOUS STUDIES**

Independent study on a topic approved by the instructor.

One term

Prerequisite: Registration in Level IV of an honours programme in Religious Studies and permission of the instructor

**Hebrew ...**

**HEBREW 2A03 INTRODUCTION TO BIBLICAL HEBREW I**

An introduction to the basics of grammar, syntax and vocabulary of the language of the Hebrew Bible. The student will begin to read in the Hebrew Bible.

Four hours (two lectures); one term

Antirequisite: HEBREW 2A06

**HEBREW 2B03 INTRODUCTION TO BIBLICAL HEBREW II**

An introduction to more grammar, syntax and vocabulary of the language of the Hebrew Bible. The knowledge acquired should enable the student to read the simple prose and poetry of the Hebrew Bible.

Four hours (two lectures); one term

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

**Japanese ...**

See separate listing in the Calendar.

## RUSSIAN

Courses and programmes in *Russian* are administered within the Department of Modern Languages of the Faculty of Humanities.

### Department Note:

Students should note that the Department has classified its Russian language courses under the following categories:

#### Introductory Level Language Course

RUSSIAN 1Z06

#### Intermediate Level Language Course

RUSSIAN 2C06

#### Advanced Level Language Courses

RUSSIAN 3C06, 4C06

### 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  
*Enrolment is limited.*

*Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.*

#### RUSSIAN 2B03 RUSSIAN SHORT STORY

Reading of short stories in the original language to develop comprehension, writing and speaking skills.

Three lectures; one term

Prerequisite: RUSSIAN 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 3C06 ADVANCED LANGUAGE STUDY

This course is designed to enhance the student's oral and written proficiency through the study of Russian idioms, exercises in syntax, and conversational classes based on selected texts and films.

Four hours; two terms

Prerequisite: RUSSIAN 2C06

#### RUSSIAN 4C06 CONVERSATION AND ADVANCED COMPOSITION

An advanced language course focusing on the structure of compound and complex sentences, and on the development of writing and oral skills.

Three lectures; two terms

Prerequisite: RUSSIAN 3C06

#### RUSSIAN 4I13 INDEPENDENT STUDY

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Tutorials; one term

Prerequisite: 18 units of 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.*

*Offered in alternate years.*

#### 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.*

*Offered in alternate years.*

## SANSKRIT

(SEE RELIGIOUS STUDIES, SANSKRIT)

## SCIENCE

With the exception of SCIENCE 1A00, 4A03 and 4I03, 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 offered by Department. They are:

BIOLOGY 1J03	Human Physiology
CHEM 1C03	General Chemistry
COMP SCI 1SA3	Computing Fundamentals
GEOLOGY 1C03	Earth Processes
PHYSICS 2J03	Physics of Musical Sound
PHYSICS 2M03	Mechanics
STATS 1A03	Statistical Reasoning
STATS 1L03	Probability and Linear Algebra
STATS 2A03	Advanced Statistical Reasoning

### Courses *If no prerequisite is listed, the course is open.*

#### 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.*

*Offered in 1996-97*

#### SCIENCE 2C03 CONTINENTAL DRIFT AND PLATE TECTONICS

A review of modern ideas of crustal movement, the origin of volcanoes and earthquakes and the construction of mountain belts, as portions of the crust drift and collide.

Three lectures; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme

Antirequisite: GEOLOGY 1A03, 1A06, or 1C03

#### SCIENCE 2D03 ASTRONOMY

A survey of modern and historical concepts in astronomy. Light and the telescope; distance measurement in space; the structure and evolution of stars, galaxies, cosmology.

Three lectures; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme

Grade 12 Mathematics required.

#### SCIENCE 2H03 THE MOLECULAR BASIS OF LIFE

A survey of the molecular basis of life; the current revolution in biology caused by recombinant DNA technology and its implications for the future.

Three lectures; or two lectures, one tutorial; one term

Prerequisite: Registration in Level II, III, or IV of any programme

Antirequisite: BIOLOGY 1A06 or 1G06

*Offered in alternate years.*

*Offered in 1997-98.*

#### 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 or 1G06

*Offered in alternate years.*

*Offered in 1996-97.*

#### SCIENCE 2L03 ENVIRONMENTAL GEOLOGY

Geological methods applied to the study of environmental problems. A case study of: pollution of water resources, nuclear waste disposal, indoor radon, acid mine drainage, leakage from garbage dumps.

Lectures and seminars (three hours); one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme

*Not open to students registered in any Geography programme.*

Antirequisite: ENVIR SC 1A06, GEOG 3C03

**SCIENCE 3A03 SCIENCE AND LAW**

How science has affected, and been influenced by the law: science of memory and abuse cases; new scientific technologies (e.g. forensic anthropology, DNA profiling) in the courts; legal issues and the conduct of scientific research.

Lectures and seminars (three hours); one term

Prerequisite: Permission of the instructor

Not open to students registered in Level I or II.

Not open to students registered in a Science or Engineering programme.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

Offered in 1996-97

**SCIENCE 3B03 THE NATURAL SCIENCE AND SOCIAL SCIENCE OF FOOD**

Scientific and social scientific approaches to food and nutrition: Biological functions and control of eating; the food habits of our human ancestors; the relationship between social change and nutritional advice.

Lectures and seminars (three hours); one term

Prerequisite: Permission of the instructor

Not open to students registered in Level I or II.

Not open to students registered in a Science or Engineering programme.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

Offered in 1996-97

**SCIENCE 4I03 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 an Honours (Complementary Studies Option) programme in the Faculty of Science. One of Physics 1A06, 1B06, 1C06 is recommended.

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

**SCIENCE 4J03 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: Registration in an Honours (Complementary Studies Option) programme in the Faculty of Science

Enrolment is limited. See the heading *Limited Enrolment Courses* in the Faculty of Science section of the Calendar.

**SOCIAL SCIENCE****Courses** *If no prerequisite is listed, the course is open.***SOC SCI 2B06 INTRODUCTION TO THE STUDY OF PEACE**

The concept of peace; an analysis of contemporary war and of conditions for peace, grounded in specific case studies; the roles of values, ideologies and strategies in the attainment of peace; peace research as a discipline.

Three hours (lectures and discussions); two terms

**SOC SCI 2C03 GENOCIDE AND ETHNOCID**

The general sociological and political issue of genocide approached through the analysis of three types: (1) ethnocide (Armenians, Jews, Gypsies), (2) politicide (the Ukraine, Cambodia), (3) ethnocide of indigenous peoples in settler societies.

Three hours; one term

**SOC SCI 2D03 PEACE AND DEVELOPMENT**

Analysis of economies of less developed countries and the processes of transformation that govern their growth and development. Special emphasis will be placed on the relationship between development and peace.

Three hours; one term

**SOC SCI 2E03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES I****Topic for 1996-97: 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

May be repeated if on a different topic for a total of six units.

**SOC SCI 2F03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II****Topic for 1996-97: 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

May be repeated if on a different topic for a total of six units.

**SOCIAL WORK****Faculty as of January 15, 1996****Director.**

J. McEwan Macintyre

**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)

Michael Wheeler/B.A. (London), M.S.W. (British Columbia), Dip. Sc. Admin. (London School of Economics)

**Professors**

Michael J. MacLean/B.A. (St. Thomas), M.A. (Sussex), Ph.D. (London)

M. Susan Watt/B.A., M.S.W., Adv. Dip. S.W. (Toronto), D.S.W. (UCLA)

**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)

James W. Gladstone/B.A. (McGill), M.S.W. (British Columbia), Ph.D. (Toronto)

Nóra 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)

Sally Palmer/B.A. (Western), B.S.W., M.S.W., Ph.D. (Toronto)

James J. Rice/B.A. (Sir George Williams), B.S.W., M.S.W. (Calgary), Ph.D. (Exeter)

**Assistant Professors**

Patricia M. Daenzer/B.A., B.S.W., (York), M.S.W., Ph.D. (Toronto)

Sheree D. Meredith/B.A. (Trent), M.S.W. (Wilfrid Laurier)

Sheila Sarrmon/B.A. (Nazareth College, New York), M.S.W. (Toronto)

**Associate Members**

N.C. Agarwal/(Business)B.A., M.A. (Delhi), Ph.D. (Minnesota)

J.A. Johnson/(Economics) M.A., Ph.D. (Minnesota)

D.R.L. Matthews/(Sociology) B.A. (Memorial), M.A., Ph.D. (Minnesota)

J. O'Connor/(Sociology) B.A., M.Soc.Sc. (Ireland), Ph.D. (Toronto)

**Practice Instructors**

Michael Balkwill/B.A., B.S.W., M.A. (McMaster)

Mel Basbaum/B.A. (Sir George Williams), M.S.W. (McGill)

Richard P. Csiernik/B.A., B.S.W., B.Sc. (McMaster), M.S.W. (Toronto)

Mary Ciotti/B.S.W. (Western), M.S.W. (Toronto), C.C.C.W. (Fanshawe)

Mary Ann Covi/B.A. (State University of New York at Buffalo), M.S.W. (Toronto)

Janet Fishlock/B.A. (Waterloo), M.S.W. (Wilfrid Laurier)

Mary Forster/B.A. (Guelph), M.S.W. (Wilfrid Laurier)

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)

Gordon Greenway/B.A., M.S.W. (Carleton)

Paul Haalboom/B.A. (McMaster), M.S.W. (Carleton)

Barbara Hill-Laurienzo/B.S.W. (Western), M.S.W. (Wilfrid Laurier)

Maxine Lane/B.A., B.S.W. (McMaster), M.Ed. (Brock)

Bob Lang/B.A., B.S.W. (McMaster), M.S.W. (Wilfrid Laurier)

Steve McCann/B.A. (York), M.S.W. (Wilfrid Laurier)

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)

Margie Woods/B.A., B.S.W., M.S.W. (Toronto)

**Department Notes:**

1. The following courses may be taken for elective credit by qualified students registered in any university programme; however, enrolment in these courses is limited and permission of the department is required.

SOC WORK 3C03 Social Aspects of Health & Disease  
 SOC WORK 3G03 Social Welfare Policy and Process  
 SOC WORK 3H03 Justice and Social Welfare  
 SOC WORK 4B03 Adult Family Violence  
 SOC WORK 4C03 Racism & Social Marginalization in Canadian Society  
 SOC WORK 4E03 Women and Social Welfare  
 SOC WORK 4J03 Social Change and Social Welfare Policy  
 SOC WORK 4K03 Concentrated Studies in Social Welfare Policy  
 SOC WORK 4M03 International and Comparative Social Welfare  
 SOC WORK 4Z03 Special Topics in Social Welfare Policy

2. Registration in all courses marked \* listed as selected topics, independent research, individual readings and honours essays requires written permission of the Department. Registration with appropriate permission must be completed by all students, including those registered in the combined B.A./B.S.W. or B.S.W. programmes, no later than the last day for registration as stated in the Calendar under *Sessional Dates*.

**Courses****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

Prerequisite: Open

**SOC WORK 2B06 SOCIAL WELFARE: GENERAL INTRODUCTION**

Purposes and values of social welfare programmes and services. Social welfare policy and the social security system in Canada in historical perspective.

Lectures and discussion; two terms

*Term 1 of this course is the same as LABR ST 2B03 and Term 2 is the same as LABR ST 2BB3. Students in a Social Work programme must register for this course as SOC WORK 2B06.*

**SOC WORK 2C03 INTRODUCTION TO SOCIAL WORK PRACTICE**

Knowledge base; social work values, fields of practice and types of intervention.

Lectures, films, discussions, small task-groups; one term

Antirequisite: SOC WORK 2C06

**SOC WORK 2D03\* INTERPERSONAL COMMUNICATION AND INTERVIEWING**

Theories of interpersonal communication. Basic skills in interpersonal communication and interviewing.

Lectures, discussions, exercises; one term

Prerequisite: Permission of the School of Social Work is required.

Antirequisite: SOC WORK 2C06

*Enrolment is limited.*

**SOC WORK 3C03\* SOCIAL ASPECTS OF HEALTH AND DISEASE**

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: Permission of the School of Social Work is required by all students  
*This course may be taken as elective credit by undergraduates not in Social Work.*

*Enrolment is limited.*

**SOC WORK 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, 2C03, 2D03, PSYCH 2A03, and registration in SOC WORK 3DD6

Antirequisite: SOC WORK 3D09

Credit in this course is dependent on achieving a minimum grade of C+ in SOC WORK 3D06 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 10 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" in SOC WORK 3DD6 and a minimum grade of C+ in SOC WORK 3D06.

*Enrolment is limited.*

**SOC WORK 3G03\* SOCIAL WELFARE POLICY AND PROCESS**

Role of values and assumptions in the development of welfare policies. Analysis of key concepts in policy planning. Study of policy and programmes in selected areas.

Lectures and seminars; one term

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Enrolment is limited.*

**SOC WORK 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: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Enrolment is limited.*

**SOC WORK 3N03 SELECTED THEORIES OF SOCIAL WORK INTERVENTION**

Examination and analysis of social work intervention with individuals and their families.

Seminars; one term

Prerequisite: Credit or registration in PSYCH 2A03

Antirequisite: SOC WORK 4N03

**SOC WORK 3O03 HUMAN SEXUALITY**

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

**SOC WORK 3P03\* CONCENTRATED STUDIES IN SOCIAL WORK PRACTICE**

Completion of a major project focusing on a selected social work problem or issue.

Tutorials; two terms

Prerequisite: Permission of the supervising instructor and course coordinator

**SOC WORK 3R03 SOCIAL WORK WITH GROUPS**

This course will provide a theoretical knowledge of group practice models for social work within an historical and didactic social work framework.

Lectures, discussions and tutorials; one term

*Enrolment is limited.*

**SOC WORK 4A03\* SOCIAL POLICY AND THE AGING POPULATION**

Critical examination of the social and economic implications of the aging population and the nature of social welfare policy with respect to elderly people.

Three hours (seminar); one term

Prerequisite: Enrolment in the B.A./B.S.W. or B.S.W. programme and permission of the School of Social Work

Cross-list: GERONTOL 4S03

*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.

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*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: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Not open to students with credit 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+ in SOC WORK 4D06 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" in SOC WORK 4DD6 and a minimum grade of C+ in SOC WORK 4D06.*

*Enrolment is limited.*

**SOC WORK 4E03 WOMEN AND SOCIAL WELFARE**

Critical examination of the responses of the welfare state to women, in particular its support of women's dependency within families and positioning as unpaid and paid providers of care.

Seminars; one term

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Not open to students with credit in SOC WORK 4Z03, Selected Issues in Social Welfare Policy, if the issue was Women and Social Welfare.*

*Enrolment is limited.*

**SOC WORK 4G03 SELECTED SOCIAL ISSUES AND SOCIAL WORK PRACTICE**

Critical examination of social work practice in respect to selected social issues. Topics will vary from year to year and the School should be consulted for details for any particular year.

Seminars; one term

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be repeated if on a different topic.*

**SOC WORK 4J03 SOCIAL CHANGE AND SOCIAL WELFARE**

Critical examination of the meaning of social change as a concept and event. Review of strategies of social change and of attempts to effect social change.

Seminars; one term

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Enrolment is limited.*

**SOC WORK 4K03 CONCENTRATED STUDIES IN SOCIAL WELFARE POLICY**

Independent study of a particular issue of interest in social welfare, and completion of a major essay or project.

Discussion and tutorials; two terms

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Enrolment is limited.*

**SOC WORK 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: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*Enrolment is limited.*

**SOC WORK 4O03 COMMUNITY WORK**

Analysis of major community work strategies, historical antecedents, current developments and future potential in Canada. Student participation in the analysis of a community project is expected.

Seminars; one term

Prerequisite: Registration or credit in SOC WORK 3D06 and 3DD6, or 3D09; or permission of the instructor

**SOC WORK 4P03 PROFESSIONAL ISSUES**

A seminar focusing on the status, roles and values of the professional social worker in contemporary society.

Seminars; one term

Prerequisite: Registration or credit in SOC WORK 3D06 and 3DD6, or 3D09

**SOC WORK 4T03 SOCIAL WORK PRACTICE WITH WOMEN**

Study of feminist and non-sexist social work practice (with individuals, groups and the community) and implications for women of selected social policies.

Seminars; one term

**SOC WORK 4V03 SOCIAL WORK PRACTICE WITH THE AGED**

A critical analysis of the social context in which the aged live, and an examination of social work methods as they apply to the aged.

Seminars; one term

**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: SOC WORK 2D03 or permission of the School of Social Work

**SOC WORK 4X03 FAMILY IN SOCIAL WORK PRACTICE**

Examination of relevant aspects of family theory for social work practice; models of family intervention.

Seminars; one term

Prerequisite: Credit or registration in SOC WORK 3D06 and 3DD6, or 3D09; or permission of the instructor

Antirequisite: SOC WORK 3M03

**SOC WORK 4Y03 METHODS OF APPLIED SOCIAL RESEARCH**

Examination of the conceptual framework of scientific inquiry relating to social work research and practice. Survey of selected research from other disciplines relevant to social work.

Seminars; one term

Antirequisite: SOC WORK 3K03

**SOC WORK 4Z03 SPECIAL TOPICS IN SOCIAL WELFARE POLICY**

Critical examination of social welfare policy in respect to selected social issues.

Topics will vary from year to year and the School should be consulted for details for any year.

Seminars; one term

Prerequisite: Permission of the School of Social Work is required by all students. *This course may be taken as elective credit by undergraduates not in Social Work.*

*This course may be repeated if on a different topic.*

*Enrolment is limited.*

**SOCIOLOGY**

**Faculty as of January 15, 1996**

**Chair**

Cyril Levitt

**Professors Emeriti**

Frank E. Jones/B.A., M.A. (McGill), Ph.D. (Harvard)

Peter C. Pineo/B.A. (University of British Columbia), M.A. (McGill), Ph.D. (Chicago)

**Professors**

W. Peter Archibald/B.A. (Mt. Allison), M.A. (University of British Columbia), Ph.D. (University of Michigan)

Carl J. Cuneo/B.A., M.A., Ph.D. (Waterloo)

John Fox/B.A., M.A., Ph.D. (Michigan)

Jack W. Haas/B.S. (SUNY, Brockport), Ph.D. (Syracuse)

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)

D. Ralph L. Matthews/B.A. (Memorial), M.A., Ph.D. (Minnesota)

Carolyn Rosenthal/B.A. (Toronto), M.A., Ph.D. (McMaster)

William B. Shaffir/B.A., M.A., Ph.D. (McGill)

Vivienne Walters/B.A., M.A. (Sheffield), Ph.D. (McGill)

**Associate Professors**

- Richard A. Brymer/B.A., M.A. (Texas), Ph.D. (Michigan State)  
 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)  
 Robert H. Storey/B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)  
 Jane Synge/M.A. (Aberdeen), Ph.D. (London)

**Assistant Professors**

- Scott Davies/B.A. (Toronto), M.A. (McMaster), Ph.D. (Toronto)  
 Dorothy Pawluch/B.A. (Laurentian), M.A., Ph.D. (McGill)  
 Victor Satzewich/B.A., M.A. (Saskatchewan), Ph.D. (Glasgow)  
 Pamela Sugiman/B.A., M.A., Ph.D., (Toronto)

**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)  
 P. Donnelly/(Physical Education) B.A. (N.Y.), M.A., Ph.D. (Massachusetts)  
 John Eyles/(Geography) M.A., M.Sc. (L.S.E.), Ph.D. (London)  
 S. French/(Nursing) B.N. (McGill), M.S. (Boston), Ph.D. (Toronto), R.N.  
 L. Greenspan/(Religious Studies) M.A. (Dalhousie), Ph.D. (Brandeis)  
 C. Jones/(Sociology, Toronto) B.A. (Cambridge), Ph.D. (Edinburgh)  
 P. White/(Kinesiology) B.Sc. (London), M.Sc., Ph.D. (Waterloo)

**Department Notes:**

- Students should consult the Department's *Handbook for Undergraduates, 1996-97*, which will be available prior to registration, for fuller course descriptions and any changes in the list of courses offered in 1996-97. Students should check the *Handbook* in order to find the term in which 'one term' courses are offered.
- SOCIOL 1A06 and several other courses are divided into independent sections. For more information, see the Sociology Department's *Handbook for Undergraduates, 1996-97*. This booklet gives course descriptions for the various SOCIOL 1A06 sections.
- 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.
- Limited enrolment courses: Level III courses identified as *Enrolment is limited* have a limit of 50 students; priority will be given to Sociology students.**  
 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 preferential ballot. Preference will be given in order to students in the following categories: Level IV Honours and Combined Honours Sociology; Continuing students in Sociology Level IV; Level III Honours and Combined Honours Sociology; B.A. in Sociology; others.  
 All students including part-time degree students, are urged to consult the Departmental Office (Kenneth Taylor Hall, Room 627) 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.***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 relationships between this 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 3103

**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**

An analysis of the status and objective condition of women in Canada (including theories of socialization and of stratification).  
 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.  
 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.  
 One term  
 Prerequisite: Registration in Level II and above  
 Cross-list: ENGLISH 3B03

**SOCIOL 2Y03 INTRODUCTION TO QUANTITATIVE STUDIES**

The course is designed to develop those skills necessary to understand and evaluate research studies in sociology using quantitative methods. Descriptive statistics and basic inferential techniques will be examined.  
 Three hours (lectures and discussion); one term  
 Prerequisite: Registration in: any programme in Sociology; or Honours Anthropology; or Labour Studies; or Social Work  
*Not open to students with credit or registration in a Statistics course.  
 Enrolment is limited.*

**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  
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

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

Alternates with SOCIOL 3D03.

Offered in 1996-97

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.

Not offered in 1996-97.

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: Permission of the instructor

Cross-list: KINESIOL 3P03

**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 SOCIOL 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: Permission of the instructor

Cross-list: KINESIOL 3Q03

**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

Enrolment is limited.

**SOCIOL 3H06 RESEARCH TECHNIQUES AND DATA ANALYSIS**

A comprehensive introduction to the principles of research methods 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, 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

Antirequisite: SOCIOL 3G03, 1986/87 or 1987/88

Enrolment is limited.

**SOCIOL 3I03 SURVEY METHODS**

Examination of methods for incorporating survey data into sociological argument and research.

Three hours (seminar and discussion); one term

Prerequisite: 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 SOCIOL 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

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

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.

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 3M06 RELIGION AND MODERN SOCIETY**

An introduction to the thoughts and theories of scholars who have studied the relation between religion and society. In the first term, the emphasis will be on pre-World War II writings. In the second term, the empirical materials of the sociology of religion since World War II will be surveyed.

Three hours (lecture and discussion); two terms

Prerequisite: Any course in Anthropology, Philosophy, Religious Studies or Sociology

Cross-list: RELIG ST 3J06

Enrolment is limited.

**SOCIOLOGICAL 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.*

**SOCIOLOGICAL 3O03 ADVANCED SOCIOLOGICAL RESEARCH**

This course will provide a detailed study of selected qualitative methods in Sociology.

Three hours (lectures and discussion); one term

Prerequisite: Registration is restricted to 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 SOCIOL 3W03.*

**SOCIOLOGICAL 3P03 AMERICAN SOCIOLOGICAL THEORY**

An advanced examination of classical and contemporary American sociological theory.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 2S06

Antirequisite: SOCIOL 3A06

Alternates with SOCIOL 3PP3.

*Not offered in 1996-97.*

*Enrolment is limited.*

**SOCIOLOGICAL 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

Alternates with SOCIOL 3P03.

*Offered in 1996-97.*

*Enrolment is limited.*

**SOCIOLOGICAL 3S03 CREATIVITY AND HUMAN INTERACTION**

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

**SOCIOLOGICAL 3T03 THE SOCIOLOGY OF URBAN AREAS**

Sociological analysis of urban structure and development, and the social consequences of urbanization.

Three hours (lectures and discussion); one term

Prerequisite: SOCIOL 1A06

*Enrolment is limited.*

**SOCIOLOGICAL 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 is restricted to Honours Sociology

*Enrolment is limited. However, the Department of Sociology guarantees that all Third- and Fourth-year Honours Sociology students will have access to either this course, SOCIOL 3I03 or SOCIOL 3O03.*

**SOCIOLOGICAL 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

*Enrolment is limited.*

**SOCIOLOGICAL 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.*

**SOCIOLOGICAL 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.*

**SOCIOLOGICAL 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.*

**SOCIOLOGICAL 4B06 FIELD STUDY METHODOLOGY**

This course provides students an opportunity to engage in first hand sociological research using field study methods, particularly participant observation.

Three hours (seminar); two terms

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**SOCIOLOGICAL 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; registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**SOCIOLOGICAL 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.*

**SOCIOLOGICAL 4F03 SPECIAL TOPICS IN COMPARATIVE SOCIOLOGICAL RESEARCH**

The focus of this course will be the comparative analysis of industrialized societies. Students will have an opportunity to engage in comparative sociological research using a range of data sources.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**SOCIOLOGICAL 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.*

**SOCIOLOGICAL 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; registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**SOCIOLOGICAL 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; registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**SOCIOLOGICAL 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 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.

*May be repeated, if on a different topic.*

*Enrolment is limited.*

**SOCIOL 4L03 SPECIAL TOPICS IN THE SOCIOLOGY OF RELIGION**

This course will focus on the central concerns of the sociology of religion; secularization, sectarianism, new religions and secular ideologies among others; which are central to an understanding of the fragmentation of modern societies. However, specific emphases may vary from year to year.

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 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

**SOCIOL 4P03 ISSUES IN THE SOCIOLOGY OF AGING**

A study of selected sub-areas in the sociology of aging, such as demographic change, changing family and social relationships, social and health services, retirement, political economy, and theoretical approaches in social gerontology.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**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 4S03 SPECIAL TOPICS IN CANADIAN SOCIETY I**

An examination of questions which have sociological relevance for Canadian society. The specific questions may vary in different years.

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 4T03 SPECIAL TOPICS IN CANADIAN SOCIETY II**

An examination of questions which have sociological relevance for Canadian society. The specific questions may vary in different years.

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.*

**SOCIOL 4Y03 THE SOCIOLOGY OF CORPORATIONS**

This course will analyze the modern corporation as a vehicle through which economic, social and political power is wielded.

Three hours (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology. Students wishing to register in this course must seek the permission of the Department.

*Enrolment is limited.*

**SOCIOL 4Z03 QUANTITATIVE METHODS IN SOCIOLOGY**

This is a course in social statistics. Topics covered include univariate distributions, estimation, hypothesis testing, bivariate and multivariate analysis with nominal, ordinal and ratio data, and the use of SPSS.

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.*

**SPANISH**

(SEE HISPANIC STUDIES)

**STATISTICS**

(SEE MATHEMATICS AND STATISTICS)

## THEME SCHOOL ON INTERNATIONAL JUSTICE AND HUMAN RIGHTS

Faculty as of January 15, 1996

### Director

Rhoda E. Howard (*Sociology*) (on leave 1996-97)

### Acting Director

Stefania Miller (*Political Science*)

Roy Adams (*Business*)

Samuel Ajzenstat (*Philosophy*)

Alex Berezin (*Engineering Physics*)

Ken Chan (*Economics*)

Howard Jones (*Classics*)

Gary Madison (*Philosophy*)

Evert Nieboer (*Biochemistry*)

George Sorger (*Biology*)

Mary Tremblay (*Occupational/Physiotherapy*)

Gary Warner (*French*)

Wayne Warry (*Anthropology*)

### Note:

For regulations on admission to the Theme School on International Justice and Human Rights, see *Theme Schools* in the programme section of this calendar.

### Courses

#### TSIJHR 2A06 INTRODUCTORY SEMINAR

Introduction to the concepts of human rights and international justice, focusing on philosophical, legal and policy aspects. Empirical examples from both Canadian and international contexts.

Prerequisite: Registration in the Theme School or permission of the Director

#### TSIJHR 3C03 CIVIL SOCIETY

Explores social and governmental arrangements necessary for the existence of a Civil Society organized on the basis of the principles of democracy and human rights.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Not open to students with credit in TSIJHR 3B03 if the topic was *Civil Society*.

Enrolment is limited.

Not offered in 1996-97.

#### TSIJHR 3D03 ECOSYSTEM HEALTH, HUMAN HEALTH AND HUMAN RIGHTS

This course explores ecosystem and human health related to issues of environmental justice, using case studies on pesticides, drinking water supply, energy production and contaminants in the food chain.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level III Theme School students.

Not open to students with credit in TSIJHR 3B03 if the topic was *Ecosystem Health, Human Health and Human Rights* (1994-95, Section 02).

Enrolment is limited.

#### TSIJHR 3E03 INDIGENOUS HUMAN RIGHTS

This course will explore First Nations human rights and self-determination in North America from an Indigenous perspective.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level III Theme School students.

Not open to students with credit in TSIJHR 3B03 if the topic was *Indigenous Human Rights* (1994-95, Section 03).

Enrolment is limited.

#### TSIJHR 3F03 INTERNATIONAL ECONOMIC COOPERATION AND HUMAN RIGHTS

Focus on human rights issues pertinent to trade and investments; including conduct of multinational corporations, the rights of trading nations and unequal exchange.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level III Theme School students.

Enrolment is limited.

#### TSIJHR 3G03 THE RIGHTS AND CONDITION OF CHILDREN IN THE INTERNATIONAL COMMUNITY

Study of international documents; comparative case studies; topics such as children and war; children and famine; labour, education and health.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level III Theme School students.

Not offered in 1996-97.

Enrolment is limited.

#### TSIJHR 3H03 RIGHTS OF LABOUR

Examines key collective labour rights such as the rights to association, to strike and to dignified treatment at work, in Canada and in comparative perspective.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level III Theme School students.

Not open to students with credit in TSIJHR 3A06, if the topic was *Rights of Labour* (1994-95, Section 02).

Enrolment is limited.

#### TSIJHR 3I03 SPECIAL TOPICS IN INTERNATIONAL JUSTICE AND HUMAN RIGHTS

The topic for 1996-97 will be *Human Rights and Disability*. A case study approach is used to examine the development, use and impact of human rights on the life experiences of individuals with disabilities in both a Canadian and International context.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level III Theme School students.

Not open to students with credit in TSIJHR 2B03 (1994-95, Section 01) and TSIJHR 2E03 (1995-96) if the topic was *Human Rights and Disability*.

Enrolment is limited.

#### TSIJHR 4B03 GENOCIDE AND INTERNATIONAL HUMANITARIAN LAW

The course will focus on genocide and other extreme forms of group violence, and the problems of international regulation and intervention.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level IV Theme School students.

Enrolment is limited.

#### TSIJHR 4C03 INTERNATIONAL WOMEN'S RIGHTS

Key theoretical and empirical questions on women's rights, such as cultural relativism, refugee women and development. Group and individual research.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level IV Theme School students.

Not offered in 1996-97.

Enrolment is limited.

#### TSIJHR 4D03 HUMAN RIGHTS IN TECHNOLOGICAL SOCIETY

Group and individual projects on the issues related to social justice, human development and individual freedom in the context of modern science and technology.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level IV Theme School students.

Enrolment is limited.

#### TSIJHR 4E03 THE FACES OF INTOLERANCE

An exploration of the general issue of freedom of intellectual and artistic expression employing specific case studies from different historical periods.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Preference given to Level IV Theme School students.

Enrolment is limited.

#### TSIJHR 4F03 INDEPENDENT RESEARCH

In consultation with the Director, students may choose a topic for independent research and recruit a supervisor from among the McMaster faculty.

Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Enrolment is limited.

#### TSIJHR 4G06 THESIS OPTION

In consultation with the Director, students may choose a thesis topic and recruit a supervisor from among the McMaster Faculty.

Prerequisite: Registration in the Theme School; registration in Level IV or V of regular University programme; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course

Prerequisite: (Beginning in 1997-98) TSIJHR

Open only to Theme School students not writing a thesis in any other programme.

Enrolment is limited.

**TSIJHR 4H03 SPECIAL TOPICS IN INTERNATIONAL JUSTICE AND HUMAN RIGHTS**

The topic for 1996-97 will be *The Right to Development*. This course will explore different approaches to development, such as gender, cultural and human rights issues, popular participation and sustainable development.  
Prerequisite: Registration in the Theme School; TSIJHR 2A06 and one three unit Level II International Justice and Human Rights course  
*Preference given to Level IV Theme School students.*  
*Enrolment is limited. Preference given to students registered in the Theme School on International Justice and Human Rights.*  
*Not open to students with credit in TSIJHR 2B03 (1993-94, section 01) and TSIJHR 2D03 (1995-96) if the topic was The Right to Development.*

**THEME SCHOOL ON NEW MATERIALS AND THEIR IMPACT ON SOCIETY****Faculty as of January 15, 1996****Director**

A. John Berlinsky (*Institute for Materials Research*) (on leave 1996-97)

**Acting Director**

John S. Preston (*Engineering Physics*)  
John L. Brash (*Chemical Engineering and Pathology*)  
Michael A. Brook (*Chemistry*)  
Malcolm Collins (*Physics*)  
J. David Embury (*Materials Science and Engineering*)  
Richard M. Epanand (*Biochemistry*)  
John E. Greedan (*Chemistry*)  
Andrew N. Hrymak (*Chemical Engineering*)  
Catherine Kallin (*Physics*)  
Pavlos S. Kanaroglou (*Geography*)  
Frank Maine (*Business*)  
Harald D.H. Stöver (*Chemistry*)  
George C. Weatherly (*Materials Science and Engineering*)  
Françoise M. Winnik (*Chemistry and Physics*)  
Daniel S.C. Yang (*Biochemistry*)  
Shiping Zhu (*Chemical Engineering & Materials Science and Engineering*)

**Courses****TSNM 3A02 THEME SCHOOL SEMINAR**

Reporting on and planning research projects, special events.  
One hour, both terms  
Prerequisite: TSNM 2A02 and permission of the Theme School

**TSNM 3B03 MATERIALS OF THE FUTURE**

A survey of the frontiers of materials research, considering new types of materials, the ultimate limits of materials, the limitations of present materials and desirable properties which might be sought.  
Three hours, first term  
Prerequisite: Permission of the Theme School

**TSNM 3R06 RESEARCH INTERNSHIP**

Research on a subject of relevance to the Theme School. Includes one hour per week seminar. See programme description regarding summer research internships.  
Three months, May-July  
Prerequisite: TSNM 2R06 and permission of the Theme School

**TSNM 4A02 THEME SCHOOL SEMINAR**

Reporting on and planning research projects, special events.  
One hour, both terms  
Prerequisite: TSNM 3A02 and permission of the Theme School

**TSNM 4B03 ENTREPRENEURSHIP AND INNOVATION: TRANSFERRING NEW MATERIALS TO THE MARKETPLACE**

The problem of introducing new materials, products and processes to the marketplace is examined both from the point of view of new start-up companies and in the context of existing companies.  
Prerequisite: Permission of the Theme School.

**TSNM 4C03 STRATEGIES FOR THE LIFECYCLES OF MATERIALS**

The strategies and trade-offs which influence choices of materials and processes will be studied from the point of view of technical, economic, environmental and social factors.  
Three hours, second term  
Prerequisite: Permission of the Theme School

**WOMEN'S STUDIES**

The Honours B.A. Women's Studies and Another Subject Programme is coordinated by an interdisciplinary Committee of Instruction.

**Director of Women's Studies**

Patricia M. Daenzer/ (*Social Work*) B.A., B.S.W. (York), M.S.W., Ph.D. (Toronto)

**Faculty Advisors**

Maroussia Ahmed/ (*French*) L. ès L., M. ès L., D. de l'U (Paris-Sorbonne)  
Jane Aronson/ (*Social Work*) B.Sc. (New University of Ulster), B.S.W., M.S.W. (McGill), Ph.D. (Toronto)  
Sylvia Bowerbank/ (*Arts & Science and English*) B.A. (McMaster), B.Educ. (Toronto), M.A. (Simon Fraser), Ph.D. (McMaster)  
Joan Coldwell/ (*English*) B.A., M.A. (London), Ph.D. (Harvard)  
Vera Chouinard/ (*Geography*) B.A. (Western), M.A. (Toronto), Ph.D. (McMaster)  
Joanne Fox/ (*Nursing*) B.N. (New Brunswick), M.Sc., Ph.D. (Queen's), R.N.  
Ruth Frager/ (*History*) B.A. (Rochester), M.A., Ph.D. (Toronto)  
Kathy Garay/ (*Archives*) B.A. (East Anglia), M.A. (McMaster), Ph.D. (Toronto)  
Donald Goellnicht/ (*English*) B.A. (Queen's), M.A., Ph.D. (McMaster)  
Nora Gold/ (*Social Work*) B.S.W. (McGill), M.S.W., Ph.D. (Toronto)  
Elizabeth Inman/ (*Drama*) B.A. (London)  
Rhonda Lenton/ (*Sociology*) B.A. (Winnipeg), M.A. (Manitoba), Ph.D. (Toronto)  
Julia O'Connor/ (*Sociology*) B.A., M.Soc.Sc. (Ireland), Ph.D. (Toronto)  
Mary O'Connor/ (*English*) B.A. (McGill), M.A., Ph.D. (Toronto)  
Vivienne Walters/ (*Sociology*) B.A., M.A. (Sheffield), Ph.D. (McGill)  
Dolores Wawia/ (*Indigenous Studies*) B.A. (McMaster), B.Ed., M.Ed. (Lakehead)  
Lorraine York/ (*English*) B.A., M.A., Ph.D. (McMaster)  
Isik Zeytinoglu/ (*Business*) B.A., M.A. (Bogazici), M.S., Ph.D. (Pennsylvania)

**Part-time Instructors as of January 15, 1996**

Kerry Burke/ L.L.B. (Laval)  
Lori Chambers/ B.A., M.A. (McMaster), Ph.D. (Toronto)  
Nicolette DiFrancesco/ B.A. (Carleton), M.A. (McMaster)  
Nairn Galvin/ B.A., M.A. (McMaster)  
Glynis George/ B.A., M.A. (Toronto)  
Rose Janson/ B.A. (Waterloo Lutheran), M.A. (Toronto)  
Mary McKeary/ B.A., M.A. (McMaster)  
Jane Vock/ B.A. (Laurier), M.A. (McMaster), M.S.W. (Laurier)  
Geraldine Voros/ B.A. (Guelph), M.A. (McMaster)

**Courses If no prerequisite is listed, the course is open.****WOMEN ST 1A06 WOMEN IN CANADIAN SOCIETY**

An introduction to Women's Studies of an interdisciplinary nature, designed to illustrate and account for the position of women in Canadian society. Possible areas of enquiry include health, law, politics, history, women and work, representation of women in literature, Canadian women artists and musicians.

Three hours (two lectures, one tutorial); two terms

**WOMEN ST 2A06 WOMEN'S ACTION FOR SOCIAL CHANGE**

The course explores the collective efforts of women, past and present, to improve social conditions. It examines the issues and controversies at the heart of historical and contemporary movements and studies utopias as envisioned by women writers. Subjects might include anti-slavery, temperance and suffrage movements, prison and labour reform, and women's peace movements.

Three hours (Seminar and discussion); two terms

Prerequisite: Registration in the Women's Studies Programme, or permission of the Director of Women's Studies.

**WOMEN ST 2B06 WOMEN'S ROLE IN WESTERN EUROPEAN SOCIETY**

The course examines the contribution of women to western European society from the late classical era to the early twentieth century. Whether examined from a historical, sociological or cultural perspective, the female role will be seen in relation to the major political changes taking place during this period.

Three hours; two terms

Prerequisite: WOMEN'S ST 1A06

*Enrolment is limited.*

*(Preference will be given to students in the Women's Studies programme.)*

**WOMEN ST 2C06 PERSPECTIVES ON GENDER**

This course is an overview of debates and research on the shaping of gender identity. Whether taking the approach of social psychology, literature or cultural studies, it includes such topics as sex typing and socialization experiences, daughter/parent relationships and moral development.

Three hours; two terms

Prerequisite: WOMEN'S ST 1A06

*Enrolment is limited.*

*(Preference will be given to students in the Women's Studies programme.)*

**WOMEN ST 2H03 REPRODUCTIVE BIOLOGY**

This course presents a medical study of human reproductive anatomy and physiology, with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction. It also explores feminist approaches to this subject.

Three hours; lectures, tutorials and guided reading; one term

Prerequisite: Registration in the Women's Studies Programme

*Enrolment is limited.*

**WOMEN ST 2HH3 WOMEN'S HEALTH:****A SOCIO-CULTURAL PERSPECTIVE**

This course studies women's actions to improve health and health care. Topics to be explored may include: the relationship between biomedicine and the social construction of gender; women as paid and unpaid health workers; the consequences of discrimination for women's health and the provision of health care; historical analysis of female healers.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Antirequisite: SOCIOL 4U03, WOMEN ST 3C06 (Summer 1994 only)

*Enrolment is limited.*

**WOMEN ST 3A06 FEMINIST THEORY AND METHODOLOGY**

This seminar explores various theoretical feminist perspectives and methodological issues in feminist research. Theories may include classical Marxism, liberal feminism, radical feminism, socialist feminism, biological determinism and post structuralism. Possible themes to be studied from these perspectives are psychotherapy, sexuality and language. Guest speakers from different disciplines will lead workshops on feminist interdisciplinary research methods.

Three hours (Seminar and discussion); two terms

Prerequisite: WOMEN ST 2A06, or permission of the Director of Women's Studies

**WOMEN ST 3B03 TOPICS IN WOMEN AND THE ARTS I:  
THEATRE AND FILM**

1996-97: WOMEN AND DRAMA

An exploration of women's role in either theatre or film, whether as subjects or creators of these art forms. Approaches may be practical, historical and/or theoretical, but there will be particular emphasis on the contemporary scene.

Three hours; one term

Prerequisite: WOMEN ST 1A06 or registration in Level III or IV of a programme in Drama

*Enrolment is limited.*

*(Preference will be given to students in the Women's Studies programme.)*

*WOMEN ST 3B03 may be repeated, if on a different topic, to a total of six units.*

**WOMEN ST 3BB3 TOPICS IN WOMEN AND THE ARTS II**

1996-97: WOMEN AND THE VISUAL ARTS

This course explores women's achievements in any one of the following fields: literature, music, visual arts. Interrelationships between these fields will also be examined where appropriate.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

*Enrolment is limited.*

*(Preference will be given to students in the Women's Studies programme.)*

*WOMEN ST 3BB3 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

Antirequisite: WOMEN ST 3C06

*Enrolment is limited.*

**WOMEN ST 3CC3 WOMEN AND THE URBAN ENVIRONMENT**

The course is an interdisciplinary enquiry into how women's lives are shaped by an urban environment. It examines a range of issues regarding women's experience of urban living with a focus on such subjects as women's responses to urban change, women and urban planning, women and housing problems, and women's struggles for socially safer environments.

Three hours; one term

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

Antirequisite: WOMEN ST 3C06

*Enrolment is limited.*

**WOMEN ST 3D06 WOMEN IN CROSS-CULTURAL PERSPECTIVE**

The course explores the experience of women in different cultures through examination of social and historical conditions, symbolic systems and women's own narratives. Topics such as: the family and household, the sexual division of labour, the social construction of gender, and social change will be explored through cross-cultural comparison.

Three hours; two terms

Prerequisite: WOMEN ST 1A06, or permission of the Director of Women's Studies

*Enrolment is limited.*

*(Preference will be given to students in the Women's Studies programme.)*

**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**

1996-97: WOMEN, THE LAW, AND THE LEGAL SYSTEM

This course presents a critical analysis of the legal system and of specific legal issues as they have developed over time and as they pertain to women today.

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.*

*WOMEN ST 4B06 may be repeated, if on a different topic, to a total of 12 units.*

**WOMEN ST 4C06 TOPICS IN FEMINIST SCHOLARSHIP**

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 complimentary to those being used in WOMEN'S ST 4A06.

Three hours; two terms

Prerequisite: Registration in Level III or IV of the Women's Studies Programme, or permission of the Director of Women's Studies

*Enrolment is limited.*



# **ACADEMIC FACILITIES, STUDENT SERVICES AND ORGANIZATIONS**

## **ACADEMIC FACILITIES**

### **THE UNIVERSITY LIBRARY**

#### **E-mail Address**

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**

Peggy Findlay, B.A., M.L.S./Librarian

#### **Archives & Research Collections**

Charlotte Stewart, B.A., M.A., M.L.S./Director

#### **Collections Management**

Victor Nunn, B.A., M.L.S./Assistant University Librarian

#### **Processing Services**

Carol Racheter, B.A., M.L.S./Director

#### **Administrative Services**

Mary Ruth Linkert/Manager

The University Library System consists of Mills Memorial Library (Humanities and Social Sciences), the 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 1994 contained more than 1,665,553 volumes, 1,374,621 microform items, 174,175 non-print items and 10,032 linear feet of archival material. Current periodical titles number about 13,859.

To help readers, service is maintained at key Reference points in the various libraries. Introductory library tours and subject-related seminars are conducted. Pamphlets describing the hours and services of the different areas are available in each library and on the University gopher.

Mills Library has several collections — Reference, Periodicals, Government Publications, Music and Maps, which contain materials of significance for both Undergraduates and Researchers; and Reserve, which is used mainly by Undergraduates.

The William Ready Division of Archives and Research Collections in Mills Library contains rare books, manuscripts and special book and archival collections; which afford many opportunities for original research. Of outstanding interest are the Bertrand Russell Archives, a massive collection of correspondence and manuscripts supported by books, journal articles, secondary literature, tapes, films and personal memorabilia.

The Eighteenth-Century Collection of British material numbers over 33,000 volumes and is the major Canadian collection in the field. Library fellowships in Eighteenth-Century Studies are offered annually. Among more modern materials are the papers of Vera Brittain, Marian Engel, Robert Fulford, Pierre Berton, Farley Mowat, Peter Newman, Matt Cohen and many others.

Business interests are reflected in such files as the General Steel Wares Archives, the Macmillan of Canada Archives, the Clarke Irwin Archives, and the McClelland and Stewart Archives. Canadian social and political interests are documented in papers from the Canadian Union of Students, the Canadian Youth Congress, the 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
- Russell, the Journal of the Bertrand Russell Archives
- Monographs with the imprint of the McMaster University Library Press

## **COMPUTING AND INFORMATION SERVICES (CIS)**

#### **Web Address**

<http://www.mcmaster.ca/cis>

#### **Assistant Vice-President, IST**

John Drake, M.A., M.Sc., Ph.D.

#### **Director, CIS**

Pat O'Day, B.A.

#### **Client Services-Research**

Robin Griffin, B.Sc., Ph.D./Assistant Director

#### **Data Services**

John Masterson, B.Sc., M.B.A./Assistant Director

#### **Client Services**

Heather Grigg, Assistant Director

#### **Administration**

Barb Campbell, B.A./Manager, Department

CIS provides computing services in support of both academic (instruction and research) and administrative activities. The facilities available for academic use include several microcomputer and workstation laboratories. CIS manages a campus-wide Ethernet which is linked to the Internet, allowing access to resources throughout the world. Administrative computing is run on an IBM MVS system and a VAX 4000. A transition to client server computing is being planned.

Student computer laboratories are located in the Burke Sciences Building, Rooms 240-245, the John Hodgins Engineering Building, Room 234, the Arthur Bourns Building, Room 166, and Kenneth Taylor Hall, Rooms B110, B111, B120 and B123. Student consultants are available to assist customers in each of these terminal areas. 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. Other courses relating to computers and computing are offered by the Department of Computer Science and Systems, the Science Resource and Training Centre and through the Centre for Continuing Education.

CIS services for the University community include a variety of electronic communications and information services; electronic mail, newsgroups, listserver access, gopher and access to Internet, a worldwide network.

CIS also administers a number of University site licences for software such as SAS, SPSS, and some Borland applications.

In addition to the facilities operated by CIS, there is computer equipment located in Departments to support academic programmes.

### **THE INSTRUCTIONAL DEVELOPMENT CENTRE**

➤ General Sciences, Room 217, ext. 24540

#### **Web Address**

<http://www.science.mcmaster.ca/idc>

#### **E-mail Address**

[blizzard@mcmaster.ca](mailto:blizzard@mcmaster.ca)

#### **Director**

A.C. Blizzard, B.Sc., M.Sc., Ph.D.

#### **Educational Consultant**

D.E. Roy, B.A., M.A.

#### **Educational Consultant**

P.A. Lockhart, B.A.

#### **Secretary**

S. Riselay

The Instructional Development Centre (IDC) is a resource centre for people who teach at McMaster: individual faculty members and teaching assistants (tutors, demonstrators, markers) as well as departments and other groups.

The Centre works closely with the University Committee on Teaching and Learning. This group, which includes a representative of the McMaster Students Union Teaching Awards Committee, two graduate students and faculty members from all six Faculties, provides policy guidance for the Centre, makes recommendations to the University on issues affecting teaching and learning conditions and provides grants for teaching and learning development projects. The Centre's activities include:

**Teaching and Learning Grants:** The IDC consults with applicants on their proposals and assists them with projects. It also provides administrative services for the Grants programme.

**Programmes for Teaching Assistants:** The Centre plans and organizes T.A. Day, a campus-wide orientation programme for teaching assistants. It also offers a series of short courses on teaching for senior Ph.D. students.

**Workshops, Seminars and Conferences:** A wide variety of events are offered, conducted by McMaster faculty, visiting resource people and IDC staff. Generally, the topics are ones requested by instructors or departments or are reports by people who have completed Teaching and Learning Grant projects. Subjects typically include teaching large classes, self-directed learning, research on learning and teaching methods, lecturing, small group discussion, simulations and the use of microcomputers in education.

**Consultation:** A major part of the Centre's work is discussing current courses with instructors. The instructor or department provides the expertise in the course content. The Centre provides information on ways for instructors to evaluate and refine courses. It also arranges contacts with other experienced people and assistance in trying new approaches.

The Centre has a long history of collaboration with student efforts to support excellence in teaching. For example, the IDC provided consultation on refinements to the MSU Teaching Awards programme and the MSU Handbook The Disabled Student as well as on grants the MSU has received for its own teaching and learning projects.

**Resources:** The IDC has a library of books on university teaching and learning, example audio-visual materials and microcomputer programmes. It also has video-tape equipment (for use in workshops and for taping classes at the request of instructors) and some microcomputer equipment for familiarization seminars and for faculty to use in evaluating educational software.

Students, especially those working as teaching assistants, are invited to visit the Centre.

## **MCMASTER MEDIA PRODUCTION SERVICES**

#### **Web Address**

<http://www.media.mcmaster.ca>

#### **E-mail Address**

[knowles@mcmaster.ca](mailto: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 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, etc.); film reservations; A/V equipment repair; graphic art — for design, charts and graphs for publication, display or poster presentations, and computer graphics; black-and-white laser prints and high-resolution 35mm colour slides; full line of desktop publishing services offered; photographic services, including location and studio photography, black-and-white and colour photofinishing, 35mm slides, film processing and slide duplication, and a wide range of film and supply sales. Full Videoconferencing services are now available.

### **PRINTING SERVICES DIVISION**

➤ Michael G. 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: layout and typesetting; cameras for reduction and enlargement; halftone (photograph) and line reproduction; copying (Xeroxing); copy duplicating; 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 four Gerontology components at McMaster: the Office of Gerontological Studies; the Educational Centre for Aging and Health; The R. Samuel McLaughlin Centre for Gerontological Health Research; and Undergraduate Degree Studies in Gerontology. (Further information concerning the two Centres mentioned above can be obtained by contacting the Office of the Vice-President (Research) located in Gilmour Hall, Room 112, ext 27270.)

### **Office of Gerontological Studies**

#### **Director**

Carolyn J. Rosenthal, B.A., M.A., Ph.D.

The Office of Gerontological Studies (OGS) is involved in the promotion and development of multidisciplinary research and educational programmes within the University and the local community. OGS also provides a forum for collaboration on education, research, and service projects with other community organizations.

The Office's activities are supported by University funding, while specific projects are funded by public agencies, private foundations, or user fees. The Undergraduate Degree Studies in Gerontology programme is administered by this Office. The various degree options are described in this Calendar in the Faculty of Social Sciences section, Gerontological Studies.

The Office mandate is as follows:

1. to serve as the communication centre regarding gerontological education and research activities at McMaster University. Regular information about gerontological activities is provided through the newsletter Aging, Health and Society: News and Views, the Inventory of Gerontological Research, and the Annual Report;

2. to coordinate and plan multidisciplinary initiatives in gerontology education and research across all Faculties of the University. (Social Sciences, Health Sciences, Humanities, Science, Business, Engineering);
3. to organize multidisciplinary educational events in gerontology for professionals and the general public, e.g. the McMaster Summer Institute On Gerontology;
4. to actively participate in provincial and national gerontological organizations and initiatives;
5. to initiate and support the development of new gerontological projects with older adults, community agencies, students, staff and faculty;
6. to promote educational opportunities for older adults at McMaster and the Hamilton-Wentworth region.

## **McMASTER INTERNATIONAL**

➤ John Hodgins Engineering Building, Room A414, ext. 24700

### **Web Address**

<http://www.mcmaster.ca/macintl>

### **E-mail Address**

macintl@mcmaster.ca

### **Director**

Gary Warner

### **Administrative Assistant**

Laurine Mollinga

McMaster University has become increasingly involved around the world in exchange agreements, institutional linkages and externally funded international programmes concerned with collaborative research, education and human resource development, and with improving the delivery of services in such sectors as business, environmental protection, community health and engineering. McMaster International was created in 1988 in response to the need for a coordinated approach to the international activities of the University. The role of McMaster International is to support and encourage institutional international activities which contribute to the achievement of the international component of the Strategic Plan adopted by the University Senate and Board. The vision of McMaster International is to promote global social equity and to be guided by the principles of partnership, human rights and environmental protection.

The specific functions of McMaster International are as follows:

1. Develop and provide liaison with funding agencies, as well as domestic and overseas contacts, for international research and education projects involving McMaster faculty and graduate students.
2. Serve as the resource centre concerning international activities at McMaster and for those at McMaster seeking to promote internationalization of their programmes.
3. Assist in developing exchange agreements with Universities in other provinces and countries.

## **MCMASTER MUSEUM OF ART**

➤ University Avenue, Ext. 23081

### **Director and Curator**

K.G. Ness, B.A., M.Litt., MMST

**E-mail:** nesskg@mcmaster.ca

### **Special Programmes Officer/Assistant to the Director**

J. Zatylny, B.A.

**E-mail:** zatylny@mcmaster.ca

### **Registrar/Operations Manager**

G. Loveys, B.A.

**E-mail:** loveys@mcmaster.ca

### **Installations/Preservation Officer**

J. Petteplace, B.A.

### **Secretary**

L. Parker, B.A.

### **Exhibitions Assistant**

C. Wiginton, B.A., MMST

### **Head of Information**

R.A. Prevec, B.A.

### **Information Staff**

D. Hammond

K. Hogue, B.A.

C. Hullenaar, B.A.

A new facility was officially opened to the public in June 1994. Located at the west end of Mills Library on University Avenue, the new Museum contains five Exhibition Galleries, a Paper Centre and an Educational Access Gallery. The Museum offers a year-round programme of exhibitions either organized by the McMaster Museum or loaned by such institutions as the Art Gallery of Ontario or the National Gallery of Canada.

McMaster's permanent art collection contains 5500 Canadian, American and European art works with a specialized collection of over 230 German Expressionist prints and the Levy Collection of Impressionist and Post Impressionist paintings. The central emphasis is on collections access and use of the collection as a cultural learning resource.

Contact the Museum for exhibition listings. Hours: Tuesday to Friday, 11:00 a.m. - 6:00 p.m.; Thursday evening, 7:00 p.m. - 9:00 p.m.; Sunday, 12:00 p.m. - 5:00 p.m. Voluntary admission fee of \$2.00; free for students and seniors. Museum Memberships available. Wheelchair accessible.

## **STUDENT SERVICES AND ORGANIZATIONS**

### **Student Affairs Web Address**

<http://www.access.mcmaster.ca>

**Information on the following organizations may also be accessed through the above address:**

Counselling and Career Services, International Students' Advisor, Human Rights Consultant and Student Exchanges Officer, Student Financial Aid and Scholarships, Housing Services and Hospitality Services.

### **ASSISTANT PROVOST (STUDENT AFFAIRS)**

Mary E. Keyes, Ph.D.

The Assistant Provost (Student Affairs) heads a variety of specialized student services offices. The Assistant Provost is happy to meet with individuals and representatives of student organizations with problems, concerns, questions or suggestions on any matter relating to student life and services on campus. The Assistant Provost is located in Gilmour Hall, Room 207, ext: 27455.

### **OFFICE FOR ABILITY AND ACCESS**

#### **Web Address**

<http://access.admin.mcmaster.ca/abildocs/abilhome.html>

#### **E-mail Address**

ability@mcmaster.ca

#### **Manager**

William A. Hoch ext. 24883

**E-mail:** hochwil@mcmaster.ca

#### **Programme Coordinator (Learning Specialist)**

Caroline Cayuga ext. 24354

**E-mail:** cayuga@mcmaster.ca

### Programme Coordinator ( Student Accommodations )

Tim Nolan ext 24339

### Administrative Assistant

Noreen Myers ext. 24028

**E-mail:** myersnz@mcmaster.ca

### Office for Ability and Access

**Kenneth Taylor Hall, Room 118**

**Effective May, 1996: Hamilton Hall, Room 302**

**Voice: (905) 529-7070**

**TTY: (905) 521-8709**

**Fax: (905) 522 7102**

The Office for Ability and Access provides support services, resource referral and advice to applicants and students on process and policy issues related to the University and students with disabilities.

The office consists of professional staff, support staff, and volunteers who can assist students in meeting their educational objectives.

Initiatives and services undertaken by the Office for Ability and Access include:

- campus accessibility issues
- provision of technical equipment services
- alternate media formats based on the individual needs of students
- on-campus professional services or referral to external community resources
- direct services to students in providing skill/process workshops on a variety of issues
- direct involvement with student and/or programme/faculty as required
- promotion of the ability of all qualified applicants

The University encourages persons with disabilities to apply for admission to its programmes. Students must meet the University's academic criteria for admission to a programme.

All students are expected to satisfy the normal requirements for courses and programmes (including final examinations) although accommodations concerning an educational programme may be authorized to assist students in the completion of assignments, tests, examinations and other course requirements. Associate Deans (Studies) may authorize accommodations based on the need of the individual and the programme of study.

### **SELF IDENTIFICATION FOR STUDENTS WITH DISABILITIES**

To ensure continuity of assistance with University programming within departments, faculties and programmes, students are strongly encouraged to self identify through the Office for Ability and Access.

The Office for Ability and Access works with all self-identified students in providing the necessary support services and network which will lead to a positive educational experience.

Self identification, supported by proper documentation, and the subsequent assistance which can be provided to students in obtaining their university education can be best described as a working partnership.

### **NOTIFICATION OF STATUS TO**

### **THE OFFICE FOR ABILITY AND ACCESS**

Students are encouraged to self identify early (two to three months prior to enrolment) in order to ensure sufficient time to coordinate their special needs requests within the University.

Students are expected to deal with most day-to-day issues relating to their personal course work. However, students seeking assistance with educational concerns, must work closely with the office while they are on campus in order to be assisted. Students not wishing accommodation assistance are encouraged to keep in contact with the office should a need for assistance arise during the term.

Students are required to inform the Office for Ability and Access of accommodation needs for final examinations at least one month prior to the exam period. This allows sufficient time to verify and arrange reasonable and appropriate accommodation. Notifications must be received by November 6, 1995 for Term 1 exams and by March 9, 1996 for Term 2 and 3, unless extraordinary circumstances prevail.

### **CONFIDENTIALITY**

All academic, personal information and health or disability related information is confidential. It will be treated in accordance with the University policy on freedom of information.

## **ATHLETICS AND RECREATION**

### Web Address

<http://www.athrec.mcmaster.ca>

### E-mail Address

[iwynne@mcmaster.ca](mailto:iwynne@mcmaster.ca) (Customer Service Line)

### Director of Athletics and Recreation

Thérèse Quigley

The Department of Athletics and Recreation provides a wide variety of opportunities for students involved in high performance athletic competition, intramural and club competition as well as recreation, fitness and instructional programmes.

A diverse programme of recreational activities is available for those who wish to keep fit, compete in active pursuits at their own level, and enjoy sports and active living opportunities of their choosing. Access to the various facilities on campus is open to all McMaster students.

The facilities include a 50-metre pool, several gyms, dance studio and a fitness centre known as "The Pulse". The Pulse 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, horseback riding, hiking and many other opportunities are offered on a cost recovery basis.

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 offers inter-university competition in 31 sports for men and women. Highly skilled coaches help McMaster athletes achieve their potential while competing against other universities in Ontario and across Canada. The outstanding efforts of McMaster's student-athletes and the social involvement of student supporters are focal points of student life on campus. Varsity events are a major source of school spirit for competitors and spectators alike.

## **BOOKSTORE**

### Web Address

<http://bookstore.services.mcmaster.ca>

### E-mail Address

[bookstr@mcmaster.ca](mailto: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.

**COUNSELLING AND CAREER SERVICES****Counselling Service**

Laurie Barlow Cash/Career Counsellor  
David Lawson/Career Counsellor  
Debbie Nifakis/Counselling Psychologist  
David Palmer/Academic Skills Counsellor  
Bill Wilkinson/Counselling Psychologist and Director

The Counselling Service is a resource provided by the University to promote the personal, academic and career development of McMaster students.

The department offers many counselling, assessment and information services to help students deal with personal and social problems, succeed in their studies, clarify educational and career goals, obtain employment, and gain the most from their university experience.

Peer Helpers assist students in assessing their needs and in determining which of our services or programmes might be most appropriate. They also provide a wide variety of services, under supervision of the counselling staff.

Personal problems which students discuss with counsellors often concern family and peer relationships, or such unwanted feelings as anxiety, stress, loneliness, depression, low self-confidence or loss of motivation - all of which can interfere with concentration and academic performance.

All discussions between students and counsellors are voluntary, private and confidential. Whenever required, students are given assistance in locating other specialized help both on and off campus.

Many students seek help in defining their interests, personalities and abilities in order to make decisions about academic choices and career goals. The lack of such goals can be a barrier to sustained academic effort.

Students also ask for help in writing resumes and in preparing to look for employment after graduation. Together with the Placement Service, the department provides assistance designed to prepare graduates and recent alumni to find jobs.

For students who are dissatisfied with their academic performance, their effectiveness in studying or in managing their time, the department provides counselling oriented toward effective learning and study skills.

In addition to individual counselling, the department provides group programmes, workshops and presentations about such topics as educational and career planning, the employment search process, applying to professional and graduate programmes, assertive communication skills, writing skills, stress management, building self-confidence, speaking in public, procrastination, writing tests and exams, and preparing for university.

The department maintains a Resource Centre of career, educational and work-abroad information for use by all members of the University community and general public.

It is an administrative centre for Graduate Record Examinations, the Law School Admission Test, the Medical College Admission Test, and the Miller Analogies Test.

Students are invited to visit the office in Hamilton Hall, Room 302, Monday through Friday, 9 a.m. to 4:30 p.m. (Wednesday 11:30 a.m. to 7 p.m.) to arrange to talk with a Peer Helper or a counsellor, to inquire about current programmes, or to use the Resource Centre. The telephone number is 525-9140, ext. 24711.

**Placement Service**

Donna Yates/Coordinator  
Teresa Lynch/Placement Officer

The Placement Service assists undergraduate and graduate students, and recent alumni of all faculties in finding permanent, temporary and part-time employment.

**Job Postings**

Immediate vacancies for permanent, summer and part-time positions are advertised year round by employers who do not conduct employment interviews on campus. Job notices for these positions are posted on the Job Boards outside the Placement Service, on the computerized Student Placement System network available in the computer labs, and at other appropriate locations on campus. A daily e-mail bulletin listing new jobs is sent to students who register for this service.

**Presentations and Workshops**

Placement staff provide and arrange, in cooperation with the Counselling staff, workshops and presentations on resume development, preparing standardized application forms for on-campus recruitment, effective job search, and interview skills.

**On-Campus Recruitment Programme**

Major national employers visit McMaster to present information about their companies and to conduct employment interviews in order to hire permanent and summer employees. Students who wish to participate in the on-campus recruitment programme should visit the Placement Service in early September.

**Resource Centre**

The Placement Service maintains a collection of employment-related reference material and company information on a large number of private and public sector employers.

The Placement Service, located in Hamilton Hall, Room 409, is open Monday to Friday, from 8:30 a.m. to 4:30 p.m. (Wednesday to 8:00 p.m.); telephone (905) 525-9140, ext. 24253, fax (905) 529-8972, or e-mail: placement@mcmaster.ca.

**STUDENT EXCHANGES OFFICER**

The Officer provides information to Canadian students on a range of options from independent study and externally sponsored programmes, to summer sessions abroad, work abroad opportunities and McMaster formal exchanges. Information about, and applications for exchanges are available in Hamilton Hall, Room 405.

**THE GROUP OF TEN STUDENT EXCHANGE PROGRAMME (GOTSEP)**

This is an undergraduate exchange programme involving the Group of Ten 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 Montréal | * University of Western Ontario  |

To be considered for this exchange, students must:

- be able to demonstrate above average academic performance
- possess language skills at a level that will allow full and successful participation in the academic and extracurricular life of the host institution
- be eligible to receive credit at McMaster University for courses completed at the host institution

Successful applicants will be considered visiting students while at the host institution. The maximum duration of the exchange is two terms, or one year. Students are required to pay all tuitions and fees for the period of the exchange to McMaster University. The deadline for applications is February 1. Information and application materials are available in Hamilton Hall, Room 405.

## **STUDENT FINANCIAL AID AND SCHOLARSHIPS**

### **Director**

J. Edwards

### **Coordinator**

D. Ellis

The office administers a variety of programmes which are accessed by nearly half of all full-time students as well as a large number of part-time students attending University. These programmes include the Ontario Student Loan Programme, Canada Student Loan Programmes, Undergraduate Scholarships Programme, Ontario Work Study Programme, Ontario Special Bursary Programme, University Bursary and Emergency Loan Programmes. In addition, the office provides administrative support to outside agencies providing scholarships and bursaries to students attending McMaster.

The office offers financial and budget counselling, assessment and information service to current and potential students designed to help identify and address post-secondary education expenses. All discussions with students are voluntary, private and confidential. Appointments and drop-in style counselling is available. The office is located in Hamilton Hall, Room 404, telephone ext. 24319.

For more detailed profiles of programme offerings, please refer to *Undergraduate Academic Awards* and *Student Financial Aid* sections in this Calendar.

## **INTERNATIONAL STUDENTS' ADVISOR**

### **Advisor**

Cheryl-Ann Jackson

The office is available to all foreign students for consultation, advice and direction in numerous areas of concern, providing information regarding immigration matters, accommodation, orientation, etc. The office is located in Hamilton Hall, Room 405, telephone ext. 24748.

## **STUDENT HEALTH SERVICE**

### **Acting Director**

J. Young

Health care is available to all university students year-round at the Student Health Service, located on the ground floor of McKay Hall Residence. The health service is open Monday through Wednesday from 9 a.m. to 7:50 p.m.; and Thursday and Friday from 9 a.m. to 4:20 p.m. Appointments can be made by calling 529-7070, ext. 27700.

Staffed by family physicians and nurses, the Student Health Service provides comprehensive primary medical care. Services include medical assessment and treatment; annual health examinations (physicals); birth-control counselling; assessment and treatment of depression, eating disorders, insomnia and other mental or emotional health problems; allergy injections; immunization; wart treatment; on-site laboratory; pregnancy tests; and information or counselling for any personal health concerns. A specialist in sports medicine is available for sports related injuries and other problems. Physiotherapy is also available at Ivor Wynne Centre on referral from one of the physicians. A staff psychiatrist is available to students on referral from one of the clinic physicians or from a counselling service psychologist. The psychiatrist provides consultation for assessment and management recommendations as well as for ongoing therapy.

Birth-control pills are dispensed at a reduced cost of \$10.00 per package to Student Health Service patients who have a current prescription for oral contraceptives from a SHS staff physician.

A computerized health status/risk assessment programme can be taken by students on several lap top units available from the receptionist. These programmes estimate a person's current level of health and their chances of developing serious health problems in the future. An individual health summary with recommendations is printed at the end of this computer programme.

Staff physicians and nurses are available for lectures, seminars, or small group discussions on health-related issues, on request by students. As well, an education and support group for students with eating disorders is conducted for six weeks during either or both the fall and winter terms. Further information can be obtained by calling the Student Health Service office at (905) 529-7070, ext. 24441. Access from the World Wide Web is expected to be available in late 1996.

## **HOSPITALITY SERVICES**

### **General Manager, Hospitality Services**

Albert Y. Ng

McMaster University provides many dining areas on campus offering a wide variety of nutritious food at reasonable prices. Students living in residence (except the Bates apartment-style building) are required to purchase a meal plan. Off-campus students and other members of the University community may purchase an off-campus meal plan for any amount over \$100 at the MAC Express Centre, located in the Commons Building, Room B101B.

McMaster has a self-operated food service that includes five full-service cafeterias with dining rooms located strategically around campus in Togo Salmon Hall, Kenneth Taylor Hall, A.N. Bourns Building, Commons Building, and the Refectory. All dining facilities accept meal cards and cash. Students can obtain meals anytime from 7 a.m. to midnight.

MAC Express Coffee Shops are located in the Chester New Hall basement, the John Hodgins Engineering Building foyer, and the Burke Science Building--2nd floor. Vending machines at many locations around campus supplement these facilities. Inquiries are welcomed by Hospitality Services at ext. 24836.

Campus Dining Locations as follows:

- **Commons Marketplace** (Located in the Commons Building);
- **Arts Quad Cafe** (Located in the basement of Togo Salmon Hall, formerly TSH Cafeteria);
- **The Wokery** (Located in the basement of Kenneth Taylor Hall, formerly KTH Cafeteria);
- **Refectory Dining Hall**;
- **Rathskellar** (located in the lower level of Refectory)

Hours of operation vary among locations.

## **HUMAN RIGHTS CONSULTANT**

The Human Rights Consultant is the resident expert and advisor on human rights legislation to all members of the University community for advice on the legislation itself, and how it should be applied. Enquiries should be directed to, Hamilton Hall, Room 405, (905) 525-9140, ext. 24748.

## **HOUSING SERVICES**

### **Director, Housing Services**

Catherine Miller

(905) 525-9140, ext. 24036

**E-mail:** millerc@mcmaster.ca

### **Manager, Admissions and Conferences**

Léanne Piper

ext. 24070

**E-mail:** piper@mcmaster.ca

### **Manager, Residence Life**

Andrea Thyret-Kidd

ext. 23032

**E-mail:** thyreta@mcmaster.ca

### **Residence Facilities Manager**

David J. Speagle

ext. 24779

**E-mail:** speagle@mcmaster.ca

### **Conference Coordinator**

Wendy Read

ext. 24783

**E-mail:** readwen@mcmaster.ca

## RESIDENCES

The University owns and operates ten on-campus residences, accommodating a total of 2,782 students. The nine traditional-style residences consist of two women's residences (248), one men's residence (102), five co-educational residences (1,688), and Matthews Hall, consisting of a co-educational International House and a Maison Française (112) and a co-educational Halcyon (Quiet) House (135).

Seventy percent of the spaces in traditional residences are reserved for incoming first-year students. In past years, admission offers to residence have been based on a student's admission average to his/her academic programme. The average has typically ranged from the high 70s to low 80s.

All students in these nine residences are required to purchase one of the following meal plans: small, regular, large, or extra-large. Students receive a meal card which is debited only for food purchased and which may be used at all Hospitality Services location 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 497 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 University is unable to provide any on-campus facilities for married students. Students in this category may wish to use the services of the Off-Campus Housing Office (*see below*).

Students will receive a residence application and a letter of instruction regarding application procedures with their letter of acceptance from the University. Guaranteed offers of residence will be confirmed upon receipt of a Residence Application form and a deposit before a specified deadline which will be applied to the student's residence fees. Students who do not receive an offer of residence, but wish to be placed on a waiting list, must return the completed Residence Application form before the specified deadline. If a student is assigned residence space but no longer requires it, the student is responsible for advising Housing Services in writing by the specified deadline. Failure to do so will result in forfeiture of the full amount of the deposit.

The responsibility for policy, budget and the overall administration of the University residence system lies with the Director of Housing Services. Housing Services has four distinct functional units: Admissions, Residence Life, Facilities and Conference Services.

## RESIDENCE ADMISSIONS

Admissions is responsible for admission systems, withdrawals, room assignments, medical and grade appeals, and waiting lists. Enquiries about residence information should be directed to the Manager, Residence Admissions, Housing Services, Commons Building 101, extension 24342, e-mail: housing@mcmaster.ca.

## RESIDENCE LIFE

Residence Life is responsible for 12 Hall Directors from the University community who serve as mentors and leadership figures in each residence. Residence Life works with the student government and Hall Directors to fashion a mature residence community in which self-discipline is maximized. Residence Life provides leadership training, residence life activities, social, educational, and personal development programmes for students and residence executives, as well as overseeing discipline matters, student government and the Residence Security Patrol.

## RESIDENCE FACILITIES

Residence Facilities 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) and the Commons Building (north campus).

## OFF-CAMPUS HOUSING

The Off-campus Housing office is a listing service provided jointly by Housing Services and the McMaster Students Union. This office maintains updated lists of available accommodation in Hamilton and the surrounding area. It also provides area maps, transit maps, free telephones for local calling and personal assistance with the housing search. The Off-Campus Housing Office is operated by student staff on a year-round basis and is located in Wentworth House, Room 118, (905) 525-9140 ext. 24086.

## CONFERENCE SERVICES

During the summer months, accommodation, food services and meeting facilities are available on campus for conferences, conventions, and touring groups, in addition to residence for summer students and casual visitors.

The Conference Front Desk, located in the Commons Building, is open for guest registration from 7:00 a.m. to 11:00 p.m. daily, from early May to mid-August. Telephone (905) 525-9140 ext. 27222.

## PARKING

### Web Address

<http://www.mcmaster.ca/parking>

***Campus parking facilities are limited and the availability of spaces cannot be assured.***

Travel to and from the University on foot, by public transportation and in car pools is encouraged.

Students wishing to park a motor vehicle or motorcycle on campus are required to complete and submit a parking application. Applications are accepted between June 1 and the last business day of July. Completed application forms, accompanied by cheque or money order, payable to McMaster University, in the amount required for the full period must be forwarded to:

Parking and Transit Services  
E.T. Clarke Centre, McMaster University  
Hamilton, Ontario L8S 4K1

Completed applications from eligible applicants will be processed beginning in August. If any applicable zone is oversubscribed, there will be a lottery draw.

Undergraduate students not in residence may apply for available spaces in Zones 1 and 6 only. The procedure for allocation of these spaces will be developed in consultation with the MSU Executive.

Students in residence requiring parking can apply for Zone 7 only, and may apply at any time of the year.

Special arrangements can be made for disabled parking privileges.

Copies of the complete rules and regulations concerning parking at McMaster University are available at the Parking and Transit Services Offices.

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. -12:30 p.m. and from 1:30 p.m. to 4:00 p.m. The telephone number is (905) 525-9140, ext. 24232 or 24921.

## UNIVERSITY CHAPLAINS

### E-mail Address:

chaplain@mcmaster.ca

The McMaster Chaplaincy Centre, located in Wentworth House, Room 108 is open to all students and the campus community. The Chaplaincy Centre is staffed by Brian Donst, Ecumenical Chaplain; Aren Geisterfer, Christian Reformed Chaplain; Father Jack Hurley, Roman Catholic Chaplain and Donna Higson, Assistant to the Chaplains. The Office is usually open between 9:00 a.m. and 5:00 p.m., Monday through Friday and appointments outside of these hours are welcomed.

Personal and confidential counselling is offered for a wide range of concerns; groups to deal with topics such as bereavement support and marriage preparation; and an experience of community through cost suppers, worship and discussion groups. In addition, the Chaplaincy Centre provides advocacy for students in need; works co-operatively with a variety of student groups; and promotes interfaith events and dialogue on campus.

The Centre can be reached at (905) 525-9140, extension 24207 or by e-mail.

## **STUDENT GOVERNMENT AND ORGANIZATIONS**

### **MCMASTER STUDENTS UNION**

#### **Web Address**

<http://msu.mcmaster.ca>

**Purpose:** The McMaster Students Union is a completely student-operated corporation with a cash flow exceeding 3.5 million dollars and extensive operations spanning over 30 unique departments. Over 12,000 full-time undergraduate students (enrolled in 18 units or more) belong to the MSU by virtue of their supplementary fees paid at registration.

**Services of the MSU:** Considered as one of the most extensive student unions in Canada, the MSU offers an array of services and volunteer opportunities for students at McMaster. These services include two campus bars (The Downstairs John and The Rathskeller), a convenience store (The Bread Bin), a games room, a Design & Copy Centre and advertising department (CAB), an Information Centre, a Day Care Centre, a yearbook (The Marmor), a Programming Department (which organizes Welcome Week, Homecoming and other special events), an Ombuds Office and an Off-Campus Housing Office. The MSU offers volunteer opportunities through the Emergency First Response Team (EFRT), a radio station (93.3 CFMU FM), a newspaper (The Silhouette), a Student Walk Home Attendant Team (SWHAT), a Student Health Education Centre (SHEC), and over 100 clubs, including academic, political, religious, cultural and general interest.

**Student Government:** The Student Representative Assembly (SRA) consists of 35 elected individuals who represent student needs in crucial matters. It meets bi-weekly to discuss issues varying from the fate of the campus radio station to the amount of study space on campus. The President is elected by the entire student body while the Vice-President and Treasurer are elected by the SRA.

**Committees:** Hundreds of energetic and ambitious volunteers from committees are the powerhouse of the Students Union. Established committees include Elections, Environment, Events, External Affairs, Finance, Gender Equity, Human Rights, Services & Promotions, Teaching Awards, University Affairs, and Constitution, Bylaws and Policies.

**Hamilton Hall:** Currently this building is the Student Centre and the headquarters of the MSU. Most of the mentioned services are located here, including the President and student representatives. For further information, visit the MSU Main Office located in Hamilton Hall, Room 406, or call ext. 22003.

**Fraternities and Sororities are not recognized by McMaster University and are not permitted to associate with the University in any way. The University is not responsible for any acts by these groups.**

### **OMBUDS OFFICE**

The Ombudsperson provides information and advice relating to problems, complaints and appeals involving members of the McMaster community. This includes academic and non-academic matters as well as questions of human rights, sexual harassment and employment-related issues. It can also include disputes arising out of the provision of services such as parking, accommodation, security and financial aid.

The Ombuds Office is a service provided by the McMaster Students Union in conjunction with the McMaster University Staff Association, McMaster Association of Part-Time Students and the McMaster University Faculty Association. The office is located in Hamilton Hall, Room 406, ext. 24151, or (905) 528-9887.

### **MCMASTER ASSOCIATION OF PART-TIME STUDENTS (MAPS)**

#### **Web Address**

<http://www.mcmaster.ca/maps/index.html>

#### **E-mail Address**

[maps@mcmaster.ca](mailto: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 a.m. to 8:55 p.m., and Friday, from 10 a.m. to 2 p.m., when classes are in session. When classes are not in session, the office hours are Monday to Thursday, from 10 a.m. to 5 p.m., and Friday from 10 a.m. to 2 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.

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.

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 three awards: two Centennial Awards and the Martin W. Johns Award. MAPS has also established bursaries to assist students who have demonstrated financial need.

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.

The MAPS lounge and office are located in Kenneth Taylor Hall, Room 102, ext 22021.

### **MCMASTER UNIVERSITY ALUMNI ASSOCIATION**

#### **E-mail Address**

[alumni@mcmaster.ca](mailto:alumni@mcmaster.ca)

Following convocation, all graduates of McMaster University automatically become members of the McMaster Alumni Association (MAA) and join our over 83,000 alumni living in over 100 countries. The Association's mission statement addresses a number of goals: support of McMaster University, involvement of alumni, recognition of alumni achievements, alumni services and benefits, alumni communication, and involvement of current students.

Our alumni branch programme creates connections in geographic areas like Brantford, Vancouver, Ottawa, Toronto and Singapore. 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, Women's Athletic Alumnae or Lettermen's Alumni Association, just to name a few.



The MAA also offers programmes in the Hamilton area. The McMaster Alumni Connection Luncheon Series brings high profile speakers to downtown Hamilton to talk with McMaster alumni and friends, and the Albert Lager Lecture Series expands your educational relationship with Mac into a lifelong affair by providing fun and unique opportunities to enjoy lectures, trips and seminars. Alumni 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, get unique McMaster merchandise, use their long-distance phone calls to help benefit the Association, receive high-quality home and auto insurance at group rates, or investigate the other services offered through the MAA.

The McMaster Alumni Association also acts as your advocate, with representatives on the University Senate and Board of Governors. These representatives, along with other elected alumni, compose the MAA Board of Directors which, along with hundreds of other alumni volunteers, provides alumni programming in conjunction with the Office of Alumni Advancement. Both the Office and the Association can be contacted in Chester New Hall, 111, or by phone at (905) 525-9140 ext 23900, or by fax at (905) 524-1733.

## **CAMPUS NAMES**

The University's Board of Governors has made provision for naming buildings, facilities, spaces and streets after individuals or organizations who have some connection with the University. Recommendations made according to the criteria outlined below are considered by the Advisory Committee on Campus Names.

### **Policy of the Board of Governors on Campus Names**

1. The names of distinguished members of the McMaster University community who are no longer actively involved in the affairs of the University.
2. Others in the following groups:
  - a) Outstanding scholars outside the University who have had a close relationship with McMaster and whose academic disciplines relate to the structure or area being named.
  - b) Major benefactors of the University, including foundations and corporations.
  - c) Names that bear a special relationship to McMaster University, Hamilton or district.

(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](mailto:awards@mcmaster.ca)

## Director

John Edwards

## Coordinator

Denise Ellis

For information on any of the programmes which follow contact:

**Student Financial Aid and Scholarships Office**  
 Hamilton Hall, Room 404  
 McMaster University  
 Hamilton, Ontario, L8S 4K1  
 Telephone: (905) 525-9140, ext. 24319

## ONTARIO STUDENT ASSISTANCE PROGRAMME

Financial aid to help students meet the costs of post-secondary education is available from the federal and provincial governments through the Ontario Student Assistance Programme (OSAP) which consists of four plans:

- Canada Student Loans Plan
- Ontario Student Loans Plan
- Ontario Special Bursary Plan
- Ontario Work-Study Plan

To be eligible for assistance under each 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 counsellor 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 needy students for completion of any level of study. In 1994-95 maximum assistance under this plan was about 40% of standard costs at an Ontario institution.

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 needy part-time students. 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. This plan also helps part-time students or students enrolled in programmes not eligible for the Canada Student Loans Plan.

### Ontario Special Bursary Plan

This plan helps exceptionally needy students who are unable to attend school full-time but need post-secondary training to improve their job prospects.

Bursaries are available to such part-time students enrolled at recognized post-secondary institutions in Ontario only.

### Work-Study Programme

The Work-Study Programme complements the original plans in the OSAP package. It offers part-time jobs to needy students during the school year to help them meet exceptional costs, often unexpected, not recognized under OSAP. It also helps students who

lack the resources expected under OSAP criteria 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.

## BURSARIES

Most bursaries are awarded by the University Bursary Selection Committee on the basis of a general bursary application. Application forms are available from the Student Financial Aid and Scholarships Office, Hamilton Hall, Room 404, from November 1 to the last Friday in November of each academic year. Bursary awards will be disbursed in January. Any person who is registered and in good standing as a student of McMaster University is eligible to apply.

### THE GARY ALLEN MEMORIAL BURSARY

Established in 1987 by friends and family of the late Gary Allen ('84) to assist a needy Commerce student in Year III or IV whose major area of study is accounting. Preference will be given to a mature student. 90501 234

### TOM ANDERSON MEMORIAL BURSARY

Established in 1988, a bursary to be awarded to a student attending his or her first year at McMaster in Business I. The student must have graduated from a secondary school in the Regional Municipality of Hamilton-Wentworth or the City of Burlington. 90502 281

### THE A.H. ATKINSON BURSARIES

Established in 1989 by the A.H. Atkinson Education Fund Inc. of Hamilton. A variable number of bursaries to be awarded to undergraduate students in a full-time programme in Engineering who demonstrate financial need. 90500 282

Value: \$700

### THE ATKINSON CHARITABLE FOUNDATION BURSARIES

A fund has been made available for the assistance of students who are residents in the Province of Ontario. A number of awards will be made on the basis of financial need and other considerations, according to regulations suggested by the Foundation. 90503 283

### 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 awarded 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. 90504 199

Value: \$700

### THE CHARLES MURRAY BALL BURSARIES

Established in 1993 by bequest of May Alexandra Ball in memory of her brother Charles Murray Ball. To assist needy students in any programme. 90560 332

### THE BECHTEL CANADA ENGINEERING BURSARY

Established in 1995 by Betchel Canada. A variable number of awards to assist needy students who graduated from a Secondary School in Canada, are currently enrolled in a programme in Engineering and who have completed Engineering I. 90573

### 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 SIDNEY L. BLUM BURSARY

Established in 1989 by friends and associates in memory of Sidney L. Blum. To be awarded 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 ROBERTA BONDAR BURSARY

Established in 1992 by the Zonta Club of Hamilton in recognition of Canada's first female astronaut. To be awarded to a female student enrolled in Engineering I or Natural Sciences I. 90558 374

### BURSARIES FOR IN-COURSE VISA STUDENTS

Established in 1982 by the University to assist visa students in any programme. 90547.

**THE CANADIAN FEDERATION OF UNIVERSITY WOMEN'S (BURLINGTON) BURSARY**

Established in 1988, a bursary to be awarded to a mature female student who demonstrates financial need, and who is a resident of Hamilton-Wentworth or Halton Region, preferably from the Burlington area. 90545 223

**THE CANADIAN FEDERATION OF UNIVERSITY WOMEN'S (HAMILTON) BURSARY**

Established in 1960 by the University Women's Club of Hamilton. To be awarded to female students in any programme. 90546

**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. 90515

**THE CLASS OF '35 BURSARIES**

Established by the Year '35 in honour of their 50th class reunion. To be awarded to a student in good academic standing who is a Canadian citizen or permanent resident. 90507 180

**THE CLASS OF '46 BURSARIES**

Established by the Year '46 in honour of their 40th class reunion. To be awarded to a student in a programme in Gerontology. 90564 337

**THE DORIS PARTRIDGE COLE BURSARY**

Established in 1981, this bursary is to be awarded to a worthy student in memory of Doris Partridge Cole ('45). 90508 002

**THE ARCHIBALD R. CROZIER BURSARIES**

Established in 1992 in memory of Archibald (Archie) Crozier ('35), former professional football player and Chair of the Ontario Energy Board for 17 years. To be awarded to a needy student who has demonstrated a sense of social awareness and shown interest in, and concern for, others. It is hoped that recipients, after graduation, will reimburse the fund to the extent of their award so that increasing numbers of students may be assisted. 90565 338

**THE AUBREY DALGLEISH BURSARY**

Established in 1985. To be awarded to a student in any programme with special preference given to handicapped students and/or students in the Faculty of Business. 90509

**PATRICIA ANNE DICICCO MEMORIAL BURSARY**

Established in 1988 this bursary is to be awarded 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 MICHAEL EARL MEMORIAL BURSARY**

Established in 1991 by family and friends of Michael Earl. To be awarded to a needy student enrolled in a programme in Psychology. 90577

**THE EDITH E. FERRIE BURSARIES**

Established in 1965 by the late Edith E. Ferrie. To be awarded to students in any programme. 90511 289

**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

**LES AMIS DU DÉPARTEMENT DE FRANÇAIS BOURSE**

Established in 1995 by the Friends of the Department of French. To be awarded to a needy student enrolled in a programme in French. Preference will be given to students from the Regional Municipality of Hamilton-Wentworth. 90574

**THE JAMES EDWARD GRADER MEMORIAL BURSARY**

Established in 1964 by his sister. To be awarded to a student specializing in Geology. Application should be made to the Department of Geology. 90513

**THE JAMES R. (JAMIE) GREILICH MEMORIAL BURSARY**

Established in 1991 in memory of Jamie Greilich ('88) by the Operating Committee on the Disabled through its Awareness Week Activities. To be awarded 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 HAMILTON CITIZENS' MEMORIAL BURSARIES**

Established in 1947 by the Hamilton Citizens' Committee for War Services. Proceeds to be used to assist undergraduate students who are residents of the Hamilton-Wentworth Region. 90516 207

**THE 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 ('50). A variable number of bursaries to be awarded to students studying Music who demonstrate financial need.

Value: Not to exceed \$1,000 90517 058

**THE M.A. (JACK) HASSAL BURSARY**

Established by the Hamilton and District Chartered Accountants' Discussion Group in 1982 in memory of M.A. (Jack) Hassal. To assist a student in Commerce who is a Canadian citizen or permanent resident of Canada. It is hoped that recipients, after graduation, will reimburse the fund to the extent of their award so that the fund may assist increasing numbers of students.

90518 297

**THE HAWKRIGG FOUNDATION BURSARIES**

Established in 1988. To be awarded to an outstanding student in Business I or Kinesiology I. 90514 288

**THE JACK AND HELMA HEATH MEMORIAL BURSARIES**

Established in 1985 by Norton Canada Inc. in memory of Jack and Helma Heath, former employees of the Company, who were tragically killed in a boating accident. The fund provides up to four awards to assist students, with demonstrated financial need, in Level III or IV of the B.Sc.N. programme (basic and/or post-diploma stream). 90519

**THE 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 awarded to a student in a programme in Modern Languages who is a Canadian citizen or permanent resident of Canada.

Value: \$500 90557 113

**THE EDWIN W. HILBORN BURSARY**

Established in 1965 by bequest of Edwin W. Hilborn. To be awarded to a student in any programme. 90520

**THE MARY A. HILL BURSARY**

Established in 1976 by bequest of Mary A. Hill. To be awarded to a female student in any programme, preference to be given to one who has graduated from a secondary school in Hamilton. 90521

**THE JULIA HURTIG BURSARY**

Established by family and friends of the late Julia Hurtig in 1985. This bursary will be awarded to a student entering Level II of the Faculty of Humanities, in good standing, who has made a special contribution to the McMaster community through involvement in University affairs. Preference will be given to a female student. 90522 211

**THE INTER-RESIDENCE COUNCIL BURSARY**

Established in 1995 by the McMaster Inter-Residence Council in recognition of the IRC's continued support of the University and its students. One or more bursaries to assist financially needy students with disabilities who 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 suitable candidate is not found, the bursary will be awarded to a student without a disability demonstrating financial need who currently resides in one of McMaster's residences. Students with disabilities must have registered with the Office for Ability and Access. 90572

**THE KHAKI UNIVERSITY AND YOUNG MEN'S CHRISTIAN ASSOCIATION MEMORIAL BURSARIES**

Established in 1921 by the Khaki University of Canada and the Young Men's Christian Association. To assist students in any programme, preference to be given to children of war veterans. 90523 284

**THE RAYMOND-C. LABARGE MEMORIAL BURSARIES**

Established in 1973 by friends and associates in memory of Raymond C. Labarge ('36) of Ottawa. Four bursaries are available for senior undergraduate students. Applicants should have a record of academic performance that 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

**THE ALBERT ABRUM LAGER BURSARIES**

Established in 1995 by the Albert Abram Lager Foundation in memory of Albert Lager, former University Senator and McMaster Alumni Association Director. Two awards to be awarded to needy students enrolled in any programme. Preference to be given to women students who are single parents.

Value: \$600 90575

**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 needy students in any programme.

90555 301

**3M CANADA INC. BURSARY**

Established in 1980, two bursaries to be awarded annually; one to an M.B.A. student and one to a student in Business or Science.

90525 220

**THE DIANNE MACISAAC MEMORIAL BURSARY**

Established in 1994 by friends and family of Dianne MacIsaac. To be awarded to a student or students enrolled in a programme in Sociology who demonstrate financial need. Preference will be given to students with disabilities.

90571

**THE ANDREW MCFARLANE BURSARIES**

Established in 1988 by bequest of Andrew McFarlane of Hamilton. To be awarded to a student or students who are in good standing and have demonstrated financial need.

90526

**THE MCMASTER 1980 BURSARIES**

Established in 1980 by the University to assist undergraduate students in any programme.

90527

**THE MCMASTER ALUMNAE CENTENNIAL BURSARY**

Established in 1988 by the McMaster Women's Alumni, Hamilton Branch, to be awarded 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 SAVINGS AND CREDIT UNION LTD. BURSARIES**

Established in 1993 by the McMaster Credit Union Limited. To assist students in any programme. Preference will 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 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 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 WOMEN'S CLUB BURSARY**

Established in 1983 by the McMaster Women's Club to assist a student beyond Level I in the University's B.Sc.N. programme.

90531 291

**THE A.J. MELLONI MEMORIAL FUND**

To be awarded to a student in any programme.

90532

**THE JAMES C. MOORE MEMORIAL BURSARY**

Established in 1989 by family and friends in memory of James C. Moore. To be awarded to a student in Humanities or Social Sciences who demonstrates involvement in student government.

90566 339

**MOUNT HAMILTON ROTARY CLUB BURSARY**

Established in 1987, this bursary is to be awarded to a student or students who demonstrate financial need.

90533 217

**THE JOHN DOUGLAS MOYER BURSARY**

Established in 1986 by bequest of John Douglas Moyer to assist needy students.

90534

**THE O'SHAUGHNESSY BURSARY**

Established in 1986 by the family and friends of the late Margaret O'Shaughnessy, RN, 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 MARION PEARCE BURSARIES**

Established in 1990 by Dr. Sally Palmer in memory of her aunt Marion Pearce ('20). Miss Pearce worked with New Canadians at the Beverly Street Baptist Church in Toronto. A variable number of bursaries to be awarded to students enrolled in the Social Work programme who have demonstrated financial need.

90536 228

**THE MARC ANDRE ADRIEN PINEAULT BURSARY**

Established in 1995 by family and friends in memory of Marc Pineault. To be awarded to a needy student enrolled in a programme in Engineering who has demonstrated involvement in University activities including the McMaster Choir, varsity wrestling, karate club and issues related to the environment and social justice.

90576

**THE PROFESSIONAL ENGINEERS' WIVES ASSOCIATION BURSARY**

Originally established in 1983 by the Professional Engineers' Wives Association to be awarded to a needy female Engineering undergraduate student who, because of extenuating circumstances, would be unable to continue her studies without such assistance.

90537 061

**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

**THE ERIC SCHLICHTING MEMORIAL BURSARY**

Established in 1966 by his family, classmates and friends. To assist a student in a programme in Geochemistry, Geology, or other field of Science, in that order of preference. Application should be made to the Department of Geology.

90539 219

**THE MYKOLA SEMENIUK BURSARIES**

Established in 1991 by bequest of Mykola Semeniuk to assist needy students.

90551 295

**THE SERTOMA CLUB BURSARY**

Established in 1989 by the Sertoma Club of Hamilton. To be awarded 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 awarded to a student with another disability provided they demonstrate financial need. Students must have registered with the Office for Disabled Students.

90540 221

**THE SAM SMURLICK BURSARY**

Established in 1978 by the Smurlick family in memory of Sam Smurlick ('35). To be awarded to a student in any programme.

90541

**THE SOCIAL SCIENCES SOCIETY BURSARIES**

Established in 1990 by the Social Sciences Society in recognition of the outstanding efforts of Dr. Peter George in establishing the Social Sciences Society. A variable number of bursaries to be awarded to full-time students enrolled in the Faculty of Social Sciences who demonstrate financial need.

90542 229

**THE LILLIAN R. STEGNE MEMORIAL BURSARIES**

Established in 1990 in memory of Lillian Rose Stegne ('62) by family, friends and colleagues. Two or three bursaries to be awarded to handicapped students in any programme who demonstrate financial need.

90543 137

**SUNCOR INC. 1988 BURSARIES**

Established in 1988, this bursary is awarded 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 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 awarded to a female student who has completed Level II of a programme in Music.

90556 200

**THE WALLINGFORD HALL BURSARIES**

Established through anonymous donations to assist needy students in any programme. 90548

**THE G. S. (SANDY) WATT MEMORIAL BURSARY**

Established in 1993 by Zeton Inc. of Burlington in memory of G. S. (Sandy) Watt. To be awarded to a student in financial need enrolled in the Commerce programme who is a Canadian citizen or permanent resident.

Value: \$500 90562 335

**THE CLIFFORD JOHNSTON WEBSTER MEMORIAL BURSARIES**

Established in 1993 by Viola Webster in memory of her brother Clifford Johnston Webster ('41). To assist needy students enrolled in the Honours English programme who are Canadian citizens of 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 YATES BURSARIES**

Established in 1963 by bequest of William Henry Yates of Hamilton. To assist students in any programme. 90549

**THE ZONTA CLUB OF HAMILTON I BURSARIES**

Established in 1988 by the Zonta Club of Hamilton I to financially assist female students. Two bursaries to be awarded to students in good academic standing: a) one to a student specializing in Commerce; and b) one to a student specializing in Gerontology. 90550 097

**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, 1995, submit a bursary application to the Office of Student Financial Aid and Scholarships, Hamilton Hall, Room 404. Final decisions regarding potential bursary support will be available on May 19, 1995 and are contingent upon acceptance to participate in an exchange.

For further information about exchange programmes, please refer to *International Study* in the *General Academic Regulations* section (page 16) and the *Student Exchanges Officer* in the *Academic Facilities, Student Services and Organizations* section in this Calendar

**SHORT-TERM EMERGENCY LOANS**

Assistance in the form of short-term loans is sometimes available to graduate or undergraduate students. Such loans cannot be given to pay tuition, bookstore, residence or other university expenses. Repayment of any loan is expected within 90 days or before the end of the academic year.

Any student interested in obtaining a short-term loan must complete an application which is available in the Student Financial Aid and Scholarships Office. Once completed, the student will meet with a representative from this office to discuss the possibility of receiving a loan.

**THE A.H. ATKINSON LOAN FUND**

Established in 1967 by A.H. Atkinson to assist Engineering students.

**THE DEAN OF WOMEN'S EMERGENCY FUND**

Established and continued by the McMaster alumni and individual benefactors to assist female students. This fund is now administered by the Director of Student Financial Aid and Scholarships.

**THE ENGINEERING INSTITUTE OF CANADA (HAMILTON SECTION) LOAN FUND**

Established by the Hamilton Section of the Engineering Institute of Canada to assist Engineering students.

**THE HAMILTON AUTOMOBILE CLUB****PAST PRESIDENTS MEMORIAL LOAN FUND**

Established in 1963 by the Hamilton Automobile Club as a tribute to its deceased past presidents. To be used to assist Engineering students.

**THE LOUISE HOLMES MEMORIAL LOAN FUND**

Established in 1958 by her parents in memory of Louise Holmes, B.A. ('48). To assist female students in any programme.

**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.

**a. Edith M. Griffen Loan Fund**

Established in 1957 by Paardeburg Chapter, IODE, in honour of Mrs. H.S. Griffen.

**b. Princess Marina Chapter, IODE, Loan Fund**

Established in 1975.

**c. Emma Frances Pratt Chapter, IODE, Loan Fund**

Established in 1958. To assist female students in Levels III or IV of any programme.

**d. Muriel Clark Riddell Loan Fund**

Established in 1964 by the Right Honourable Stanley Baldwin Chapter, IODE.

**e. Sovereign Chapter, IODE, Loan Fund**

Established in 1960. To assist female students in the final level of any programme.

**f. Margaret B. Sutterby Memorial Fund**

Established in 1955 by the 67th University Battery Chapter, IODE.

**g. Wentworth Chapter, IODE, Loan Fund**

Established in 1953.

**THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS LOAN FUND**

Established in 1968 by the Hamilton Section of the Institute of Electrical and Electronics Engineers. To assist students in a programme in Engineering.

**THE RUSSELL E. LOVE MEMORIAL LOAN FUND**

Established in 1951 by bequest through the Optimist Club of Hamilton. To assist male students in the penultimate or final level of an Arts programme.

**THE 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 PI BETA PHI FRATERNITY LOAN FUND**

Established in 1958 by the local alumni of Pi Beta Phi. To assist female students in any Level IV Honours Arts or Science programme.

**THE PROFESSIONAL ENGINEERS'****WIVES' ASSOCIATION LOAN FUND**

Established in 1972 by the Professional Engineers' Wives' Association to provide loans for Engineering students.

**THE SOCIETY OF AUTOMOTIVE****ENGINEERS (ONTARIO SECTION) LOAN FUND**

Established in 1962 by the Ontario Section of the Society of Automotive Engineers. To assist students in a programme in Engineering.

**THE IVOR WYNNE MEMORIAL LOAN FUND**

Established in 1971 in memory of Ivor Wynne, Dean of Students. To assist students in any programme.

**THE UNIVERSITY LOAN FUNDS**

Small short-term emergency loans from the University funds are available to assist students in any programme.

# UNDERGRADUATE ACADEMIC AWARDS

WEB ADDRESS: <http://access.mcmaster.ca>

E-MAIL ADDRESS: [awards@mcmaster.ca](mailto:awards@mcmaster.ca)

## Director

John Edwards

## Coordinator

Denise Ellis

For information, please contact:

**Student Financial Aid and Scholarships Office**  
**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. Honours Biology and Psychology, Level II: 33 units). If the Calendar does not specify the programme requirements by individual levels, divide the total units for all levels by the number of levels, discarding the remainder. A full load is not required to be eligible for graduation awards.

**Graduation 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 1995-96) 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 Director, Student Financial Aid and Scholarships. Approval of applications is not automatic, and deferments 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 Director, 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 263)

- McMaster Scholars Programme
- National Scholarships
- Scholarships Open to Ontario Students
- Merit Awards Open to Ontario Students

#### B. Awards for Full-time In-Course Students (Full Load) (page 265)

- Medal
- Senate Scholarships
- Residence Scholarships
- Travel Scholarships

#### C. Awards for Part-time In-Course Students (page 274)

**D. Single Achievement Awards for Full-time and Part-time Students (page 274)**

**E. Awards for Graduating Students (page 277)**

**F. Awards for Second Baccalaureate Degree Students (page 280)**

**SECTION 3. INDEX OF ACADEMIC AWARDS (page 281)**

To find a specific award, use the Index for Academic Awards.

**SECTION 2. CATEGORIES OF AWARDS**

**A. Awards for Entering Students**

- A.1** These awards are provided exclusively for students qualifying for admission to Level I of a first baccalaureate degree programme.
- A.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.
- A.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 Director, Student Financial Aid and Scholarships about making changes to their programme of study.
- A.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 Director, Student Financial Aid and Scholarships. Approval of applications is not automatic, and deferments are not normally granted for more than one calendar year.
- A.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.

**◆ 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 March 1, 1996. Applicants will be asked to provide a resume, an essay, a full high school transcript and letters of recommendation. Details may be obtained from the Director, Student Financial Aid and Scholarships.

**MCMASTER SCHOLARS (UNIVERSITY)**

Up to five scholarships, each valued at \$25,000, to be awarded to students entering any programme of study at McMaster University.

The McMaster Scholars programme incorporates the following awards:

**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

**MCMASTER SCHOLARS (FACULTY/PROGRAMME SPECIFIC)**

Up to seven scholarships, each valued at \$15,000, 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 Humanities
- McMaster Scholars in Natural Sciences
- McMaster Scholars in Nursing
- McMaster Scholars in Social Sciences

**THE LILLIAN AND LEROY PAGE SCHOLARSHIP**

Established in 1982 by donation of the Lillian and Leroy Page Foundation for a student from the Hamilton area entering the Faculty of Science. 20030

**◆ NATIONAL SCHOLARSHIPS**

Students applying for admission within two years of completing required subjects at any secondary school in Canada will be automatically considered for these awards. Students studying abroad must submit their academic transcripts to the Director, Student Financial Aid and Scholarships by March 3, 1995, 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 his memory. To be awarded to a promising student entering a full-time programme of study.

Value: \$3,000 20020 062

**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 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 MONNEX INSURANCE BROKERS LTD. -- MCMASTER ALUMNI ASSOCIATION SCHOLARSHIP**

Established in 1994 by the MONNEX Insurance Brokers Ltd. of Toronto. To be awarded to an outstanding student entering a Level I Programme of study.

Value: \$3,000 20045 351

**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 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

**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 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

**◆ 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, one to a male student, one to a female student entering the Faculty of Engineering.

**Value:** \$1,200 20027 232

**THE CHANCELLORS' SCHOLARSHIPS (UNIVERSITY)**

A variable number to be awarded to students entering a full-time programme of study.

**Value:** \$3,000 20018

**THE CHANCELLORS' SCHOLARSHIPS (SPECIFIED LEVEL I PROGRAMMES)**

A variable number to be awarded to students entering a Level I Programme in the Schools of Business and Nursing, and the Faculties of Humanities and Social Sciences.

**Value:** \$3,000 20041

**THE HELEN M. CURREY SCHOLARSHIP**

Established in 1941 by bequest of Helen Maud Currey of 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 DOFASCO SCHOLARSHIP**

Established in 1955 by the Dominion Foundries and Steel Company. To be awarded to a student who is a Canadian citizen or permanent resident and who is entering Engineering I.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20000 050

**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 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, IODE, SCHOLARSHIP**

Established in 1968 by the Paardeburg Chapter, IODE. To be awarded to a student from a secondary school in Hamilton who attains good standing in OAC subjects and who has a satisfactory record with respect to character, personality and activities. Preference to be given to children of service or ex-service personnel.

**Value:** \$200 20032 082

**THE JURY SCHOLARSHIP**

Established in 1941 by bequest of J.H. Jury of Bowmanville, Ontario. To be awarded to a student from a Bowmanville high school. Preference will be given to students entering the Faculty of Humanities or of Social Sciences.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20023

**THE LLOYD MEMORIAL SCHOLARSHIP**

Established in 1956 in memory of Henry Hoyes and Lizzie Lloyd by their children. OAC subjects to be included are: Physics, Chemistry, two credits of Mathematics, and either Biology or a third credit of Mathematics.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20015

**THE ALBERT MATTHEWS SCHOLARSHIP**

Established in 1920. OAC subjects to be included are Latin and a language other than English.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20004

**THE HAROLD MATTHEWS MEMORIAL SCHOLARSHIP**

Established in 1917. OAC subjects to be included are French and either German or Spanish.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20008

**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 D.E. THOMSON SCHOLARSHIP**

Established in 1909 and augmented in 1915. OAC subjects to be included are English and either Latin or French.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20006

**THE WHEELER SCHOLARSHIP**

Established in 1915. OAC subjects to be included are: History, English and a language other than English.

**Value:** \$12,000 (\$3,000 per year for up to four years) 20016

**● MERIT AWARDS OPEN TO ONTARIO STUDENTS**

Each year, allotments of Merit Awards are established for Arts & Science I, Business I, Engineering I, Humanities I (including Music I), Natural Sciences I, Nursing I and Social Sciences I (including Kinesiology I) in proportion to full-time undergraduate students enrolled in these Level I programmes. Applications from students completing OACs in the current school year are required by March 30, 1995. Applications must include a resume, and school assessment. Details may be obtained from the Director, 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 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 Beechan, Monsanto and the Royal Bank. Two scholarships to be awarded to outstanding students graduating from a secondary school in the Halton Region; (a) one to a student entering a full-time programme of study; and (b) one to a student entering full-time study in Natural Sciences I or Music I. Preference will be given to women students.

**Value:** \$1,000 each 20039 251

**THE 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 ('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 ('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 LESLIE A. PRINCE MERIT AWARDS**

Established in 1979 in honour of Leslie A. Prince, Dean of Students, by his friends and colleagues upon the occasion of his retirement and in recognition of his outstanding contribution to the University community. Two to be awarded.

**Value:** \$1,000 each 20024 139



**B. Awards for Full-time, In-Course Students (Full Load)**

The following awards are based on competition across the University or within a Faculty or programme.

- B.1** These awards, which are granted in June or November, are provided exclusively for first baccalaureate degree students registered for a full load qualifying on the basis of work included at the May review (or deferred examinations resulting therefrom) in other than graduating session. Students choosing to graduate at the subsequent Fall convocation forfeit any awards that they have been named to receive.
- B.2** In addition to meeting the General Conditions listed in Section 1, a student must complete, during the Fall/Winter session immediately prior to the May review, a full load of work corresponding at least to:
  - a. either the minimum number of units specified in the Calendar for their level and programme;
  - b. or, if the Calendar does not specify the programme work by individual levels, the average number of units per level; and
  - c. a Full-load Average of 8.0 and no failures.
- B.3** 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.
- B.4** The Full-load Average will be used to break any tie in the competition or awards which are based on another criterion.

◆ **MEDAL**

**THE CHANCELLOR'S GOLD MEDAL**

Established in 1938. To be awarded to the student who has completed the penultimate year of any four or five-level programme at the most recent spring review, and who ranks highest in scholarship, leadership and influence. 30022

◆ **GENERAL SCHOLARSHIPS AND PRIZES**

**THE AARON PRIZE**

Established in 1964 by Fannie Aaron ('44). To be awarded to the student who has completed Level I and 30-45 units of the three-level English programme and who attains the highest Cumulative Average. Value: \$25 30004 001

**THE ACI (ONTARIO CHAPTER) SCHOLARSHIP**

Established in 1992 by the American Concrete Institute (Ontario Chapter). To be awarded to a student entering Level IV of the Civil Engineering programme who, in the judgment of the Department of Civil Engineering, has demonstrated outstanding academic achievement and knowledge of concrete technology. Value: \$300 30215 319

**THE W.K. ALLAN MEMORIAL SCHOLARSHIP**

Established in 1994 in memory of William Kellock Allan ('31) by his wife. To be awarded to a student entering the final level of a programme in Mathematics or Physics who attains the highest Full-load Average. Value: \$900 30221 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 Department of 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 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 Ceramic Engineering, Honours Materials Science, Materials Engineering or Metallurgical 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 Department of Geology, have attained notable standing. Ordinarily, not more than one scholarship will be awarded in any one programme. Value: \$800 each 30182 188

**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 or Major programme in the Department of Mathematics and Statistics, who attains the highest Full-load Average and who in that session achieves a grade of at least B in STATS 3D06. Value: \$300 30076

**THE M. 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 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 Natural Sciences I with the highest Full-load Average and who is entering Level II of Honours Biochemistry, Honours Chemistry, Honours Biochemistry and Chemistry or Honours Applied 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, Honours Geology and Physics, Honours Chemistry and Geology or Honours Materials Science, and the other to the student entering Level II of Chemical Engineering, Materials Engineering or Metallurgical Engineering, who attain the highest average in at least nine units in chemistry and physics in Level I and a Full-load Average of at least 9.5. A scholarship is tenable for three years provided the recipient maintains a Cumulative Average of at least 10.0. Value: \$3,000 each (\$1,000 each year) 30078 016

**THE BRIAN BLAKEY MEMORIAL SCHOLARSHIP**

Established in 1979 in memory of Dr. Brian Blakey, Professor of French, by his friends, colleagues and former students, on behalf of his wife, Dorothy. To be awarded to the student who attains the highest Full-load Average on completion of Level I and 60 to 75 units of an Honours programme in Classical

Studies or Classics, Drama, English, French, or Modern Languages. Students in all programmes except Drama must have taken at some point LINGUIST 1A06 or ANTHROP 1B06 and achieved in it a grade of at least B-.

**Value:** \$600 30013 018

#### THE BRIEN SCHOLARSHIP IN PHILOSOPHY

Established in 1944 by Dr. J. W. Brien of Windsor. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Philosophy and who attains the highest Full-load Average.

**Value:** \$450 30014

#### THE JOSEPHINE STAPLES BRIEN SCHOLARSHIP

Established in 1936 by Dr. J.W. Brien of Windsor. To be awarded to a woman student who is entering her graduating session and who qualifies on the basis of academic standing and interest in undergraduate activities.

**Value:** \$300 30091

#### THE DR. AND MRS. F.R. BRITTON SCHOLARSHIP IN MATHEMATICS

Established in 1962 by Dr. and Mrs. F. R. Britton and augmented by Mrs. Britton's bequest in 1982. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in 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 ROBERT BURNS SOCIETY SCHOLARSHIP

Established in 1993 by The Robert Burns Society of Hamilton. To be awarded to a student who has completed Level I and 60 units of a Humanities programme who, in the judgment of the Prizes and Scholarships Committee for the Faculty of Humanities, has demonstrated academic excellence and a scholarly interest in Scottish history, politics and culture.

**Value:** \$500 30218 327

#### THE CRISPIN CALVO PRIZE

Established in 1978 in memory of Professor C. Calvo by his family and friends. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise in thermodynamics.

**Value:** \$200 30031

#### THE ELLA HALSTEAD CAMPBELL PRIZE

Established in 1978 by Mrs. 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 CANADIAN CERAMIC SOCIETY (WESTERN SECTION) PRIZE

Established in 1987. To be awarded to a student entering Level IV of the Ceramic Engineering programme who, in the judgment of the Department of Materials Science and Engineering, exhibits most promise in the area of structural clay products.

**Value:** \$200 30020 025

#### THE CFUW (HAMILTON) PAST PRESIDENT'S PRIZE

Established in 1976 by the Past Presidents of the University Women's Club of Hamilton which became the CFUW (Hamilton) on the occasion of the Club's 50th anniversary. To be awarded to the woman student who has completed Level I and 70 to 90 units of a programme in Engineering with the highest Cumulative Average.

**Value:** \$150, plus book ends 30149 020

#### THE CFUW (HAMILTON) SCHOLARSHIP

Established in 1945 by the University Women's Club of Hamilton, now the Canadian Federation of University Women. To be awarded to the woman student who attains the highest Full-load Average in the penultimate level of any programme.

**Value:** \$800 30150 323

#### 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, Honours Applied Chemistry, or Chemistry Major 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 CIVITAN-BELL SCHOLARSHIP

Established in 1986 by the Civitan Club of Burlington. To be awarded to a student who has completed Level I and 36 to 90 units of a Social Work programme with high standing and who, in the judgment of the School of Social Work, has demonstrated an interest in a career in working with the mentally handicapped.

**Value:** \$500 30024 036

#### 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 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 1943 in celebration of their 50th anniversary. To be awarded to the student who has completed Level I and at least 60 units of an Honours programme in Drama who, in the judgment of the School of Art, Drama and Music, has achieved notable academic standing and has made a significant contribution to theatre on campus.

**Value:** \$600 30214 329

#### THE CLASS OF '44 SCHOLARSHIP

Established by the Class of '44 in celebration of their 50th anniversary. To be awarded to the student entering the penultimate year of any programme who has attained the highest Full-load Average.

**Value:** \$700 30224 361

**THE CLASS OF '50 SCHOLARSHIP IN HONOURS ECONOMICS**

Established in 1982 by the Graduating Class of 1950 in Honours Economics. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Economics, and who, in the judgment of the Department of Economics, has attained a high Full-load Average and has demonstrated leadership in undergraduate extracurricular activities.  
**Value:** \$400 and book 30027 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 entering Level III of a programme in Engineering who, in the judgment of the Faculty of Engineering, has demonstrated outstanding academic achievement and has made notable contribution to the campus or community by participation in extracurricular activities.  
**Value:** \$500 30183 252

**THE CONSUMERS GLASS SCHOLARSHIP**

Established in 1988. To be awarded to a student entering Level V of the Ceramic Engineering and Management programme who, in the judgment of the Department of Materials Science and Engineering, has attained notable academic standing.  
**Value:** \$1,000 30029 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 D. M. DAVIES PRIZE**

Established in 1984 by friends, colleagues and former students in recognition of Professor Douglas Davies for his outstanding contribution to the Department of Biology during 34 years of service. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Biology and who attains the highest average in at least 12 units of senior level courses in whole-animal biology, taken in one session.  
**Value:** \$300 30032 047

**THE JOHN DEERE LIMITED SCHOLARSHIP**

Established in 1992 by John Deere Limited. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Commerce programme who, in the judgment of the School of Business, has demonstrated outstanding academic achievement in courses offered by the Human Resource/Labour Relations Area and has displayed leadership and self-motivation in extracurricular activities.  
**Value:** \$1,500 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 3AA3 and 3AB3.  
**Value:** \$500 30148 177

**THE SCHOOL OF ART, DRAMA AND MUSIC SCHOLARSHIP IN MUSIC**

Established in 1993 by the Department of Music which later became part of the School of Art, Drama and Music. To be awarded to a student who, in the judgment of the School of Art, Drama and Music, has demonstrated academic excellence in Music.  
**Value:** \$1,000 30216 324

**THE ROSEMARY DOUGLAS-MERCER MEMORIAL PRIZE**

Established in 1989. To be awarded to a student who has completed Level I and 30 to 45 units of an Honours programme in French and who has attained the highest average in FRENCH 2BB3 and one of 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 student who has completed Level I and 60 to 75 units of an Honours programme in Philosophy and who, in the judgment of the Department of Philosophy, has attained the most notable standing.  
**Value:** \$150 30066

**THE HELEN EMERY SCHOLARSHIPS IN ENVIRONMENTAL SCIENCE**

Established in 1990 by Miss Helen Emery of Barrie, Ontario. Two scholarships to be awarded: (a) one to a student entering the Honours Geography and Environmental Science Programme; and (b) one to a student entering Level III of the Honours Geography and Environmental Sciences programme who, in the judgment of the Department of Geography, demonstrates leadership and influence in addressing environmental matters. Recipients must have attained a Full-load Average of 9.5 or greater.  
**Value:** \$1,400 each 30184 380

**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 3NA3 and 3SA3, taken in one session.  
**Value:** \$200 30098 057

**THE 4 R's ENVIRONMENTAL PROGRAMME AWARDS**

Established in 1992 from the proceeds of awards recognizing McMaster University as recipient of the 1990 Canadian University Productivity Award and a Regional Environmental Commitment Award. Two scholarships to be awarded: a) one to a student entering Level III of a programme in Engineering and Society; and b) one to a student entering Level III of the Honours Geography and Environmental Studies programme. In addition to notable academic standing, these awards will be granted to students who, in the judgment of the Faculty of Engineering or the Department of Geography, have demonstrated leadership and influence in addressing environmental matters.  
**Value:** \$1,500 each 30209 293

**THE BARBARA FRANCIS SCHOLARSHIP**

Established in 1985 by Laura Dodson ('56) in memory of her sister. To be awarded to the student who has completed Level I and at least 30 units of an Arts and Science programme and who has demonstrated outstanding achievement in both arts and science.  
**Value:** \$350 30007 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 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 ('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 DAPHNE ETHERINGTON GRAHAM MEMORIAL SCHOLARSHIP IN ENGLISH**

Established in 1989, in memory of a former student and dedicated servant of the University, by her friends, family, and Professor Emeritus R.P. Graham. To be awarded to the student, registered for a first degree after completing Level I, who attains the highest standing in 18 units of English including ENGLISH 2A06, all taken in the same session, with an average standing of at least A-, provided that the recipient is not the holder of another scholarship of equal or greater value.

**Value:** \$1,000 30034 242

**THE H.B. GREENING BOOK PRIZE**

Established in 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 30327 389

**THE HAMILTON PERFORMING ARTS SCHOLARSHIP**

Established in 1992 by the Hamilton Performing Arts Council. To be awarded to a student who has completed at least 30 units of a programme in Art, Drama, or Music, who in the judgment of the Faculty of Humanities, has demonstrated outstanding academic achievement and excellence in the performing arts: theatre, drama, music or art.

**Value:** \$500 30219 348

**THE DONALD HART SCHOLARSHIP**

Established in 1985 by Mrs. Pamela Hart and Joel Jordan in honour of Donald Neil Hart ('70). To be awarded to a student who has completed Level I and 30 to 45 units of a programme in Commerce and who, in the judgment of the School of Business, has achieved high standing in the required Level II Commerce courses, taken in one session.

**Value:** \$350 30037 075

**THE HELLENIC PRIZE**

Established in 1995 by the Greek communities and associations in the Hamilton-Wentworth area. 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 Level I and 32 to 45 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. Seventy-five awards were given in 1995.

**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 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 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 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 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 KATHLEEN MARY JOHNSTON MEMORIAL PRIZE**

Established in 1963 by Lawrence D. Johnston in memory of his wife. To be awarded to the student who has completed Level I and 30 to 45 units of an Honours programme in Religious Studies and who attains the highest Full-load Average.

**Value:** \$125 30094 090

**THE JURY PRIZE**

Established in 1941 by bequest of J.H. Jury of Bowmanville. To be awarded to the student who has completed Level I and 30-45 units of the Honours History programme and who attains the highest Full-load Average.

**Value:** \$150 30093

**THE STANFORD N. KATAMBALA GEOLOGY PRIZE**

Established in 1965 by contributions from friends and associates of Stanford N. Katambala, a Year III Honours Geology student from Tanzania, killed in a mine accident in Northern Ontario in September 1964. To be awarded to a student who has completed Level I and 60 to 75 units of the Honours Geology programme and who attains high standing in Geology.

**Value:** \$50 30143

**THE GEORGE P. AND LEATHA M. KEYS SCHOLARSHIPS**

Established in 1982 by Mrs. Leatha Keys. Three scholarships to be awarded to students who, in the judgment of the Departments of Computer Science and Systems, and of Mathematics and Statistics, have demonstrated outstanding achievement in Honours and Major 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 GARY LAUTENS MEMORIAL SCHOLARSHIP**

Established in 1992 by family, friends and colleagues in memory of Gary Lautens ('50), columnist and editor of the Toronto Star (1962-92), the Hamilton Spectator (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 Director, Student Financial Aid and Scholarships, before December 1.

**Value:** \$3,600 (\$1,200 each year) 30212 321

**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 Level I and 67 to 85 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 ('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 ('70). To be awarded to a student who has completed Level I and 70 to 85 units of a programme in Civil Engineering and who, in the judgment of the Department of Civil Engineering and Engineering Mechanics, 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 ('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 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

## 270 UNDERGRADUATE AWARDS — FULL LOAD

### THE MCNABB SCHOLARSHIP

Established in 1989 in memory of Donald G. McNabb ('37) by friends, family and business associates. To be awarded to the student who has completed Level I plus 60 to 75 units of an Honours programme in Chemistry 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 SCHOLARSHIPS

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 MCPHATER MEMORIAL SCHOLARSHIP

Established in 1988 by Peter McPhater's friends in recognition of his art, craftsmanship and humanitarianism. To be awarded to a student who has completed Level I and 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, 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 SCHOLARSHIPS

Established in 1957 from funds originally subscribed by the Alumnae of Moulton College during the years 1946 to 1949 for the expansion of Moulton College. Two scholarships to be awarded to the women students of Moulton Hall with the highest 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 ('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 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 ('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 PAIKIN SCHOLARSHIP

Established in 1957 in memory of Barney David Paikin ('33), by Mrs. Barney David Paikin and Morris Paikin. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours History programme and who attains the highest Full-load Average.

**Value:** \$200 30117 131

### 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 PEAT MARWICK THORNE 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 PEVENSING SCHOLARSHIP

Established in 1987 by David C. Hannaford ('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 AND CO. 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 ('80) in memory of his wife, Sharon ('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 SCHOLARSHIPS**

Established in 1984 by bequest of Ella Julia Reynolds of Hamilton. Two scholarships to be awarded on the basis of scholarship and character to students who have completed Level I and 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 SCHOLARSHIPS**

Established in 1982 by bequest of Mrs. Edna Elizabeth Ross Reeves of Hamilton in memory of her husband, Herbert A. Ricker. Four scholarships to be awarded on the basis of scholarship (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 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 Department of Geography, 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 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 9 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 Natural Sciences I and who attains the highest average in any two of the Level I courses in Chemistry, Physics and Biology.

**Value:** \$125 30138

**THE GERALD AND VERA 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 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 3AA3.

**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 SCHOLARSHIPS**

Established in 1973 by the South Ontario (formerly Niagara) Economic Development Council. Two scholarships to be awarded, normally one in each of the B.A. and B.Sc. programmes, to the students who have completed Level I and 60 to 75 units of the Honours Geography programme and who elect GEOG 4C06 in their graduating session. Awards are based on scholarship and interest in undertaking 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 ('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 9 units of Italian courses above Level I and has demonstrated an active involvement in community life.

**Value:** \$100 30133 162

## 272 UNDERGRADUATE AWARDS — FULL LOAD

### THE S.L. SQUIRE SCHOLARSHIPS

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 1A06, 1B03, 1H05, 1N06, 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 STOKLEY 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 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 JUANITA LEBARRE SYMINGTON SCHOLARSHIP

Established in 1981 by The Women's Art Association of Hamilton in memory of Juanita LeBarre Symington. To be awarded to the student entering the graduating session of the Honours Art programme with the highest Full-load Average. The recipient must be from the Hamilton-Wentworth Region.

Value: \$300 30092 169

### THE T.H.B. SYMONS SCHOLARSHIP IN CANADIAN STUDIES

Established in 1978. To be awarded to the student who attains the highest Cumulative Average in Canadian Studies after completion of Level I and 60 to 75 units of a programme in Canadian Studies.

Value: \$250 30144 170

### THE HUGH R. THOMPSON MEMORIAL PRIZE

Established in 1960 in memory of Dr. Hugh R. Thompson. To be awarded to the student who has completed Level I and 30 to 45 units of the Honours Geography or the Honours Geography and Geology programme with the highest Full-load Average.

Value: \$150 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 ('89) by family and friends. To be awarded to the student entering Level IV of the Honours Philosophy programme and who, in the judgment of the Department of Philosophy, has demonstrated leadership and influence in scholarly activities related to the field of philosophy.

Value: \$300 30190 256

### TRAC SCHOLARSHIPS

Established in 1984 by The Refractories Association of Canada. Two scholarships to be awarded to students who have completed Level I and 35 to 50 units and who attain a high Full-load Average: (a) one in the Ceramic Engineering programme and (b) one in the Chemical Engineering programme.

Value: \$500 each 30145 178

### THE VALLEY CITY MANUFACTURING CO. LTD. SCHOLARSHIPS

Established in 1991 by the Valley City Manufacturing Co. Ltd. of Dundas, Ontario. Two scholarships to be awarded to the students enrolled in an Honours B.Sc. programme: one to the student entering Level II and one to the student entering Level III who attain the highest Full-load Average. Recipients may not hold another scholarship of equal or greater value.

Value: \$1,500 each 30205 227

### THE VAREY SCHOLARSHIP

Established in 1978 by J.C. Varey, Dundas, in memory of Albert E. Varey. To be awarded to the student who attains high standing in an Honours programme in Biology and who, in the judgment of the Department of Biology, shows an innovative approach to the study of ecology.

Value: \$200 30151 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 the Honours Programme in Philosophy who, in the judgment of the Department of Philosophy, shows the most academic promise.

Value: \$800 30197

### THE WEISZ FAMILY FOUNDATION SCHOLARSHIP

Established in 1982. To be awarded to the student who has completed Level I and 60 to 75 units of the Honours Commerce programme and who attains the highest Full-load Average (at least 9.5).

Value: \$1,500 30152 184

### 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 the 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: \$200 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 to 75 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 LILLIAN AND MANUEL ZACK SCHOLARSHIP

Established in 1984 by Lillian and Manuel Zack ('40) of Hamilton. To be awarded to a student who has completed Level I and 70 to 85 units of a programme in Nursing and who, in the judgment of the School of Nursing, has demonstrated achievement, initiative, and commitment to gerontological nursing through clinical practice, term papers, research interest, or community activities and who pursues these interests in Level IV.

Value: \$900 30101 190



◆ **SENATE SCHOLARSHIPS**

The following scholarships are awarded for general academic proficiency at the discretion of the Undergraduate Council.

Every full-time student who is eligible for review in May but is not graduating in any programme in any Faculty or other academic unit will be eligible for consideration for a Senate Scholarship, provided that he or she attains a Full-load Average of 9.5 in addition to meeting the conditions noted in Category B, above.

In 1995, the value of a Senate Scholarship was \$800.

Each year, quotas of Senate Scholarships are established for each Faculty and other academic units in proportion to the number of full-time undergraduate students enrolled. In 1995, 175 Senate Scholarships were awarded, all of which were funded by the donors listed below.

**THE EDGAR R. ASHALL SCHOLARSHIP**  
Established in 1965 by bequest of his wife, Edith M. Ashall. 30162

**THE EDWIN MARWIN DALLEY MEMORIAL SCHOLARSHIPS**  
Established in 1965 by bequest of Edwin Marwin Dalley of Hamilton. 30164

**THE EDUCATION FOUNDATION OF THE FEDERATION OF 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 STOBO SCHOLARSHIP**  
Established in 1957 by bequest of William Q. 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
- Whidden Hall Residence Scholarship** 30159
- Woodstock Hall Residence Scholarship** 30160

In 1994, the value of each scholarship was \$300.

◆ **TRAVEL SCHOLARSHIPS**

Students who wish to be considered for these awards should consult the Director, Student Financial Aid and Scholarships before December 1.

**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. 30174

**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. 30175 037

**THE JOAN JACKSON DUNBAR TRAVEL SCHOLARSHIP**  
Established in 1960 by Mayor Lloyd D. Jackson ('09), LL.D ('55) and Mrs. Jackson of Hamilton in memory of their daughter, Joan ('40). To be awarded to a woman student who has completed Level I and 60 to 75 units of an Honours 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. 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. 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. 30188 274

**THE ALBERT SHALOM TRAVEL SCHOLARSHIP**  
Established in 1994 by family, friends and colleagues in memory of Albert Shalom, Professor of Philosophy at McMaster University from 1966 to 1991. To be awarded to a student who is enrolled in a programme in Philosophy, and has, in the judgment of the Department of Philosophy, attained notable standing. The award is to be used to help defray the costs of study overseas in Level III. 30225 365

**THE E.T. SALMON SCHOLARSHIP**  
Established in 1991 by Mrs. Edward Togo Salmon in memory of her husband, world-renowned Roman historian and member of the Faculty for 43 years. To be awarded to the student who has completed Level I and 30 to 45 units of any Honours Classics or Honours History programme, including at least 12 units of Ancient History and Archaeology, and who, in the judgment of a committee of the two Departments, shows outstanding achievement and promise. The purpose of the scholarship is to enable the winner to travel and

## 274 UNDERGRADUATE AWARDS — PART-TIME & SINGLE ACHIEVEMENT

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 HOWARD P. WHIDDEN SCHOLARSHIP

Established in 1941 by the Honourable Jacob Nicol ('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 ('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, Geology, Materials Science, Physics. Candidates for this scholarship must have attained high standing in the subjects of their programme and must, in addition, have demonstrated a lively interest in the humanities and in the human and social implications of scientific developments. The purpose of the scholarship is to enable the winner to spend the summer before the final Fall/Winter session in travel and study outside Canada.

**Value:** \$6,000

30178

## C. Awards for Part-time, In-Course Students (Part-Time Studies)

The following awards are based on competition across the University or within a Faculty or programme.

**C.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.

**C.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.

**C.3** The Cumulative Average will be used to break any tie in the competition for awards.

### THE TED ALLEN BOOK PRIZE

Established in 1984 in memory of Frederick J. Allen, an employee and part-time student at McMaster University. To be awarded to the part-time student who attains the highest standing in ENGLISH 2H06 (American Literature).

**Value:** \$50 for books

60002 309

### 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, ENGLISH 2I06 or ENGLISH 3H06.

**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

## D. Single Achievement Awards for Full-time and Part-time Students

The following awards are granted based on competition across the University or within a Faculty or programme.

**D.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.

**D.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.

**D.3** The Cumulative Average will be used to break any tie in the competition for these awards.

### THE ALUMNI CANADIAN GEOGRAPHY PRIZE

Established in 1985 by the Geography Branch of the McMaster University Alumni Association in recognition of Dr. Lloyd G. Reeds for his contribution to teaching during more than 35 years of service. To be awarded to the student who attains the highest grade in GEOG 2E03 (Geography of Canada).

**Value:** \$175

40001 004

### THE ALUMNI SOCIAL WORK PRIZE

Established in 1991 by the Social Work Branch of the McMaster Alumni Association. To be awarded to the student who attains the highest standing in SOC WORK 4P03.

**Value:** \$50 for books

40056 275

### THE AMERICAN-STANDARD PRIZE

Established in 1978. To be awarded to the student in the Ceramic Engineering programme who attains the highest grade in GEOLOGY 2B04.

**Value:** \$100

40002 007

### THE ARTS & SCIENCE PROGRAMME BOOK AWARD

Established in 1995. To be awarded from time to time to an Arts & Science student who, in the judgment of the Arts & Science Programme Awards Committee, has demonstrated outstanding academic achievement in both arts and science.

**Value:** \$ 75

40075 390

### THE MURRAY BALL PRIZES IN GEOLOGY

Established in 1991 by May A. Ball in memory of her brother Murray Ball. Two scholarships to be awarded to students in Natural Sciences I who, in the judgment of the Department of Geology attained notable standing in (a) GEOLOGY 1A03 and (b) GEOLOGY 1C03 respectively.

**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:** \$50

40046 248

### THE CANADIAN INSTITUTE OF INTERNATIONAL AFFAIRS PRIZE

Established in 1994 by the Canadian Institute of International Affairs (Hamilton Branch). To be awarded to a student who has completed Level I and at least 30 units of a programme in Political Science who, in the judgment of the Department of Political Science, has achieved notable standing in at least six units of International Politics courses including an outstanding essay dealing with a topic related to the field of International Politics.

**Value:** \$300

40071 349

**THE ELEANOR 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 JAMES ROBERTSON CARRUTHERS MEMORIAL PRIZE**

Established in 1984 in memory of James Robertson Carruthers ('74) by his family and friends. To be awarded to the student who, in the judgment of the Department of History, attains notable standing in HISTORY 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 JOHNSON BURNS CLINARD SCHOLARSHIP**

Established in 1994 by friends and colleagues as a tribute to John Clinard in recognition of his outstanding contribution to the choral field, especially through his association with the Bach Elgar Choir. To be awarded to an in-course student who has completed Level I of a programme in Music and who, in the judgment of the School of Art, Drama and Music, is outstanding in the area of choral or vocal music.

**Value:** \$500 30220 350

**THE COMPARATIVE LITERATURE PRIZE**

Established in 1988. To be awarded to a student in an Honours programme in Comparative Literature or Literary Studies who, in the judgment of the Department of Modern Languages, has achieved notable standing in Level II courses in Comparative Literature.

**Value:** \$200 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 EDITH GRACE COOMBS MEMORIAL SCHOLARSHIP**

Established in 1989 by Lois Brown. To be awarded to a full-time or part-time student entering Level IV of an Honours Programme in Art or Art History who, in the judgment of the School of Art, Drama and Music, is outstanding. Preference will be given to a student from the Regional Municipality of Hamilton-Wentworth.

**Value:** \$500 30046 043

**THE BEATRICE CORRIGAN MEMORIAL BOOK PRIZE**

Established in 1980 in memory of Professor Beatrice Corrigan by her friends and colleagues. To be awarded to the student who achieves the highest standing in either ITALIAN 3NN3 or ITALIAN 4R03, or MOD LANG 3SS3.

**Value:** \$75 40004

**THE CRANSTON PRIZES**

Established in 1958 by William H. Cranston of Midland in honour of his parents, J. Herbert Cranston ('05) and Eva Wilkins Cranston ('07). Two prizes to be awarded for excellence in the study of Canadian literature: (a) one for the highest grade in ENGLISH 2G06, and (b) one for the highest grade in ENGLISH 2C03.

**Value:** (a) \$150; (b) \$100 40011

**THE DRAMA BOOK PRIZE**

Established in 1974 by Professor Ronald W. Vince. To be awarded to the student who attains the highest standing in DRAMA 1A06.

40014 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 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 steel castings industry. To be awarded to the student who attains the highest grade in MATLS 3D06 or MATLS 3H03.

**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 and in Level II French.

40017

**THE R. LOUIS GENTILCORE PRIZE**

Established in 1989 by the family and friends of Professor R. Louis Gentilcore on the occasion of his retirement from the Department of Geography. To be awarded to a student in an Honours programme in Geography who, in the judgment of the Department, has demonstrated exceptional achievement in historical-cultural geography.

**Value:** \$400 40062 064

**THE GERMAN EMBASSY BOOK PRIZE**

To be awarded from time to time 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 2E06.

**Value:** \$100 40019

**THE GREEK COMMUNITY OF BURLINGTON AND DISTRICT SCHOLARSHIP**

Established in 1983. To be awarded to the student who obtains the highest standing in GREEK 1Z06.

**Value:** \$250 40020 068

**THE HAMILTON ENGINEERING INSTITUTE PRIZE**

Established in 1962 by the Hamilton Section of the Engineering Institute of Canada and continued by the Hamilton Engineering Institute. To be awarded to the student in Engineering I who attains the highest grade in ENGINEER 1C04.

**Value:** \$250 40023 073

**THE HUGHES SCHOLARSHIP**

Established in 1993 by Heidi Dickensen-Hughes in memory of her husband Peter Hughes ('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 40068 330

**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 for books 40080 394

**THE PAUL HYPHER PRIZE**

Established in 1988 in memory of Paul F. Hypher by his friends and classmates. To be awarded to the student in a programme in Commerce who attains the highest standing in COMMERCE 2MA3.

**Value:** \$150 for books 40039 080

**THE MUNICIPAL CHAPTER OF HAMILTON, IODE, PRIZE**

Established in 1944 by the Municipal Chapter of Hamilton, Imperial Order Daughters of the Empire. To be awarded to the student who attains the highest standing in a Level I History course.

**Value:** \$150 40036 081

**THE INTERNATIONAL (BONN) BOOK PRIZE**

To be awarded from time to time to in-course students for proficiency in German studies.

40024

**THE H.L. JACKSON MEMORIAL SCHOLARSHIP**

Established in 1989 in memory of Professor H.L. Jackson by his friends and colleagues. To be awarded to the student who has completed Level I and at least 60 units of an Honours programme in the Department of Mathematics and Statistics, who in the judgment of the department has demonstrated achievement in MATH 3A06 or 3Q06.

**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

## 276 UNDERGRADUATE AWARDS — SINGLE ACHIEVEMENT

### 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 2B06.

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 ('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 ECON 3J06 (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 Department of Art and Art History, has demonstrated outstanding achievement in ART HIST 3V03.

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 2M06.

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 student who, in the judgment of the Department of History, attains notable standing in HISTORY 2N06.

Value: \$100 40022

### THE JOHN MCDIARMID PRIZE

Established in 1966. To be awarded to the student in Engineering I who obtains the highest standing in PHYSICS 1D03.

Value: \$100 40027 108

### THE JANET MCKNIGHT AWARD

Established in 1994 by faculty, friends and students in memory of Janet McKnight, beloved colleague and teacher, a recognized expert in educational methodology and small-group, problem-based learning. To be awarded to a student entering Level IV of a programme in Nursing who, in the judgment of the School of Nursing has demonstrated notable academic achievement and leadership in clinical and educational aspects of gerontology or, problem-based, self-directed learning in nursing education.

Value: \$400 40077 385

### THE 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: \$175 and book 30107 111

### THE MOFFAT KINOSHITA ASSOCIATES 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 GEOG 4F03; and (b) the student who attains the highest grade in 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 METALL 4C04.

Value: \$100 40061 264

### 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 programme and who attains the highest standing in CERAMICS 3A04.

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 grade in PSYCH 1A06.

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 in SOC SCI 2B06 or SOC SCI 2C03 and 2D03.

Value: \$200 40064 308

### THE DERRY NOVAK SCHOLARSHIP

Established in 1984 by the Political Science alumni and colleagues in honour of Professor Derry Novak. To be awarded to the student in a programme in Political Science who, in the judgment of the Department of Political Science, has achieved high standing in Level III courses in political theory or political philosophy.

Value: \$350 40012 125

### THE CONNIE O'SHAUGHNESSY MEMORIAL PRIZE

Established in 1988 by family, friends and associates of Connie O'Shaughnessy ('88), a part-time student who chose to return to complete her degree on a full-time basis. To be awarded to a student who has completed Level I and 30 to 60 units who, in the judgment of the Selection Committee for Part-Time Awards, has made a significant contribution to the University life of part-time students.

Value: \$375 40009 265

### THE PIONEER GROUP LTD. PRIZE

Established in 1990. To be awarded to a student in a Gerontology programme who, in the judgment of the Gerontology Committee of Instruction, has achieved notable academic standing, and demonstrates practical aptitude for a career in health care of the elderly.

Value: \$400 40058 270

### THE PROCOR LIMITED SCHOLARSHIP

Established in 1962. To be awarded to a student who has completed at least 30 units beyond Level I in a programme in the Department of Modern Languages and who, in the judgment of the Department, has attained notable standing in either MOD LANG 3R03 or MOD LANG 3RR3.

Value: \$150 40042 140

### THE RAND MEMORIAL PRIZE OF CLASS '98

Established by the Class of '98 in Arts, on the occasion of the 25th anniversary of graduation, 1923, in memory of Chancellor Theodore Harding Rand, to encourage original literary work. To be awarded to the student who has completed Level I and 60 to 75 units and who, in the judgment of the Department of English, has made the most notable original contribution to student publications.

Value: \$200 40045

**THE ABRAHAM ROSENBERG MEMORIAL PRIZE**

Established in 1986 by bequest of Abraham I. Rosenberg ('34) of Hamilton and Kitchener. To be awarded to the student who attains the highest standing in ENGLISH 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 the Department of History, attains notable academic standing in at least 9 units of History courses.

Value: \$150 for books. 40075 359

**THE LARRY SAYERS PRIZE IN CHINESE HISTORY**

Established in 1983 in memory of Larry P. Sayers ('82) by his friends. To be awarded to the student who, in the judgment of the Department of History, has demonstrated outstanding achievement in at least six units of courses work in Chinese history.

Value: \$250 40030 149

**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. Five scholarships to be awarded to students in the Labour Studies programme, who in the judgment of the Committee of Instruction for Labour Studies, have achieved notable standing: (a) one to a student entering Level II of a programme in Labour Studies as a full-time student; (b) one to student entering Level II of a programme in Labour Studies as a part-time student; (c) one to a student who has completed Level I and 30-45 units of a programme in Labour Studies as a full-time student; (d) one to a student who has completed Level I and 30-45 units of a programme in Labour Studies as a part-time student; (e) one to a student who has completed Level I and 60-75 units of an Honours programme in Labour Studies.

Value: \$300 each 30099 151

**THE GRACE SENRA-FONTES MEMORIAL PRIZE**

Established in 1989 by the graduating class ('88) in association with the McMaster University Nursing Society and the McMaster Nursing Alumni Executive in memory of Grace Senra-Fontes ('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 standing in BIOLOGY 1A06.

Value: \$125 40059 277

**THE SOCIAL WORK PRIZE**

Established in 1982. To be awarded to the student who attains the highest grade in SOC WORK 2D03.

Value: \$50 40050

**THE ANNE STEIN MEMORIAL PRIZE**

Established in 1971 by friends and colleagues of Anne Stein. To be awarded to the student who successfully completes SOC WORK 3DD3 and attains the highest average in SOC WORK 3D06 in the same session.

Value: \$100 40003

**THE STO PRIZE IN GERONTOLOGY**

Established in 1987 by the Superannuated Teachers of Ontario, District 13. To be awarded to the student who attains the highest standing in GERONTOL 1A06.

Value: \$75 40047 163

**THE SWISS MINISTER TO CANADA BOOK PRIZES**

Established in 1950. To be awarded from time to time to in-course students for proficiency in French, German, or Italian.

40051

**THE KENNETH W. TAYLOR BOOK PRIZE**

Established in 1976 by his children in memory of Dr. Kenneth W. Taylor ('21), LL.D. ('50). To be awarded to the student who, in the judgment of the Department of Economics, has demonstrated outstanding academic achievement in courses within the area(s) of monetary economics and financial institutions and 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 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 UNIVERSITY PRIZES FOR SPECIAL ACHIEVEMENT**

Established in 1973. Two prizes to be awarded in each Faculty and other academic units to students who exhibit exceptional skill and originality in a creative project (such as an essay, poem, sculpture, mathematical or scientific problem, engineering design) or a related series of such projects.

Value: \$150 each 40052

**THE MELINDA WAPSHAW ACHIEVEMENT AWARD**

Established in 1993 by the Labour Studies Student Association and the Labour Studies Programme. To be awarded to a student who has completed Level I and 60-75 units of an Honours Programme in Labour Studies and who, in the judgment of the Committee of Instruction, demonstrates outstanding achievement.

Value: \$ 100 40074 358

**THE RALPH WEEKES SCHOLARSHIP**

Established in 1994 by the Investors Group Financial Services to recognize the accomplishments of Ralph Weekes ('73). To be awarded to a student enrolled in a programme in Economics who, in the judgment of the Department of Economics, has attained notable standing. Preference to be given to a student pursuing studies on a part-time basis.

Value: \$ 300 40073 360

**THE WIDMAIER PRIZES FOR PROFICIENCY IN GERMAN**

Established in 1990 by Dr. and Mrs. F. Widmaier. Two prizes to be awarded to students of GERMAN 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

**E. Awards for Graduating Students**

The following awards are based on competition across the University or within a Faculty or programme.

E.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.

**E.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 Her 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, 4AB3, 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 ('38), D. Litt. ('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 ('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 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 Department of Geography, shows outstanding achievement in studies in climatology. 50009 267

**Value:** \$150 for books

##### 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. 50004

**Value:** \$50

##### 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. 50050 366

**Value:** \$200

##### 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. 50034

**Value:** \$50 for books

##### 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. 50000 017

**Value:** (a) \$75; (b) \$75; (c) \$75

##### 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 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 attains the highest Cumulative Average. 50068 342

**Value:** Medal and Certificate

**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 3AA3, 3AB3, 4AA3 and 4AB3.

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 ('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 LAURA DODSON PRIZE**

Established in 1985 by Laura Dodson ('56). To be awarded to the student graduating from the Honours Arts and Science programme who has displayed outstanding achievement in both arts and science.

Value: \$150 50031 049

**THE HELEN EMERY PRIZE IN ENVIRONMENTAL SCIENCE**

Established in 1990 by Miss Helen Emery of Barrie, Ontario. To be awarded to a student graduating from the Honours Geography and Environmental Sciences programme who has displayed outstanding achievement.

Value: \$250 50053 237

**THE EUROPEAN HISTORY PRIZE**

Established in 1986 by Professor 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 FINANCIAL EXECUTIVES INSTITUTE PRIZE**

Established in 1983 by the Hamilton Chapter of the Financial Executives Institute. To be awarded to the graduating student who, in the judgment of the School of Business, has demonstrated outstanding achievement in courses in finance.

Value: \$500 50019 060

**THE GERONTOLOGY PRIZES**

Established in 1988 by the Pioneer Group Limited. Two prizes to be awarded (a) one to a full-time student and (b) one to a part-time student, both of whom are graduating from a programme in Gerontology who, in the judgment of the Gerontology Committee of Instruction, have demonstrated high academic achievement and leadership in extracurricular activities.

Value: \$100 each 50021 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 ('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 ('78) and Richard Litkowski ('86) in honour of their father. To be awarded to a full-time student graduating from an Honours programme in Political Science who, in the judgment of the Department of Political Science, has demonstrated outstanding academic achievement.

Value: \$350 50032 100

**THE AGNES AND JOHN MACNEILL MEMORIAL PRIZE**

Established in 1946 by bequest of Annie May MacNeill ('03). To be awarded to the student graduating from an Honours programme in English who has attained the most notable standing in English throughout the degree programme.

Value: \$150 50001

**THE CATHERINE MACNEILL PRIZE**

Established in 1946 by bequest of Annie May MacNeill ('03). To be awarded to a woman student in her graduating year who has attained notable standing in scholarship and has shown qualities of leadership.

Value: \$150 50011

**THE ESTHER MCCANDLESS MEMORIAL PRIZE**

Established in 1984 by friends and colleagues in memory of Professor E. L. McCandless, a humanitarian and distinguished member of the Department of Biology from 1964 to 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. ('65), former Deputy Minister of University Affairs and Deputy Minister of Education for the Province of Ontario. To be awarded to a student graduating from a programme in Arts & Science, Humanities, 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 Director 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 '25) and further enlarged in 1950 by A.H. Wilson of Woodstock. To be awarded to the student who attains the highest Cumulative Average in an Honours programme in English.

Value: \$250 50057 279

**THE E.S. MOORE PRIZE IN GEOLOGY**

Established in 1956 by Elwood S. Moore, LL.D. ('55). To be awarded to the student graduating in an Honours programme in Geology who, in the judgment of the Department of Geology, has attained the most notable standing in Geology.

Value: \$150 50015 116

**THE NATIONAL ASSOCIATION OF CORROSION ENGINEERS PRIZE**

Established in 1989 by the Toronto Section of the National Association of Corrosion Engineers. To be awarded to the 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 Psychology; and (d) one to a student in a B.Sc. programme in Psychology who has completed the programme primarily on a part-time basis.

**Value:** \$50 each 50040 280

**THE ONTARIO ASSOCIATION OF PROFESSIONAL SOCIAL WORKERS PRIZE**

Established in 1986 by the Hamilton Branch. To be awarded to the graduating student who attains the highest average in SOC WORK 4D06 and 4DD6.

**Value:** \$125 50037 126

**THE ONTARIO PHYSIOTHERAPY ASSOCIATION BOOK PRIZE**

Established in 1985 by the Ontario Physiotherapy Association (Hamilton Branch). To be awarded to the student who has attained the highest Cumulative Average in the Physiotherapy programme.

**Value:** \$100 for books 50038 128

**THE HARRY L. PENNY PRIZE**

Established in 1984 in recognition of Professor Harry L. Penny, founding Director of the School of Social Work, for his outstanding contribution to the School. To be awarded to the student with the highest Cumulative Average in a Social Work programme.

**Value:** \$50 50023

**THE PIONEER GROUP PRIZE IN NURSING**

Established in 1989 by the Pioneer Group Limited in conjunction with the R. Samuel McLaughlin Centre for Gerontological Health Research. Two prizes to be awarded to students graduating from the Nursing programme who, in the judgment of the School of Nursing, have achieved notable standing and demonstrated 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. or B.Sc. programme in Geography; and (d) one to the student who, in the judgment of the Department of Geography, has demonstrated outstanding achievement in 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, Honours Chemistry and Geology, 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 HISTORY 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 ('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.

- F.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).
- F.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.
- F.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 Occupational Therapy and Physiotherapy, is most outstanding in the theory component of the Occupational Therapy programme.

**Value:** \$75 50065 316



**THE PHYSIOTHERAPY SECTION OF THE CANADIAN LUNG ASSOCIATION BOOK PRIZE**

Established in 1992 by the Canadian Physiotherapy Association. To be awarded to the graduating student who has attained the highest Cumulative Average in the Physiotherapy programme.

Value: \$150 50063315

**THE CANADIAN PHYSIOTHERAPY CARDIO-RESPIRATORY SOCIETY BOOK PRIZE**

Established in 1992 by the Canadian Physiotherapy Cardio-Respiratory Society. To be awarded to a graduating student who, in the judgment of the School of Occupational Therapy and Physiotherapy, has demonstrated notable academic achievement and excellence in clinical fieldwork related to cardio-respiratory physiotherapy.

Value: \$60 50066314

**THE HAMILTON DISTRICT ONTARIO PHYSIOTHERAPY ASSOCIATION BOOK PRIZE**

Established by the Hamilton District of the Ontario Physiotherapy Association. To be awarded to a student graduating from the Physiotherapy programme who has attained the highest Cumulative Average.

Value: \$.150 50074362

**THE HOMEWOOD AWARD**

Established in 1987 at Mohawk College by the Occupational Therapy Department of Homewood Sanatorium and transferred to McMaster University in 1992. To be awarded to the student completing Block IV of the B.H.Sc. (OT) programme who, in the judgment of the School of Occupational Therapy and Physiotherapy, has demonstrated outstanding academic achievement and excellence in clinical fieldwork related to psychiatry.

Value: \$100 40065306

**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 50064317

**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 Occupational Therapy and Physiotherapy, has demonstrated notable academic achievement and excellence in clinical fieldwork related to neurology.

50073354

**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 50037126

(The above award is offered in addition to the award in Category E with the same name and terms.)

**THE OT/PT CLINICAL EDUCATION AWARD**

Established in 1994. To be awarded to the graduating student who, in the judgment of the School of Occupational Therapy and Physiotherapy, best demonstrates excellence in clinical fieldwork throughout the programme.

Value: \$500 50070352

**THE PHYSIOTHERAPY STUDENT LIFE AWARD**

Established in 1994. To be awarded to the graduating student who, in the judgment of the School of Occupational Therapy and Physiotherapy, has achieved notable academic standing and who best demonstrates leadership and initiative in contributing to student life while enrolled in the Physiotherapy programme.

Value: \$500 50071353

**THE SMITH AND NEPHEW INC. AWARD**

Established in 1991. To be awarded to the student completing Year I of the B.H.Sc. (OT) programme who, in the judgment of the School of Occupational Therapy and Physiotherapy, has demonstrated outstanding academic achievement and excellence in clinical fieldwork.

Value: \$75 40066307

**The following awards are cross-listed with Section 2, Category D; see latter section for description of terms.**

- > THE ALUMNI SOCIAL WORK PRIZE
- > THE ABE BLACK MEMORIAL PRIZE
- > THE CANADIAN INSTITUTE OF INTERNATIONAL AFFAIRS PRIZE
- > THE JAMES ROBERTSON CARRUTHERS MEMORIAL PRIZE
- > THE COMPARATIVE LITERATURE PRIZE
- > THE CITIZEN ACTION GROUP PRIZE
- > THE CONSUL GENERAL OF ITALY BOOK PRIZE
- > THE BEATRICE CORRIGAN MEMORIAL BOOK PRIZE
- > THE CRANSTON PRIZES
- > THE ENVIRONMENTAL ISSUES PRIZE
- > THE NEIL FORSYTH PRIZE
- > THE GILMOUR MEMORIAL PRIZE
- > THE INTER NATIONES (BONN) BOOK PRIZE
- > THE JEAN JONES PRIZE
- > THE SAM LAWRENCE PRIZE
- > THE LINGUISTICS PRIZE
- > THE MacGIBBON SCHOLARSHIP
- > THE WILLIAM MACKENZIE MEMORIAL PRIZE
- > THE ELEANOR DORNBUSH MARPLES PRIZE IN ART HISTORY
- > THE ELEANOR DORNBUSH MARPLES PRIZE IN DRAMA
- > THE H.W. McCREADY PRIZE IN BRITISH HISTORY
- > THE MCKNIGHT SCHOLARSHIP
- > THE MCMASTER NURSING ALUMNI PRIZE
- > THE CONNIE O'SHAUGHNESSY MEMORIAL PRIZE
- > THE PIONEER GROUP LTD. PRIZE
- > THE PROCOR LIMITED SCHOLARSHIP
- > THE ABRAHAM ROSENBERG MEMORIAL PRIZE
- > THE NOEL SANDUSKY MEMORIAL BOOK PRIZE
- > THE LARRY SAYERS PRIZE IN CHINESE HISTORY
- > THE LARRY SEFTON SCHOLARSHIP
- > THE GRACE SENRA-FONTES MEMORIAL PRIZE
- > THE ANNE STEIN MEMORIAL PRIZE
- > THE SWISS MINISTER TO CANADA BOOK PRIZES
- > THE KENNETH W. TAYLOR BOOK PRIZE
- > THE JOHN TOTH MEMORIAL PRIZE
- > THE JOHN H. TRUEMAN PRIZE
- > THE THOMAS TRUMAN MEMORIAL SCHOLARSHIP
- > THE UNIVERSITY PRIZES FOR SPECIAL ACHIEVEMENT
- > THE MELINDA WAPSHAW ACHIEVEMENT AWARD
- > THE RALPH WEEKES SCHOLARSHIP
- > THE R.M. WILES MEMORIAL BOOK PRIZE

**SECTION 3. INDEX OF AWARDS**

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<b>B</b> Business	<b>N</b> Nursing
<b>E</b> Engineering	<b>AS</b> Arts & Science Programme
<b>H</b> Humanities	<b>HS</b> Health Sciences
<b>S</b> Science	<b>U</b> University-wide
<b>SS</b> Social Sciences	<b>OT/PT</b> Occupational Therapy/Physiotherapy

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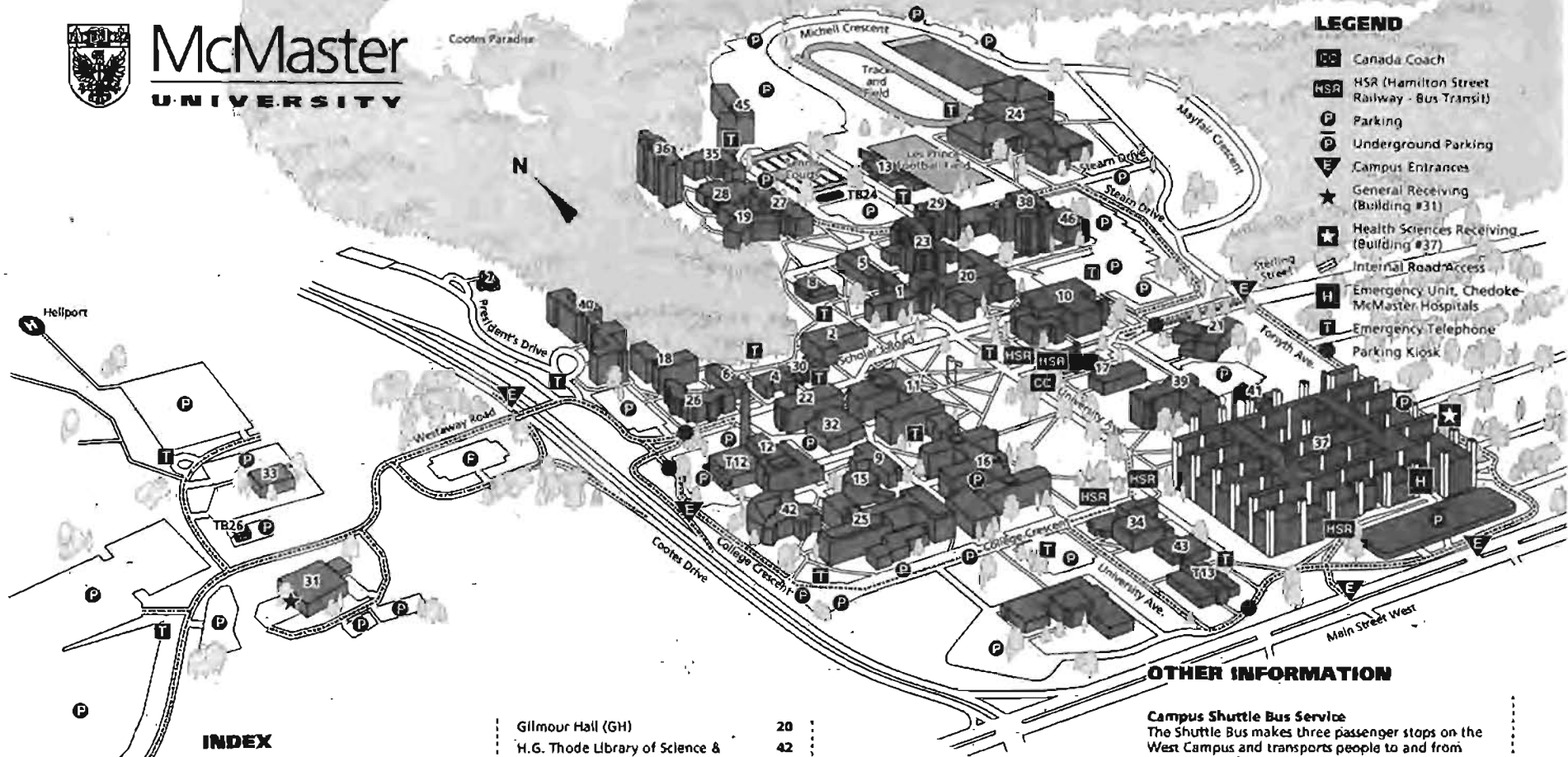
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# McMaster UNIVERSITY



- LEGEND**
- CC Canada Coach
  - HSR HSR (Hamilton Street Railway - Bus Transit)
  - P Parking
  - P Underground Parking
  - E Campus Entrances
  - ★ General Receiving (Building #31)
  - ★ Health Sciences Receiving (Building #37)
  - H Internal Road Access
  - H Emergency Unit, Chedoke McMaster Hospitals
  - T Emergency Telephone
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- Hamilton/Scourge Project Lab TB26

**OTHER INFORMATION**

- Campus Shuttle Bus Service**  
The Shuttle Bus makes three passenger stops on the West Campus and transports people to and from University Hall, the Health Sciences Centre and A.N. Bourns Science Building.
- Security**  
E.T. Clarke Centre (2nd Floor) 525-9140, ext. 24284
- Parking**  
E.T. Clarke Centre, Room 102, ext. 24232
- Lost and Found**  
E.T. Clarke Centre (2nd Floor), ext. 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 Office for Ability and Access, Kenneth Taylor Hall, Room 118, ext. 24028.





