

McMaster University Undergraduate Calendar 1992-1993

This Calendar covers the period from September 1992 to August 1993.

Arts and Science, Business, Engineering, Health Sciences, Humanities, Science and Social Sciences.

The University reserves the right to change information contained in this calendar, and, because of resource limitations, reserves the right to limit enrolment in or admission to any course or programme at any Level. The timetable which is published annually should be used to determine:

1. if a course is to be offered, and
2. the term in which a course is to be offered.

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Directory for Correspondence and Enquiries

Mailing Address: McMaster University
Hamilton, Ontario L8S 4L8
Telephone: Area Code 416, Number 525-9140

The following is a list of University offices (with the appropriate postal code) and Administrative staff members that are most frequently called on. Other offices and services are described throughout the Calendar with their addresses and telephone numbers.

Admission to Undergraduate Studies

Associate Registrar (Liaison and Admissions): Ann McLaughlin
Assistant Registrar (Admissions): Liz McCallum
Admission and Calendar Officer: Lynn Giordano
Gilmour Hall, Room 120 L8S 4L8 extn. 4796

Health Sciences Admissions

Associate Registrar (Health Sciences): Laurel Stuart
Health Sciences Centre, Room 1B7 L8S 4J9 extn. 2114

Student Liaison

Assistant Registrar (Liaison): Laurie Deans
Liaison Officers: Michael Markowski, Craig Harris
Gilmour Hall, Room 102 L8S 4L8 extn. 4787

Student Financial Aid and Scholarships

Director: John Edwards
Coordinator: Denise Ellis
Hamilton Hall, Room 401 L8S 4K1 extn. 4319, 4789

Transcripts and Records

Associate Registrar (Systems and Records): Helen Barton
Assistant Registrar (Records): Darlene Russell
Gilmour Hall, Room 108 L8S 4L8 extn. 4457

Examinations, Schedules and Reservations

Associate Registrar (Systems and Records): Helen Barton
Assistant Registrar (Schedules and Examinations): Rosemary Viola
Gilmour Hall, Room 107 L8S 4L8 extn. 4453

School of Graduate Studies

Gilmour Hall, Room 110 L8S 4L8 extn. 3679

Centre for Continuing Education

Commons Building, Room 116 L8S 4K1 extn. 4321

Arrangements for Disabled Persons

Co-ordinator for the Disabled: Tim Nolan
Gilmour Hall, Room 109B L8S 4L8 extn. 4339

Alumni Association

Alumni Memorial Building, Room 203 L8S 4K1 extn. 2604
Director of Alumni Advancement: Roger Trull
Chester New Hall, Room 111 L8S 4L9 extn. 3804

Dean of Student Affairs

Dean: Rudy Heinzl
Hamilton Hall, Room 312 L8S 4K1 extn. 4649

On-campus Housing (Residence)

Director of Housing and Food Services: Ron Coyne
Manager, Residence Admissions: Leanne Piper
Commons Building, Room 101 L8S 4K1 extn. 4223

Off-campus Housing

Wentworth House, Room 118 L8S 4K1 extn. 4086

Counselling and Career Services

Director of Counselling and Career Services: Dr. W. Wilkinson
Hamilton Hall, Room 302 L8S 4K1 extn. 4711

Employment Opportunities

Placement Office
Hamilton Hall, Room 409 L8S 4K1 extn. 4253

Advice for Overseas Students

International Students' Advisor: Pat J. Fernando
Divinity College, Room 146 L8S 4K1 extn. 4748

Grievances

Secretary of the Senate: Joan Morris
Gilmour Hall, Room 104 L8S 4L8 extn. 4337

Ombuds Office

Ombudsman: Rick Russell
Hamilton Hall, Room 217 L8S 4K1 extn. 2003

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

Other Publications

UNDERGRADUATE STUDIES

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

The above publications are all 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 School of Business

Post-Graduate Medical Programme Calendar available from the Health Sciences Registry, in the Health Sciences Complex, Room 1B7.

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

CERTIFICATE AND PROFESSIONAL STUDIES

Part-time Studies Calendar, which describes professional designations, certificate and correspondence programmes, 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.

Using the Calendar

The information in this Calendar is arranged in the sequence most appropriate for use by a prospective or current student.

The first sections describe procedures and regulations that apply University-wide. These are *Sessional Dates*, *Application and Admission Procedures*, *Academic Regulations*, *Senate Policy Statements*, and *Financial Information*.

The next sections start with a summary of the various degree programmes offered by each Faculty, followed alphabetically by the sections the *Arts and Science Programme* and six Faculties: *Business*, *Engineering*, *Health Sciences*, *Humanities*, *Science* and *Social Sciences*. Each section describes specific Faculty regulations and the undergraduate degree programmes by department. The programme descriptions specify which courses and what academic standing is required in order to satisfy the University's requirements for awarding a Bachelor's degree.

After consulting the programmes, you will note that some courses are 'Required' and some are 'Electives'. To determine the prerequisite requirements you must meet in order to register for a specific course, you should then look at the section *Course Listings*. The course listing is presented alphabetically by subject and department.

At the back of the Calendar there are two sections of information about the University services, the libraries, residences, research laboratories, computing facilities, and student activities and organizations.

The next section *Undergraduate Academic Awards*, lists all the awards and scholarships offered to undergraduate students by McMaster University. The regulations governing these awards are also described.

Bursaries and loan funding is presented next under *Student Financial Aid*.

To locate information about a specific subject, you should consult the *Index* at the back of the Calendar.



McMaster University

During 1987, McMaster University proudly celebrated one hundred years of active life in post secondary education, during which it grew to be one of the leading universities in Canada.

Named after Senator William McMaster, who bequeathed funds to endow a 'Christian school of learning', McMaster University grew out of educational work initiated by Baptists in central Canada as early as the 1830's. After its initial years in Toronto from 1887 to 1930, the University was moved to Hamilton and became non-denominational in 1957, although the historic Baptist connection continues through the separately incorporated McMaster Divinity College. Over 12,000 full-time students attend McMaster University, 1,500 of whom are pursuing advanced degrees offered through the School of Graduate Studies. In addition, about 3,000 part-time students are registered in the Winter Session from September to April, and 2,500 in the Summer Session from May to August. The University also provides courses in centres located outside Hamilton, for which full credit is granted.

McMaster University is a medium-sized, full service university offering educational programmes through six Faculties. The extensive activity in research supported by over \$65 million in grants and contracts means that there are first-class libraries and sophisticated facilities. Undergraduate teaching is conducted through the School of Business, Faculties of Engineering, Health Sciences, Humanities, Science, and Social Sciences, and the distinctive Arts and Science programme. The Department of Physical Education, and the School of Social Work are part of the Faculty of Social Sciences.

The Faculty of Humanities offers programmes in Art, Art History, Classics, Greek, Latin, Comparative Literature, Drama, English, French, History, Japanese 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 at a university in a country approved by the Faculty.

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 Physical Education the B.P.E. degree.

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

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 degree may be earned in Occupational Therapy or Physiotherapy.

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

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

Most of the 1000 members of the University faculty hold doctoral degrees in the areas of their specialization. Faculty members are expected to teach both graduate and undergraduate courses and may be involved in the academic counselling of students.

The diverse academic programmes of the University 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, an art gallery 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, and support academic and non-academic applications. The Faculty of Engineering has made special arrangements for students to lease-purchase microcomputers.

The recreation and intramural programmes offer more than 30 different sports in which over 5,000 students participate. The Intercollegiate Athletic Programme provides 17 sports for men and 15 for women. The athletic facilities include a 50-metre pool, a newly-surfaced 400 metre all-weather track as well as fully equipped laboratories for exercise, physiology and biomechanics.

The University is located on an attractive campus beside the Royal Botanical Gardens at the western end of Lake Ontario. The campus is reserved for pedestrian traffic. Residential accommodation on the campus is available for about 2,765 students and includes men's and women's residences as well as co-educational facilities.

Access to downtown Hamilton and the activities that a major city has to offer is easy. As part of the extensive downtown redevelopment, new facilities, which support the cultural life of the city, have been constructed in recent years. These include an Art Gallery, a Convention Centre, Hamilton Place, an auditorium which seats over 2,400 persons and includes a studio theatre, and most recently a major arena, the Copps Colliseum. The public library includes teaching facilities, and a Downtown Information Centre operated jointly by McMaster University and Mohawk College.

Sessional Dates

For the purpose of teaching the academic year is divided into sessions as shown on the chart below.

The Winter Session, from September to April, is the session in which most undergraduate students register and classes are offered in both day and the evening.

The February to July (Evening) Session offers courses at various times during the six-month period.

Summer (Day) Session starts at the beginning of July and ends in mid-August.

All Application Deadlines appear below the chart.

The 1992-93 Academic Year Divided by Session and Term

The number in the bottom left corner of each block is the start date for that term.

The number in the bottom right corner of each block is the end date of that term, including the examination period.

SESSION	TERMS	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
WINTER (Day and Evening) SESSION	Term 1	10			11								
	Term 2					1							
	Term 3	10											
FEBRUARY to JULY (Evening) SESSION	Term A												
	Term B												
	Term C												
	Term D												
	Term E												
SUMMER (Day) SESSION	Term 1												
	Term 2												
	Term 3												

APPLICATION DEADLINES

(See also the section *Application Procedures*)

Winter Session - September Entry

All undergraduate programmes not mentioned below	July 15
Medicine November	1
Occupation Therapy/Physiotherapy Second Degree	January 15
Nursing (other than OAC)	February 15
Social Work	March 1
Labour Studies	April 15
Gerontology	April 15
Women's Studies	April 15
Nursing (OAC)	May 1

Winter Session - January Entry

All eligible programmes	November 30
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February to July Session

February entry	January 10
May entry	April 15
June entry	May 31

Summer Day Session

All eligible programmes	May 31
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CONVOCATIONS

Last day to file a Graduation Information Card for Autumn 1992 Convocation	Friday September 11
Autumn 1992 Convocation (all Faculties)	Friday November 13
Last day for changing Programme for Spring 1993 Convocations	Friday February 12
Last day to file a Graduation Information Card for Spring 1993 Convocations	Friday February 12
Health Sciences Convocation 1993	Friday May 14
Spring Convocations 1993	Thursday June 3 to Saturday June 5
Last day to file a Graduation Information Card for Autumn 1993 Convocation	Friday September 10
Autumn 1993 Convocation (all Faculties)	Friday November 12 (subject to approval)

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.

Extensive construction will be occurring on-campus over the next few years. The University will do its utmost to minimize any disruption.

WINTER SESSION 1992-1993 (DAY and EVENING)

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

	Term 1	Term 2	Term 3
Level I Early Registration	Friday August 14 and Saturday August 15	Friday August 14 and Saturday August 15	Friday August 14 and Saturday August 15
Registration (all Levels)	Friday Sept. 4, Tuesday Sept. 8, Wednesday Sept. 9	Friday Sept. 4, Tuesday Sept. 8, Wednesday Sept. 9	Friday Sept. 4, Tuesday Sept. 8, Wednesday Sept. 9
Classes begin	Thursday September 10	Monday January 4	Thursday September 10
Last day for registration and adding courses	Wednesday September 23	Wednesday January 13	Wednesday September 23
Last day to withdraw without failure by default	Friday October 16	Friday February 12	Friday February 12
Thanksgiving - no classes	Monday October 12		Monday October 12
Mid-term recess		Mon. Feb. 22 to Sat. Feb. 27	Mon. Feb. 22 to Sat. Feb. 27
Good Friday - no classes		Friday April 9	Friday April 9
Examination ban - no tests or examinations may be held during class time	Mon. Nov. 30 to Sat. Dec. 5	Fri. April 2 to Sat. April 10	Fri. April 2 to Sat. April 10
Classes end	Saturday December 5	Thursday April 8	Thursday April 8
Winter Session Examinations			
Mid-Session Tests (Level I Courses)			Mon. Dec. 7 to Sat. Dec. 19
Final Examinations	Mon. Dec. 7 to Sat. Dec. 19	Mon. Apr. 12 to Thurs. Apr. 28	Mon. Apr. 12 to Thurs. Apr. 28
Deferred Examinations			
Last day to confirm intent to write deferred exams from Winter Session 92/93	Friday February 12, 1993	Friday June 25, 1993	Friday June 25, 1993
Deferred exams from Winter Session 92/93	Mon. Apr. 12 to Wed. Apr. 28	Mon. July 26 to Thurs. July 29	Mon. July 26 to Thurs. July 29

FEBRUARY TO JULY (EVENING) SESSION 1993

	Term A 6-unit courses 1 night per week	Term B 3-unit courses 1 night per week	Term C 6-unit crs., 2 nights/wk 3-unit crs., 1 night/wk	Term D 3-unit courses 2 nights per week	Term E 3-unit courses 2 nights per week
Classes begin	Mon. Feb. 1	Mon. Feb. 1	Mon. May 3	Mon. May 3	Mon. June 14
Last day for registration and adding courses	Fri. Feb. 12	Fri. Feb. 12	Fri. May 7	Fri. May 7	Wed. June 16
Last day to withdraw without failure by default	Fri. May 21	Fri. March 19	Fri. June 25	Fri. May 21	Fri. July 2
Mid-term recess	Mon. Feb. 22 to Sat. Feb. 27	Mon. Feb. 22 to Sat. Feb. 27			
Good Friday - no classes	Fri. April 9	Fri. April 9			
Victoria Day - no classes	Mon. May 24		Mon. May 24	Mon. May 24	
Canada Day (July 1) - no classes	Thurs. July 1		Thurs. July 1		Thurs. July 1
Classes end	Fri. July 23	Fri. Apr. 30	Fri. July 23	Fri. June 11	Fri. July 23
Examinations	Mon. July 26 to Thurs. July 29	Fri. Apr. 30 to Sat. May 1	Mon. July 26 to Thurs. July 29	By instructor	Mon. July 26 to Thurs. July 29
Last day to confirm intent to write deferred exams	Fri. Oct. 22	Fri. June 25	Fri. Oct. 22	Fri. Oct. 22	Fri. Oct. 22
Deferred examinations	Dec. 1993 Exam Period	Mon. July 26 to Thurs. July 29	Dec. 1993 Exam Period	Dec. 1993 Exam Period	Dec. 1993 Exam Period

SUMMER (DAY) SESSION 1993

	Term 1 3-unit courses 3 hours, daily	Term 2 3-unit courses 3 hours, daily	Term 3 6-unit courses 3 hours, daily
Classes begin	Monday July 5	Monday July 26	Monday July 5
Last day for registration and adding courses	Tuesday July 6	Tuesday July 27	Tuesday July 6
Last day to withdraw without failure by default	Friday July 9	Friday July 30	Friday July 30
Civic Holiday - no classes		Monday August 2	Monday August 2
Classes end	Friday July 23	Monday August 16	Monday August 16
Examinations		Last day or as arranged by instructor	
Last day to confirm intent to write deferred examinations	Friday October 22	Friday October 22	Friday October 22
Deferred examinations	Dec. 1993 Exam Period	Dec. 1993 Exam Period	Dec. 1993 Exam Period

Application Procedures

PROGRAMMES ENTERED IN LEVEL I

McMaster University has the following Level I programmes: Arts and Science I, Business I, Engineering I, Humanities I, Music I, Nursing I, Physical Education I, Natural Sciences I and Social Sciences I.

DEADLINES

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

All of the programmes have limited admission and may be full before the deadlines given below. *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 on page 4, Sessional Dates.*

RETENTION OF STUDENT DOCUMENTS

All documentation which applicants submit to the University in support of applications for admission becomes property of the University.

Documentation submitted by applicants who are not accepted, or by applicants who fail to enrol following acceptance, is normally destroyed at the end of each admissions cycle. Students who reapply subsequently will have to resubmit any additional academic information and must resubmit any documentation submitted previously.

FORMER MCMASTER STUDENTS

If you have previously registered at McMaster, but did not attend last year, you should contact with the Associate Dean (Studies) of the appropriate Faculty. *If you are intending to return to the School of Business or Faculty of Science, this contact is required.* You may be required to write a letter in order to seek readmission, unless five years have passed since your last registration.

If five years have passed since you last registered at McMaster, you will be required to follow the current regulations and curriculum. You must obtain and complete an application form from the Admissions Office (Gilmour Hall, Room 120, telephone (416) 525-9140 extension 4796). Your application will be considered by the appropriate Faculty committee.

APPLICANTS WITH DISABILITIES

The University encourages disabled persons to apply for admission to its programmes. All students are expected to satisfy the normal requirements for courses and programmes (including final examinations), although the Associate Deans (Studies) may authorize special arrangements to assist students to complete assignments, tests and examinations. Some programmes may include requirements which cannot be met by some people. Nevertheless in selected programmes an adapted course of study may be prescribed by the Associate Dean (Studies) on behalf of the Faculty following discussion with the student. Although there are many obstacles to overcome, experience has shown that students with various disabilities have been able to complete a variety of programmes at McMaster.

Applicants with disabilities are encouraged to contact the Co-ordinator for the Disabled, (Office of the Registrar, Gilmour Hall Room 109B, telephone (416) 525-9140 extension 4339) who will discuss their programmes of study and other aspects of university life, and will identify the faculty advisers to whom they should speak. Information on sources of financial assistance is also available.

A student of McMaster who incurs a permanent or temporary disability while enrolled at McMaster should consult the Associate Dean (Studies) of his or her Faculty to determine whether special arrangements can be made to enable that student to continue the course of studies in which he or she is enrolled.

ACADEMIC COUNSELLING FOR THOSE OFFERED ADMISSION

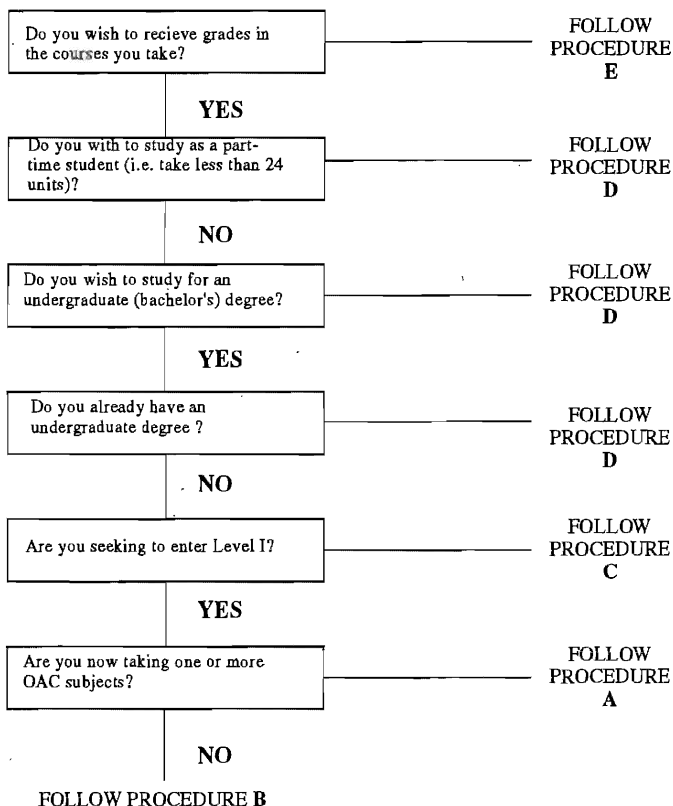
If you are offered **full-time admission to Level I**, you will be asked to confirm that you have accepted the offer of admission and will attend the University. When we receive your acceptance of our offer, we will send you a Registration Kit with information about the University, academic counselling and registration procedures.

Each Faculty also makes arrangements for students to visit the University and meet with a Faculty advisor to set up their programmes. Though 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 time of September registration.

If you are offered **admission above Level I**, you may contact the Office of the Associate Dean (Studies) of the Faculty offering the programme or the Office of the Director of the programme for academic counselling as soon as you are admitted.

APPLICATION PROCEDURES

The application procedures differ according to your current academic qualifications and your ultimate goals. You may determine the procedure you have to use by answering each of the questions below in sequence until you are directed to the procedure you must follow.



ENQUIRIES

The *Directory for Correspondence and Enquiries* on page 2 of this Calendar, provides a list of University offices and Administrative staff members to whom you may direct specific queries.

ADMISSIONS OFFICE
Gilmour Hall, Room 120
McMaster University
Hamilton, Ontario L8S 4L8

Please call (416) 525-9140, extension 4796

PROCEDURE A:

This procedure applies to applicants who are now taking one or more **Ontario Academic Courses (OACs)** in day school and wish to enter a **full-time** degree programme.

Application forms (OUAC 101) are available from your guidance office. You should choose one of the following programmes and complete the form:

PROGRAMME	OUAC PROGRAMME CODE
Arts and Science I (Special Programme)	MX
Business I	MB
Engineering I	ME
Humanities I	MH
Humanities I (Fine Art)	MHA
Music I	MM
Natural Sciences I	MS
Nursing I	MN
Physical Education I	MR
Social Sciences I	ML

Send the form and the application fee to the Ontario Universities' Application Centre. We acknowledge every application.

PROCEDURE B:

This procedure applies to applicants who wish to enter Level I of a **full-time degree** programme, **but** who are **not currently** taking one or more **Ontario Academic Courses (OACs)** in day school.

It also applies to all **out-of-province** applicants who wish to enter Level I of a **full-time** degree programme.

Obtain an application form (OUAC 105) from the Ontario Universities' Application Centre or from the Admissions Office, Gilmour Hall, Room 120. You should choose one of the following programmes and complete the form:

PROGRAMME	OUAC PROGRAMME CODE
Arts and Science I (Special Programme)	MX
Business I	MB
Engineering I	ME
Humanities I	MH
Humanities I (Fine Art)	MHA
Music I	MM
Natural Sciences I	MS
Nursing I	MN
Physical Education I	MR
Social Sciences I	ML

Send the form and the application fee to the Ontario Universities' Application Centre.

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

Students who are attending, or have attended, secondary school in another province may have to obtain the transcript of secondary school marks from the Ministry or Department of Education for that province.

If you:

1. do not have the required OAC standing or its equivalent; and
 2. will be 21 years or older in the calendar year in which you plan to start your University courses; and
 3. have not attended secondary school as a full-time student for at least two years,
- you may qualify for entry as a **Special Student**. If so, refer to the Special Student section on page 10 of this Calendar.

PROCEDURE C:

This procedure applies to applicants who seek to enter a **full-time** degree programme **above Level I**.

Obtain an application form (OUAC 105) from the Admissions Office, Gilmour Hall, Room 120.

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.

PROCEDURE D:

This procedure applies to applicants who wish to enter as:

1. **part-time** students; or
2. **non-degree** students (Occasional, Continuing, or Post-Degree); or
3. students taking work for **credit at another university**; or
4. **second-degree** candidates.

All those listed, *except* Post-Degree applicants, must obtain a McMaster application form from the Admissions Office, Gilmour Hall, Room 120. You will be provided with more information on application procedures at that time.

Post-Degree applicants must obtain the appropriate application form from the Graduate Studies Office, Gilmour Hall, Room 110.

PROCEDURE E:

This procedure applies to applicants who wish to register as **Listeners**. Listeners may attend classes, but do not write assignments or examinations. A Listener does not receive a grade for the course.

To register as a Listener, write, visit or telephone the Centre for Continuing Education, Commons Building, Room 116, Hamilton, Ontario L8S 4K1 (416) 525-9140, extension 4321.

PROGRAMMES ENTERED ABOVE LEVEL I

Health Sciences: The *Faculty of Health Sciences* section in this calendar provides detailed information about the curriculum and admission requirements for the 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 for those with prior university work, as well as diploma RN's.

The appropriate application forms may be obtained from the Admissions-Records Office (Health Sciences), at the Health Sciences Centre, Room 1B7, or by calling (416) 525-9140, extension 2114.

Social Work: Students enter the Social Work programme in Level II. Admission to the Combined B.A. and Social Work Programme is by selection. Applicants must have completed, or be completing, 30 units of work including Psychology 1A06 and Sociology 1A06 and normally with a University Average of at least 6.0.

Students **enrolled at McMaster** who are interested should apply directly to the School of Social Work prior to March 1.

Students wishing to apply for **transfer from another university** are required to complete a two-tier application procedure. This is explained in the section *Faculty of Social Sciences, School of Social Work* in this calendar.

Admission Requirements

The University reserves the right to change any information contained in this section at any time without notice.

All Level I programmes have limited enrolment and admission is made by selection. Thus possession of the minimum admission requirements does not guarantee admission.

Admission from Ontario Secondary Schools

To be considered for admission, an applicant must satisfy not only the general requirements of the University, but also the subject requirements for the specific programme you applied to.

For an applicant from an Ontario secondary school there are *three* requirements:

1. the Ontario Secondary School Diploma with acceptable standing; and
2. a 'weighted average' in the 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 obtained is included in the average for admission. Alternatively, the applicant 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 the 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 supplied by secondary schools in April and may be granted to an applicant who expects to acquire final standing later in the year.

An applicant granted Early Admission must successfully complete six Ontario Academic Courses (OACs) including all required subjects. In addition the applicant will be expected to meet the minimum average required for the chosen programme. The University reserves the right to withdraw offers of admission to an applicant who does not meet the minimum final average prescribed for the programme, who has not received the Ontario Secondary School Diploma, or who has not responded within the two week response period. Final marks are reported to the University in mid-July for students registered in OACs, but applicants may submit such marks directly to the Admissions Office.

An applicant who has final standing in each of the OACs required to enter the chosen McMaster University programme may be granted Final Admission.

Subject Requirements for Specific Level I Programmes

ARTS AND SCIENCE I (Special programme)

Applicants are required to submit a completed Supplementary Application, normally by April 1st. 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 80's or higher. The following are the minimum requirements.

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

Candidates without these qualifications who nevertheless provide evidence of unusual promise will also be considered.

BUSINESS I

The specific percentage required for admission to Business I varies 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. Calculus or OAC Finite Mathematics is preferred.
3. Completion of additional OACs to total six credits, with a minimum overall average of 70.0%.

Although the stated minimum is 70.0%, in recent years an average in the mid-70's has been required for an offer of Early Admission in June.

ENGINEERING I

Applicants are required to submit a completed Supplementary Application, normally by May 15. The information provided is utilized as part of the selection process. The following are the minimum requirements.

1. One of OAC English I, OAC anglais I or OAC anglais II.
2. Calculus.
3. Algebra and Geometry.
4. Chemistry
5. Physics
6. Completion of one additional OAC to total six credits with a minimum overall average of 75.0%.

HUMANITIES I

Although the minimum average required for admission is 70.0% on six OACs, it is anticipated that an average greater than 70.0% will be required to receive an offer of admission. The following are the minimum requirements.

1. One of OAC English I, anglais I or anglais II, with a grade of at least 65.0%.
2. Completion of additional OACs to total six credits.

No more than two OACs in any one subject as defined by the McMaster University Subject Area Listing will be accepted. This listing is available in secondary school guidance offices.

The Faculty of Humanities strongly recommends that students 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: An applicant intending to take Art 1F06 must present a portfolio by April 30 and be interviewed by the Department of Art and Art History. The portfolio should contain a variety of original works in different media including works derived from both first hand observation and the imagination. During the interview an applicant may be asked to do some drawing as an additional means of demonstrating skills and interests. Late applications may be considered if places are available in the class. *Applicants for this course should use the MHA OUAC code.*

MUSIC I

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 the candidate's 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.

Those applying for Music I must make arrangements with the Department of Music for the audition.

NATURAL SCIENCES I

Students with a weighted OAC average of 75.0% or better have a good chance of success in science programmes and will be given priority. The following are the minimum requirements.

1. OAC Calculus.
2. One of OAC Algebra and Geometry, or OAC Finite Mathematics.
3. Two of OAC Biology, OAC Chemistry, OAC Physics.
4. One of OAC English I, OAC anglais I or OAC anglais II.
5. Completion of one additional OAC to total six credits.
6. An average acceptable to the Faculty in the four credits specified in points 1, 2, and 3 above. (In the last five years an average of at least 70.0% has been required.)
7. An average acceptable to the Faculty in the best six OAC credits (which must include the four OACs specified in points 1, 2 and 3 above).

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

Possession of the minimum requirements does not guarantee admission. The minimum requirements are:

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, OAC Functions and Relations.
4. One of OAC Biology, or OAC Physics.
5. Completion of two additional OACs to total six credits.

Note: Application to the programme must be made within two years of completion of the OAC requirements.

Deadlines: *OAC applications* must be postmarked no later than **May 1** in the year in which study is to commence. *Non-OAC applications* (as described in the Section *Faculty of Health Sciences, School of Nursing*) must be postmarked no later than **February 15** in the year in which study is to commence.

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

PHYSICAL EDUCATION I

Although the minimum average required for admission is 70.0% (to be computed on the six highest OACs), it is anticipated that an average greater than 75.0% will be required for an offer of admission. Required:

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

It is strongly recommended that one of Biology, Chemistry, or Physics be included by potential applicants in their OACs.

SOCIAL SCIENCES I

Although the minimum average required for admission is 70.0% (to be computed on the six highest OACs), it is anticipated that an average greater than 70.0 will be required for an offer of admission. Required:

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

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

PROGRAMME TRANSFER AFTER ADMISSION

Students who have been admitted to one programme and subsequently wish to transfer to another may be able to do so, provided they have met

the subject requirements for the second programme and a place is available. Students wishing to make such a transfer should consult the Admissions Office.

Admission With Other Qualifications

A. ADMISSION FROM ONTARIO COLLEGES OF APPLIED ARTS AND TECHNOLOGY

Applicants from Colleges of Applied Arts and Technology who have completed at least one year of work 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. In Social Sciences, Humanities, and Business, advanced credit will normally be given to well-qualified students who have completed at least two years of work.

In the granting of credit attention will be given to:

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

The credit could be up to 24 units for a well-qualified graduate of a three-year programme, and at least 6 units for an applicant who has completed two years and performed well, provided the college work is appropriate for the university programme to which entry is sought.

Credit beyond this may be given on an individual basis where the college and university programmes are in similar areas, and where the applicant's academic record and background warrant special consideration.

For Engineering, applicants from Ontario Colleges of Applied Arts and Technology who have achieved a first-class honours standing in the last two years of a three-year technology programme will be considered for admission to the second level of a relevant Engineering programme.

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

B. ADMISSION FROM RYERSON POLYTECHNICAL INSTITUTE

In determining admissibility and the possibility of advance credit, due consideration is given to the admission requirements of the Ryerson programme, its length of study and nature (i.e. certificate, diploma or degree), standing in the programme and studies desired at university level. Students with high standing after one or two years of study are invited to apply.

Every application is dealt with individually so that appropriate academic credit may be granted where warranted.

C. ADMISSION FROM REDEEMER COLLEGE

For admission to McMaster University a student 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. Students who wish advanced credit for work completed at Redeemer College must write an examination set by McMaster for each course in which credit is sought.

D. ADMISSION FROM OTHER CANADIAN PROVINCES

We welcome applications from students from other Canadian provinces. They must meet the following minimum requirements and present subjects appropriate for the programmes as described above under *Subject Requirements for Specific Level I Programmes*. For further information, applicants are invited to contact the Admissions Office.

Province Qualifications Required

Quebec	Year I (CEGEP) General Course
All other Provinces and two Territories	Grade 12

ADMISSION REQUIREMENTS

E. ADMISSION FROM OTHER COUNTRIES

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

Students from other countries should send official matriculation certificates 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. Each applicant is considered on an individual basis. Applicants are strongly advised not to come to the University until they have been informed of their acceptance.

Applicants whose native language is not English and who have not resided in an English-speaking country for four years will be required to obtain standing satisfactory to the University in the Michigan English Language Assessment Battery (MELAB). The MELAB authorization form will be sent upon receipt of a formal application for admission. If the Test of English as a Foreign Language (TOEFL) has already been written, its results may be submitted in place of the MELAB results.

Applicants from **the G.C.E. System** require:

1. five G.C.E. 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 I Programmes*);
3. an average of at least 'C' in the two Advanced Level subjects

Applicants from **Hong Kong** require:

1. five subjects in the G.C.E. or University of Hong Kong Matriculation, 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 I Programmes*);
3. an average of at least 'C' in the two Advanced Level subjects
4. standing satisfactory to McMaster University in the Michigan English Language Assessment Battery (MELAB). Details of the test will be sent upon receipt of a formal application for admission.

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

F. SPECIAL STUDENTS AND MATURE STUDENTS

Applicants who have attended university are **not** admissible as special students or mature students. Applicants to Engineering are not admissible under this category.

Full-time Study (Mature Students): An applicant who does not meet the normal admission requirements described above in *Admission from Ontario Secondary Schools* may be admitted *on university probation* to full-time study provided all of the following three conditions are satisfied:

1. the applicant is at least 21 years old or will be in the calendar year in which he or she proposes to start; and
2. the applicant has not attended secondary school on a full-time basis for at least two years; and
3. the applicant obtains a satisfactory standing on a scholastic aptitude test (held in May, June, August and January) and is considered qualified by the appropriate Faculty Admissions Committee.

Students applying to the Natural Sciences I programme as a Mature Student will be required to obtain satisfactory standing in the area OAC Mathematics and Science requirements as described in the *Admission from Ontario Secondary Schools* section of this calendar, in addition to writing the qualifying examination.

The writing of the test will be waived for those who have satisfactorily completed a certificate programme or professional designation at McMaster University or the equivalent (see *K. Graduates of McMaster Certificate Programmes* below). Information concerning the deadline

for final application and other details may be obtained from the Admissions Office.

A student who has been admitted in this manner may, nevertheless, choose to study on a part-time basis; he or she would be *on university probation* and follow the normal academic regulations.

Part-time Study (Special Students): An applicant who does not meet the normal admission requirements described above in *Admission from Ontario Secondary Schools* may be considered for admission as a part-time student *on university probation*, provided he or she is at least 21 years old (or will be in the calendar year in which he or she proposes to start university study) and has not attended secondary school on a full-time basis for at least two years. Admission is not automatic, but is at the discretion of the Faculty to which the applicant seeks admission. This type of admission is open only to an applicant applying to Humanities I, Social Sciences I and Natural Sciences I. Please note that an applicant applying to Natural Sciences I must successfully complete the area OAC Mathematics and Science requirements as outlined in *Admission from Ontario Secondary Schools* section of this calendar.

If admitted, the applicant may register as a *Special Student* to take one course at a time. Normally, these first courses will be Level I courses.

After taking 12 to 14 units, the student's performance will be reviewed.

1. If a special student has a weighted average of at least 4.0 and a grade of at least D- in each course, he or she *may* transfer to the Level I programme of the Faculty in which he or she is registered.
2. If a special student has a weighted average of less than 2.5, he or she *may not* continue *without* permission of the Faculty in which he or she is registered.
3. If a special student meet neither of the above conditions, he or she may take further courses as a *Special Student* and the student's record will be reviewed after taking at least 24 units in total.

At the second review:

1. If the special student has a weighted average in all the work taken of at least 4.0, he or she may transfer to the Level I programme of the Faculty in which he or she is registered.
2. If the student's weighted average is less than 4.0, he or she will be required to withdraw.

After the special student has met the above conditions to clear probation, he or she may continue studies on either a full-time or part-time basis.

G. STUDENTS TRANSFERRING FROM OTHER UNIVERSITIES

Students wishing to transfer to McMaster University normally will receive credit only for courses in which at least a 'C' (third-class honours) standing has been obtained. Assessment of courses for transfer credit is subject to the guidelines of the individual Faculties.

A student transferring to McMaster University must satisfy the Residence Requirements set out in *Academic Regulations*. The University will not accord to students transferring to McMaster privileges which would not be granted by their own universities. Grades obtained in courses taken at another university will *not* be included in the various McMaster averages, and, therefore, cannot be used to raise standing.

Students applying from another university who have been required to withdraw from that university and who have fulfilled their period of suspension may apply for admission. Such students, however, must present a letter of explanation and clarification concerning their past academic performance. In addition, students may be asked to provide academic documentation providing proof of further academic achievement which is both current and relevant.

Students transferring from a non-Canadian university whose native language is not English and who have not resided in an English-speaking country for four years must obtain standing satisfactory to the University in the Michigan English Language Assessment Battery (MELAB). The MELAB authorization form will be sent upon receipt of a formal application for admission. If the Test of English as a Foreign Language (TOEFL) has already been written, its results may be submitted in place of the MELAB results.

H. GRADUATES APPLYING FOR A SECOND BACHELOR'S DEGREE

Admission is by selection. Students with a first degree may apply to take a second degree in the same discipline or in another discipline. The requirements are set out in the *Academic Regulations*. Application forms can be obtained from the Admissions Office.

Students wishing to enter a Second Bachelor's Degree in a subject area from the Faculty of Science should note the additional regulations for such a programme in the section *Faculty of Science, Second Bachelor's Degree Programmes*.

Graduates of other universities must supply an official up-to-date transcript with the completed application.

I. CONTINUING AND POST-DEGREE STUDENTS:

(Graduates not proceeding to a second degree or an advanced degree)

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

Continuing students who wish to take courses *other than* Commerce and Engineering need only to apply formally through Admissions in the first instance. In subsequent sessions they need only to submit a Registration form.

Continuing students who wish to take *Commerce or Engineering* courses must re-apply for each session on an application form which can be obtained from the Admissions Office.

Applicants will be expected to have at least a 'C' (third-class standing) average, with no failures, in the work of their final year (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 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 Dean of Graduate Studies.

A **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.

Such students must apply to the appropriate departments and have their admissions and registrations approved by the School of Graduate Studies for each session in which they wish to take courses. These students will be registered and pay fees as undergraduates.

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 towards the advanced degree will not normally be granted for the work previously taken.

J. OCCASIONAL STUDENTS:

(Non-graduates attending undergraduate classes for other than degree credit)

Occasional students are those who:

1. do not hold a University degree; and
2. wish to take undergraduate courses; and

3. are or will be at least 21 in the calendar year in which they plan to take university courses.

An Occasional Student may take up to 12 units of work in courses at the discretion of the Dean of Studies and instructor(s) during the period September 1 to August 31.

The status of an Occasional Student is reviewed after the completion of five courses, and a decision may be made at that time by the student as to whether he or she wishes to enter a degree programme or to continue as an Occasional student.

K. GRADUATES OF McMASTER CERTIFICATE PROGRAMMES

Students who have completed certificate programmes may be granted advanced credit up to maxima specified by Undergraduate Council. Such credit will normally be applied against elective courses and Faculties will take into account the subject matter of both the certificate and degree programmes.

L. ENRICHMENT PROGRAMME

High school students with first-class standing may be allowed to enrol in courses which do not duplicate the material available to them in their own high schools. Degree credit for successfully completed courses will be granted after students have been admitted to and have registered at McMaster University.

Applicants must provide letters of recommendation from their Principal as well as one other teacher who knows their abilities, aptitudes and interests.

Interested students are invited to contact the Admissions Office for information regarding available courses and application procedures.

M. STUDENTS STUDYING IN CANADA ON STUDENT AUTHORIZATION (VISA)

In limited enrolment programmes up to 5% of places available in Level I may be filled by Visa students.

N. ADVANCED CREDIT

As noted in sections (A), (B), (C), and (G) above, advanced credit may be granted to applicants who have completed work at another university or college, *subject to the applicant having met the minimum requirements prescribed*. Advanced credit serves to shorten the degree programme.

In special situations, where a student has acquired the knowledge at another kind of institution or in a different manner such that the qualifications are difficult to assess, the University may require an examination of the student. In such a case, the Associate Dean (Studies) of the Faculty will request the appropriate academic department to *assess* the feasibility of such an examination. When such an examination is deemed feasible, the department involved will be responsible for deciding the appropriate method of evaluation and for administering the examination, which may consist of a variety of possible modes of evaluation, both written and oral. The examinations must be arranged by the last date for registration in the student's initial term at the University and may not be repeated. Any credit granted as the result of such an examination will be shown on the transcript in the normal manner used for advanced credit.

Academic Regulations

The regulations which follow are the general regulations of the University. You should read both these general regulations and the Faculty regulations which may be more stringent and 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.

Honours and three-level degree programmes are offered in the Faculties of Humanities, Science, and Social Sciences and in the Arts and Science Programme. Major programmes are offered in the Faculties of Science and Social Sciences. The general regulations governing these programmes appear in this section of the Calendar. The regulations governing programmes in Business, Engineering, Engineering and Management, Medicine, Nursing, Occupational Therapy and Physiotherapy, Social Work, and Physical Education appear in the appropriate Faculty sections. In the event there is a conflict between the programme regulations for these eight programmes and the general regulations in this chapter, *the programme regulations take precedence*.

The following regulations cover the ordinary cases. Faculties are authorized to use discretion in special situations by taking into account past practice, the spirit of the regulations, and circumstances which, in the opinion of the Faculty, are deserving of unusual treatment. Students who have irregular cases should consult the appropriate Associate Dean (Studies).

General 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 a four- or five-level (Honours, Major, etc.) 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.

In order 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 Area 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. The appropriate Dean of Studies may relax these requirements in special cases, and may take into account high academic standing and place of residence, among other considerations.

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 or at the beginning of each session, and information on how to register will be sent to eligible students. Counselling is available to assist you in course selection and in some programmes is compulsory.

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. First select the courses required for your programme and then 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 fail to meet the programme requirements, you will not be eligible to graduate, and, if you have not passed the prerequisite courses, you will not be able to take the course selected.

Approval of Programmes: You are responsible for the completeness and accuracy of your registration. If you try to register in a programme or courses for which you are not qualified, your registration may not be accepted and you may not receive credit in selected courses. Your programme and course selection must be approved by the Associate Dean (Studies) of your Faculty. Similarly, you must obtain approval from the Associate Dean (Studies) for any change, including the dropping of courses. You should note that in order to qualify for most scholarships, you must register for the full load prescribed for your programme and level.

Extra 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 Associate Dean (Studies) of your Faculty. Normally, a University Average of at least 7.0 in the immediately preceding review period will be required if extra work is to be permitted. Additional academic fees will be assessed for extra work (see *Financial Information* section in this Calendar).

Sequence of Courses: Courses must be taken in the sequence specified in the programmes of the University which are set out by Faculty. For programmes described by Level, this means that, when registering in a Level, you must have completed the preceding Level, or be registered in any remaining courses for that Level. At the discretion of your Faculty, substitutions may be approved, especially for part-time students, when a required Area course is not available.

Repetition of Courses: To repeat a course for which credit has been obtained, you need approval of your 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 various averages; however, only one successful attempt will enter into the computation of credit earned towards your degree.

Repeated course work will not be considered when reviewing for Academic Awards, and therefore, cannot be used to win awards.

Limit on Level I Courses: After you have completed Level I, you may obtain credit in no more than 12 additional units of courses beginning with the digit 1 in a three-level degree programme, and no more than 18 additional units of courses beginning with the digit 1 in a four-level degree programme, except where special permission has been obtained from the Associate Dean (Studies). This means that 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.

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 your Associate Dean (Studies) and pay the appropriate fee. If your Associate Dean (Studies) grants you this privilege, you should take note of any conditions 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 minimum residence requirements, and probably will delay graduation if permission has been granted to take the last courses for the degree at another institution.

You should note that the grades obtained in courses taken at another university will *not* be included in the various McMaster averages, and, therefore, cannot be used to raise standing.

Students taking courses on letter of permission must continue to carry a full load during the Winter Session if they wish to be considered for Academic Awards.

Study Abroad: Study Abroad opportunities exist either through exchange agreements signed with a number of universities in other countries or through Third Year Study Elsewhere Programmes (in the Faculties of Science and Humanities). For information on the opportunities available, procedures and approval, please contact the appropriate Office of the Associate Dean (Studies). Tuition fees and/or a processing fee may be payable to McMaster University.

Auditing Courses: A student who does not wish to have credit for a course may, with the approval of the Chair of the Department and the Associate Dean, *audit* the course. The student must satisfy the prerequisite for the course, but will not complete assignments nor write the final examinations.

Cancellation of a Course: If you cancel a course during the change of registration period, it will not show on your record. After that the course will show on your record. The grade will be recorded as *CAN* (cancelled) if the course is cancelled up to and including the last date for withdrawing from the course shown in the *Sessional Dates*.

After the last date for withdrawing you will remain registered in the course whether or not you attend, you will receive no refund of fees, and you will be assigned a grade based on the work submitted.

The various dates appear in the *Sessional Dates* at the beginning of this Calendar and are **rigidly adhered to**.

Students dropping courses to less than a full load may affect their current and future eligibility for Academic Awards. Please refer to the section entitled Undergraduate Academic Awards for further details.

Withdrawal from the University: If you wish to withdraw from the University, you must consult the appropriate Associate Dean (Studies). Your identity card must be surrendered to the Associate Dean (Studies). Fees are not refunded unless this procedure is followed.

Your record in the courses being taken will be handled as outlined in the section above *Cancellation of a Course*.

Readmission: If you are seeking readmission to the University following withdrawal or poor academic performance, you must do so in writing. You should pay attention to any special requirements of the Faculty you wish to re-enter, including the deadline for applications. These requirements are specified in the Faculty sections of the Calendar.

In considering applications for readmission, the University may take into account both the secondary and post-secondary educational achievement of the applicant, and may require oral or written tests of the applicant, or other evidence which in the judgement of the appropriate Faculty is relevant. The Faculty may specify conditions which must be met in granting readmission.

Transfer of Credit between Faculties: Transfer of credit between Faculties is handled by the Associate Deans (Studies). Full credit may not be given at the time of transfer between Faculties and additional courses may need to be taken.

RECORDS RETENTION POLICY

By applying for admission to McMaster University and by registering in programmes of courses at the University, students accept the University's right to collect pertinent personal information. The information is needed to assess the student's 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.

Students also agree that all documentation which they 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.

Students are notified of their academic performance in courses by grade reports sent by the Office of the Registrar. Students must note the appeal procedures which are outlined in the Calendar under the section *Senate Policy Statements*. Those policies set deadlines for appeals of an academic record.

Supporting documentation relevant to a student's admission to and performance at the University is held for a limited period of time.

1. Physical (paper) records will normally be eliminated 7 years after the end of the student's enrolment at the University (graduation or no graduation).
2. Documentation submitted by applicants who are not accepted, or by applicants who fail to enrol following acceptance, is normally destroyed at the end of each admissions cycle. Students who reapply subsequently will have to submit any additional academic information and must resubmit any documentation submitted previously.
3. All portions of a student's record which are needed to produce official transcripts are maintained permanently.

EXAMINATIONS

The section *Sessional Dates* should be consulted for the dates of the final examinations in all terms and sessions. Mid-session tests for full-year Winter Session Level I courses are held in December.

Mid-session tests in December for Level I courses and final examinations for two and three-unit courses normally are of two hours duration. Final examinations for courses of four or more units normally are of three hours duration.

No examinations or tests may be held in the final week of the terms of the Winter Session except for those specifically approved by the Undergraduate Council. The specific dates appear in the *Sessional Dates*.

Tests and examinations organized by the Office of the Registrar may be scheduled in the morning, afternoon, or evening, Monday through Saturday. You should arrange to be available throughout the examination periods since, until the final examination timetable is published, you cannot know when during the examination period your examination may be scheduled. Cases in which examinations can be rescheduled are described at the end of this section.

If you miss an examination for medical reasons you must submit a medical certificate from Student Health Services or from a doctor to your Associate Dean (Studies). The certificate must define the nature and severity of disability and the period of absence, and must be submitted by the end of the examination session.

If you miss an examination for any reason other than illness, you must report immediately to the Examination Section of the Office of the Registrar.

Deferred Examinations: A deferred examination privilege may be granted by your Faculty Reviewing Committee if you fail to write a final examination for a certifiable medical or compassionate reason, provided that you have submitted the certificate by the end of the examination period. Deferred examinations are conducted in the examination period which follows the period for which the privilege is granted (e.g. in April for an examination missed in December.) Specific dates and deadlines appear in the *Sessional Dates*.

A decision to grant a deferred examination privilege will be reported on your grade report. You must confirm your intent to write a deferred examination by submitting an application to the Office of the Registrar. Specific deadline dates appear in the *Sessional Dates*.

Examination Regulations: These regulations apply to all examinations conducted by the Office of the Registrar. Variations may occur for instructor-conducted examinations. Students who do not observe these regulations will be required to withdraw from examinations. Special circumstances must be reported immediately to the Examination Section of the Office of the Registrar.

McMaster student photo identification cards are required at all examinations. Students who seat themselves at an examination without photo I.D. cards will be required to withdraw from the examination. Students who arrive without photo I.D. cards will be required (before being seated) to obtain a substitute card and pay the appropriate fee; no extension of the examination will be permitted to compensate for any delay encountered.

It is the responsibility of students to be present on the day and hour when an examination is scheduled. If you fail to appear at the scheduled time, you will be considered to have defaulted the examination.

Punctuality is essential and no extra time will be allowed to those arriving late. No candidate will be admitted to an examination room more

ACADEMIC REGULATIONS

than 30 minutes after the start of any session.

The University makes every effort to ensure that examinations are complete when students receive them. However, it is the **student's responsibility** to ensure that the examination is complete, and to draw attention to any discrepancies in the paper.

No candidate may leave the room to withdraw from an examination during the first 45 minutes of any session. Candidates must leave the room immediately after handing in their examination materials.

A student who becomes ill during an examination may be excused by a Presider but must file a doctor's certificate with the appropriate Associate Dean (Studies).

No conversation or any form of communication between candidates is permitted in the examination room. No books, papers or instruments may be taken into any examination room unless specifically prescribed on the examination paper. No examination books or supplies are to be removed from the examination room. Smoking is not permitted in any examination room. Handbags must be left beneath the chairs, not on the desks. The University can assume no responsibility for lost articles.

Rescheduling Examinations: Special examination arrangements will be made if you have a conflict with religious obligations. Your request with appropriate documentation from a minister or equivalent must be submitted to the Examinations Section of the Office of the Registrar at least ten working days before the scheduled examination date.

If you are a part-time student and your employer requires you to be away from the Hamilton area when you are to write an examination, you may seek special arrangements for writing your examination. Your application must be supported by a letter of explanation from an executive of your company.

Examinations are not rescheduled for purposes of travel.

Other regulations related to the conduct of, and special arrangements for, examinations appear on the examination timetable and the examination booklets.

GRADING SYSTEM

The grade for a course is normally determined by combining the grades obtained on classwork, assignments, tests, and examinations. The method for determining the final grade is to 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.

Since September 1982, the grading scale has been as follows:

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

Before submitting a failing grade, the instructor reassesses whatever examples of the student's work are available.

For the purpose of satisfying 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.

Weighted averages are calculated using the grade points and units for a course as shown in the example below:

Grade	Points		Units		
A-	10	×	6	=	60
C+	6	×	3	=	18
B-	8	×	6	=	48
D+	3	×	6	=	18
B-	7	×	6	=	42
B+	9	×	3	=	27
Total			30		213

$$\text{AVERAGE} = 213 \div 30 = 7.1$$

Terminology

This glossary of terminology is arranged in alphabetic sequence.

Area Courses ('A' courses) are those courses in which the grades are used in computing the Cumulative Area Average (CAA) and the Graduation Average (GA). These courses are listed in the programme requirements.

Course Numbers (e.g. 1A03) can be deciphered 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 defines the number of units of credit associated with the course.

Cumulative Area Average (CAA) is computed as shown in the example below, using the best 80% of the grades obtained in the Area courses prescribed for the programme beyond Level I, provided that at least 12 units of Area courses have been attempted since the CAA was computed.

For students re-admitted to the University after obtaining a University Average of less than 2.0, the CAA will be computed from the time of re-admission.

In Combined Honours programmes consisting of two separate components two Cumulative Area Averages will be computed on the best 80% of the grades in each component; in other Combined Honours programmes a single average will be computed.

The grades in the following example are ranked in descending sequence. Since the student has taken 27 units, the average will be computed on the basis of the best 21.6 units (80% of 27 = 21.6). Thus, only 0.6 units of the course in which the student obtained the D+ have been included.

Grade	Points	(Units)	CAA Units		
A-	10	(6)	×	6.0	= 60.0
B	8	(6)	×	6.0	= 48.0
B-	7	(6)	×	6.0	= 42.0
C+	6	(3)	×	3.0	= 18.0
D+	3	(6)	×	0.6	= 1.8
Total		(27) × 80%	=21.6		169.8

$$\text{CAA} = 169.8 \div 21.6 = 7.9$$

Elective Courses ('E' courses) are those courses which are not required courses, and which a student has free choice in selecting. These courses form part of the total number of units required for the degree programme.

Extra Courses are those courses taken by a student which are over and above the total number of units required for the degree programme. The grades obtained in such courses will not be included in the computation of the various averages.

Graduation Average is used to determine the standing of a student at the time of graduation. In the case of the three-level degree programmes it is computed on at least 24 units of Area courses, and in the case of Honours and Major programmes on at least 36 units of Area courses. For Combined Honours programmes created from two distinct components, two Graduation Averages will be computed using at least 24 units in each component; in other Combined Honours programmes a single average will be computed.

For three-Level programmes the computation will be based on Level II and III Area courses, (i.e. courses with a first digit of 2 or 3) and for Major and Honours programmes on Level III and IV Area courses (i.e. courses with a first digit of 3 or 4). Where a student has taken more than

the minimum number of Area courses specified for the programme, the Graduation Average will be computed on the best 80% of the appropriate Area courses, or the minimum, whichever number of units is greater.

In the example below of a three-level degree programme the total number of appropriate Area course units with a course number beginning with 2 or 3 actually taken was 42 and the required number was 24, so that the average will be computed on the basis of the best 33.6 units (80% of 42 = 33.6). If the student had taken 24-30 units of appropriate Area courses, the Graduation Average would be calculated on 24 units.

Grade	Points	(Units)	GA Units		
A	11	(6)	× 6.0	=	66.0
A-	10	(6)	× 6.0	=	60.0
B+	9	(3)	× 3.0	=	27.0
B	8	(6)	× 6.0	=	48.0
B	8	(3)	× 3.0	=	24.0
B	8	(6)	× 6.0	=	48.0
B-	7	(3)	× 3.0	=	21.0
B-	7	(3)	× 0.6	=	4.2
C+	6	(6)	× 0.0	=	0.0
Total		(42) × 80%	= 33.6		298.2

GA = $298.2 \div 33.6 = 8.9$

Graduation Standing is assigned on the basis of the Graduation Average calculated as above. First-class standing is given to those with averages of 9.5 or higher, second-class for averages of 7.0 to 9.4, and third-class for averages of 4.0 to 6.9.

Level is used in two ways:

1. to describe how far through a programme a student has progressed. A student entering the University with the normal admission requirements will register in Level I and normally take 30 units of courses beginning with the digit 1; upon completion of Level I the student will progress to Level II, etc. The number of units required to complete a level is specified for each programme in the Faculty section of this calendar.
2. to indicate at what stage in a programme a student normally takes a given course. Level I courses (beginning with the digit 1) normally are taken by students registered in Level I, Level II courses by students registered in Level II, etc. The level designation is only a guideline, however, in that the academic regulations and curriculum requirements may provide for deviations from this guideline.

Programme Probation may be assigned to students who do not meet the normal promotion requirements on the Cumulative Area Average for a programme, which appear under the programme regulations. A student may be on Programme Probation only once.

Required Courses ('R' courses) are those courses which are specifically designated for inclusion in a programme.

Reviewing Period is the time between two reviews for a student. Students records are reviewed in May, July, and August each year for those 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 which constitute their probationary period.

Units define the amount of credit associated with a course and are used in the computation of averages. A unit is roughly equivalent to one lecture-hour per week for one term or two hours of laboratories or seminars per week for one term. Most courses are of 3 or 6 units credit. Normally 30 or more units of work are specified for a Level; approximately 90 units or more constitute the work for a three-level degree and 120 units or more for a four-level degree.

University Average is computed on the grades obtained in all courses since the last review of student standing.

University Probation may be assigned to students who fail to obtain a University Average of 2.5 which is required for continuance at the University but do obtain a University Average of at least 2.0. A student

may be on University Probation only once, except with the special permission of the Faculty in which he or she is registered.

Programme Requirements and Academic Standing

Students entering McMaster University register in one of the following Level I programmes: Arts and Science I, Business I, Engineering I, Humanities I, Music I, Natural Science I, Nursing I, Physical Education I, or Social Sciences I. The admission requirements for specific programmes beyond Level I (e.g. Honours History) appear in the appropriate Faculty sections of the Calendar and prescribe the required standard of performance in appropriate Level I courses.

ACADEMIC STANDING

Academic standing is reviewed in May, July, and August each year for students who

1. have completed 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 which constitute their probationary period.

In the review of academic standing, three sets of decisions are made:

1. whether a student may continue at the University for which the University Average, calculated on at least 18 units, is used;
2. whether a student may continue in a programme for which the Cumulative Area Average, calculated on at least 12 units of area work, is used; and
3. whether a student may graduate and the classification of the degree, for which the Graduation Average is used.

REQUIREMENTS FOR LEVEL I

If you enter the University without advanced standing being granted, you must attempt a full load of Level I work before proceeding to the work of higher Levels. Admission to the programmes beyond Level I is based on the performance in Level I, and you must meet the normal requirements prescribed in the following section, *Minimum Requirements for Continuance at the University*, in order to continue at the University.

If you meet the requirements for continuance at the University after completing the Level I work, but fail to meet the admission requirements of any programme, you may continue at the University for one additional reviewing period. You will be registered as Irregular on Programme Probation.

If you again fail to qualify for admission to a programme, you may *not* continue without special permission.

If you are repeating Level I voluntarily, your registration status will be *Clear Admission*.

In the case of part-time students, the Associate Dean (Studies) has the discretion to permit students 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.

MINIMUM REQUIREMENTS FOR CONTINUANCE AT THE UNIVERSITY

You may continue at the University if you obtain a University Average of at least 2.5, subject to meeting any special requirements of your programme. If you fail to meet the requirement of a 2.5 average, you may continue on University Probation for one reviewing period, provided that you have a University Average of at least 2.0. You may be on University Probation only once.

If your University Average is less than 2.0 you may not continue without permission and must seek re-admission. The decision will be made by the appropriate Faculty Reviewing Committee, and, if you are permitted to continue, you will be placed on probation for one reviewing period.

ACADEMIC REGULATIONS

If you fail to obtain a University Average of 2.5 on a second occasion, you will be required to withdraw from the University for a period of at least 12 months. If there are special circumstances which apply, the Faculty Reviewing Committee may waive the requirement of withdrawal for 12 months.

In the event that you are eligible to continue at the University, but are ineligible to continue in any programme because the programme requirements have not been met, you require the permission of your Faculty to reregister. If permitted to reregister, you will be on programme probation and may register as Irregular for one reviewing period, during which you may take up to 18 units of Area work that would qualify you to re-enter a programme. Other courses taken may be used as electives. *This privilege will be granted only once.*

PROGRAMME REQUIREMENTS FOR B.A. AND B.SC. PROGRAMMES

The programme requirements are **in addition** to the minimum requirements prescribed above for continuance at the University.

Honours Programmes: If you obtain a Cumulative Area Average of at least 7.0 you may continue in an Honours programme. If you fail to obtain a Cumulative Area Average of 7.0 but have an average of at least 6.5, you may continue on Programme Probation for one reviewing period. You may be on Programme Probation only once. If you fail to obtain a Cumulative Area Average of 6.5, you may not continue in the programme, and must seek entry to another programme.

Graduation Standing in Honours degree programmes is awarded in three classes: first-class, second-class, and third-class. For first-class standing a minimum Graduation Average of 9.5 is required, for second-class standing 7.0 and for third-class standing 4.0.

A student who at the time of graduation fails to meet the requirements for an Honours degree may seek to transfer to another programme.

Combined Honours Programmes: All Combined Honours programmes offered by the Faculty of Science will be treated in the same manner as single Honours programmes above, thus, a single CAA and GA will be computed.

In the case of Combined Honours programmes in other Faculties two separate Cumulative Area Averages will be computed using the Area courses for each of the two components, except where the Calendar specifies that a single average will be computed. Where two Cumulative Area Averages are computed, you must meet the specified minimum averages for each of the two components of the combined Honours Programme.

Similarly, two separate Graduation Averages will be computed, and Graduation Standing will be determined by taking the mean of the two Graduation Averages, except for those programmes where a single CAA is computed, in which case one Graduation Average will be computed.

A student who at the time of graduation fails to meet the requirements for a combined Honours degree may seek to transfer to another programme.

Major Programmes: Major programmes are available through the Faculties of Science and Social Sciences.

Effective for students registered in the programme **before September 1987:** If you obtain a Cumulative Area Average of at least 4.0, you may continue in a Major programme. If you fail to obtain a Cumulative Area Average of 4.0 but have an average of at least 3.5, you may continue on Programme Probation for one reviewing period. You may be on Programme Probation only once. If you fail to obtain a Cumulative Area Average of 3.5 you may not continue in the programme and must seek entry to another programme.

Effective for students admitted to a Major programme **after August 1987:** If you obtain a Cumulative Area Average of at least 5.0, you may continue in a Major programme. If you fail to obtain a Cumulative Area Average of 5.0 but have an average of at least 4.5, you may continue on Programme Probation for one reviewing period. You may be on Programme Probation only once. If you fail to obtain a Cumulative Area Average of 4.5 you may not continue in the programme and must seek entry to another programme.

Graduation Standing in Major degree programmes is awarded in three

classes: first-class, second-class, and third-class. For first-class standing a minimum Graduation Average of 9.5 is required; for second-class standing 7.0; and for third-class standing 4.0 for the first group covered above and 5.0 for the second group. A student who at the normal time of graduation fails to meet the requirements for a major degree may seek to transfer to another programme.

Three-Level Degree Programmes: If you obtain a Cumulative Area Average of at least 4.0 you may continue in the programme. If you fail to obtain an average of 4.0 but have an average of at least 3.5, you may continue on Programme Probation for one reviewing period. You may be on Programme Probation only once. If your Cumulative Area Average is less than 3.5, you may not proceed in the programme and must transfer to another programme.

Graduation Standing in these programmes is awarded in three classes: first-class, second-class, and third-class. For first-class standing a minimum Graduation Average of 9.5 is required; for second-class standing 7.0; and for third-class standing 4.0. A student who at the normal time of graduation fails to meet the requirements for one of these degrees may seek to transfer to another programme.

TRANSFER BETWEEN PROGRAMMES

If you are registered in Level III of an Honours or Major programme and wish to transfer to a three-level degree programme in order to be eligible for graduation at the next Convocation you must apply to the appropriate 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.

If you wish to transfer from one programme to another, you must have a Cumulative Area Average with standing appropriate for the programme you wish to enter. The Faculty will specify whether you need to take additional course work to obtain a specialist background equivalent to that of students already registered in the programme. You should discuss the practicability of transfer with the appropriate Associate Dean (Studies).

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 both second and first degrees and whether they are in the same subject.

Credit for courses taken towards the first degree may be applied to the second degree, except in the case of some professional programmes (e.g. Bachelor of Education and Bachelor of Library Science). Some additional regulations are applied by the Faculty of Science involving cognate disciplines e.g. Mathematics and Statistics. These are described in the section *Faculty of Science* in this Calendar. The new programmes in Occupational Therapy and Physiotherapy (B.H.Sc.) are available *only* as a Second Degree. Advance credit is not available in these 2-year programmes.

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

All the additional work to obtain the second degree must be taken at McMaster University. Decisions on admissions and the courses required to complete the second degree will be made by the appropriate Faculty.

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

Students who do not qualify for a Second Degree programme on the basis of the relevant course work completed during their first degree studies may, with the permission of the department and appropriate Associate Dean (Studies), be allowed to qualify on the basis of further work undertaken as *Continuing* students considered in conjunction with their previous performance in the area courses.

Students who are allowed to qualify for admission on the basis of further work taken as *Continuing* students at McMaster University may,

with the permission of the department and the appropriate Associate Dean (Studies), have this course work applied toward the fulfillment of the requirements for the second degree. Faculties wishing this provision to apply only to second degree programmes in *another subject* may make that restriction in the Faculty regulations. (The Faculty of Science has so indicated.)

A student in a Second Degree programme must meet the minimum requirements prescribed in earlier sections for the University Average, the Cumulative Area Average, and the Graduation Average, with the exception that, where the number of Area courses prescribed is less than the minimum normally prescribed for inclusion in the Graduation Average, all Area courses taken in the second degree programme will be included in the computation of the Graduation Average. If less than 12 units are used to compute the Graduation Average, no Graduation Standing (first class, etc.) will be given.

Major Degree Following a Three-Level Degree in Same Subject: For entry into a Major Degree programme in the Faculty of Science, a Graduation Average of at least 4.0 in the first degree programme is required for those entering a major programme before September 1987; thereafter an average of at least 5.0 will be required.

If admitted, you must take at least 30 units of work as specified by the department(s); normally this will include the Level IV specialist courses and courses from Levels II and III to provide specialist background equivalent to that of students already in the programme.

Honours Degree Following Major or a Three-Level Degree in the Same Subject: For entry, a Graduation Average of at least 7.0 in the first degree programme is required.

If admitted, you must take at least 30 units of work specified by the department(s); normally this will include the Level IV specialist courses and courses from Levels II and III to provide specialist background equivalent to that of students already in the programme.

Second Degree in Another Subject: For admission to the second degree you must meet the admission requirements for the programme you wish to enter (e.g. an average in specified courses of at least 7.0 for entry to an Honours programme and of at least 4.0 for entry to other programmes of the Faculties of Humanities, Science, and Social Sciences). The average used for admission would normally be based on Area courses for,

or courses related to, the programme you wish to enter.

If the second degree is a Bachelor of Arts or Bachelor of Science degree, you must complete at least 30 units of work specified by the department offering the programme. If the second degree is a Major or Honours degree, the minimum is 60 units.

DEANS' HONOUR LIST

Each year outstanding students are recognized by their being named to the Deans' Honour List for which a minimum average of 9.5 is required. In the case of full-time students, they must have completed in a Winter Session at least 30 units (36 in the case of Engineering). The Deans have the power to exercise discretion where the full load for a particular level of a programme is less than 30 units (36 in Engineering e.g. Civil Engineering, Level IV, 34 to 36 units). In the case of a full-time student the minimum average of 9.5 must have been obtained on the University Average. For those who have studied part-time on a continuous basis, the assessment will be made at the reviewing periods where 30, 60, and 90 units have been completed, and at graduation.

(The special provision for students in the B.H.Sc. programme is explained in the section *Faculty of Health Sciences, Occupational Therapy & Physiotherapy Programme*.)

Graduation

When you register for the session in which you expect to complete the graduation requirements, you must file a graduation information card. If you fail to do so at the time of registration you must do so in the Office of the Registrar *before* February 15 for Spring Convocation and *before* September 8 for Autumn Convocation.

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

A Programme Standing will be determined for students who have fulfilled the graduation requirements in May of each year. The Programme Standing will be determined on the basis of the Graduation Average and will appear on the transcript. The notation will show your rank in the graduating class for the programme and the number of students graduating from that programme in May.

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
- 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 coursework, 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 students' 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.

Students are strongly encouraged, however, 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 re-admission to an undergraduate degree programme may not be *appealed*, except under the conditions described in the next paragraph. Applicants may, however, ask for a *review* of a decision on admission or re-admission 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 re-admission to an undergraduate degree programme may appeal the decision, using the procedures described in the *Student Appeal Procedures*, if the following two conditions have been met:

- i. the applicant withdrew from the University voluntarily; and
- ii. the applicant alleges error or injustice on grounds other than academic judgement.

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 define 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 Procedures on Human Rights which outline the procedure to be followed in the event that a student has a complaint regarding an alleged violation of human rights.

STUDENT RECORDS

The University has developed operating procedures which are designed to protect the confidentiality of undergraduate student records. The following have been defined as public information: student number, 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. For those admitted to the Nursing and M.D. Programmes a separate admission file is maintained.

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 completion of registration, a student is responsible for the full payment of all fees as defined in this Calendar.

Payment of academic fees does not mean acceptance to the University or approval of a student's registration. Academic requirements have to be fulfilled before registration is completed.

New students may not forward *academic fees* to the Business Office until they have received their Letters of Acceptance.

Students should not send *residence fees* unless notification of acceptance has been received.

Students are responsible for the fees for each academic session and 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 are in effect at the time of printing this Calendar. The University reserves the right to amend the fees and regulations at any time.

Undergraduate Fees

Fees are composed of an academic fee and supplementary fees. Academic fees are calculated on a per unit basis up to the maximum stated under *Tuition Fee* in the fee schedules, below. Full supplementary fees are payable by students taking 18 units or more.

Fees for full-time students cover the student's portion of the tuition cost, registration, library, diplomas, campus health services, student organizations, and athletics (except for the facilities fee), 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, and 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 commencing September 1. Fees shown below are for 1991/92. The fee schedule and refund schedule for 1992-93 is enclosed in the Registration Handbook sent to each student during the summer preceding registration.

CANADIAN CITIZENS and LANDED IMMIGRANT STUDENTS

Full-time Fees (for an academic load of 30 units or more except for Engineering, Eng. Mgt. III, V - 33 units or more)

	Tuition Fee	Supplementary Fees	Total Fees
Medicine I,II	\$3,375.00	\$315.00	\$3,690.00
Medicine III	2,250.00	296.00	2,546.00
Engineering, and Eng. Mgt. III, V	1,920.00	357.60	2,277.60
Eng. Mgt. II,IV	1,767.00	357.60	2,124.60
Nursing	1,767.00	387.60	2,154.60
Business and Commerce	1,767.00	334.60	2,101.60
Arts & Sci. Prog.	1,767.00	304.60	2,071.60
Physical Education	1,767.00	289.60	2,056.60
Humanities and Social Sciences	1,767.00	299.60	2,066.60
Science	1,767.00	284.60	2,051.60

Students registered in the Co-op programme in Honours Biology/Pharmacology Level III will be assessed an additional \$275.00 Co-op Fee per term along with the normal Science fees.

Students registered in the Co-op programme in Honours Biology/Pharmacology Level IV will be assessed 1/2 the Tuition and Supplementary Fees for Science and an additional \$275.00 Co-op Fee.

For academic loads from 18 to 29 units (32 units for Eng., Eng. Mgt. III, V), the fee was \$58.92 per unit plus full supplementary fees.

Students will be assessed extra fees per unit for units taken over their programme maximum load.

Student Health Services Fee: 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 Student's Union Health Insurance Plan fee of \$27.60 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. Accidents should be reported to Student Health Services within ten days. Prescribed drugs, excluding contraceptives, may be claimed through this plan. For details concerning dollar amounts allowable, contact the McMaster Student Union Office.

Part-time Fees

For students who took less than 18 units, the fee was \$58.92 per unit plus a supplementary fee of \$4.68 per unit for membership in the McMaster Association of Part-time Students/COPUS and Centennial Fund donation. Students who took 18-23 units paid supplementary fees as follows:

Student Athletic Fee	\$61.00
Student Health Services	36.00
Canadian Federation of Students	7.00
McMaster Student Union Fees:	
Student Organization Fee	74.50
Health Insurance Plan	27.60
Student Refugee Fee	1.00
Ancillary Fee for CFMU-FM	8.60
Ancillary Fee for MarMar Yearbook	5.90

Plus

McMaster Student Union's University Student Centre Building Fee (per unit)	2.10
to a maximum of \$63.00 (30 units)	

And

Society Fees according to Faculty:

Arts & Science Society	20.00
Commerce Society	50.00
Engineering Society	73.00
Humanities Society	15.00
Nursing Society	18.00
Nursing Learning Resource Fee	85.00
Bachelor of Physical Education Society	5.00
Social Science Society	15.00

Listeners

As of 1991-92 a *Listener* is a student not seeking academic credit, and may be admitted at one-half of the standard fee upon application to the Centre for Continuing Education.

A husband and wife attending the same course as Listeners may pay the reduced rate of one Listener fee, plus half of the fee for another listener.

Persons Aged 65+

Subject to meeting admission and prerequisite requirements, persons aged 65 and over may register in any courses without payment of tuition and supplementary fees.

FINANCIAL INFORMATION

VISA STUDENTS

Full-time Visa Students (for an academic load of 30 units or more)

	Tuition Fee	Supplementary Fees	Total Fees
Medicine I,II	\$14,430.00	\$315.00	\$14,745.00
Medicine III	9,620.00	296.00	9,916.00
Nursing	9,626.00	387.60	10,013.60
Engineering, and Engin. & Mgt.	9,626.00	357.60	9,983.60
Business and Commerce	5,905.00	334.60	6,239.60
Arts & Sci. Prog.	5,905.00	304.60	6,209.60
Physical Education	5,905.00	289.60	6,194.60
Humanities and Social Sciences	5,905.00	299.60	6,204.60
Science	5,905.00	284.60	6,189.60

Students registered in the Co-op Programme in Honours Biology/Pharmacology will be assessed fees in the same manner as Canadian/Landed Immigrant students.

Part-time Visa Students

Visa students enrolled in Engineering, Engineering and Management and Nursing courses were assessed at \$320.92 per unit tuition fee up to 17 units, plus supplementary fees of \$4.68 per unit. Visa students enrolled in courses for **all other programmes** were assessed at \$196.92 per unit tuition fee up to 17 units plus \$4.68 per unit supplementary fee.

Residence and Food Service Fees

REGULAR SESSION

Residence fees for students living on campus cover the period, Labour Day to the end of the April examination period.

The fees below are those for 1991-92.

	Payable in Full	Payable in Part
Residences		
Room and Board		
12 Meal Plan	\$4,390.25	\$2,865.00
14 Meal Plan	4,605.25	2,995.00
19 Meal Plan	4,778.25	3,100.00
Apartments: Per Person (Room Only)	\$2,332.25	\$1,630.00
Food Plan Only		
12 Meal Plan	\$2,058.00	\$1,235.00
14 Meal Plan	2,273.00	1,365.00
19 Meal Plan	2,446.00	1,470.00

Students wishing to make changes in their selection of meal plans may do so up to September 18, 1992. Please contact Food Services, extension 3837, to make any changes in food plans.

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 525-9140, extension 4342.

The University reserves the right to use the rooms during vacation periods, and the charges do not include the use of the room or the cost of meals during these periods, unless arrangements to the contrary are made.

Students will be assessed for unwarranted breakage.

SUMMER RESIDENCE

McMaster University offers residence, with centralized washroom facilities, to men and women of all ages from early May to late August each year. Only single occupancy is available unless a specific roommate is named.

Room rates include bed linens, weekly service and weekly linen change (but no towels). Parking is extra.

Stays of less than one month are subject to Provincial sales tax and G.S.T. A cash key deposit of \$10.00 is collected upon check-in. For further information, contact Conference Services, Commons Building, Room 115, telephone (416) 525-9140, extension 4781.

Payment of Fees

Full-time tuition fees and residence/food plan fees are payable in full during the registration period in August/September. Prepayment of fees will significantly simplify the registration process (see below *Prepayment of Fees*). Students unable to make full payment at the time of registration may be registered by paying the minimum first payment which is equal to approximately 70% of the total fee at the time of registration, and the balance no later than January 22. Failure to make payment by January 22 will result in a late Instalment fee. Interest is added monthly to the unpaid balance.

Part-time fees must accompany registration.

Cheques must be made payable to **McMaster University**. Any cheque not accepted and returned by the bank will be subject to an additional administrative charge of \$25.00 first occurrence and an additional \$10.00 each subsequent occurrence. **Failure to comply** with payment dates will result in the University adding interest at the rate of 1.5% per month on overdue fees.

In addition, refusal to pay fees, or any part of the fees, may result in the student being refused admission to the University or being requested to withdraw with all privileges suspended. Fees to the date of withdrawal will be assessed. Students wishing to re-register within the same academic session will also be assessed a reinstatement fee.

No student may 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:** Effective November 1, 1991 Graduates who have outstanding accounts with the University will be permitted to attend convocation but will not receive their diplomas until such time as their accounts have been cleared in full.

PREPAYMENT OF FEES

All tuition, supplementary, residence and food plan fees and any debts from prior sessions should be received in the Business office **prior** to registration.

For your payment to appear on University records by the time you register, pre-payment must be received at the University by:

August 7* for Level I students who will be registering in early August;
August 21* for Upper Level students who will be registering in early September.

*Please refer to registration handbook as these dates are subject to change for September 1992.

Students must complete the fee prepayment form and send it together with a cheque, which may be post-dated to September 4, to the Business Office. The 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.

Students who are expecting to receive financial assistance under the Ontario Student Assistance Programme or are to be recipients of scholarships, bursaries or other awards, may arrange fee deferments prior to the day of registration, provided they can show satisfactory evidence that such awards have been granted by contacting the Credit/Collection Department, extension 4331/3235. All fees are payable upon receipt of financial assistance.

Any known differences between the amount of the award, and minimum first payment must be paid by September 4.

Students being sponsored by outside organizations, e.g. Vocational Rehabilitation Services, R.C.M.P., Canadian Armed Forces, etc., are required to bring copies of fee authorizations at the time of request of deferment.

Students who are unable to pay their fees at the time of registration should contact the Business office Room 208 Gilmour Hall prior to registration.

REFUNDS

Students who are forced by illness or other personal reasons to withdraw from courses will be charged a partial fee for courses that are cancelled. A Charge Schedule for Course Cancellation is included with the fee schedules which are sent in the summer preceding September registration. The amount of 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 up to the end of the drop and add period .**

Miscellaneous Fees

The following fees were in effect for the 1991-92 academic year, and are over and above assessed academic fees, supplementary fees, and residence fees and food plan fees.

OPTIONAL USER FEES

Application Fee	\$10.00
Admission and Re-admission Tests	10.00
Transcript (per copy)	3.00
Certification of Enrolment	3.00
Replacement of Diploma	25.00
Replacement of M.D. and Graduate Diploma	30.00
Letter of Permission	30.00
Late Document Fee	30.00
Late Registration Fee	
Full-Time Student	50.00
Part-Time Student	25.00
Deferment of Payment Fee	30.00
Late Instalment Fee	30.00
Deferred Examination at Another Centre	40.00
Supervision of Examinations for Other Universities	35.00
Examination Reread	30.00
Replacement Fee - Income Tax Tuition Receipt/ Education Credit Certificate	6.00
Replacement Student I.D. Card	15.00
Replacement Food Card	
Lost Card	15.00
Misuse of Card	25.00
Picture	2.00
Returned Cheque Charge (NSF, Payment Stopped)	
First Occurrence	25.00
Each Subsequent Occurrence - Additional	10.00
Reinstatement Fee	50.00
Residence Withdrawal Fee	35.00
Photocopy of Examination Script	10.00
Athletic Fees & Facility User Fee (optional for Part-time students)	
17 units or less - Full Service	
Full Year	138.00
8 months	106.00
4 months	65.00
Summer (May-August)	58.00
17 units or less (towel/basket only)	
Full Year	120.00
8 months	93.00
4 months	57.00

Summer (May-August)	51.00
Facility Fees (18 units or more)	
Full Service	45.00
Towel Only	32.00
Athletic Guest fee	6.00
3 for	11.00
5 for	16.00
Library charges	
Locker Rental	10.00
Overdue Recalled Books (per day)	2.00
Overdue Reserve Material (per hour)	2.00
Replacement Costs/Fines ... up to	100.00
Returned Books After Replacement Obtained	10.00
Locker, large	11.50
Locker, small	4.00
Campus Health Service (optional for Part-time (day) students)	36.00

EXPENSES

To some extent, expenses are controlled by the student (e.g., clothing, living expenses and amusement). The essential costs for a typical student in Level I not living at home will be approximately \$7,250 depending upon the amount the student chooses to pay for room and board.

Costs Other Than Fees For Students in Clinical Courses: Students must buy uniforms, shoes, stockings and uniform accessories, for clinical practice. Nursing students' uniforms and accessories are ordered under the direction of the School of Nursing and the approximate cost is \$200. White shoes and hose are also necessary.

Registration Examinations: Graduates of the B.Sc.N. programme can expect to pay fees (\$252.00 in 1992) 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. It is suggested that insurance policies be inspected 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. It must be remembered that the greater part of a student's day is usually devoted to activities not related to a University course. There are various insurance plans available and although the University does not specifically endorse any one of these plans, it has no objection to the explanatory brochures and literature being posted on bulletin boards or distributed in appropriate places. Students involved in laboratory or field work are particularly encouraged to investigate such coverage.

For Information on Student Awards and Financial Aid, please refer to Sections on UNDERGRADUATE ACADEMIC AWARDS and STUDENT FINANCIAL AID in this Calendar.

Degrees and Programmes

McMaster University offers the following undergraduate degrees:

FACULTY AND DEGREE Duration in Years

Arts and Science Programme

B.Arts Sc.	3
B.Arts Sc. (Honours)	4
(with the exception of the combined Honours degrees in Biology and Physics which require 5 years of study.)	

School of Business

B.Com.	4
B.Com. (Honours)	4
B.Com. & Arts (Honours)	4
(No new registrants will be taken into the Bachelor of Commerce & Arts (Hon.) programme after the Fall of 1993)	

Faculty of Engineering

B.Eng.	4
B.Eng.Mgt.	5
B.Eng.Soc.	5
(Subject to approval by the Ministry of Colleges and Universities.)	

Faculty of Health Sciences

B.H.Sc.-Second Degree	2
B.Sc.N.	4
(In addition, the B.Sc.N. is available as a 2-year programme to those holding the R.N. Diploma)	
M.D. (Doctor of Medicine)	3
(The M.D. Degree is taken after at least three years of undergraduate study.)	

Faculty of Humanities

B.A.	3
B.A. (Honours)	4
B.Mus.	4

Faculty of Science

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

Faculty of Social Sciences

B.A.	3
B.A. (Honours)	4
B.A. (Major)	4
B.P.E.	4
B.A./B.S.W.	4
B.S.W. (as a Second Degree)	2

Second Undergraduate Degree

Provision exists for a university graduate to take a second bachelor's degree. This programme is normally shortened (except for the B.H.Sc.-Second Degree Programme). 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 *Academic Regulations, Second Bachelor's Degree Programme*.)

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 Associate Dean (Studies).

Courses Instructed in French

In order to facilitate the intellectual development of students in the French language, the University will attempt to offer one or two courses annually where French is the language of instruction. These courses are open to all students providing they have the necessary prerequisite, and a suitable working knowledge in the French language.

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 6 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 section *Courses Listing* in this Calendar.

Anthropology	1A03, 1L03, 1Z03
Art History	1A06
★ † Biology	1J03
★ † Chemistry	1A06, 1C03
★ Chinese	1Z06, 1ZZ6
Classics	1B06, 1L06
Comparative Literature	1A06
★ † Computer Science	1MA3, 1MB3, 1ZA3
Drama	1A06
Economics	1A06
English	1D06
French	1A06, 1N06, 1Z06
★ † Geography	1C03, 1G03
Geography	1B06
★ † Geology	1C03
German	1A03, 1AA3, 1Z06, 2Z06
Gerontology	1A06
Greek	1Z06, 2A03
Hispanic Studies	1A06, 1Z06
History	1C06, 1D06, 1L06
Humanities 2B06	
Italian	1A06, 1Z06, 1ZZ6
Japanese	1Z06
Labour Studies	1AA3, 1A03
★ Latin	1Z06, 2A03
Linguistics	1A06
★ † Mathematics	1A06, 1AA6, 1B03, 1C06, 1K03, 1M03
★ † Materials	1A03, 1B03
Music	1A06
Philosophy	1B06, 1D06
★ † Physics	1A06, 1B06, 1C06
Political Science	1B03, 1C03
† Psychology	1A06
Religious Studies	1B06, 1D06, 1E06, 1F06, 1I06
Russian	1Z06
Sociology	1A06
★ Statistics	1A03, 1L03
Women's Studies	1A06

★ These courses are **not** acceptable for the 6-unit complementary studies elective required in Engineering I.

† These courses are **not** acceptable for the 6 units of Humanities or Social Sciences electives required in Natural Sciences I.

Degrees by Programme

Subject	Bachelor's Degree	Major Degree	Honours Degree	Combined Honours Degree	Professional Degree
Anthropology	B.A.★		B.A.★	B.A.★	
Applied Chemistry			B.Sc.		
Applied Physics			B.Sc.		
Art			B.A.	B.A.	
Art History	B.A.★		B.A.★	B.A.★	
Arts and Science	B. Arts Sc.		B. Arts Sc.	B. Arts Sc.	B. Arts Sc./B.S.W.
Asian Studies x		B.Sc.			
Biochemistry			B.Sc.	B.Sc.	
Biological Chemistry			B.Sc.		
Biology	B.Sc.✱	B.Sc.	B.Sc. B.Sc.; B.A.		
Biotechnology & Genetic Engineering			B.Sc.		
Business					B.Com.(Hon.) B.Com. B.Com.&Arts(Hon.)♦
Canadian Studies x					B.Eng., B.Eng.Mgt. B.Eng.Soc.† B.Eng., B.Eng.Mgt., B.Eng.Soc.†
Ceramic Engineering		B.Sc.	B.Sc.	B.Sc.	
Chemical Engineering	B.Sc.✱				
Chemistry					
Chinese x					B.Eng., B.Eng.Mgt. B.Eng.Soc.†
Civil Engineering	B.A.★		B.A.	B.A.	
Classics					B.Com. B.Com(Hon.) B.Com.&Arts(Hon.)♦
Commerce					
Comparative Literature			B.A.	B.A.	
Computer Engineering					B.Eng., B.Eng.Mgt., B.Eng.Soc.†
Classics					
Computer Science	B.Sc.✱	B.Sc.	B.A. B.Sc.	B.Sc.; B.A. B.A.★	
Drama	B.A.★		B.A.★		
Earth Science	B.Sc.†				
Economics	B.A.★		B.A.★	B.A.	
Eighteenth Century Studies x					
Electrical Engineering					B.Eng., B.Eng.Mgt., B.Eng.Soc.† B.Eng., B.Eng.Mgt.
Engineering Physics					
English	B.A.★		B.A.★	B.A.★	
Film x					
French	B.A.		B.A.	B.A.	
Geography	B.A.★; B.Sc.✱		B.A.★; B.Sc.	B.A.★; B.Sc.	
Geography and Environmental Sciences					
Geography and Environmental Studies					
Geology	B.Sc.✱	B.Sc.	B.A. B.Sc.	B.A.; B.Sc. B.A.	
German					
Gerontology	B.A.(combined)			B.A.	
Greek x					
Hebrew x					
Hispanic Studies					
History	B.A.★		B.A.★	B.A.	B.A.★
Italian				B.A.	
Japanese Studies				B.A.★	
Labour Studies	B.A.★		B.A.★	B.A.★	
Latin x					
Life Science	B.Sc.†				
Linguistics			B.A.		
Manufacturing Engineering					B.Eng. B.Eng., B.Eng.Mgt., B.Eng.Soc.†
Materials Engineering		B.Sc.	B.Sc.		
Materials Science					
Mathematical Science	B.Sc.†				
Mathematics	B.Sc.★✱	B.Sc.	B.Sc.	B.Sc.; B.A.	B.Eng., B.Eng.Mgt., B.Eng.Soc.†
Mechanical Engineering		B.Sc.	B.Sc.		
Medical and Health Physics					
Medicine					M.D. B.Eng., B.Eng.Mgt., B.Eng.Soc.†
Metallurgical Engineering					
Modern Languages and Linguistics			B.A. B.Sc.		
Molecular Biology and Biotechnology			B.Mus.	B.A.	
Music	B.A.				
Nursing					B.Sc.N. B.H.Sc.
Occupational Therapy					
Peace Studies x					
Pharmacology ♦				B.Sc. B.A.★; B.Sc.	
Philosophy	B.A.★		B.A.★		B.P.E.
Physical Education					
Physical Science	B.Sc.†				
Physics	B.Sc.✱	B.Sc.	B.Sc.	B.Sc.	B.H.Sc.
Physiotherapy					
Political Science	B.A.★		B.A.★	B.A.★	
Psychology	B.A.★; B.Sc.✱	B.A.★; B.Sc.	B.A.★; B.Sc.	B.A.★; B.Sc.	
Religious Studies	B.A.★		B.A.★	B.A.★	
Russian					
Sanskrit x					
Science	B.Sc.				
Social Work					B.A./B.S.W., B.S.W.
Sociology	B.A.★		B.A.★ B.Sc.	B.A.★	
Statistics		B.Sc.			
Women's Studies				B.A.★	

♦ No new registrants will be taken into the Bachelor of Commerce & Arts (Hon.) programme after the Fall of 1993.

★ degree programme is available through a combination of evening and summer study.

✱ No new registrants will be taken into Level II as of August 1992.

† degree programme is pending approval.

• a five year co-op degree programme.

x course areas not offered as degrees.

Arts and Science Programme

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

The Arts and Science Programme has been designed for students who wish to use their university years to further their intellectual growth through a study of the methods of inquiry and of significant achievements in both arts and sciences. The Programme also allows for substantial specialization in a discipline or area through the use of electives. The philosophy of the Arts and 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 and Science Programme, together with other courses offered by Departments. The core curriculum is designed to meet three major objectives:

1. to increase understanding of biological and physical sciences, behavioural sciences, technology, and the arts;
2. to develop skill in the use of the written and spoken word, and in quantitative reasoning; and
3. to foster the art of practical inquiry into problems 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 serious 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 issues, 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 and 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 and Science Programme with a prescribed set of courses in a subject. Completion of a combined honours programme can be expected to satisfy course requirements for admission to graduate study in the particular subject. Students are advised, however, to contact the Department in which they are contemplating graduate study to obtain information on admission requirements.

Students who plan to seek employment directly upon graduation may wish to consider concentrating their electives in such work-related subjects as economics, psychology, computer science, business or applied mathematics.

Academic Regulations

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

The Programme **begins in Level I** and leads to the degree, Bachelor of Arts and 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. Continuation in the

Programme requires honours-level performance, and the requirements for Level III are the same whether or not Level IV is undertaken.

Registration in Level I of the Arts and Science Programme is limited to approximately fifty students.

Inquiry Seminar Requirements

Inquiry seminars are comprised of Arts and Science 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 and Science 1C06 must be completed in Level I. Upper-level inquiry seminars may be taken in Level II and beyond.

Students intending to graduate with the B. Arts Sc. (Honours) degree are required to complete 12 units of upper-level inquiry seminars or 6 units of upper-level inquiry seminar and an additional 6 units of a course or courses, approved by the Director, in which another age or culture is studied, and in which students can enhance their skills in inquiry.

Students intending to graduate with B. Arts Sc. degree are required to complete 6 units of upper-level inquiry seminar. An additional 6 units of upper-level inquiry seminar may be taken as an elective.

Combined Honours

Students in the Arts and Science Programme may undertake combined honours programmes in many disciplines within the Faculties of Social Sciences, Humanities or Science. The combined programmes with Physics and with Biology are five-level programmes. Combined programmes that are already established are described below. Students are encouraged to consult the Director of the Arts and Science Programme for consideration of other possible combinations.

Registration: Registration in each level of any combined honours programme requires the written approval of the Director of the Arts and Science Programme and the appropriate Departmental Counsellor.

Individual Study/Thesis: Students in the B. Arts Sc. (Honours) Programme are required to complete either Individual Study or Thesis (Arts and Science 4A06, or 4C06). For students in combined honours programmes this requirement can be, and in some cases must be, met by a Departmental course.

Level I Standing

Level I standing is computed as the average of the best 80% of the 30 units of Level I work. *Continuation beyond Level I* requires a Level I standing of *at least 7.0*. In the case of some combined honours programmes, the average must include specified courses. These courses are indicated in the programme descriptions below.

Continuation Beyond Level II

For students in the B. Arts Sc. (Honours) and B. Arts Sc. Programmes, *continuation beyond Level II* requires a Cumulative Area Average (CAA) of *at least 7.0*.

For students in a combined programme of Arts and Science and Another Subject, continuation beyond Level II requires an **overall CAA** of at least 7.0 in Levels II, III and IV, **and** a CAA of at least 7.0 calculated for those courses designated as area courses by the combined discipline.

Area Courses

All courses completed by students in Level II, III, IV or V are Area courses unless designated as *extra* at the time of registration, or otherwise stated in the Programme descriptions below.

Programme Probation

A student whose Cumulative Area Average is less than 7.0 but no lower than 6.5, and who has not been placed on probation before, may be granted Programme Probation at the discretion of the Director. A student whose Cumulative Area Average is less than 6.5 will not be granted Programme Probation.

Graduation Average

The Graduation Average for all Arts and Science programmes will include Arts and Science 2A06 and 2D06. For combined programmes, a single Graduation Average will be computed.

Arts and Science Programmes**B. ARTS SC.(HONOURS) AND B. ARTS SC.****Level I: 30 units**

R Arts and Science 1A06, 1B06, 1C06, 1D06; Biology 1A06. (Biology 1A06 must be completed by the end of Level II.)

E Electives to a total of 30 units.

Level II: 30 units

R Arts and Science 2A06, 2D06; 6 units upper-level Inquiry (may be taken in Level III); Arts and Science 2R06; Biology 1A06 (if not completed in Level I).

E Electives to a total of 30 units.

Level III: 30 units

R Arts and Science 3B06, either 3A06 or 3D06, and 6 units upper-level Inquiry if this requirement has not already been completed.

E Electives to a total of 30 units. Students enrolled in B. Arts Sc. may include an additional 6 units upper-level Inquiry as an elective if 6 units were completed in Level II.

Level IV: 30 units

R Science 3A06 or 3D06 (whichever not completed in Level III). If the inquiry requirement has not already been completed, an additional 6 units from upper-level Inquiry, or from a course or courses approved by the Director in which another age or culture is studied; 6 to 12 units from Arts and Science 4A06, 4A12, 4C06, 4C12.

E Electives to a total of 30 units.

Arts and Science Programme and Another Subject

Established combined programmes are described below. Students are encouraged to consult the Director of the Arts and Science Programme for consideration of other possible combinations.

HONOURS ARTS AND SCIENCE AND ANTHROPOLOGY**Continuation Beyond Level I:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including an average of at least 7.0 from: Anthropology 1A03, 1L03, 1Z03.

Programme Note:

The Anthropology component includes a study of 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 subfield course listing in the *Department of Anthropology* section of this Calendar.

Area Courses:

All Level II, III and IV Anthropology courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; 6 units from Anthropology 1A03, 1L03, 1Z03.

Level II: 30 units

R Arts and Science 2A06; Arts and Science 2R06; Biology 1A06; 12 units from Anthropology 2E03, 2F03, 2I03, 2PA3, 2Q03.

Level III: 30 units

R Arts and Science 2D06, 3A06; 6 units upper-level Inquiry; 3 units from Anthropology 2E03, 2F03, 2I03, 2PA3, 2Q03 whichever not taken in Level II; 3 units from Anthropology 3A03, 3B03, 3D03, 3F03; 6 units from Anthropology Area courses.

Level IV: 30 units

R Arts and Science 3B06, 3D06; 6 units upper-level Inquiry; Anthropology 4I03, 3 units Level IV Anthropology, 6 additional units of Anthropology Area courses.

HONOURS ARTS AND SCIENCE AND BIOCHEMISTRY**Admission:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work and at least an average of 7.0 in Arts and Science 1D06 and Chemistry 1A06.

Area Courses:

All Level II, III, and IV Biochemistry courses; Biology 2B03, 2C03; Chemistry 2O06, 2Q06, 2R03, 3D03, 3F03.

Programme Note:

Biochemistry 2A06 will be included in calculating the Graduation Average.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Chemistry 1A06

Level II: 33 units

R Arts and Science 2A06; Arts and Science 2R06 or Statistics 2M03 or 2MA3 and Computer Science 1MA3 or 1ZA3; Biochemistry 2A06; Biology 1A06; Chemistry 2O06, 2R03.

Level III: 33 units

R Arts and Science 2D06, 3A06; Biochemistry 3A03, 3AA3, 3L03, 3P03; Biology 2B03 (if not completed), 2C03; Chemistry 3F03.

Level IV: 33 units

R Arts and Science 3B06, 3D06, 6 units upper-level Inquiry; Biochemistry 4E03 and either Biochemistry 4B06 or 4P03 and 4A03; 6 units from: 4D03, 4I03, 4M03.

HONOURS ARTS AND SCIENCE AND BIOLOGY**Admission:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work, and at least a 7.0 in one of Arts and Science 1D06 or Chemistry 1A06.

Programme Notes:

1. **Continuation** in the programme beyond Level II requires at least 7.0 in Biology 1A06.
2. Students are advised to note carefully the prerequisites for all Level III and IV courses listed in the programme, particularly Biochemistry 3A03, 3AA3 and 3G06.
3. In Levels IV and V students may elect either the Whole Organism Option or the Cell, Molecular Biology, Genetics Option.

Area Courses:

All Level II, III, and IV Biology courses; Biochemistry 3A06, 3A03, 3AA3, 3G06, 4D03, 4E03, 4M03; Engineering 4X03; Geography 3P03, 4P03; Geology 2J03, 3D06, 3J03, 4D03, 4F03; Molecular Biology 4H03; Pharmacology 4B03; Psychology 3F06, 3R03, 3S03, 3T03.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Chemistry 1A06

Level II: 30 units

R Arts and Science 2A06, 2D06, 2R06; Biology 1A06; Chemistry 2O06

Level III: 30 units

R Arts and Science 3B06, 6 units upper-level Inquiry; 12 units from Biology 2B03, 2C03, 2D03, 2E03, 2F03; Biochemistry 3G06.

Level IV: 30 units Whole Organism Option (OPTION A)

R Arts and Science 3A06 or 3D06; Biology 3U03 and 3UU3, or 4B03, or 3SS3 and 3TT3; Biology 3N03 and 3NN3, two of Biology 3B03, 3BB3, 3F03, 3FF3, 3K03; Biology 3I03 or 3J03.

E 3 to 6 units.

Level V: 30 units

R Arts and Science 3A06 or 3D06 (whichever not completed), 6 units upper-level Inquiry; Arts and Science 4C06; Biology 4D03 or 4X03; 6 units of Level III or Level IV Biology courses.

E 3 units.

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Level IV: 30 units Cell, Molecular Biology, Genetics Option (OPTION B)
R Arts and Science 3A06 or 3D06; Biology 3E03, 3H03, 3HH3, 3I03, 3J03, 3N03 and 3NN3, 3O03

Level V: 30 units

R Arts and Science 3A06 or 3D06 (whichever not completed), 6 units upper-level Inquiry; Arts and Science 4C06; Biochemistry 4E03 and Biology 4M03; Biology 4I03 or 4V03; 3 units of Level IV Biology courses.

HONOURS ARTS AND SCIENCE AND COMPUTER SCIENCE

Continuation Beyond Level I

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including Arts and Science 1D06, and Computer Science 1MA3 and 1MB3.

Area Courses:

All Level II, III, IV Computer Science courses except 2ME3, 2SB3, 4EC3.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Computer Science 1MA3 and 1MB3.

Level II: 33 units

R Arts and Science 2A06, 2D06; Biology 1A06; Statistics 2D03 or 2M03 or 2MA3; Mathematics 1B03; Computer Science 2MF3, 2MC3, 2MD3.

Level III: 33 units

R Arts and Science 3A06, 3B06, 6 units upper-level Inquiry; Computer Science 2ME3 or 2MJ3, 3MG3, 3MH3, 3MI3 and one of 3CA3, 3EA3, 3IA3.

Level IV: 30 units

R Arts and Science 3D06, 6 units upper-level Inquiry; Computer Science 4MP6 and 9 additional units of Level III or IV Computer Science courses, including Computer Science 3EA3 if not already taken.

E 3 units.

HONOURS ARTS AND SCIENCE AND DRAMA

Admission:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work, including a grade of at least B- in Drama 1A06.

Programme Note:

Students in Drama must include a minimum of 3 units of work from at least 3 of the 4 Fields of Study (See *Programme Notes under Drama*).

Area Courses:

All Level II, III, and IV Drama courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Drama 1A06.

Level II: 30 units

R Arts and Science 2A06; Arts and Science 2R06, Computer Science 1MA3 or 1ZA3, Mathematics 1B03; Biology 1A06; 12 units Level II Drama.

Level III: 30 units

R Arts and Science 2D06, 3A06, 6 units upper-level Inquiry; 12 units Level III or IV Drama.

Level IV: 30 units

R Arts and Science 3B06, 3D06, 6 units upper-level Inquiry; 12 units Level III or IV Drama including at least one Level IV Drama course approved as the Arts and Science Programme Individual Study/Thesis requirement.

HONOURS ARTS AND SCIENCE AND ECONOMICS

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

Admission:

Option A requires a Level I standing of at least 7.0, with at least 7.0 in Economics 1A06. *Option B* requires a Level II Cumulative Area Average of at least 7.0, with at least 7.0 in Economics 1A06.

Programme Note:

For both Options A and B, a Single Graduation Average will be calculated

on the basis of all Level II, III and IV Economics courses and all Level III and IV Arts and Science courses, and Arts and Science 2A06 and 2D06.

Area Courses:

All Level II, III, and IV Economic courses.

Option A:

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Economics 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Biology 1A06; Economics 2G03, 2GG3, 2H03, 2HH3.

Level III: 30 units

R Arts and Science 3A06, 3B06, 6 units upper-level Inquiry; one of Economics 3O06, Arts and Science 2R06; one of Economics 2K03, 3I03, 3R03.

E 3 units. (Mathematics 1L03 or Statistics 1L03 is strongly recommended.)

Level IV: 30 units

R Arts and Science 3D06 and 6 units upper-level Inquiry; Economics 3LL3, 3F03 and 12 additional units of Economics, 6 units of which must be approved as substitutes for Arts and Science 4A06/4C06.

Option B:

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Biology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06, 2R06; Economics 1A06.

E 6 units. (Mathematics 2L03 is recommended.)

Level III: 30 units

R Arts and Science 3A06, 3B06, 6 units upper-level Inquiry; Economics 2G03, 2GG3, 2H03, 2HH3.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; one of Economics 2K03, 3I03, 3R03; Economics 3LL3, 3F03; Economics 3 units; Economics 6 units to replace Arts and Science 4A06/4C06.

HONOURS ARTS AND SCIENCE AND ENGLISH

Students who entered this programme before September 1990 must consult the Departmental Counsellor to discuss ways of meeting their programme requirements.

Enrolment in this programme is limited. Selection is based on academic achievement, but requires, as a minimum, a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including a grade of at least B- in English 1D06.

Programme Notes:

1. Completion of the English component of this combined programme requires a minimum of 6 units of work from four of the six fields listed in Department Note #2 of the *Department of English* section of this Calendar. English 2A06, 4X03 and the Level IV seminars may not be used for field coverage. Students should plan their programmes in consultation with the Departmental Counsellor in the English Department.
2. In addition to the 36 units of English Area courses, students must successfully complete 6 units of a language other than English. The English Department strongly advises students to fulfill this requirement before Level III.
3. With special permission of the English Department, students may substitute English 4X03 for 3 units of Level IV seminar work in the second term.

Area Courses:

English 2A06, 2B06, 2G06, 2H06, 3C06, 3D03, 3DD3, 3G06, 3H06, 3I03, 3J06, 3K06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3, 3T03, 3V06, 4X03 and all Level IV seminar courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; English 1D06

Level II: 30 units

R Arts and Science 2A06; Biology 1A06; Arts and Science 2R06; English 2A06; 6 units from: English 2B06, 2G06, 2H06.

Level III: 30 units

R Arts and Science 2D06, 3B06; 6 units upper-level Inquiry; 12 units Level III English Area courses.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; 6 units Level III English Area courses; 6 units Level IV seminars; 6 units Language requirements.

HONOURS ARTS AND SCIENCE AND FRENCH**Continuation Beyond Level I:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including at least B- in French 1A06.

Area Courses:

All Level II, III, IV French courses, except French 3Y03.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; French 1A06.

Level II: 30 units

R Arts and Science 2A06; Arts and Science 2R06; Biology 1A06; French 2A03; one of: French 2J03, 2J3; one of 2W03, 2WW3; one of: 2C03, 2G03.

Level III: 30 units

R Arts and Science 2D06, 3B06; 6 units upper-level Inquiry; French 3C03; one of: French 3K03, 3KK3; one of: French 3Q03, 3QQ3; one of 3AA3, 3BB3, 4U03.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; French 4A03; 3 units Level III or IV French Area courses; two 3-unit Level IV French courses approved as replacement for Arts and Science 4A06 or 4C06.
E 6 units.

HONOURS ARTS AND SCIENCE AND GEOGRAPHY**Continuation Beyond Level I:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including at least 7.0 in 6 units of Level I Geography.

Programme Note:

Students will normally select Area courses in Geography from one of the two major subfields of Physical Geography or Human Geography. Students should consult with the Departmental Counsellor concerning the specific courses related to each subfield.

Area Courses:

All Level II, III and IV Geography courses with the exception of Geography 2C03, 2E03, 2P03, 3JJ3, 3R03.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Geography 1A06 or Geography 1C03 and 1G03, 1B06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Biology 1A06; Geography 2LL3, 2NN3; 6 units of Geography Area courses.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; 12 units of Geography Area courses including Geography 3O03.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; 12 units from Level III or IV Geography Area courses; Geography 4C06.

HONOURS ARTS AND SCIENCE AND GERMAN**Continuation Beyond Level I:**

Level I standing of at least 7.0, including a grade of at least B- in German 1A06 for *Programme A*, or a grade of at least B- in German 1Z06 for *Programme B*.

Programme Notes:

- Upon completion of 60 units of work (including 12 units of required Level II German Area courses), and with the approval of the Department of Modern Languages and of the Associate Dean of Humanities and the Director of the Arts and Science Programme, up to 15 units of Level III German may be replaced by courses of study at university in a German-speaking country. Students who plan to spend their third year abroad must have a CAA of at least 8.0 in *each* of German and

Arts and Science in their second year.

- All Level II, III and IV German Area courses will be included in calculating the Graduation Average.

Area Courses:

Programme A: Level II, III and IV German courses, excluding German 2AA3 and 2Z06.

Programme B: Level II, III and IV German courses.

Level I: 30 units

R Arts & Science 1A06, 1B06, 1C06, 1D06; German 1A03 and 1AA3 or 1A06 or 1Z06.

Level II: 30 units

R Arts & Science 2A06; Arts and Science 2R06; Biology 1A06;
Programme A: German 2A03, 2E03; one of Modern Languages 2H03, 3G03; 3 additional units of German.

Programme B: German 2AA3; 2Z06; one of Modern Languages 2H03, 3G03.

Level III: 30 units

R Arts & Science 2D06, 3B06; 6 units upper-level Inquiry.
Programme A: German 3Z03; 3ZZ3; 6 units from German 2G03, 3A03, 3B03, 4CC3, 4HH3, 4I3, 4T03, 4TT3, 4Z03.

Programme B: German 2A03; 2E03; 2G03; one of German 3A03, Modern Languages 2H03, 3G03.

Level IV: 30 units

R Arts & Science 3D06; 6 units upper-level Inquiry.
Programme A: 12 units from German 2C03, 3A03, 3B03, 4CC3, 4HH3, 4I3, 4TT3, 4Z03.

Programme B: German 3Z03; 3ZZ3; 6 units from German 3A03, 3B03, 4G03, 4HH3, 4I3, 4T03, 4TT3.

E 6 units.

Note: For *both* Programme A and B, 6 units taken in Level IV must be approved as substitutes for Arts and Science 4A06/ 4C06.

HONOURS ARTS AND SCIENCE AND GERONTOLOGY**Admission:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work, including Gerontology 1A06.

See "Programme Notes" under Gerontological Studies.

Area Courses:

Level II, III and IV Gerontology Area courses, and all designated Gerontology Area courses: Anthropology 3Q03; Health Sciences 3B04, 4C03, 4D03; History 3EE3; Philosophy 3C03; Religious Studies 2A06, 2WW3; Social Work 3C03, Sociology 3G03, 3HH3, 3X03, 4P03; or other designated and approved Area courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Gerontology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Arts and Science 2R06; Biology 1A06; Gerontology 2A03; Gerontology 2B03, or 3D03.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; Gerontology 3B03, 3C03, 3G03; 3 units Gerontology Area courses.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; Gerontology 4A06; 12 units Gerontology Area courses.

HONOURS ARTS AND SCIENCE AND HISTORY**Continuation Beyond Level I:**

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including at least 7.0 in any Level I History course.

Programme Notes:

- Completion of the History component of this combined programme requires a minimum of 3 units in each of three of the following six fields of History: European, Ancient, Asian, Canadian, British, and the Americas (excluding Canada). All Level I, II and III History courses may be used towards this requirement. (See listing in the *Department of History* section of this calendar.) Students are permitted a maximum of 18 units of Area work in any one of the preceding fields.

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

Area Courses:

All Level II, III, IV History courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; 6 units of Level I History

Level II: 30 units

R Arts and Science 2A06, 2D06; Arts and Science 2R06; Biology 1A06; 6 units Level II History.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; 6 units Level II History; 6 units Level III History.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; 6 units Level III History; 6 units Level IV History; 6 units Level IV History approved as substitutes for Arts and Science 4A06/4C06.

HONOURS ARTS AND SCIENCE AND MATHEMATICS

Continuation Beyond Level I:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including a weighted average of 7.0 in Arts and Science 1D06 or Mathematics 1A06 or 1AA6, and Mathematics 1B03.

Area Courses:

All Level II, III, IV Mathematics and Statistics courses.

Level I: 30-33 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Mathematics 1B03; Biology 1A06 (may be taken in Level II).

E 3 units, if Biology 1A06 not taken in Level I.

Level II: 33-36 units

R Arts and Science 2A06, 2D06; Statistics 2D03 or 2M03 or 2MA3 or Arts and Science 2R06 if Biology 1A06 completed in Level I; Mathematics 2A06, 2B06, 2F03; Biology 1A06 (if not completed in Level I).

Level III: 33-36 units

R Arts and Science 3A06, 3B06, 6 units upper-level Inquiry; Mathematics 3A06, 3E03, 3EE3, and 3 to 6 units from 2C03, 3B03, 3F03, 3FF3, 3H03, 3L06, 3P03, 3Q03, 3RR3, Statistics 3D06.

Level IV: 30-36 units

R Arts and Science 3D06, 6 units upper-level Inquiry; one of Arts and Science 4A06 or 4C06; one of Mathematics 2C03, 3B03, 3F03, 3FF3, 3H03, 3L06, 3P03, 3Q03, and 9 to 12 additional units of Mathematics or Statistics from Mathematics 4A06, 4B06, 4C03, 4E03, 4J03, 4K03, 4Q03, 4RR3, 4S03, 4V06, Statistics 4M03.

HONOURS ARTS AND SCIENCE AND PHILOSOPHY

Continuation Beyond Level I:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work, including a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in 6 units of work acceptable to the Department of Philosophy.

Programme Note:

Philosophy 2C06 will be included in calculating the Graduation Average.

Area Courses:

All Level II, III, IV Philosophy courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Biology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Arts and Science 2R06; Philosophy 2A06; 6 units Level III or IV Philosophy.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; Philosophy 2C06; 6 units Level III or IV Philosophy.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; Philosophy 3W03 and 4W03, or 4Z06; 6 units Level III or IV Philosophy.

E 6 units.

HONOURS ARTS AND SCIENCE AND PHYSICS

Admission:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 33 units of Level I work, and at least a 7.0 in Arts and Science 1D06 or Mathematics 1A06.

Programme Note:

Continuation in the programme beyond Level II requires at least 7.0 in Physics 1A06 or 1B06.

Area Courses:

All Level II, III, IV Physics courses and Mathematics 2A06, 2G03, 2O03, 3C03, 3D03.

Level I: 33 units

R Arts and Science 1A06, 1B06, 1C06; Arts and Science 1D06 or Mathematics 1A06; Physics 1A06 or 1B06, or Biology 1A06; Mathematics 1B03.

Level II: 30-33 units

R Arts and Science 2A06, 6 units upper-level Inquiry; Biology 1A06, or Physics 1A06 or 1B06, whichever has not been completed in Level I; Chemistry 1A06; Mathematics 2A06 or 2G03 and Mathematics 2C03 or 2O03.

Level III: 30 units

R Arts and Science 3B06, and either 3A06 or 3D06; Physics 2B06, 2C03, 2D03, 2H03; Computer Science 1MA3.

Level IV: 29 units

R Arts and Science 3A06 or 3D06 (whichever not completed in Level III); Physics 3H04, 3K04, 3M03, 3MM3 and 3N03; Mathematics 3C03, 3D03.

Level V: 32 units

R Arts and Science 4C06; 6 units upper-level Inquiry; Physics 4B04, 4F03, 4J04; 9 units Level III or IV Physics excluding Physics 4Q04.

HONOURS ARTS AND SCIENCE AND POLITICAL SCIENCE

Admission:

Admission requires a Level II Cumulative Area Average of at least 7.0, with a grade of at least B- in 6 units of Political Science courses.

Programme Notes:

1. Political Science 2F06 and 2O06 will be included in calculating the Graduation Average if taken after Level II. If both 2F06 and 2O06 are taken together in Level II, students may have difficulty with prerequisites in Level III.
2. The second year Arts and Science mathematics requirements may be fulfilled by Political Science 2F06.

Area Courses:

All Level II, III, IV Political Science courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Biology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Political Science 2F06 (or Arts and Science 2R06); 12 units Level II or III Political Science.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; Political Science 2O06; 6 units Level III Political Science.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; 6 units Level III/IV Political Science; 6 units Level IV Political Science approved to replace Arts and Science 4A06 or 4C06.

E 6 units.

HONOURS ARTS AND SCIENCE AND PSYCHOLOGY

Continuation Beyond Level I:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work including at least B in Psychology 1A06.

Programme Notes:

1. Students must meet a laboratory requirement by completing one of Psychology 3C06, 3E03, 3L03 (formerly 2U03), 3QQ3, 3S03, 3V03, 4G03, 4QQ3.

2. Arts and Science 2R06 or Psychology 2R03 and 2RR3 will be included in the Graduation Average if taken after Level II.

Area Courses:

Arts and Science 2R06, Psychology 2E03, 2H03, 2R03, 2RR3, 2T03 and all Level III and IV Psychology courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Psychology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Biology 1A06; Psychology 2R03 and 2RR3 (or Arts and Science 2R06); 6 units from: Psychology 2E03, 2H03, 2T03.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; 3 units from: Psychology 2E03, 2H03, 2T03 (whichever not taken in Level II); 9 units Level III Psychology Area courses.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; 6 units Level III or IV Psychology Area courses; Psychology 4D06 or 6 units Level IV Psychology Area courses approved as substitutes for Arts and Science 4A06 or 4C06.

E 6 units.

HONOURS ARTS AND SCIENCE AND RELIGIOUS STUDIES

Admission:

Level I Standing of at least 7.0 in Arts and Science and at least 7.0 in Arts and Science 1A06.

Programme Note:

The computation of the Graduation Average will include all Level II, III and IV Religious Studies courses taken.

Area Courses:

All Level II, III, and IV Religious Studies courses or approved substitutes.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Biology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06; Arts and Science 2R06; 6 units from Religious Studies 2D06, 2E06, 2FF6, 2II3, 2JJ3, 2K03, 2KK3, 2LL3, 2R06, 2S06; and 6 units from Religious Studies 2J06, 2MM6, 2TT3, 3E03, 3H03, 3I03, 3U03, 3UU3.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; Religious Studies 3F03; 9 units Level III Religious Studies courses.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; Religious Studies 4A06 and 4J06 (one of which will replace Arts and Studies 4A06, 4C06.)

E 6 units

HONOURS ARTS AND SCIENCE AND SOCIOLOGY

Admission:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work, and at least 7.0 in Sociology 1A06.

Area Courses:

All Level II, III, and IV Sociology courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Sociology 1A06.

Level II: 30 units

R Arts and Science 2A06, 2D06, Biology 1A06; Sociology 2S06, 6 units Sociology.

Level III: 30 units

R Arts and Science 2R06, 3B06; 6 units upper-level Inquiry; Sociology 3H06; 3 units from: Sociology 3A03, 3P03, 3PP3; 3 units from: Sociology 3O03, 3W03.

Level IV: 30 units

R Arts and Science 3A06, 3D06; 6 units upper-level Inquiry; 6 units Level IV Sociology; Sociology 4M03 and 4N03 or 4MM6 to replace Arts and Science 4A06, 4C06.

HONOURS ARTS AND SCIENCE AND STATISTICS

Admission:

Students must achieve a Level I standing of at least 7.0 in the best 80% of the 30 units of Level I work, and at least 7.0 in Arts and Science 1D06 and Mathematics 1B03.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2SB3, 3IA3, 3SC3; Mathematics 2A06, 2B06, 2C03, 2E03, 3A06, 3E03, 3EE3, 3F03, 3FF3, 3O06, 3Q03, 3R03, 3S03, 3T03, 3W03, 3X03, 3Y03, 4A06, 4C03, 4G03, 4J03, 4K03, 4Q03, 4QQ3, 4RR3, 4W03, Statistics 2D03, 2M03 and all Level III, and IV Statistics courses.

Level I: 30 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Mathematics 1B03.

E 3 units. Computer Science 1ZA3 is suggested.

Level II: 30 units

R Arts and Science 2A06, 2D06, Biology 1A06; Mathematics 2A06, Statistics 2D03 and either 2M03 or 2MB3.

Level III: 30 units

R Arts and Science 3A06, 3B06; 6 units upper-level Inquiry; Statistics 3D06; Mathematics 3O06.

Level IV: 30 units

R Arts and Science 3D06; 6 units upper-level Inquiry; Arts and Science 4A06 or 4C06; Statistics 3U03, 3S03; Mathematics 3T03, and 3 units of Level IV Statistics.

BACHELOR OF ARTS AND SCIENCE AND SOCIAL WORK

(B.Arts Sc./BSW)

Admission:

Completion of Level I, including Psychology 1A06 and Sociology 1A06, with a Level I standing of 7.0. An applicant **must** complete Level I by April of the year in which application is made. The School of Social Work will evaluate personal suitability by one, or a combination of, written statements, tests, or interviews.

Enrolment is limited. Students who intend to apply must consult the School of Social Work before applying; applications must be made prior to *March 1*.

Continuation Beyond Level I:

Students must achieve a minimum grade of C+ in each of the required Social Work core courses, and a Cumulative Area average of at least 6.0 in Social Work courses at each review; students must maintain an Arts and Science Level I standing of 7.0 and a CAA of at least 7.0 at the end of Level II and beyond in order to continue in the programme.

Programme Notes:

1. Courses in Social Work are divided into 3 groupings: required core courses, practice oriented courses, and policy oriented courses. Students should consult a counsellor in the School of Social Work concerning the specific courses related to each grouping.
2. Students are expected to assume the cost of travelling to and from field practice agencies.

Area Courses:

All Social Work courses (See Programme Notes in School of Social Work.)

Level I: 36 units

R Arts and Science 1A06, 1B06, 1C06, 1D06; Psychology 1A06; Sociology 1A06.

Level II: 36 units

R Arts and Science 2A06, 2D06; Biology 1A06; Psychology 2A03; Social Work 2B06, 2C03, 2D03.

E 3 units.

Level III: 36 units

R Arts and Science 3B06, Arts and Science 2R06; Social Work 3D06, 3DD6, and 3N03 or 3R03; 3 units from Social Work practice courses, and 6 units from Social Work policy courses.

Level IV: 36 units

R 6 units upper-level Inquiry; and Arts and Science 3A06 or 3D06; Social Work 4D06, 4DD6, and one of Social Work 4O03, 4X03 or 4Y03; 3 units from Social Work practice courses, and 6 units from Social Work policy courses.

Michael G. DeGroote School of Business

(Faculty of Business)

W.G. Truscott/B.S.E., M.B.A., D.B.A., P. Eng., Dean of Business
J.W. Medcof/B.A., M.A., Ph.D., Associate Dean of Business (Academic)
M.W.L. Chan/B.Sc., M.A., Ph.D., Associate Dean of Business (External Relations)
J. Osterman/B.A., B. Admin., Administrator, Undergraduate Programmes
B. Pegg/B.A., Undergraduate Student Advisor

The School of Business offers three 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 **Honours Commerce and Economics** programme, which is offered in conjunction with the Department of Economics, leads to the Honours Bachelor of Commerce and Arts (Honours B.Com. & Arts) degree. This programme combines extensive amounts of work in both Commerce and Economics. No new registrants will be taken into the Bachelor of Commerce & Arts (Hon.) programme after the Fall of 1993. 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 three programmes are referred to collectively as the *Commerce programmes*.

In addition, the School of Business and the Faculty of Engineering offer a five-level joint programme for the Bachelor of **Engineering and Management** (B.Eng.Mgt.) degree. This programme provides a full course of study in Engineering and includes a complete core of business subjects. Details concerning the B.Eng.Mgt. programme and its 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 any of the Commerce programmes establishes a foundation in computer science, economics, mathematics and psychology or sociology, 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., Honours B.Com. & Arts, or B.Com. degrees. In Level II a wide range of business subjects (accounting, finance, marketing, organizational behaviour, and statistical analysis for business) are introduced and further coursework in economics is required. Elective work is taken from non-Commerce courses.

The Commerce programmes diverge at Level III. While the same core of required Commerce courses is completed in Levels III and IV, the mix of work taken over these Levels differs. In Levels III and IV of 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. The **Honours Commerce and Economics** programme contains approximately equal amounts of work in Commerce and Economics over Levels III and IV, with few electives outside these disciplines. In Levels III and IV of the **Commerce** programme, about one-half of the course work is in each of Commerce subjects and non-Commerce electives.

PART-TIME STUDIES

The Commerce programmes may be taken through part-time studies. A part-time student is permitted to take a maximum of 18 units in any Winter Session (September to April) and a maximum of 12 units in any

Summer term (May to August). It should be noted that only a few Level IV Commerce courses are offered in evenings or in summer sessions.

CONTINUING STUDENTS

Graduates of McMaster's three 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) 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. (see *Admission Requirements I. Continuing and Post-Degree Students*).

*These courses are available as CCE 500, CCE 501, CCE 502, through McMaster's Centre for Continuing Education, subject to sufficient enrolments and availability of qualified instructors.

Other than those GRADUATES specified above, Commerce courses are not open to Continuing Students. Such students are eligible for courses designated BUSINESS.

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.

Academic Regulations

A student enrolled in any 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:

CUMULATIVE COMMERCE AVERAGE

The Cumulative Area Average for the Commerce programmes is termed the **Cumulative Commerce Average** (CCA) and is the weighted average of grades in all courses, including non-Commerce courses, attempted subsequent to admission to Commerce Level II or readmission to the Commerce programme, excepting those courses designated at registration as *Extra*.

CONTINUATION IN PROGRAMME

Continuation in Level II: See section below *Commerce - Admission*.
Continuation in Levels III and IV: The Cumulative Commerce Average begins with grades attained in Level II.

A student who maintains a Cumulative Commerce Average of at least 7.0, with no more than 6 units of F grades, may continue in the **Honours Commerce** programme. A student who maintains a CCA of at least 7.0,

with no more than 6 units of F grades, and maintains at least a 7.0 cumulative weighted grade-point average in all Economics courses taken beyond Economics 1A06, may continue in the **Honours Commerce and Economics** programme. A student who maintains a CCA of at least 4.0, with no more than 6 units of F grades, may continue in the **Commerce** programme.

A student whose Cumulative Commerce Average is less than 4.0 or who has more than 6 units of F grades in the CCA **may not continue** in any of the Commerce programmes.

There is **no probationary status** in any of the Commerce programmes.

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 Associate Dean (Academic). Approval will not be granted for a transfer from Level III Commerce into a Level IV Honours Commerce programme.

Transfer from the Honours Commerce and Economics programme into Economics programmes should be discussed with the Department of Economics.

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

WORK LOAD

A full-time student must complete a 30-unit load in each Winter Session. Advance credit and credit earned during Summer Sessions may be used to reduce this load requirement. Such reductions will be applied as late as possible in a student's programme. In any 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 Commerce Average below 9.0.

REPEATED COURSES

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

EXTRA COURSES

Courses in addition to those which constitute the student's programme must be designated *Extra* at registration and the grades obtained in such courses affect neither eligibility for continuation in the programme nor graduation standing. In addition, the units are not included in those required for graduation. The designation *Extra* can be neither added nor removed retroactively. *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*.

LEVEL OF REGISTRATION

A student is required to register in the lowest Level for which more than 6 units of work is incomplete. Work of the next higher Level may be undertaken only when necessary to fill a programme load.

RE-ADMISSION

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 re-admission to the *Commerce programme* in a subsequent calendar year.

Re-admission is not guaranteed.

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

A student who is re-admitted after having become ineligible to continue in a Commerce programme must repeat all the courses of the Level at which he became ineligible to continue unless specific course exemptions are granted. The earliest possible session for re-admission is the session starting in September of the year following the year in which the student became ineligible to continue. The computation of a student's CCA begins anew at such re-admission.

PREREQUISITES FOR COMMERCE COURSES

Prerequisites for Commerce courses are specified in the course listing. A grade of at least D- must be attained to satisfy any course prerequisite.

COURSE CHANGES

It is the responsibility of the student to ensure that the programme of work undertaken meets the requirements for the degree. All course changes must be made through the Office of the Administrator, Undergraduate Programmes and will be subject to the deadline dates established by the University (see *Sessional Dates* section of this Calendar).

GRADUATION

The Graduation Average (GA) is the weighted average of all grades in courses taken for Levels III and IV of the programme, excluding *Extra* courses. A minimum GA of 4.0 is required for graduation from any of the Commerce programmes.

First-class standing requires at least a 9.5 GA.

Second-class standing requires at least a 7.0 GA.

Third-class standing is specified for students with a GA of less than 7.0.

FORMER COMMERCE STUDENTS

If you were previously registered in a Commerce programme and in good standing but did not attend last year, you must write to the Office of the Administrator, Undergraduate Programmes to seek readmission. The letter should explain your activities (academic and otherwise) since you were last registered.

If five years have passed since you were last registered at McMaster, please see *Application Procedures-Former McMaster Students* section of the calendar.

Graduates of McMaster's Commerce or Engineering and Management programmes should refer to the *School of Business-Continuing Students* section of the calendar.

INQUIRIES RE: ACADEMIC REGULATIONS

A student seeking relief from the School of Business regulations must apply in writing, 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).

Programmes

The chart *Structure of Programmes* should be used in conjunction with the text description of the programmes that follow.

BUSINESS I: 30 units

R Computer Science 1BA3; Economics 1A06; Statistics 1L03; Mathematics 1M03 or 1A06; Psychology 1A06 or Sociology 1A06.

E Electives to make a total of 30 units (students without OAC Calculus must elect Mathematics 1K03).

COMMERCE

Admission:

Admission to Commerce Level II is by selection on the basis of the overall weighted average attained in the work designated for Level I.

To be considered for Commerce Level II, a Business I student normally must have attained a weighted average of at least 5.0* on the first attempt in the 30 units of Level I with no F grades. In addition, the Business I

SCHOOL OF BUSINESS

student normally must have completed the full load (30 units) in a single Winter Session (September to April).

*(NOTE: Last year, a 5.4 average was required).

Enrolment in Commerce Level II is limited to a maximum of 300 students.

A maximum of 50 of the 300 places in Commerce Level II may be given to students from other universities or from other Faculties within McMaster University. Academic requirements for admission of transfer students may be more demanding than those for Business I students.

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

Level II: 30 units

R Commerce 2AA3, 2BA3, 2FA3, 2MA3, 2QA3; Economics 2G03 and Economics 2H03.

(A student who wishes to proceed in the **Honours Commerce** programme or the **Commerce** programme and who plans to take a substantial amount of further work in Economics should take Economics 2G03 and 2GG3, and Economics 2H03 and 2HH3. A student who wishes to proceed in the **Honours Commerce and Economics** programme must take Economics 2G03 and 2GG3, and 2H03 and 2HH3. (No new registrants will be taken into the Bachelor of Commerce & Arts (Hon.) programme after the Fall of 1993.)

E Electives from non-Commerce courses to make a total of 30 units. (A student who wishes to proceed in the **Honours Commerce and Economics** programme must take elective work from other than Commerce and Economics courses, and is advised to elect Mathematics 2L03 as preparation for Economics 3A03 in Level III.)

HONOURS COMMERCE (Honours B.Com.)

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

Level III: 30 units

R Commerce 3AA3, 3FA3, 3MA3, 3QA3, 3QB3; Commerce 3BA3 or 3BB3; six additional units from among Commerce 3AB3, 3BA3, 3BB3, 3FB3, 3MB3.

E 6 units of electives from non-Commerce courses.

Level IV: 30 units

R Commerce 4PA3, 4QA3; 15 or 18 additional units from Groups 1 to 6 below. No more than 12 of these 15 or 18 additional units can be taken in Level IV from any one Group. (See Group listing below.)

E 6 or 9 units of electives from non-Commerce courses beyond Level I.

Group 1 (Accounting) Commerce 3AB3, 4AA3, 4AB3, 4AC3, 4AD3, 4AE3, 4AF3, 4AG3*, 4AH3*, 4AI3*.

NOTE: *Available summer sessions, 1991, 1992, 1993, subject to sufficient enrolments and availability of qualified instructors.

Group 2 (Human Resources and Labour Relations) Commerce 3BA3, 3BB3, 4BA3, 4BB3, 4BC3, 4BD3, 4BE3, 4BF3, 4BG3, 4BH3.

Group 3 (Finance) Commerce 3FB3, 4FA3, 4FB3, 4FC3.

Group 4 (Marketing) Commerce 3MB3, 4MC3, 4MD3.

Group 5 (Environment and International Business) Commerce 4PB3, 4PC3, 4PD3, 4PE3.

Group 6 (Production and Management Science) Commerce 4QB3, 4QC3.

HONOURS COMMERCE AND ECONOMICS (Honours B.Com. & Arts)

Requirements for continuation towards the Honours B.Com. & Arts degree are specified above in *Academic Regulations*. No new registrants will be taken into the Bachelor of Commerce & Arts (Hon.) programme after the Fall of 1993.

Level III: 30 units

R Commerce 3AA3, 3FA3, 3MA3, 3QA3, 3QB3; Commerce 3BA3 or 3BB3; Economics 3A03, 3AA3; six additional units in Economics.

Level IV: 30 units

R Commerce 4PA3, 4QA3; six additional units in Commerce; twelve units in economics including one of Economics 2K03, 3I03 or 3R03 if not taken previously.

E 6 units of electives from other than Commerce and Economics courses.

COMMERCE (B.Com.)

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

Level III: 30 units

R Commerce 3AA3, 3FA3, 3MA3, 3QA3, 3QB3; Commerce 3BA3 or 3BB3.

E 12 units of electives from non-Commerce courses.

Level IV: 30 units

R Commerce 4PA3, 4QA3; 9 additional units from Groups 1 to 6 above. No more than 6 of these 9 additional units can be taken from any one Group.

E 15 units of electives from non-Commerce courses beyond Level I.

See *Structure of Programmes Chart* on next page.

	STRUCTURE OF PROGRAMMES Required - courses are common for all students. Electives - as appropriate for programme and student interest.	THE SCHOOL OF BUSINESS OFFERS THREE UNDERGRADUATE PROGRAMMES EACH SPANNING FOUR LEVELS OF STUDY		
		B. COMMERCE	HONOURS B. COMMERCE	HONOURS B. COMMERCE & ARTS (ECONOMICS)**
LEVEL I 30 units*	Required - Introductory courses in computer science, economics, mathematics and sociology or psychology Electives - Chosen from courses offered in Humanities, Science and the Social Sciences	21 9 30 units	21 9 30 units	21 9 30 units
LEVEL II 30 units	Required - Commerce courses in accounting, finance, marketing, organizational behaviour, statistical analysis. - Intermediate level courses in Economics Electives - Non-commerce courses offered in other Faculties	15 6 9 30 units	15 6 9 30 units	15 12 3 30 units
LEVEL III 30 units	Required - Commerce courses in accounting, finance, marketing, managerial decision theory, information systems, and personnel or industrial relations. Electives - →	18 12 units of Non-Commerce electives 30 units	18 6 units of Commerce electives 6 units of Non-Commerce electives 30 units	18 6 units of Economics required 6 units of Economics electives 30 units
LEVEL IV 30 units	Required - Commerce courses in Business Policy and Production/Operations Electives - →	6 9 units of Commerce electives 15 units of Non-Commerce electives 30 units	6 15-18 units of Commerce electives 6-9 units of Non-Commerce electives 30 units	6 6 units of Commerce electives 12 units of Non-Commerce electives 6 units of Non-Commerce, Non-Economics electives 30 units
TOTAL UNITS REQUIRED FOR GRADUATION =		120 units	120 units	120 units

* A unit represents one class hour per week per term.

** No new registrants will be taken into the Bachelor of Commerce & Arts (Hon.) programme after the Fall of 1993.

Faculty of Engineering

G.R. Purdy/B.Sc., M.Sc., Ph.D., P.Eng., Dean of Engineering
M.A. Dokainish/B.Sc., M.A.Sc., Ph.D., P.Eng., Associate Dean of Engineering (Academic Programmes)
R.C. Hudspith/B.Eng., M.Eng., P.Eng., Director of Engineering I
J. Zywna, Undergraduate Student Advisor

An engineer, as originally defined, meant 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 beneficial control of the environment, 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:

Ceramic Engineering
Chemical Engineering
Civil Engineering
Computer Engineering
Electrical Engineering
Engineering Physics
Manufacturing Engineering
Materials Engineering
Mechanical Engineering
Metallurgical Engineering

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

Ceramic Engineering and Society
Chemical Engineering and Society
Civil Engineering and Society
Computer Engineering and Society
Electrical Engineering and Society
Materials Engineering and Society
Mechanical Engineering and Society
Metallurgical Engineering and Society

The offering of these programmes is contingent upon approval by the Ontario Council on University Affairs.

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:

Ceramic Engineering and Management
Chemical Engineering and Management
Civil Engineering and Management
Computer Engineering and Management
Electrical Engineering and Management
Engineering Physics and Management
Materials Engineering and Management
Mechanical Engineering and Management
Metallurgical Engineering and Management

The Engineering and Management Programme has limitations on enrolment. Admission to the Programme is after Level I has been completed successfully. Admission procedures and criteria can be obtained from the Engineering and Management Programme Office.

McMaster baccalaureate degree programmes in Engineering are accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers (CEAB); except the eight new programmes in Engineering and Society which will be examined at the next accreditation. 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 Economics 1A06 as their elective in Level I. Students interested in one of the Engineering and Society programmes must choose the 6 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 cognate with Engineering programmes (with the exception of Economics 1A06 for Engineering and Management programmes).

A total of 21 units of complementary studies electives is required in all B.Eng. programmes. Of these, 3 units must be selected from courses that are designated as being above Level I.

The Associate Dean of Engineering (Academic Programmes) must authorize each student's complementary studies elective courses from an approved list, published each spring and available from his 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.

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

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

A student in Engineering I whose University Average (UA) is less than 4.0 is required to withdraw from Engineering.

CUMULATIVE ENGINEERING AVERAGE

The Cumulative Area Average for Engineering programmes is termed the Cumulative Engineering Average (CEA), and is the weighted average of all courses attempted and repeated subsequent to admission to the first Engineering programme, at Level II or above, with the exception that the CEA begins anew at readmission after being ineligible to continue in a programme. Those courses required in Engineering I or designated as *Extra* are excluded from the CEA.

CONTINUATION IN PROGRAMME

A student who obtains a Cumulative Engineering Average of at least 4.0, with no F grades, may continue in an Engineering programme. A student whose Cumulative Engineering Average is at least 4.0 and includes an F grade in the work of the most recent Reviewing period, and who has not previously been placed on probation, may, at the discretion of the Faculty and subject to the availability of space, continue on Programme Probation.

A student whose Cumulative Engineering Average is less than 4.0 and who has not been granted probation is ineligible to 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 (grade 'F') must be repeated if they are required courses for the Engineering programme or may be replaced if they are not courses explicitly required. Courses may be repeated only following

failure (F) or inability to achieve prerequisite standing for a required course or approved technical elective course.

EXTRA COURSES

Courses in addition to those which constitute the degree programme in which the student is registered may be designated *Extra* at registration and the grades obtained in such courses will neither be included in the Cumulative Engineering Average nor the units in those required for graduation. *The designation Extra cannot be removed retroactively.*

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 (Academic Programmes).

WINTER SESSION WORK LOAD

The Faculty of Engineering has set a minimum Winter Session work load 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 (Academic Programmes). In order to qualify for most scholarships, 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 is ineligible to 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 (Academic Programmes) 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. The computation of the Cumulative Engineering Average begins anew at such readmission.

PROGRAMME CHANGES

It is the responsibility of the student to ensure that the programme of work undertaken meets the degree requirements for that programme. All programme changes must be made through the Office of the Associate Dean of Engineering (Academic Programmes) and will be subject to the deadline dates established by the University (see *Sessional Dates* section of this Calendar).

GRADUATION

A minimum Graduation Average of 4.0 is required for Graduation from all B.Eng., B.Eng.Mgt. and B.Eng.Soc. programmes.

Honours standing at graduation will be granted to a student whose Graduation Average (GA), based on all Level III, IV, and V courses (i.e. those labelled 3--, 4-- or 5--) and not designated *Extra*, is at least 10.0. This same Graduation Average will be used to determine a Programme Standing for all students fulfilling the graduation requirements in May of each year.

Engineering I: 34 units

R Chemistry 1E03; Engineering 1C04, 1D04; Mathematics 1H05, 1N06; Physics 1D03, 1E03.

E 6 units complementary studies elective.

Programmes for the B.Eng., B.Eng.Soc., and B.Eng.Mgt. Degrees

ADMISSION TO LEVEL II ENGINEERING PROGRAMMES

Admission to Level II Engineering programmes requires completion of Engineering I with a minimum University Average of 4.0. A programme selection form must be submitted to the Office of the Associate Dean (Academic Programmes) by April 9, 1993. All programmes have limited enrolment; should there be more applicants than the limiting number in any programme, admission to that programme will be by selection using

the Level I University Average. In addition, admission to a B.Eng.Mgt. programme is by written application and requires the completion of Economics 1A06 with a minimum grade of C; an interview may also be required. Admission to a B.Eng.Soc. programme requires the submission of a completed Engineering and Society Electives form. 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.)

Admission:

See Admission described at the beginning of the programme listing.

Programme Notes:

1. Level II Ceramic Engineering is identical to Level II Metallurgical Engineering. Transfer to Level III Metallurgical Engineering can therefore be made without course deficiency.
2. Attention is drawn to Materials 4A01, which requires a report based on experience in the summer before entering Level IV.
3. Complementary studies elective courses must comprise a significant component of analytical reading and writing practice. A list of acceptable courses is available from the Chair, Department of Materials Science and Engineering.

Level II: 36 units

R Chemistry 2P06; Engineering 2M04, 2P04; Materials 2C04, 2G04, 2H02; Mathematics 2M06; 6 units approved complementary studies elective (see Note 3, above).

Level III: 38 units

R Ceramics 3A04, 3G03; Chemical Engineering 3O04 or Mechanical Engineering 3O04; Chemistry 2W03; Geology 2B04; Materials 3D06, 3E06, 3F02; Mathematics 3V06.

Level IV: 36 units

R Ceramics 4R03, 4S03; Engineering 4A03 or 4H03 or equivalent, 4B03; Materials 3P03, 4A01, 4E03, 4K04, 4L04.

E 3 units approved complementary studies elective; 6 units approved Level III or IV technical elective.

CERAMIC ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)

Admission:

See Admission described at the beginning of the programme listing.

Programme Notes:

1. Complementary studies elective courses must comprise a significant component of analytical reading and writing practice. A list of acceptable courses is available from the Chair, Department of Materials Science and Engineering.
2. Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 39 units

R Chemistry 2P06; Commerce 2AA3, 2MA3; Economics 2G03, 2H03; Engineering and Management 2A01; Engineering 2M04; Mathematics 2M06; Materials 2C04, 2G04, 2H02.

Level III: 39 units

R Ceramics 3A04, 3G03; Commerce 2BA3, 2FA3; Engineering and Management 3A01; Engineering 2P04; Geology 2B04; Materials 3D06, 3F02; Mathematics 3V06; Statistics 3Y03.

Level IV: 38 units

R Ceramics 4R03; Chemical Engineering 3O04 or Mechanical Engineering 3O04; Chemistry 2W03; Commerce 3AA3, 3BA3 or 3BB3, 3FA3, 3MA3; Engineering and Management 4A01; Materials 3E06, 3P03; 6 units approved complementary studies electives (see Note 1, above).

Level V: 36-37 units

R Ceramics 4S03; Commerce 4PA3, 4QA3; Engineering 4A03 or 4H03 or equivalent; Engineering and Management 5A01, 5B03; Materials 4E03, 4K04, 4L04.

E 6 units of Commerce selected from Level III and IV Commerce courses; 3 units approved technical electives.

FACULTY OF ENGINEERING

CERAMIC ENGINEERING AND SOCIETY (B.Eng.Soc.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 35 units (1992-93)

R Chemistry 2P06; Engineering 2M04; Engineering and Society 2X03, 2Y03; Materials 2C04, 2G04, 2H02; Mathematics 2M06.

E 3 units of Engineering and Society focus electives.

Level III: 38 units (1993-94)

R Ceramics 3G03, 3A04; Engineering 2P04; Engineering and Society 3Y03, 3Z03; Geology 2B04; Materials 3D06, 3F02; Mathematics 3V06.

E 3 units of Engineering and Society focus electives.

Level IV: 34 units (1994-95)

R Ceramics 4R03, 4S03; Chemical Engineering 3O04 or Mechanical Engineering 3O04; Chemistry 2W03; Engineering and Society 3X03; Materials 3E06, 3P03.

E 9 units of Engineering and Society focus electives.

Level V: 30 units (1995-96)

R Engineering 4B03; Engineering and Society 4X03, 4Z03; Materials 4A01, 4E03, 4K04, 4L04.

E 6 units of approved technical electives; 3 units of Engineering and Society focus electives.

CHEMICAL ENGINEERING (B.Eng.)

Admission:

See *Admission* described at the beginning of the programme listing.

For students wishing to specialize, certain option themes or streams are available in the programme.

Process Control:

Chemical Engineering 4E03, Electrical Engineering 4CB3.

Polymers:

Chemical Engineering 3Q03, 4B03, 4X03 and Materials 4P03.

Environment:

Chemical Engineering 4Z03, Engineering 4U03, Chemistry 2M05 (for Management), Civil Engineering 4C03.

Biomedical:

Biochemistry 2E03, Chemical Engineering 4T03, Engineering 4X03 or Engineering Physics 3X03.

Additional enrichment for all the themes may be possible through senior year thesis (ChE 4Y04) or design project (ChE 4W04).

Level II: 36 units

R Chemical Engineering 2A04, 2C02, 2D04, 2F04, 2G02; Chemistry 2D03, 2M05; Mathematics 2M06; 6 units approved complementary studies electives.

Level III: 35 units

R Chemical Engineering 3D03, 3E03, 3G03, 3K04, 3L02, 3M04, 3O04, 3P03; Statistics 3N03; 6 units of Chemistry related courses chosen from Biochemistry 2E03, Chemical Engineering 3Q03, Chemistry 2W03, Engineering 2O03.

Level IV: 35 units

R Chemical Engineering 4L02, 4M03, 4N04, either 4W04 or 4Y04; Engineering 2M04, 4A03 or 4H03 or equivalent; three of Chemical Engineering 4B03, 4C03, 4D03, 4E03, 4K03, 4T03, 4X03, 4Z03, Electrical Engineering 4CB3, Engineering 4U03, one of which must be Chemical Engineering 4B03, 4K03 or Engineering 4U03.

E 3 units complementary studies electives; 3 units approved Level III or IV technical electives.

CHEMICAL ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme Note:

Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 35 units

R Chemical Engineering 2A04, 2C02, 2D04, 2F04, 2G02; Chemistry 2D03; Commerce 2MA3; Economics 2G03, 2H03; Engineering and Management 2A01; Mathematics 2M06.

Level III: 36 units

R Chemical Engineering 3D03, 3E03, 3L02, 3M04, 3O04; Commerce 2AA3, 2BA3, 2FA3, 3AA3; Engineering 2M04; Engineering and Management 3A01; Statistics 3Y03.

Level IV: 37-40 units

R Chemical Engineering 3G03, 3K04, 3P03, 4L02, 4M03; Commerce 3FA3, 3BA3 or 3BB3, 3MA3, 4QA3; Engineering and Management 4A01; 3 units of approved complementary studies electives; 6 units of Chemistry related courses chosen from Biochemistry 2E03, Chemical Engineering 3Q03, Chemistry 2M05, 2W03, Engineering 2O03.

Level V: 36-37 units

R Chemical Engineering 4N04, and 4W04 or 4Y04; Commerce 4PA3; Engineering and Management 5A01, 5B03; three of Chemical Engineering 4B03, 4C03, 4D03, 4E03, 4K03, 4T03, 4X03, 4Z03, Electrical Engineering 4CB3, Engineering 4U03, one of which must be Chemical Engineering 4B03, 4K03 or Engineering 4U03; Engineering 4A03 or 4H03 or equivalent.

E 6 units of Commerce selected from Level III or IV Commerce courses; 3 units approved Level III or IV technical electives.

CHEMICAL ENGINEERING AND SOCIETY (B.Eng.Soc.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 34 units (1992-93)

R Chemical Engineering 2A04, 2C02, 2D04, 2F04, 2G02; Chemistry 2D03; Engineering and Society 2X03 and 2Y03, Mathematics 2M06.

E 3 units of Engineering and Society focus electives.

Level III: 33 units (1993-94)

R Chemical Engineering 3D03, 3E03, 3L02, 3M04, 3O04, 3P03; Chemistry 2M05; Engineering and Society 3Y03, 3Z03.

E 3 units of Engineering and Society focus electives

Level IV: 34 units (1994-95)

R Chemical Engineering 3G03, 3K04, 4L02, 4M03; Engineering 2M04; Engineering and Society 3X03; Statistics 3N03.

E 6 units of Engineering and Society focus electives; 6 units of chemistry related courses chosen from Biochemistry 2E03, Chemical Engineering 3Q03, Chemistry 2W03, Engineering 2O03.

Level V: 32 units (1995-96)

R Chemical Engineering 4N04, and 4W04 or 4Y04; three of Chemical Engineering 4B03, 4C03, 4D03, 4E03, 4K03, 4T03, 4X03, 4Z03, Electrical Engineering 4CB3, Engineering 4U03, one of which must be Chemical Engineering 4B03, 4K03 or Engineering 4U03; Engineering and Society 4X03, 4Z03.

E 3 units of approved Level III or IV technical electives; 6 units of Engineering and Society focus electives.

CIVIL ENGINEERING (B.Eng.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme 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

R Civil Engineering 2A02, 2C04, 2E03, 2F03, 2I03, 2J03, 2O03; Engineering 2C03, 2P04, 2Q04; Mathematics 2M06.

Level III: 36 units

R Civil Engineering 3B03, 3D03, 3G03, 3J04, 3K03, 3M04, 3Q03, 3S03; Engineering 3P03; Mathematics 3J04; 3 units approved complementary studies electives.

Level IV: 34-36 units

R Civil Engineering 4B03; Engineering 4B03; one of Engineering 4A03, 4H03 or equivalent; 22 to 24 units chosen from Level IV Civil Engineering courses.

E 3 units complementary studies elective.

CIVIL ENGINEERING AND COMPUTER SYSTEMS**(B.Eng.C.S.)****Admission:**See *Admission* described at the beginning of the programme listing.**Programme 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.

The Department has suspended admission to Level II of this programme for 1992-93.

Level II: 37 units

R Computer Science 1MB3, 2MF3; Civil Engineering 2A02, 2C04, 2E03, 2I03, 2J03, 2O03; Engineering 2P04; 3 units approved complementary studies electives; Mathematics 2M06.

Level III: 36 units

R Computer Science 2MC3, 2MD3; Civil Engineering 2F03, 3G03, 3K03, 3M04; Engineering 2C03, 2Q04; Mathematics 3J04, 3Q03; 3 units complementary studies.

Level IV: 37 units

R Computer Science 3EA3, 3MG3, 3SC3, 4EB3; Civil Engineering 3B03, 3D03, 3J04, 3Q03, 3S03; Civil Engineering 4B03; Engineering 3P03; one of Engineering 4A03, 4H03 or equivalent.

Level V: 34-36 units

R Computer Science 4MP6, 3 units from Computer Science Level III or IV courses; 19 to 21 units from Level IV Civil Engineering courses; Engineering 4B03, 4C03.

CIVIL ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)**Admission:**See *Admission* described at the beginning of the programme listing.**Programme Notes:**

1. 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.
2. Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 38 units

R Civil Engineering 2A02, 2C04, 2I03, 2J03, 2O03; Commerce 2AA3, 2MA3; Economics 2G03, 2H03; Engineering 2P04; Engineering and Management 2A01; Mathematics 2M06.

Level III: 37 units

R Civil Engineering 2E03, 2F03, 3M04, 3Q03; Commerce 2BA3, 2FA3, 3AA3; Engineering 2C03, 2Q04; Engineering and Management 3A01; Mathematics 3J04; Statistics 3Y03.

Level IV: 38-39 units

R Civil Engineering 3B03, 3D03, 3G03, 3J04, 3K03, 3S03, 4B03; Commerce 3FA3, 3BA3 or 3BB3, 3MA3, 4QA3; Engineering 3P03; Engineering and Management 4A01.

Level V: 37-39 units

- R 21 to 22 units of Level IV Civil Engineering; Commerce 4PA3; Engineering and Management 5A01, 5B03.
- E 6 units Commerce electives selected from Level III and IV Commerce courses; one of Engineering 4A03, 4H03 or equivalent.

CIVIL ENGINEERING AND SOCIETY (B.Eng.Soc.)**Admission:**See *Admission* described at the beginning of the programme listing.**Programme 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: 34 units (1992-93)

- R Civil Engineering 2A02, 2C04, 2I03, 2J03, 2O03; Engineering 2P04; Mathematics 2M06; Engineering and Society 2X03, 2Y03.
- E 3 units of Engineering and Society Focus Elective

Level III: 33 units (1993-94)

- R Civil Engineering 2E03, 2F03, 3M04, 3Q03; Engineering 2C03, 2Q04; Mathematics 3J04; Engineering and Society 3Y03, 3Z03.
- E 3 units of Engineering and Society Focus Elective.

Level IV: 37 units (1994-95)

- R Civil Engineering 3B03, 3D03, 3G03, 3J04, 3K03, 3S03, 4B03; Engineering 3P03; Engineering and Society 3X03.
- E 6 units of Engineering and Society Focus Elective; 3 units of Level IV Civil Engineering courses.

Level V: 33 units (1995-96)

- R Engineering 4B03; Engineering and Society 4X03, 4Z03.
- E 6 units of Engineering and Society Focus Elective; 18 units chosen from Level IV Civil Engineering courses, these courses should be selected to complement the chosen focus.

COMPUTER ENGINEERING (B.Eng.)**Admission:**See *Admission* described at the beginning of the programme listing.**Level II: 35 units**

- R Computer Engineering 2HA3, 2KA3, 2YA3; Electrical Engineering 2BA3, 2DA3, 2FA3; Engineering 2O03; Mathematics 2P04, 2Q04; 6 units approved complementary studies electives.

Level III: 36 units

- R Computer Engineering 3HB3, 3KB3, 3VA3, 3WA3; Electrical Engineering 3AA3, 3BB3, 3CA3, 3DB3, 3FB3, 3FC3; Mathematics 3K03; Statistics 3X03.

Level IV: 34 units

- R Computer Engineering 4MA3, 4HC3, 4HD3, 4HE3, 4JA4; Electrical Engineering 4QA3; Engineering 4B03, and 4A03 or 4H03 or equivalent.
- E 9 units from Computer Science 3MG3, 3SD3, 4CB3, and Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering.

COMPUTER ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)**Admission:**See *Admission* described at the beginning of the programme listing.**Programme Note:**

Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 36 units

- R Commerce 2AA3, 2MA3; Computer Engineering 2HA3, 2YA3; Economics 2G03, 2H03; Electrical Engineering 2BA3, 2DA3, 2FA3; Engineering and Management 2A01; Mathematics 2P04, 2Q04.

Level III: 37-38 units

- R Commerce 2BA3, 2FA3, 3AA3; Computer Engineering 2KA3, 3HB3, 3VA3, 3WA3; Electrical Engineering 3BB3; Engineering 2O03; Engineering and Management 3A01; Mathematics 3K03; Statistics 3X03, 3Y03.

Level IV: 37-36 units

- R Commerce 3FA3, 3BA3 or 3BB3, 3MA3; Computer Engineering 3KB3, 4HC3, 4HD3; Electrical Engineering 3AA3, 3CA3, 3DB3, 3FB3, 3FC3; Engineering and Management 4A01.
- E 3 units approved complementary studies electives.

Level V: 35 units

- R Commerce 4PA3, 4QA3; Computer Engineering 4MA3, 4HE3, 4JA4; Engineering 4A03 or 4H03 or equivalent; Engineering and Management 5A01, 5B03.
- E 6 units Commerce electives selected from Level III and IV Commerce courses; 6 units approved electives from Computer Science 3MG3, 3SD3, 4CB3 and Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering.

FACULTY OF ENGINEERING

COMPUTER ENGINEERING AND SOCIETY (B.Eng.Soc.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 35 units (1992-93)

- R Computer Engineering 2HA3, 2YA3; Electrical Engineering 2BA3, 2DA3, 2FA3; Engineering and Society 2X03, 2Y03; Mathematics 2P04, 2Q04.
E 6 units of Engineering and Society focus electives.

Level III: 33 units (1993-94)

- R Computer Engineering 2KA3, 3HB3, 3VA3, 3WA3; Electrical Engineering 3BB3; Engineering and Society 3Y03, 3Z03; Engineering 2O03; Mathematics 3K03; Statistics 3X03.
R 3 units of Engineering and Society focus electives.

Level IV: 30 units (1994-95)

- R Computer Engineering 3KB3, 4HC3, 4HD3; Electrical Engineering 3AA3, 3CA3, 3DB3, 3FB3, 3FC3; Engineering and Society 3X03.
E 3 units of Engineering and Society focus electives.

Level V: 34 units (1995-96)

- R Computer Engineering 4HE3, 4MA3, 4JA4; Engineering and Society 4Z03, 4X03; Engineering 4B03.
E 6 units of Engineering and Society focus electives; 9 units from Computer Science 3MG3, 3SD3, 4CB3, and Level III or IV Electrical Engineering or Engineering Physics or Level IV Computer Engineering.

ELECTRICAL ENGINEERING (B.Eng.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 35 units

- R Computer Engineering 2HA3, 2KA3; Electrical Engineering 2BA3, 2DA3, 2FA3; Engineering 2O03, 2S03; Mathematics 2P04, 2Q04.
E 6 units approved complementary studies elective.

Level III: 36 units

- R Computer Engineering 3HB3, 3KB3; Electrical Engineering 3AA3, 3BB3, 3CA3, 3DB3, 3FB3, 3FC3, 3NA3, 3SA3; Mathematics 3K03; Statistics 3X03.

Level IV: 34 units

- R Electrical Engineering 4JA4, 4QA3; Engineering 4B03 and Engineering 4A03 or 4H03 or equivalent; 12 units of Electrical Engineering Level IV or Computer Engineering Level III or IV courses.
E 9 units Level III or IV approved technical electives.

ELECTRICAL ENGINEERING AND MANAGEMENT

(B.Eng.Mgt.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme Note:

Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 36 units

- R Commerce 2AA3, 2MA3; Computer Engineering 2HA3, 2KA3; Economics 2G03, 2H03; Electrical Engineering 2BA3, 2DA3, 2FA3; Engineering and Management 2A01; Mathematics 2P04, 2Q04.

Level III: 37 units

- R Commerce 2BA3, 2FA3, 3MA3; Computer Engineering 3HB3; Electrical Engineering 3CA3, 3FB3, 3FC3; Engineering 2O03, 2S03; Engineering and Management 3A01; Mathematics 3K03; Statistics 3X03, 3Y03.

Level IV: 34-35 units

- R Commerce 3AA3, 3BA3 or 3BB3, 3FA3; Computer Engineering 3KB3; Electrical Engineering 3AA3, 3BB3, 3DB3, 3NA3, 3SA3; Engineering 4A03 or 4H03 or equivalent; Engineering and Management 4A01.
E 3 units approved complementary studies electives.

Level V: 35-36 units

- R Commerce 4PA3, 4QA3; Electrical Engineering 4JA4; Engineering and Management 5A01, 5B03.
E 6 units Commerce electives selected from Level III and IV Commerce courses; 15 units Level III or IV approved technical electives, of which at least 9 units must be selected from Electrical Engineering Level IV or Computer Engineering Level III or IV courses.

ELECTRICAL ENGINEERING AND SOCIETY (B.Eng.Soc.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 35 units (1992-93)

- R Computer Engineering 2HA3, 2KA3; Electrical Engineering 2BA3, 2DA3, 2FA3; Engineering and Society 2X03, 2Y03; Mathematics 2P04, 2Q04.
E 6 units of Engineering and Society focus electives.

Level III: 33 units (1993-94)

- R Computer Engineering 3HB3; Electrical Engineering 3CA3, 3DB3, 3FB3, 3FC3; Engineering and Society 3Y03; Engineering 2O03, 2S03; Mathematics 3K03; Statistics 3X03.
E 3 units of Engineering and Society focus electives.

Level IV: 33 units (1994-95)

- R Computer Engineering 3KB3; Electrical Engineering 3AA3, 3BB3, 3NA3, 3SA3; Engineering and Society 3X03, 3Z03.
E 3 units of Engineering and Society focus electives; 9 units of approved Level III or IV technical electives.

Level V: 31 units (1995-96)

- R Electrical Engineering 4JA4; Engineering and Society 4Z03, 4X03; Engineering 4B03.
E 6 units of Engineering and Society focus electives; 12 units of Electrical Engineering Level IV or Computer Engineering Level III or IV courses.

ENGINEERING PHYSICS (B.Eng.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme Note:

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

<i>Computer Systems</i>	Physics 4D06.
<i>Lasers and Electro-Optics</i>	Engineering Physics 4G03, 4K03, 4S04.
<i>Nuclear Engineering</i>	Engineering Physics 4D03, 4L03, 4N03.
<i>Solid State Electronics</i>	Engineering Physics 4E03, 4F03, 4Z03.

Level II: 38 units

- R Computer Engineering 2HA3; Engineering 2O03, 2P04, 2V04; Engineering Physics 2A03, 2E04; Mathematics 2P04, 2Q04; Physics 2D03; 6 units approved English literature.

Level III: 37 units

- R Engineering Physics 3D03, 3E03, 3F03, 3O03, 3W04; Mathematics 3C03, 3D03, 4Q03; Physics 3B06, 3M03.
E Complementary studies elective (which may be deferred to Level IV), or approved technical electives to make a total of 37 units.

Level IV: 36-38 units

- R Engineering 4A03 or 4H03 or equivalent, 4B03; Engineering Physics 4A04, 4C02, 4U04; Physics 4B04; at least 10 units selected from Engineering Physics 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, Physics 4D06.
E 3 units complementary studies elective (if not completed in Level III); approved Level III or IV technical electives to make a total of 36 to 38 units.

ENGINEERING PHYSICS AND MANAGEMENT (B.Eng.Mgt.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme Note:

Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 39 units

- R Commerce 2AA3, 2MA3; Economics 2G03, 2H03; Engineering 2O03, 2P04, 2V04; Engineering and Management 2A01; Engineering Physics 2A03, 2E04; Mathematics 2P04, 2Q04.

Level III: 37 units

- R Commerce 2BA3, 2FA3, 3AA3; Computer Engineering 2HA3; Engineering and Management 3A01; Engineering Physics 3E03, 3F03; Mathematics 3C03, 3D03; Physics 2D03, 3B06; Statistics 3Y03.

Level IV: 37-38 units

- R Commerce 3FA3, 3MA3, 4QA3, and 3BA3 or 3BB3; Engineering and Management 4A01; Engineering Physics 3D03, 3O03, 3W04, 4U04; Mathematics 4Q03; Physics 3M03, 4B04.

Level V: 38-41 units

- R Commerce 4PA3; Engineering 4A03 or 4H03 or equivalent; Engineering and Management 5A01, 5B03; Engineering Physics 4A04, 4C02; at least 10 units selected from Engineering Physics 4D03, 4E03, 4F03, 4G03, 4N03, 4S04, Physics 4D06.
- E 6 units Commerce electives selected from Level III and IV Commerce courses; 3 units approved Level III or IV technical elective; 3 units approved complementary studies elective.

MANUFACTURING ENGINEERING (B.Eng.)**Admission:**

See *Admission* described at the beginning of the programme listing.

Level II: 37 units

- R Engineering 2M04, 2O03, 2P04, 2Q04, 2W04; Manufacturing Engineering 2C03; Mathematics 2M06; Mechanical Engineering 2A03; 6 units approved English literature.

Level III: 37 units

- R Engineering 3M03, 3N03, 3R03; Manufacturing Engineering 3M02; Mathematics 3V06; Mechanical Engineering 3A03, 3C03, 3E04, 3O04, 3R03, 4D03.

Level IV: 39 units

- R Engineering 4A03 or 4H03 or equivalent, 4B03, 4C03, 4J03; Manufacturing Engineering 4A03, 4M04, 4P02; Mechanical Engineering 4C03, 4K03, 4Q03, 4R03, 4Z03.
- E 3 units complementary studies elective.

MATERIALS ENGINEERING (B.Eng.)**Admission:**

See *Admission* described at the beginning of the programme listings.

Programme Notes:

1. This programme is designed to permit choices of electives in Level IV which will allow study in depth of various types of modern engineering materials (e.g. electronic materials, amorphous solids, high performance alloys, composites and ceramics.)
2. Transfer to Level III Ceramic Engineering or Metallurgical Engineering can be made without course deficiency.
3. Attention is drawn to Materials 4A01, which requires a report based on experience in the summer before entering Level IV.
4. Complementary studies elective courses must comprise a significant component of analytical reading and writing practice. A list of acceptable courses is available from the Chair, Department of Materials Science and Engineering.

Level II: 36-38 units

- R Chemistry 2P06; Engineering 2M04, 2P04; Materials 2C04, 2G04, 2H02; Mathematics 2P04 and 2Q04 or Mathematics 2M06; 6 units approved complementary studies elective (see Note 4, above).

Level III: 35 units

- R Chemistry 2W03; Engineering 3Q03; Materials 3D06, 3E06, 3F02, 3G03; Mathematics 3C03 and 3D03, or 3V06; Chemistry 3B03 and 3 units approved technical elective, or Physics 3M03, 3MM3.

Level IV: 36 units

- R Engineering 4A03 or 4H03 or equivalent, 4B03; Materials 3P03, 4A01, 4E03, 4K04, 4L04.
- E 3 units approved complementary studies electives; 12 units approved Level III or IV technical electives.

MATERIALS ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)**Admission:**

See *Admission* described at the beginning of the programme listing.

Programme Notes:

1. Complementary studies elective courses must comprise a significant component of analytical reading and writing practice. A list of acceptable courses is available from the Chair, Department of Materials Science and Engineering.
2. Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 35-37 units

- R Chemistry 2P06; Commerce 2AA3, 2MA3; Economics 2G03, 2H03;

Engineering and Management 2A01; Mathematics 2P04 and 2Q04 or Mathematics 2M06; Materials 2C04, 2G04, 2H02.

Level III: 38 units

- R Commerce 2BA3, 2FA3; Engineering and Management 3A01; Engineering 2M04, 2P04, 3Q03; Materials 3D06, 3F02, 3G03; Mathematics 3C03 and 3D03, or 3V06; Statistics 3Y03.

Level IV: 37-38 units

- R Chemistry 2W03; Chemistry 3B03 and 3 units approved technical elective or Physics 3M03, 3MM3; Commerce 3AA3, 3BA3 or 3BB3, 3FA3, 3MA3; Engineering and Management 4A01; Materials 3E06, 3P03; 6 units approved complementary studies elective (see Note 1, above).

Level V: 36-37 units

- R Commerce 4PA3, 4QA3; Engineering 4A03 or 4H03 or equivalent; Engineering and Management 5A01, 5B03; Materials 4E03, 4K04, 4L04.
- E 6 units of Commerce selected from Level III and IV Commerce courses; 6 units approved technical elective.

MATERIALS ENGINEERING AND SOCIETY (B.Eng.Soc.)**Admission:**

See *Admission* described at the beginning of the programme listing.

Level II: 31-33 units (1992-93)

- R Chemistry 2P06; Engineering and Society 2X03, 2Y03; Materials 2C04, 2G04, 2H02; Mathematics 2P04 and 2Q04 or Mathematics 2M06.
- E 3 units of Engineering and Society focus electives.

Level III: 37 units (1993-94)

- R Chemistry 2W03; Engineering 2M04, 2P04; Engineering and Society 3Y03, 3Z03; Materials 3D06, 3F02, 3G03; Mathematics 3C03 and 3D03 or 3V06.
- E 3 units of Engineering and Society focus electives.

Level IV: 33 units (1994-95)

- R Chemistry 3B03 and 3 units technical elective, or Physics 3M03, 3MM3; Engineering 3Q03; Engineering and Society 3X03; Materials 3E06, 3P03.
- E 6 units of Engineering and Society focus electives; 6 units of approved technical electives.

Level V: 33 units (1995-96)

- R Engineering 4B03; Engineering and Society 4X03, 4Z03; Materials 4A01, 4E03, 4K04, 4L04.
- E 6 units of approved technical electives; 6 units of Engineering and Society focus electives.

MECHANICAL ENGINEERING (B.Eng.)**Admission:**

See *Admission* described at the beginning of the programme listing.

Level II: 37 units

- R Engineering 2M04, 2P04, 2Q04, 2W04; Mathematics 2M06; Mechanical Engineering 2A03, 2B03, 2C03; 6 units approved English literature.

Level III: 37 units

- R Engineering 2O03, 3M03, 3N03; Mathematics 3V06; Mechanical Engineering 3A03, 3C03, 3D03, 3E04, 3M02, 3O04, 3R03.

Level IV: 36 units

- R Mechanical Engineering 4G03, 4M04, 4P02, 4Q03, 4R03, 4S03; Engineering 3R03, 4A03 or 4H03 or equivalent, 4B03.
- E 3 units complementary studies elective; two of the following courses: Chemical Engineering 4T03, Civil Engineering 3K03, Electrical Engineering 3SA3, Engineering 3P03, 3Q03, 4J03, 4X03, Engineering Physics 3X03, 4D03, Mechanical Engineering 4A03, 4C03, 4D03, 4F03, 4K03, 4L03, 4T03, 4U03, 4V03, 4W03, 4X03, 4Y03, 4Z03. Manufacturing Engineering 4A03 may be substituted, with the permission of the Department.

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

MECHANICAL ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)**Admission:**

See *Admission* described at the beginning of the programme listing.

FACULTY OF ENGINEERING

Programme Note:

Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 37 units

R Commerce 2AA3, 2BA3, 2MA3; Economics 2G03, 2H03; Engineering 2M04, 2P04, 2W04; Mathematics 2M06; Mechanical Engineering 2A03; Engineering and Management 2A01.

Level III: 38 units

R Commerce 2FA3, 3AA3; Engineering 2O03, 2Q04; Engineering and Management 3A01; Mathematics 3V06; Mechanical Engineering 2C03, 3D03, 3M02, 3O04, 3R03; Statistics 3Y03.

Level IV: 37-38 units

R Commerce 3MA3, 3FA3, and 3BA3 or 3BB3; Engineering 3M03; Engineering and Management 4A01; Mechanical Engineering 3A03, 3C03, 3E04, 4P02, 4R03, 4S03.

E 3 units Level III or IV approved technical electives; 3 units complementary studies elective.

Level V: 38-39 units (1992-93 only)

R Commerce 3MA3, 4PA3; Engineering 3M03; Engineering and Management 5A01, 5B03; Mechanical Engineering 4C03, 4G03, 4M04, 4Q03; Engineering 4A03 or 4H03 or equivalent.

E 6 units Commerce electives selected from Level III and IV Commerce courses; one of the following courses: Chemical Engineering 4T03, Civil Engineering 3K03, Electrical Engineering 3SA3, Engineering 3P03, 3Q03, 3R03, 4J03, 4X03, Engineering Physics 3X03, 4D03, Mechanical Engineering 4A03, 4D03, 4F03, 4K03, 4L03, 4T03, 4U03, 4V03, 4W03, 4X03, 4Y03, 4Z03.

MECHANICAL ENGINEERING AND SOCIETY (B.Eng.Soc.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 33 units (1992-93)

R Engineering 2M04, 2P04, 2W04; Engineering and Society 2X03, 2Y03; Mathematics 2M06; Mechanical Engineering 2A03.

E 6 units of Engineering and Society focus electives.

Level III: 37 units (1993-94)

R Engineering 2O03, 2Q04; Engineering and Society 3Y03, 3Z03; Mathematics 3V06; Mechanical Engineering 2C03, 3D03, 3M02, 3O04, 3R03.

E 3 units of Engineering and Society focus electives.

Level IV: 30 units (1994-95)

R Engineering and Society 3X03; Mechanical Engineering 3A03, 3C03, 3E04, 4P02, 4R03, 4S03.

E 6 units of Engineering and Society focus electives; 3 units of approved Level III or Level IV technical electives.

Level V: 31 units (1995-96)

R Engineering 3M03, 4B03; Engineering and Society 4X03, 4Z03; Mechanical Engineering 4C03, 4G03, 4M04, 4Q03.

E 3 units of Engineering and Society focus electives; 3 units of approved Level III or Level IV technical electives.

METALLURGICAL ENGINEERING (B.Eng.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme Notes:

1. Level II Metallurgical Engineering is identical to Level II Ceramic Engineering. Transfer to Level III Ceramic Engineering can therefore be made without course deficiency.
2. Attention is drawn to Materials 4A01, which requires a report based on experience in the summer before entering Level IV.
3. Complementary studies elective courses must comprise a significant component of analytical reading and writing practice. A list of acceptable courses is available from the Chair, Department of Materials Science and Engineering.

Level II: 36 units

R Chemistry 2P06; Engineering 2M04, 2P04; Materials 2C04, 2G04, 2H02; Mathematics 2M06; 6 units approved complementary studies elective (see Note 3, above).

Level III: 36 units

R Chemical Engineering 3O04 or Mechanical Engineering 3O04; Chemistry 2W03; Materials 3D06, 3E06, 3F02, 3P03; Mathematics 3V06; Metallurgy 3C03, 3G03.

Level IV: 37 units

R Engineering 3M03 or 3N03, 4A03 or 4H03 or equivalent, 4B03; Materials 4A01, 4E03, 4K04, 4L04; Metallurgy 4C04.

E 3 units complementary studies elective; 9 units Level III or IV approved technical electives.

METALLURGICAL ENGINEERING AND MANAGEMENT (B.Eng.Mgt.)

Admission:

See *Admission* described at the beginning of the programme listing.

Programme Notes:

1. Complementary studies elective courses must comprise a significant component of analytical reading and writing practice. A list of acceptable courses is available from the Chair, Department of Materials Science and Engineering.
2. Attention is drawn to Engineering and Management 4G01 and 5G01, the voluntary intensive courses offered in the month of May.

Level II: 39 units

R Chemistry 2P06; Commerce 2AA3, 2MA3; Economics 2G03, 2H03; Engineering and Management 2A01; Engineering 2M04; Mathematics 2M06; Materials 2C04, 2G04, 2H02.

Level III: 37 units

R Commerce 2BA3, 2FA3; Engineering and Management 3A01; Engineering 2P04, 3M03 or 3N03; Materials 3D06, 3F02; Mathematics 3V06; Metallurgy 3C03, 3G03; Statistics 3Y03.

Level IV: 35-36 units

R Chemical Engineering 3O04 or Mechanical Engineering 3O04; Chemistry 2W03; Commerce 3AA3, 3BA3 or 3BB3, 3FA3, 3MA3; Engineering and Management 4A01; Materials 3E06, 3P03; 6 units approved complementary studies elective (see Note 1, above).

Level V: 37-38 units

R Commerce 4PA3, 4QA3; Engineering 4A03 or 4H03 or equivalent; Engineering and Management 5A01, 5B03; Materials 4E03, 4K04, 4L04; Metallurgy 4C04.

E 6 units of Commerce selected from Level III and IV Commerce courses; 3 units approved technical electives.

METALLURGICAL ENGINEERING AND SOCIETY (B.Eng.Soc.)

Admission:

See *Admission* described at the beginning of the programme listing.

Level II: 35 units (1992-93)

R Chemistry 2P06; Engineering 2M04; Engineering and Society 2X03, 2Y03; Materials 2C04, 2G04, 2H02; Mathematics 2M06.

E 3 units of Engineering and Society focus electives.

Level III: 36 units (1993-94)

R Engineering 2P04, 3M03 or 3N03; Engineering and Society 3X03, 3Y03; Materials 3D06, 3F02; Mathematics 3V06; Metallurgy 3C03, 3G03.

E 3 units of Engineering and Society focus electives.

Level IV: 32 units (1994-95)

R Chemical Engineering 3O04 or Mechanical Engineering 3O04; Chemistry 2W03; Engineering and Society 3X03; Materials 3E06, 3P03; Metallurgy 4C04.

E 3 units of approved technical electives; 6 units of Engineering and Society focus electives.

Level V: 33 units (1995-96)

R Engineering 4B03; Engineering and Society 4X03, 4Z03; Materials 4A01, 4E03, 4K04, 4L04.

E 6 units of approved technical electives; 6 units of Engineering and Society focus electives.

Faculty of Health Sciences

J. Bienenstock, M.B., B.S., M.R.C.P., F.R.C.P(C), F.R.C.P./Vice-President (*Health Sciences*)

S. M. MacLeod, B.Sc., M.D., Ph.D., F.R.C.P.(C)/Dean (*Health Sciences*)

E.K.M. Smith, B.Sc., M.D. F.R.C.P., F.R.C.P.(C)/Associate Dean (*Education*)

A. Baumann, B.Sc.N, M.Sc.N., Ph.D./Associate Dean (*Nursing*)

B. Cooper, Dip.P.O.T., B.A., M.H.Sc./Associate Dean (*Occupational Therapy and Physiotherapy*)

M. Cohen, M.D./Associate Dean (*Health Services*)

B. Underdown, Ph.D./Associate Dean (*Research Services*)

For information concerning Health Sciences programmes and admission requirements, contact

Laurel Stuart, Associate Registrar,
Health Science Centre, Room 1B7,
Telephone (416) 525-9140, ext. 2114

The concept of Health Sciences Education is based on the view that health is a broad subject encompassing not only the problems of ill-health but also the impact of biology, environment and the way of life on health. Each health professional has specific educational requirements, but by training 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. 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.) (Occupational Therapy or Physiotherapy).

In addition to its undergraduate programmes the Faculty of Health Sciences also has the responsibility for the 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. The M.Sc. - Medical Sciences programme is available in the research area of Design, Measurement and Evaluation.

The interprofessional M.H.Sc. (**Health Care Practice**) programme offers a unique opportunity to experienced health professionals who wish advanced preparation as clinicians. It is designed to assist qualified individuals such as nurses, occupational therapists, physicians, and physiotherapists to extend knowledge and skills appropriate to patient care activities.

Interprofessional programmes, postprofessional in nature and leading to an academic **diploma** are offered through the Continuing Health Sciences Education programme. These include: Behavioural Sciences; Occupational Health and Safety; and Child Life Studies.

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 University Medical Centre, a division of the 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 the Hamilton General Hospital, the Henderson General Hospital, the Hamilton Psychiatric Hospital, St. Joseph's Hospital, the Chedoke division of the Chedoke-McMaster Hospitals, St. Peter's Hospital and the Health Sciences Education Centre, Mohawk College. Extensive use is made of community hospitals. A satellite programme has been developed with institutions in Northwestern Ontario. In accordance with the plan to co-ordinate 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 School of Nursing (B.Sc.N.) and the School of Occupational Therapy and Physiotherapy (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
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 **March 15**

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 re-admission to any student whose academic performance or general conduct has been unsatisfactory, or who has withdrawn from the programme for a period in excess of one academic year.

An evaluation of *Unsatisfactory* in the School of Medicine, signifies that the student has failed to meet these objectives and the University may, at its option, because of the *Unsatisfactory* evaluation, 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 asked to withdraw.

Health Regulations for Admission

Before registration, students must file with the University evidence of a recent health examination 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 member of faculty 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 are 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.

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 the 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 of 1972. At present, 100 students are admitted to the programme each year. The academic programme operates on an eleven 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 with 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, Emergency Medicine, Family Medicine, Internal Medicine (and subspecialties), Laboratory Medicine, Obstetrics and Gynecology, Pediatrics (and subspecialties), Psychiatry, Radiology, and Surgery (and subspecialties).

More details on these postgraduate programmes are available from the Associate Registrar (Health Sciences).

The Northern Ontario Medical Programme (NOMP) has been developed in co-operation 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 MEDICAL PROGRAMME

The three-year programme in Medicine uses an approach to learning that should apply throughout the physician's career. The components have

been organized in a relevant and logical manner 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 personal qualities 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 Appraisal 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 Qualities: To recognize, develop and maintain the professional qualities 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 co-operation 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 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.

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 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 observation 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.

The Evaluation Working Group, a sub-committee 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

The curriculum of the undergraduate medical programme comprises 6 Units, an Elective Programme and Revision Time. The Curriculum Plan showing the relative proportion of time accorded to these units is illustrated below.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
								UNIT 1							
								CHRISTMAS BREAK							
UNIT 2		UNIT 3		ELECTIVE		UNIT 4		ELECTIVE							
HOLIDAY				HOLIDAY				CHRISTMAS BREAK							
UNIT 5		UNIT 6 THE CLERKSHIP								CHRISTMAS BREAK					
UNIT 6 THE CLERKSHIP (Continued)		GRADUATION		UNIT 6 includes 16 weeks of elective time. plus 4 weeks of holiday time											
		REVISION													

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 a global view of the determinants of health and illness. Factors from both the molecular to the global environment will be considered, as they determine the clinical presentation in an individual. 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.

This unit is the foundation for *all* the following units and not specifically preliminary to Unit 2.

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

There is an emphasis on critical appraisal of evidence, on clinical skills and learning skills throughout these units.

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 geriatric health.

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: Electives are 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 and 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 sections of the curriculum for full-time elective activities. Block Electives occur after Unit 3 (6 weeks), after Unit 4 (4 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 and are not 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 6 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 provide 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.

FACULTY OF HEALTH SCIENCES

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 between the provinces. After completing the M.D. degree, graduates are eligible to write the Medical Council of Canada Qualifying Examination, which is required by all provinces except Quebec for licensure. After having passed this examination the graduate must provide evidence of having completed one year (two years for those graduating in May 1993 or later) of acceptable postgraduate experience in a hospital approved by the College of Physicians and Surgeons of Ontario before being licenced to practise in this province.

Canadian Intern Matching Service

The Matching Service is a clearing-house designed to help final year Canadian medical students obtain the first post-M.D. year 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 the Office of the Associate Registrar (Health Sciences).

ADMISSION POLICY FOR THE MEDICAL PROGRAMME

The following are the requirements for admission in September 1993. Please note that the admission policy is reviewed annually, and the admission requirements from 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 2, 1992, 12:00 noon E.S.T.** 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.

Application Procedure

1. by 12:00 noon E.S.T. **November 2, 1992**, the applicant must **submit to the Ontario Medical School Application Service (OMSAS)**:
 - a) a completed, signed Application for Admission; **and**
 - b) the application fee; **and**
 - c) an original, completed Autobiographical Submission Package which contains responses to Sections I and II, a list of corroborators and a copy of page 4 of the Application, i.e. the Autobiographical Sketch, affixed to the front; **and**
 - d) three (3) complete photocopied sets of the Autobiographical Submission Package.
2. By **December 11, 1992**, applicants must ensure that the following is **received at OMSAS**:
 - a) transcripts from all post-secondary institutions that have been attended (see *Transcript Notes* below); **and**
 - b) the three Confidential Assessment Forms from the referees.

Transcript Notes

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 by OMSAS by December 11, 1992; 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 11, 1992. Therefore, it is **totally the applicant's responsibility** to ensure that all transcripts, work reports, and Registrar statements are received at OMSAS by December 11, 1992. 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 (pages 2 and 3 of the OMSAS Application) 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, 1993** applicants must have completed a minimum of 3 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 one. 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, 1993 at least 2 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 one.

Applicants who have satisfactorily completed the requirements for a baccalaureate degree in less than three years by November 2, 1992 are also eligible.

- b) By **November 2, 1992** 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 3.00 on the 4.00 scale.

Graduate work will be used to establish eligibility in the following circumstance. 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 establish eligibility. In this case, McMaster will apply the median grade point average of the eligible applicant pool for the graduate degree, and the overall average will be recalculated.

Academic Assessment

After the Academic Eligibility of an applicant has been established, using the single average, two averages will be considered for purposes of Academic Assessment. The higher of the two averages will be used. The averages are calculated as follows:

1. a simple average in which the work of different years is treated equally. (This average is calculated by the applicant on the Academic Record Form and verified on the OMSAS Verification Report which is sent to applicants.)
2. a weighted average in which the last reported undergraduate academic year is given a weight of three, the next to last reported undergraduate academic year is given a weight of two, and all other prior undergraduate years are given a weight of one.

The calculation of the weighted average and the other calculations which follow are made by the Office of the Associate Registrar (Health Sciences) on receipt of the applicant's transcript package from OMSAS.

Supplementary courses will be included in the average of the academic level at which the work was taken. Both the simple and the weighted overall averages will be recalculated.

Academic work which cannot be converted to the OMSAS values by using the OMSAS Conversion Table will be examined individually.

Applicants on whom a graduate degree has been conferred will be assigned the median grade point average of the eligible applicant pool for this work. A second set of simple and weighted averages including the completed graduate work will be calculated. The best of the four averages will be used for academic assessment.

Autobiographical Submission

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

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

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

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

Geographical Consideration

The geographical status is determined from the Autobiographic Sketch (page 4 of the OMSAS Application). 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 2, 1992; and**
- b) have resided for at least 3 years in the area since the age of 14. Attendance at a university in the area for at least 3 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 (page 4 of the OMSAS Application).

Interviewers do not have access to any other information.

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, 1993.

Unsuccessful Applications

Applications from one year are not held over to another year. If an unsuccessful applicant wishes to reapply, a new application package, including supporting documentation must be submitted, using the OMSAS Application, the OMSAS Instruction Booklet, and the McMaster Autobiographical Submission for the new admission selection cycle.

Unsuccessful applicants may inquire about their application for the current year. The applicant must make the request in writing to the Chair of the Admissions Committee of the McMaster Undergraduate Medical Programme. No inquiries will be considered after June 30 of the year of application.

Application for Deferral of Registration

Deferred registration may be granted only under exceptional circumstances. Deferred registration applications may be requested only by those candidates offered a place in the class on the last working day in May and by those who have accepted that offer. The application must be submitted by deadlines, determined from year-to-year (normally within 2 weeks of the offer of admission).

Special Applicants

Candidates who believe they are eligible for this category **must** contact, in writing, the Associate Registrar (Health Sciences) **before** making a formal application. The formal application containing all relevant information and documentation must be made by **October 1** to be considered for that year.

This category is designed to provide opportunities only to those who:

1. have not attended a post-secondary institution as a full-time student, or
2. have completed less than 10 full courses as a part-time student, or
3. are First Nations applicants who wish to be considered under this category.

To be eligible for consideration under this category, the candidate must demonstrate exceptional competence and motivation, and must:

1. have completed at the time of application, at least 4 full degree credit courses. These courses must be completed with the equivalent of an overall average of at least a "B" on the McMaster grading scale. A current university transcript must accompany the request for consideration.
2. have been employed or active in the community for at least 7 years since leaving high school.
3. be a resident of Ontario.
4. Candidates who meet the above specifications will be assessed on having made an exceptional contribution to society. In this, candidates must have shown creativity, initiative and leadership.

Advanced Standing/Transfer

Applications for Advanced Standing will be considered only under exceptional circumstances. Admission with Advanced Standing is conditional upon the availability of resources and will not affect the number of students admitted by the regular route.

Applicants for Advanced Standing must provide evidence to show that their undergraduate medical education has been or will be either terminated or delayed for at least two years by circumstances beyond their control. Those who have already completed the educational requirements of an M.D. degree (or equivalent) will **not** be considered for Advanced Standing.

FACULTY OF HEALTH SCIENCES

In addition at the time of application, applicants must have:

1. successfully completed three years of university education at an accredited post-secondary institution including a full year/level in medical school. Applicants who have enrolled in an undergraduate medical programme as their first post-secondary education, must have completed at least three years of undergraduate university education (including the years in the medical programme);
2. To be considered eligible because of compassionate reasons based on political grounds, all applicants who are not Canadian citizens must show, at the time of application, evidence of being admitted to Canada as a member of the Refugees and Humanitarian classes.

Those who believe that they are eligible for this category must contact, in writing, the Chair of the Admissions Committee of the Undergraduate Medical Programme or the Associate Registrar (Health Sciences), before making formal application. Unless the applicants for advanced standing can demonstrate the need for urgency in the handling of their application, they are subject to the same formal application deadlines as regular applicants, and must provide all relevant documentation by **October 1** to be considered for eligibility for that year's selection and admission cycle.

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 available to the medical school.

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 1991-92, 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	\$ 3,690.
Year III	2,546.

Visa Students

Year I and II	14,745.
Year III	9,916.

In addition, the cost of books and diagnostic equipment for a Year I student was *approximately* \$1500. Students are also responsible for their transportation costs related to clinical study.

Financial assistance is available from the federal and provincial governments through the Ontario Student Assistance Program (OSAP). To be eligible a student must be a Canadian Citizen or permanent resident of Canada and fulfill certain requirements for residency in Ontario. 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 150 Main Street West. Telephone (416) 523-2751.

Final Year Clerkship Stipend The Ontario Hospital Services Commission will make a grant of approximately \$4,600 to each student, payable in 24 biweekly instalments, for educational development within a teaching hospital.

In relation to the Ontario Student Assistance Program, the O.H.S.C. grant will be taken into account in assessing the amounts of the awards for those students who are eligible.

Other Funds The School of Medicine administers a small loan and bursaries programme to assist some medical students who may be in 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 Susan Clue, (416) 525-9140, extension 2141.

Academic Awards The School of Medicine 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 co-operative 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 School of Medicine for purposes of recognizing scholastic merit among medical students. In order to meet the requirements of these awards within the spirit of co-operative scholarship, these funds are administered by the School'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 Student Affairs Office, outlining the nature of their work and the need for funds. For further information, contact Susan Clue, (416) 525-9140, extension 2141.

The School of Nursing

In 1942, McMaster University began its first programme in Nursing, which was operated co-operatively 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 co-operation 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 RN Stream of the B.Sc.N. Programme was introduced. There has been a high demand for admission to this Stream. In response, a Collaborative Category has been added to the existing Open Category. This second category of admission is available to provide expanded opportunities for Diploma Registered Nurses. The Collaborative Category has been designed with the active support and involvement of health care agencies in the Hamilton-Wentworth Region and is subject to the availability of resources.

Applicants often wish to discuss the implications of embarking upon a degree programme in nursing. During the school year Health Sciences Information Sessions for high school students are presented. Details about these sessions may be obtained from the Student Liaison Office (Gilmour Hall, Room 102, (416) 525-9140 Ext. 4787). Applicants not applying directly from high school may discuss aspects of the admission process with the Associate Registrar (Health Sciences) or the Admissions Co-ordinator, Nursing by calling (416) 525-9140, extn. 2232, or writing directly to Admission and Records, HSC 1B7.

THE B.Sc.N. PROGRAMME

The School of Nursing is committed to education, research, and service. 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 within the context of a respectful and facilitative teacher-learner relationship where learners take responsibility for their own learning. 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.

Goals of the B.Sc.N. Programme

The overall goal of the B.Sc.N programme is to provide a general baccalaureate education in nursing for the preparation of professional nurses. These nurses will be able to practice in a variety of health care settings in the present and in the future. They will have the necessary skills for life-long learning.

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.

Health is a dynamic life experience and is defined as being all of which one is capable in one's life situation. 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 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 programme.

As places in the B.Sc.N. programme are limited, admission is by selection of applicants, and possession of published minimum requirements does not guarantee admission.

There are **two 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 Diploma R.N. (B) Stream requires two years of study and is available to Diploma Registered Nurses *only*.

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: The major portion of places in Level 1 are held by students with OACs or equivalent. The selection method is by academic qualifications. Either interim or final grades provide the academic base, calculated the first part of June.

Applicants with Other Qualifications and Diploma R.N.'s: The selection method is based on academic qualifications, and a personal qualities' score which includes references, a questionnaire and an interview score. The response to the questionnaire is assessed by teams of assessors normally representing the faculty, the students or alumni, and the community. Those applicants with the highest academic assessment scores, questionnaire scores, and reference scores are invited to an **interview in early May**.

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.

All applicants will be informed of the admission decision in mid-June. Where courses were in progress at the time of application, the offer of admission may be conditional upon the applicant achieving an overall B average. Failure to meet the condition will result in withdrawal of the offer of admission.

ADMISSION PROCEDURE:

Applicants from Ontario Secondary Schools: 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 R.N. Applicants: Such applicants should write to the Associate Registrar (Health Sciences) for an application package. Transcripts of courses either completed or in progress, the questionnaire response and reference forms must be included with the application by **February 15th**. Diploma R.N. applicants must also include their Certificate of Competence and the statement(s) of their nursing practice in the last five years.

Applications for all studies beginning in September must be received by the Associate Registrar (Health Sciences) no later than **February 15th** at:

Faculty of Health Sciences (Admissions & Records)

McMaster University, HSC Room 1B7

1200 Main St. West

Hamilton, Ontario L8N 3Z5

Students enrolled in other programmes at McMaster University wishing to be considered for the B.Sc.N. programme should also apply by this method through the Office of the Associate Registrar (Health Sciences) by **February 15th**.

FACULTY OF HEALTH SCIENCES

ADMISSION REQUIREMENTS

If you plan to enter a nursing programme, you may qualify under one of the four categories (A to D) 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, OAC Functions and Relations;
4. One of OAC Biology, or OAC Physics;
5. Completion of 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.

Secondary School Semester Applicants: Applicants who complete the programme admission requirements in January may choose to take university courses commencing in February. Nursing applications submitted in January normally will be among those considered for the following September.

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 February.

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 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.)

Note: University degree credit courses completed prior to admission will be assessed for advanced credit, following admission to the programme, by the Co-ordinator of Studies.

2. submit a completed original and three (3) copies of their response to the questionnaire provided in the application package;
3. submit three (3) completed reference forms from non-relatives, including one person qualified to address the applicant's academic capabilities. Reference forms will be provided in the application package.

Applicants will be evaluated on the basis of the material submitted in 1, 2 and 3 above. Those ranked highest 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 wish to transfer to McMaster. Availability of space in the Level requested will be determined by the Co-ordinator of Studies (B.Sc.N. programme). 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 Co-ordinator of Studies to discuss placement in the programme;
2. send a written request to the Chairperson, Undergraduate Nursing Admissions Committee outlining their request;
3. submit a completed original and three (3) copies of their response to the Questionnaire provided in the transfer application package;
4. 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);

5. Submit a current official transcript.

The applicant may be invited to McMaster for a personal interview. Interviews are held in early May. Applicants are responsible for their own travel expenses.

Applications for transfer to studies above Level I beginning in September must be received by the Associate Registrar (Health Sciences) no later than March 15.

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 Diploma R.N.(B) Stream of the Undergraduate Bachelor of Science in Nursing programme.

Applicants *currently enrolled* in a diploma nursing programme will be considered in Category B above.

Advanced credit is granted for 24 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.

There are two categories of admission within the Diploma R.N. (B) Stream.

1. **The Open Category:** The Open Category is open to *all* diploma registered nurses who meet the following conditions.

Applicants in this category normally should:

- i. 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.
- ii. provide evidence (transcripts) of a minimum of a B- grade in at least 6 units (or equivalent) of University degree credit work. University correspondence degree courses are acceptable.

University degree credit courses completed prior to admission will be assessed for advanced credit, following admission to the programme, by the Co-ordinator of Studies.

- iii. submit a completed original and three (3) copies of their response to the questionnaire provided in the application package;
- iv. submit three (3) completed reference forms provided in the application packet. References should be from non-relatives, and should include at least one person who is qualified to address the applicant's professional and academic capabilities.

Applicants will be evaluated on the basis of the material submitted in ii, iii, and iv above. Those ranked highest 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.

2. **The Collaborative Category:** The Collaborative Category was developed in conjunction with specific health care institutions in Hamilton-Wentworth. Further information about this Collaborative Category is available from the Admissions Co-ordinator - Nursing or the Post RN Stream Chair in the School of Nursing.

Candidates wishing to apply to the Collaborative Category should satisfy all those conditions listed *above* in the Open Category. *In addition* they must provide a letter from their Director of Nursing.

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, we reserve the right to change the regulations in this section of the Calendar.

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) or (B) 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.

Level I Nursing

A student in Level I must:

1. achieve a University Average (UA) of at least 2.5; and
2. achieve an average of at least 4.0 in the Nursing and required Health Science courses; and
3. achieve a grade of at least C- in the Nursing and required Health Science courses with the exception that a grade of D-, D, or D+ is permissible in one Health Science course.

A student who fails to meet these requirements may not continue in the programme but may seek readmission by writing to the B.Sc.N. Programme Chair.

Area Courses:

The Area courses consist of all the Nursing and Health Science courses above Level I.

The following courses are designated *clinical courses*:

Basic (A) Stream	Nursing 2L03, 2P03, 3X07, 3Y07, 4J07, 4K07.
Diploma Registered Nurses (B) Stream	Nursing 3L05, 3M05, 3N08, 4S06, 4T06.

All clinical courses above Level I are evaluated on a "Pass/Fail" basis. A "pass" designation is equivalent to a minimum of a C+ grade or higher. Areas of excellence in practice are noted in a detailed evaluation summary for each course.

A grade of at least C- is required in all graded Area courses with the exception that a grade of D-, D, or D+ is permissible in a Health Science Area course only once beyond Level I. In order to meet these requirements an Area course may be repeated only once. If a student fails to meet the minimum grade requirements after repeating the course, he or she *may not continue* in the Nursing programme. A student may normally be allowed to repeat only one (1) clinical and one (1) non-clinical Nursing or Health Science course during the programme.

A course for which credit has been granted may be repeated only when approval is granted by the B.Sc.N. Programme Chair in consultation with the programme Reviewing Committee.

Cumulative Area Average (CAA)

The Cumulative Area Average (CAA) for the B.Sc.N. programme is the weighted average of all graded Nursing and required Health Sciences courses attempted and repeated beyond Level I. It is used to determine whether a student may continue in the programme, may continue on Programme Probation, or may not continue in the programme.

For the Basic (A) Stream the courses included are:

Health Science 2B08, 3A04, 3B04, 4L04
Nursing 2M03, 2N03, 3S04, 3T04, 4A02, 4E03, 4F03.

For the Diploma RN (B) Stream the courses included are:

Health Science 2B08, 3A04, 3B04, 4L04
Nursing 3S04, 3T04, 4A02, 4E03, 4F03.

Continuation in the Programme

To continue in the B.Sc.N. programme a student must obtain a University Average (UA) of at least 2.5, a Cumulative Area Average of at least 4.0, and meet the minimum requirements of the Programme. A student whose CAA is at least 3.5 may, at the discretion of the Faculty, 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 Cumulative Area Average is less than 3.5, or whose CAA is less than 4.0, and who has not been granted Programme Probation, may not continue in the programme. A student who fails to obtain a Cumulative Area Average of 4.0 at the completion of the period on Programme Probation may not continue in the B.Sc.N. programme. A student may normally repeat a Level of work only once.

Extra Courses

Courses in addition to those which constitute the B.Sc.N. programme may be designated *Extra* at registration. The grades obtained in such courses will not be included in the CAA nor will the units be included in those required for graduation. The designation *Extra* cannot be added or removed retroactively.

Level of Registration

Level describes where a student is placed in the programme. A student is required to register in that Level for which more than 6 units of work is incomplete. Work of a higher Level may be undertaken, if prerequisites are met, with the permission of the Programme Chair or the Co-ordinator of Studies (Nursing).

Selection of Electives

After a student has completed Level I he or she may take no more than 18 units of courses beginning with the digit 1.

Graduation Average (GA)

The Graduation Average (GA) for the B.Sc.N. programme is based on the following graded courses:

Health Science 2B08, 3A04, 3B04, 4L04
Nursing 3S04, 3T04, 4A02, 4E03, 4F03.

The GA is used to determine whether a student may graduate from the programme.

CURRICULUM FOR THE B.S.C.N. PROGRAMME

Basic (A) Stream

The Faculty has planned the curriculum so that the study of nursing, the physiological, psychological and social sciences, and the humanities are interrelated and span the entire programme. In Level I, the amount of nursing experience is relatively small; the major proportion of study is in the behavioural and natural sciences. The nursing component increases progressively through Levels II, III, and IV, as the study of natural sciences is completed. Normally, because of timetable constraints, courses must be taken in the Level indicated in the curriculum.

Six units in Sociology or Anthropology are required by the end of Level II. In at least one of Levels I, II, III, or IV, six units of elective are to be chosen from the Humanities, and six additional units from one of Psychology, Sociology, or Anthropology are to be chosen at or above Level II. 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

R Health Sciences 1A06, 1B07; Nursing 1F04, 1G04; Psychology 1A06.
E 6 units.

Level II: 35 units

units graded: 29

units pass/fail: 6

R Health Sciences 2B08; Nursing 2L03, 2P03, 2M03, 2N03;
E 15 units.

Level III: 33 units

units graded: 19

units pass/fail: 14

R Health Sciences 3A04, 3B04; Nursing 3S04, 3T04, 3X07, 3Y07.
E 3 units.

Level IV: 32 units

units graded: 18

units pass/fail: 14

R Health Sciences 4L04; Nursing 4A02, 4E03, 4F03, 4J07, 4K07.
E 6 units.

Diploma R.N. (B) Stream

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 in the Open Category to complete the programme requirements. Students in the Collaborative Category must elect to take their programme in either four years or five years and indicate their preferred choice at the time of acceptance into the programme.

Each level of the programme will consist of eight months of academic study with concurrent clinical practice. Level III is followed by 6 to 8 weeks of concentrated clinical practice in one setting (normally a community health care setting). The concentrated experience is designed to provide the student with the opportunity to develop expanded role skills and to demonstrate independent decision-making capacity.

Electives: Thirty (30) 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: 24 units

Level III: 55 units

units graded: 37

units pass/fail: 18

Terms 1 and 2: 35 units

R Health Sciences 1A06, 1B07, 3A04; Nursing 3L05, 3M05, 3S04, 3T04.

Spring Term: 14 units

R Nursing 3N08.

E 6 units.

Summer Term: 6 units

E 6 units.

Level IV: 54 units

units graded: 42

units pass/fail: 12

Terms 1 and 2: 36 units

R Health Sciences 2B08, 3B04, 4L04; Nursing 4A02, 4E03, 4F03,

4S06, 4T06.

Spring Term: 6 units

E 6 units.

Summer Term: 6 units

E 6 units.

Additional Electives (Any term): 6 units

E 6 units.

School of Occupational Therapy and Physiotherapy

McMaster University offers two new 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 new 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. The 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 behaviours in order to analyze and manage health problems.

Programme Goals

The graduates of the B.H.Sc. programmes in Occupational Therapy and Physiotherapy will be able:

Knowledge:

1. to understand and apply the theoretical and scientific bases of Occupational Therapy and Physiotherapy;
2. to understand the biological, social, cultural and environmental determinants of health, and their relationship with one another;
3. to understand the basic principles and methods of scientific inquiry and critical appraisal;
4. to understand the importance of prevention, health maintenance, health promotion and treatment;
5. to understand the factors which affect health policy and the delivery of health care;
6. to understand change.

Skills:

1. to demonstrate clinical reasoning skills for the management of health care problems;
2. to demonstrate competence in assessment and treatment techniques in Occupational Therapy or Physiotherapy;
3. to demonstrate effective oral and written communication skills;
4. to function as members of an interdisciplinary health-care team;
5. implement programmes for prevention, health maintenance and health promotion;
6. to function in advocacy roles in order to enhance quality of life;
7. to demonstrate teaching and supervisory skills in professional practice;
8. to demonstrate critical thinking skills;
9. to assess effectiveness of professional practice;
10. to adapt to and initiate change.

Personal Qualities:

1. to 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. to 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
								Block I Basic Skills 16 Weeks			
Block II Specialty Block 8 Weeks				Block III Specialty Block 8 Weeks				Block IV Specialty Block 8 Weeks			
Block V Specialty Block 8 Weeks				Block VI Integration Block 8 Weeks				Block VII Clinical Elective 6 Weeks			

Problem based tutorials, Inquiry Seminars, Clinical Skills Labs, Independent Study (Block VI only)

6-week blocks of full-time Clinical fieldwork

Curriculum

The curriculum is divided into seven blocks of full-time study over a period of twenty-four months. The content of each block is profession specific; however, there are occasions for Occupational Therapy and Physiotherapy students to study together. The total programme consists of 100 units of credit; 70 units of academic study and 30 units (30 weeks) of clinical practice.

Northern Studies Stream

Both programmes, Occupational Therapy and Physiotherapy, offer a Northern Studies Stream option for enrolled students. Initially, half of the students in each programme will have an opportunity to participate. The Northern Studies Stream will expand as enrolment is increased.

Northern Studies Stream students will complete one eight week academic block at Lakehead University and/or a six week clinical fieldwork placement either in Thunder Bay or surrounding Northwestern Ontario communities.

Initially, one Physiotherapy tutorial group will study Block III (Musculoskeletal III) at Lakehead University. Similarly, one Occupational Therapy tutorial group will study Block IV (Mental Health) at Lakehead University as part of the Northern Studies Stream option. Students will develop an awareness and appreciation of northern health issues during their professional and clinical training in Northwestern Ontario.

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 Philosophy

Using the problem-based learning approach developed by the Faculty of Health Sciences at McMaster University, the curriculum has been designed to accommodate students who come from a variety of academic and experiential backgrounds. One of the basic objectives of this approach is to develop in graduates the skills to become life long learners and leaders in their profession.

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

Tutorials allow students to learn the content specified for each curriculum block and to learn and practice group skills, share knowledge, become comfortable with changing leadership positions, and give and receive feedback.

Tutorial group size may vary from 5 to 7 students. Tutorial group membership is changed for each block in the programme in order to maximize interaction among students and faculty.

The tutor functions as a facilitator of students' learning. Tutors are usually occupational therapists or physiotherapists who are knowledgeable in the content area of the block, and expert in tutoring in a problem-based format. The same tutor meets regularly with the group throughout the block, including the clinical education portion. The 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 block are applied and integrated into the clinical education component of the specialty blocks.

The focus of clinical skills laboratories changes through the blocks. Block 1 stresses basic clinical skills, Blocks 2 through 5 focus on specialty areas of practice, and Block 6 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 block and may vary from year to year. The seminar leaders include faculty members of McMaster or Lakehead Universities, 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. During clinical education students practice under the supervision of clinical preceptors who are occupational therapists or physiotherapists who are normally employed by the facility.

Under normal circumstances problem-based tutorials will continue during the clinical education component where the focus for group discussion may be clinical case presentations and real life experiences encountered by students in their clinical practice.

Independent Study

The independent study 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 Block V. The project is completed during Block VI.

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 programme in Occupational Therapy and Physiotherapy is limited to 30 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. Assessment teams are composed of representatives of the faculty, the community, and students.

Eligibility

Applicants must:

- At the time of application, have achieved a minimum grade point average of B- or 70% over the last two years of full-time academic study or the equivalent.
- 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.

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:

Admissions and Records
(Health Sciences, HSC 1B7)
McMaster University

or

Registrar's Office, Lakehead University

All application packages must be submitted directly to Admissions and Records (Health Sciences, Room 1B7) McMaster University. Deadlines will be strictly enforced.

The applicant is responsible to ensure that the following is received on or before **January 15**:

- application forms: the McMaster application, autobiographical submission, and academic record form.
- transcripts for all university degree credit courses and programmes in which the applicant has been enrolled.
- \$10.00 application fee.

Applicants may also be required to obtain references.

Selected applicants are invited to a personal interview. Interviews will be conducted between **April 1** and **May 15** in **Hamilton** and **Thunder Bay**. Applicants invited to interview will be notified in advance.

All applicants will be notified of the admission decision by **June 1**.

Financial Information

In 1991-92 the academic fees (tuition and supplementary fees) for a student in the McMaster Undergraduate Occupational Therapy or Physiotherapy Second-Degree Programmes (3 terms, September 1991 to August 1992) was \$3069.20. It is estimated that books and supplies cost an additional \$750.

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 block. All courses within each block must be taken concurrently.

Area Courses

All courses are area courses.

Graduation Average

The Graduation Average is computed using the best 80% of all area courses, in Blocks I through VII.

Graduation standing is assigned on the basis of the Graduation Average. First-class standing is given to those with averages of 9.5 or higher, second-class for averages of 7.0 to 9.4, and third-class for averages of 4.0 to 6.9.

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 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 block, and at the end of the academic component in each of the specialty blocks (Blocks II to V). Students must achieve a grade of at least 4.0 (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 4.0, 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 4.0 in all cases. The remedial work must be completed prior to the beginning of the next block 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 4.0, 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 re-admission in writing to the Programme Chair.

The request must be made at least three months prior to the beginning of the block to which the student is requesting re-admission. Normally, a student who is re-admitted to the programme must repeat all courses of the block in which he/she became ineligible to continue.

A student who becomes ineligible for continuation in the programme a second time or who voluntarily withdraws from the programme a second time, may re-apply only through the regular admissions process.

The latest possible date for re-admission is two years from the beginning of the block from which the student withdrew.

PROGRAMMES

B.H.Sc.(OT)

Year I: 47 units

R Block I Occther 1T15, 1L17, 1S13

Block II Occther 1T23, 1L24, 1S23, 1C26

Block III Occther 1T33, 1L34, 1S33, 1C36

Year II: 53 units

R Block IV Occther 2T43, 2L44, 2S43, 2C46

Block V Occther 2T53, 2L54, 2S53, 2C56

Block VI Occther 2T64, 2L63, 2I65, 2S63

Block VII Occther 2C76

B.H.Sc.(PT)

Year I: 47 units

R Block I Physther 1T15, 1L17, 1S13

Block II Physther 1T23, 1L24, 1S23, 1C26

Block III Physther 1T33, 1L34, 1S33, 1C36

Year II: 53 units

R Block IV Physther 2T43, 2L44, 2S43, 2C46

Block V Physther 2T53, 2L54, 2S53, 2C56

Block VI Physther 2T64, 2L63, 2I65, 2S63

Block VII Physther 2C76

Licensing

Physiotherapy

Physiotherapists in Canada must be licenced with the appropriate provincial regulatory board in order to practice. The School of Occupational Therapy and Physiotherapy, McMaster University, has no jurisdiction in matters related to the regulatory boards and cannot accept responsibility for changes in regulations which may occur from time to time.

The Canadian Alliance of Physiotherapy Regulatory Boards is developing a Physiotherapy National Examination process to be implemented as an entry level requirement to practice physiotherapy in all jurisdictions in Canada. Target date for implementation is 1993 and thus will apply to the graduating classes of that and subsequent years.

The Physiotherapy programme at McMaster will undergo accreditation by the Canadian Physiotherapy Association previous to the graduation of the first class. After programme accreditation the graduates will be eligible for membership in the Canadian Physiotherapy Association and to seek licensure in most provinces until the time that the National Examination process is finalized.

Details regarding eligibility for practice in any province in Canada may be obtained by writing to:

Canadian Physiotherapy Association
890 Yonge Street, 9th Floor
Toronto, Ontario M4W 3P4

Occupational Therapy

The Occupational Therapy programme at McMaster will undergo accreditation previous to the graduation of the first class. All graduates from accredited Occupational Therapy programmes in Canada must pass a national certification exam in order to be eligible for membership in the Canadian Association of Occupational Therapists.

Some provinces in Canada require a licence to practice Occupational Therapy. The question of licensing in Ontario is currently being explored by the Health Legislation Review Board and the Ontario College of Occupational Therapists.

Details regarding eligibility for practice in any province in Canada may be obtained by writing to:

Canadian Association of Occupational Therapists
3rd Floor, 110 Eglinton Avenue West
Toronto, Ontario M4R 1A3

Faculty of Humanities

E. Simpson/A.B., Ph.D., Dean of Humanities
 F.A. Hall/Assoc.Dipl., B.Mus., M.A., Ph.D., Associate Dean of
 Humanities (Studies)
 P.A. Kalnins/B.A., Assistant to the Associate Dean
 S.A. Richard/Student Advisor

The humanities tell us how men and women of our own and other civilizations have grappled with life's enduring, fundamental questions: What is justice? What should be loved? What deserves to be defended? What is courage? What is noble? What is base? Why do civilizations flourish? Why do they decline?...

Mankind's answers to compelling questions are available to us through the written and spoken word -- books, manuscripts, letters, plays, and oral traditions -- and also in non-literary forms, which John Ruskin called the book of art. Within them are expressions of human greatness and of pathos and tragedy. In order to tap the consciousness and memory of civilization, one must confront these texts and works of art.

William J. Bennett

The humanistic disciplines -- philosophy, languages and literature, history, music, art and drama -- are those fields of critical enquiry which help us to know ourselves through an understanding of humanity's creative and intellectual traditions, its moral and aesthetic values and its spiritual and material aspirations, and through the realization of human memory. The task of the humanistic scholar is to cultivate an appreciation for traditional learning, and to generate new ideas about the nature of human conditions; to discover, through historical perspective, the processes which link past and present; and to bring to bear on the problems of an age of rapid and often unsettling transformation perceptions informed by values which make us more, rather than less, human and civilized.

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' nine academic departments. These are:
 Department of Art & Art History
 Department of Classics (Ancient History and Archaeology, Classical Languages and Literature)

Department of Drama

Department of English

Department of French

Department of History

Department of Modern Languages (Chinese, German, Hispanic Studies, Italian, Japanese, Russian)

Department of Music

Department of Philosophy

In addition, the Faculty offers the following two interdepartmental programmes:

Honours Comparative Literature

Honours Modern Languages and Linguistics.

Programmes and Degrees

A. LEVEL I PROGRAMMES

Admission Requirements

Students intending to qualify, after Level I, for admission to a degree programme in one of the Humanities disciplines should complete **Humanities I**. Students intending to enrol in a degree programme in Music should complete **Music I**, although students may enter a B.A. programme in Music from Humanities I.

The admission requirements for Humanities I and Music I are described in the *Admission Requirements* section of the Calendar.

Level I Programme Requirements

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

R 18 units representing **three** (3) of the following four (4) areas of study:

1. *Literary Studies/Linguistics*
 Classics 1B06
 Comparative Literature 1A06
 English 1D06
 Linguistics 1A06
2. *Historical and Philosophical Studies*
 Classics 1L06
 History 1C06, 1D06, 1L06
 Philosophy 1B06, 1D06
3. *Languages other than English*
 Chinese 1Z06, 1ZZ6
 French 1A06, 1N06, 1Z06
 German 1A03, 1AA3, 1Z06, 2Z06
 Greek 1Z06, 2A03*
 Hispanic Studies 1A06, 1Z06
 Italian 1A06, 1Z06, 1ZZ6
 Japanese 1Z06
 Latin 1Z06, 2A03*
 Russian 1Z06
4. *The Arts*
 Art 1F06**
 Art History 1A06
 Drama 1A06
 Music 1A06, 1B06, 1CC3, 1D03***

E 12 units elective of which at least 6 should be selected from courses offered by a Faculty other than Humanities.

No Humanities I student may take more than 6 units of work in any single subject, except in the case of Classics 1B06 and 1L06.

* Students choosing Greek or Latin 2A03 will also register for an additional 3 units of Level II Greek or Latin to be taken in Term 2.

** Portfolio Required: If you intend to take Art 1F06 you should present a portfolio and be interviewed by the Department of Art and Art History by the end of April. The portfolio should contain a variety of original works in different media including works derived from both first-hand observation and the imagination. Aptitude in art and ability in academic subjects are both considered in our selection process. Personal interviews and portfolio reviews are conducted on weekends in April and the first selection for admission is made in early May. You should contact the Department of Art and Art History to arrange for a time for your interview. In exceptional circumstances, portfolios may be submitted in the form of colour slides. Late applications will be considered subject to space availability and merit after our first allocations have been confirmed. This final selection may not occur, depending on demand, until the beginning of classes in September.

*** Students wishing to take Music courses other than Music 1A06 must make arrangements with the Music Department for qualifying tests.

Students admitted to **Music I** must complete 30 or 33 units of work as follows:

R Music 1B06, 1CC3, 1D03, 1E03 (or 1E06), 1G03. (Permission of the Department is required for Music 1E06.)

E 12 units normally representing **two** (2) of the four (4) areas of study listed above under *Level I Programme Requirements* for Humanities I students. Students may not use Music courses for *The Arts* area of study.

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.

1. 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.

FACULTY OF HUMANITIES

2. Combined honours programme: *three* years of study, beyond Level I, concentrated in the work of *two* disciplines (e.g. French and German, 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, Philosophy and Biology) or one Humanities discipline with Women's Studies or Japanese Studies.
3. 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 further on in this Calendar under the title *Programmes for the B.A., B.A. (Honours) and B.Mus. Degrees*.

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 *Courses by Department*.

Not only are students from other Faculties able to take individual courses which have an open prerequisite, 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 only able to take their work during the Winter Evening Session:

Art History; Drama; English; History; Philosophy.

For part-time students who are only able to attend during the Winter Evening 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 University Average of at least 4.0 and have completed the necessary programme requirements.

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 re-admission (see below).

A student who *May Not Continue Without Permission* may apply for readmission. 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/February 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 Programmes: Admission from Other Post-Secondary Institutions

Enrolment in English 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 English programmes at McMaster must be received by the Registrar's Office no later than June 15. Note that English programmes at McMaster may be commenced only in September.

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. In the Faculty of Humanities, students are required to preregister in March for the following Winter Session. When registering or making changes to course selection, students must seek the written approval of the appropriate Departmental Counsellor and the Dean of Studies. Dates for final registration and course changes appear in the *Sessional Dates* at the beginning of this Calendar and are rigidly adhered to.

Cross-listed Courses

Any student for whom a cross-listed course is an Area course under one of its listings must register for it under that listing. For example, Art History 2B03 is cross-listed as Classical Civilization 2B03, so students in an Art History programme wishing to register for this course must register for it under the label Art History 2B03. Such courses will then be used in calculating the student's Cumulative Area Average and possibly the Graduation Average.

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.

Letters 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;ms 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 McMaster averages, and, therefore, cannot be used to raise standing.

No transfer credit will be given for work taken at another institution for which a student did not receive prior approval from the Associate Dean's Office.

Summer Immersion Programmes in French

You 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.

Withdrawal

Students who wish to withdraw from the University are required to advise the Dean of Studies Office in writing. Students must surrender their identity 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.

Academic Regulations Pertaining to the Department of Music

The Cumulative Area Average for the Honours Music programmes and for the music portion of the Combined Honours programmes is termed the *Cumulative Music Average* and is the weighted average of grades in all Area courses attempted. To continue in an Honours Music programme, a student must maintain a CMA of at least 7.0.

Normally, students with an undergraduate degree in Music will not be admitted to a B.Mus. degree programme as a second undergraduate degree.

Third Year Study Elsewhere

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 sixty units of work with a Cumulative Area Average of at least 8.0 in their area(s) of specialization. Individual programmes may have additional requirements. All requirements must be satisfied by the end of the 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 thirty units of work.

No fees are payable to McMaster University for the Third Year Study Elsewhere Programme, but students must pay all associated travel, study, and living expenses. For students in need of financial assistance, O.S.A.P. (The Ontario Student Aid Programme) grants and loans may be available for this programme. In addition, assistance with travel expenses may be available from McMaster University bursary funds.

Students interested in applying for this programme should consult the Associate Dean of Humanities (Studies) and their department(s) about one year before they plan to begin their study elsewhere. No later than the end of January, students must propose a programme of study for approval by their department(s) and the Associate Dean.

While they are engaged in study elsewhere, students must maintain links by correspondence with their departmental academic counsellor(s) at McMaster.

Students may receive up to thirty units of credit for a full year of study in Third Year Elsewhere Programme. Of this total, up to eighteen units may be applied to the Level III R-work of an Honours programme and up to twelve units to the Level III R-work of each component of a Combined Honours programme. The awarding of all credit for work completed elsewhere may be confirmed only after departments have received transcripts and reviewed students' academic achievement following their return and after students 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.

Programmes for the B.A., B.A. (Honours) and B.Mus. Degrees

Department of Art and Art History

HONOURS ART

Admission:

Enrolment in Honours Art is limited and admission is by selection on the basis of: (a) the overall weighted average attained in the Level I programme, (b) a weighted average of at least 7.0 in Art 1F06 and Art History 1A06, and (c) a grade of at least B- in Art 1F06.

Programme Notes:

1. Students in Honours Art must complete Art 2A04, 2B04, 2C03, 2F04 before registering in Level III or IV Art courses.
2. Level II Art History courses are grouped into the following Fields:
I *Ancient and Medieval*: Art History 2B03, 2C03, 2G03
II *Renaissance and Baroque*: Art History 2M03, 2N03
III *Modern*: Art History 2O03, 2P03

Area Courses:

All Level II, III and IV Art courses except Art 4C06; all Level III and IV Art History courses except 3J03, 3K03; Studio 1B03, 2B03.

Levels II, III and IV: 90 units

- R 48 units of Art including Art 2A04, 2B04, 2C03, 2F04; 3C03; 3G06, and 24 units of Level III or IV Art courses, including 4B12; 18 units of Art History, including at least 3 units of Level II from each Field and at least 6 units from Levels III or IV.
- E 24 units, 12 of which may be from Art, Art History, and Studio courses.

COMBINED HONOURS IN ART AND ANOTHER SUBJECT

Admission:

Enrolment is limited and admission is by selection on the basis of: (a) the overall weighted average attained in the Level I programme, (b) a weighted average of at least 7.0 in 12 units of Level I work, and (c) a grade of at least B- in Art 1F06 and the successful completion of Art History 1A06.

Programme Note:

Students in Combined Honours Art must complete Art 2A04, 2B04, 2C03, 2F04 before registering in Level III or IV Art courses.

Area Courses:

Level II, III and IV Art courses; Studio 1B03, 2B03.

Levels II, III and IV: 90 units minimum

- R 42 units of Art including Art 2A04, 2B04, 2C03, 2F04; 3C03; 3G06, and 18 units of Level III or IV Art, including 4C06 or 4B12.
- E To the combined total of a minimum of 78 units of Area work beyond Level I, the student must add elective work to make up an overall total of at least 90 units.

HONOURS ART HISTORY

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 Art History 1A06.

Programme Note:

Level II Art History courses are grouped into the following Fields:

- Ancient and Medieval*: Art History 2B03, 2C03, 2G03
- Renaissance and Baroque*: Art History 2M03, 2N03
- Modern*: Art History 2O03, 2P03

Area Courses:

All Level II, III and IV Art History courses, except Art History 3J03, 3K03.

Levels II, III and IV: 90 units

- R 54 units of Art History, including 18 units of Level II (6 units from each Field), and 36 units of Levels III and IV Art History including 6 units of seminar courses.
- E 36 units, 12 of which may be Art History and Studio courses.

COMBINED HONOURS IN ART HISTORY 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 Art History 1A06.

Programme Note:

Level II Art History courses are grouped into the following Fields:

I *Ancient and Medieval*: Art History 2B03, 2C03, 2G03

II *Renaissance and Baroque*: Art History 2M03, 2N03

III *Modern*: Art History 2O03, 2P03

Area Courses:

All Level II, III and IV Art History courses except Art History 3J03, 3K03.

Levels II, III and IV: 90 units minimum

R 36 units of Art History including 12 units of Level II (at least 3 units from each Field), and 24 units of Levels III or IV (at least one seminar course and 3 additional units from Level IV).

E To the combined total of a minimum of 72 units of Area work beyond Level I, the student must add elective work to make up an overall total of at least 90 units.

B.A. IN ART HISTORY - (A) STREAM

Admission:

Completion of any Level I programme with a weighted average of at least 4.0 in 12 units of Level I work including a grade of at least C- in Art History 1A06.

Programme Note:

Level II Art History courses are grouped into the following Fields:

I *Ancient and Medieval*: Art History 2B03, 2C03, 2G03

II *Renaissance and Baroque*: Art History 2M03, 2N03

III *Modern*: Art History 2O03, 2P03

Area Courses:

All Level II, III and IV Art History courses, except Art History 3J03, 3K03.

Levels II and III: 60 units

R 30 units of Art History including 18 units of Level II (6 units from each Field), and 12 units from Levels III or IV.

E 30 units, 12 of which may be Art History and Studio courses.

B.A. IN ART HISTORY - DIPLOMA (B) STREAM

Subject to government approval, the Department of Art and Art History intends to offer the following programme:

Admission:

Completion of the Mohawk/D.V.S.A. Diploma in Fine Arts with a Mohawk Grade Point Average of at least 3.2 covering the last two semesters at Mohawk College and a weighted average of at least C- in both Art History and Studio courses. Students admitted into this programme receive 36 units transfer credit.

Programme Note:

Students must complete at least 6 units from each of the Fields listed below. Twelve units of Art History courses completed at Mohawk College will be applied towards the fulfillment of this requirement as appropriate.

I *Ancient and Medieval*: Art History 2B03, 2C03, 2G03

II *Renaissance and Baroque*: Art History 2M03, 2N03

III *Modern*: Art History 2O03, 2P03

Area Courses:

All Level II, III and IV Art History and Studio courses, excluding Art History 3J03, 3K03.

Levels II and III: 54 units

R Studio 3A12 and 4A12; 6 units of Level II Art History (see *Programme Note* above); 12 units of Level III or IV Art History courses;

E 12 units elective, 6 units of which may be Studio courses.

Department of Classics

Department Notes:

1. Students in a Classics programme may choose Area Courses from the following sub-fields: *Ancient History and Society*, *Ancient Philosophy*, *Classical Archaeology and Art History*, *Classical Literature in Translation*, *Greek Language and Literature*, *Latin Language and Literature*.

2. With the approval of the Department of Classics, the following related courses offered by another department are also available as Area Courses to students in a Classics programme.

Ancient Religious Studies: Religious Studies 2E06, 2F03, 2H3, 3K03, 3O03, 3X03.

3. 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 or participation in archaeological excavations abroad.

4. Students intending to do graduate work in the field of Classics should note that most universities offering such programmes require undergraduate work in Greek and Latin for admission. These students are strongly encouraged to include Greek and Latin courses as early as possible in their programme.

5. Students intending to do graduate work in the field of Classics are strongly encouraged to include a thesis course (Classics 4T06) in the final level of their programme.

HONOURS CLASSICS (Programme A: Ancient History and Archaeology)

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 one of any Level I Classics course, Greek 1Z06, or Latin 1Z06. (Students with OAC Ancient Greek may substitute Greek 2A03 and 3 additional units of Level II Greek; students with OAC Latin may substitute Latin 2A03 and 3 additional units of Level II Latin.)

Programme Note:

All Level II Classics, Greek, and Latin courses will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Classics, Greek, and Latin courses. Greek 1Z06 and Latin 1Z06, if not included in the Level I programme.

Levels II, III and IV: 90 units

R 54 units as follows: 36 units from Classics 2A03, 2B03, 2C03, 2G06, 2U03, 2V03, 2Z03, 3A03, 3G03, 3H03, 3LL3, 3MM3, 3R03, 3S03, 3UU3, 3VV3, 3WW3, 3X03, 4D06, 4I06, 4LL6; 18 additional units of Area Courses. (The overall total must include at least 24 units of Level III and IV courses.)

E 36 units, 12 of which may be from Classics.

HONOURS CLASSICS (Programme B: Classical Languages and Literature)

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 one of Greek 1Z06 or Latin 1Z06. (Students with OAC Ancient Greek may substitute Greek 2A03 and 3 additional units of Level II Greek; students with OAC Latin may substitute Latin 2A03 and 3 additional units of Level II Latin.) Students are encouraged to include a Level I Classics course in their Level I programme.

Programme Note:

All Level II Classics, Greek, and Latin courses will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Classics, Greek, and Latin courses. Greek 1Z06 or Latin 1Z06, if not included in the Level I programme.

Levels II, III and IV: 90 units

R 66 units as follows: 9 units from Classics 2D03, 2H03, 2HH3, 3C03, 3I03; 24 units of Greek (including Greek 1Z06, if not completed in the Level I programme); 24 units of Latin (including Latin 1Z06, if not completed in the Level I programme); 9 additional units of Area Courses. (The overall total must include at least 24 units of Level III and IV courses.)

E 24 units, 12 of which may be from Greek and Latin.

COMBINED HONOURS IN CLASSICS AND ANOTHER SUBJECT

(Programme A: Ancient History and Archaeology)

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 one of any Level I Classics course, Greek 1Z06, or Latin 1Z06. (Students with OAC Ancient Greek may substitute Greek 2A03 and 3 additional units of Level II Greek; students with OAC Latin may substitute Latin 2A03 and 3 additional units of Level II Latin.)

Programme Note:

All Level II Classics, Greek, and Latin courses will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Classics, Greek, and Latin courses. Greek 1Z06 and Latin 1Z06, if not included in the Level I programme.

Levels II, III and IV: 90 units minimum

R 36 units as follows: 27 units from Classics 2A03, 2B03, 2C03, 2G06, 2U03, 2V03, 2Z03, 3A03, 3G03, 3H03, 3LL3, 3MM3, 3R03, 3S03, 3UU3, 3VV3, 3WW3, 3X03, 4D06, 4I06, 4LL6; 9 additional units of Area Courses. (The overall total must include at least 18 units of Level III and IV courses.)

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make an overall total of 90 units beyond Level I.

COMBINED HONOURS IN CLASSICS AND ANOTHER SUBJECT

(Programme B: Classical Languages and Literature)

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 Greek 1Z06 or Latin 1Z06. (Students with OAC Ancient Greek may substitute Greek 2A03 and 3 additional units of Level II Greek; students with OAC Latin may substitute Latin 2A03 and 3 additional units of Level II Latin.)

Programme Note:

All Level II Classics, Greek, and Latin courses will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Classics, Greek, and Latin courses. Greek 1Z06 or Latin 1Z06, if not included in the Level I programme.

Levels II, III and IV: 90 units minimum

R 36 units as follows: 6 units from Classics 2D03, 2H03, 2HH3, 3C03, 3I03; *either* 24 units of Greek *or* 24 units of Latin; 6 additional units of Area courses. (The overall total must include at least 18 units of Level III and IV courses.)

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make an overall total of 90 units beyond Level I.

B.A. IN CLASSICS**Admission:**

Completion of any Level I programme with a weighted average of at least 4.0 in 12 units of Level I work including a grade of at least C- in one of any Level I Classics course, Greek 1Z06, or Latin 1Z06. (Students with OAC Ancient Greek may substitute Greek 2A03 and 3 additional units of Level II Greek; students with OAC Latin may substitute Latin 2A03 and 3 additional units of Level II Latin.)

Programme Notes:

1. Students entering the programme with 6 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 6 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.
3. Students in the B.A. programme in Classics who achieve a weighted average of at least 7.0 in 12 units of Level II Area Courses may be admitted to an Honours programme in Classics in Level III.

Area Courses:

All Level II, III, and IV Classics, Greek, and Latin courses.

Levels II and III: 60 units

R 24 units of Classics, Greek and Latin, including at least 9 units of Level III and IV courses.

E 36 units, 12 of which may be from Classics.

Department of Drama**Department Notes:**

1. Courses are grouped into four fields: theatre crafts, film studies, theatre history, dramatic literature and theory. While students are encouraged to pursue a broadly-based programme of study, a limited amount of specialization is possible through a careful selection of courses. Students wishing to graduate in Drama programmes must complete a minimum of three units of work from at least 3 of the 4 Fields of Study indicated below. (Courses which appear in two Fields can only satisfy one Field requirement.)

I Theatre Crafts

Drama 2A06, 3A06, 3D03, 3E03, 4A06

II Film Studies

Drama 2X06, 3R03, 3RR3, 3T03, 3TT3, 4H03, 4S03

III Theatre History

Drama 2F03, 2H03, 2HH3, 2M06, 3F03, 3FF3, 3M03, 3MM3, 3N03, 3P06, 4DD3, 4F03, 4M03, 4N03.

IV Dramatic Literature and Theory

Drama 2B06, 2H03, 2HH3, 3BB3, 3C03, 3CC3, 3DD3, 3K06, 3P03, 3P06, 3Q03, 4DD3, 4E03

2. Students registered in Honours Drama are strongly urged to complete 6 units of non-introductory work in a language other than English. Students in Combined Honours are strongly urged to complete a language other than English (OAC level or equivalent).
3. Students who meet the prerequisites for courses in drama in languages other than English, offered by the Departments of Classics, French or Modern Languages, may take up to 6 units of such courses as a part of their Drama R-group, with the approval of the Chair of the Department.
4. **Practicum Courses:** Practicum courses are open only to students registered in Drama programmes. Each practicum course carries one unit of academic credit, and requires twenty-four hours of instruction over a six-week or a twelve-week period. Students registered in an Honours or a Combined Honours programme in Drama may include up to six units of practicum courses in their programmes; students registered in a three-level programme in Drama may take up to three units of practicum courses. No student may register in more than two practicum courses in a single academic session. Practicum courses will be classified as "Area" courses, but must be taken as work over and above the total number of units required for the degree programme. Details regarding the following practicum courses can be obtained from the Drama Chair.

Drama 2EE1/Mind-Body Integration (Same as PR 30)

Drama 2G01/Modern Dance I (Same as PR 21)

Drama 3G01/Mime (Same as PR 27)

Drama 3GG1/Jazz Dance I (Same as PR 25)

Drama 3H01/Dance Exercise (Same as PR 28)

Drama 3HH1/Social Dance (Same as PR 22)

Drama 3I01/Folk Dance (Same as PR 20)

FACULTY OF HUMANITIES

HONOURS ARTS AND SCIENCE AND DRAMA (B. Arts Sc.)

(See *Arts and Science Programme*).

HONOURS DRAMA

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 Drama 1A06.

Area Courses:

All Level II, III and IV Drama courses.

Levels II, III and IV: 90 units

R 18 units of Level II Drama; 36 units of Level III or IV Drama, including at least one Level IV course.

E 36 units, 12 of which may be from Drama.

COMBINED HONOURS IN DRAMA 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 Drama 1A06.

Area Courses:

All Level II, III and IV Drama courses.

Levels II, III and IV: 90 units minimum

R 12 units of Level II Drama; 24 units of Level III or IV Drama, including at least one Level IV Drama course.

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

B.A. IN DRAMA

Admission:

Completion of **any Level I** programme including 12 units from the Faculty of Humanities and a weighted average of at least 4.0 in 12 units of Level I work including a grade of at least C- in Drama 1A06.

Area Courses:

All Level II, III and IV Drama courses.

Levels II and III: 60 units

R 12 units Level II Drama; 12 units Level III/IV Drama.

E 36 units, 12 of which may be Drama.

Department of English

Department Notes:

1. The department has defined six fields of study. Students should consult the Programme Notes for their specific programme to determine how many of these fields must be taken to meet graduation requirements.

2. Fields of study for students entering an English programme **beginning as of September 1990**.

I Medieval

English 3C06, 3D03, 3DD3

II Renaissance

English 3I03, 3K06, 3T03

III 17th and 18th Centuries

English 3G06, 3V06

IV 19th and 20th Centuries

English 3H06, 3M03, 3MM3

V North American

English 2G06, 2H06

VI Studies in Language, Criticism and Genre

English 2B06, 3J06, 3N06, 3Q03, 3QQ3

HONOURS ARTS AND SCIENCE AND ENGLISH (B.Arts Sc.)

(See *Arts and Science Programme*).

HONOURS ENGLISH

Students who entered this programme before September 1990 must consult the Departmental Counsellor to discuss ways of meeting their programme requirements.

Admission:

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with (a) a grade of at least B- in English 1D06, and (b) a weighted average of at least 7.0 in 18 units of Level I courses including English 1D06 and 6 additional units of Humanities.

Programme Notes:

1. Students should plan their programmes in consultation with the Departmental Counsellor. A minimum of 6 units of work from Field I and from **four** of the other five fields in Department Note #2 (listed above under Department Notes) must be taken. English 2A06, 4X03 and the Level IV seminars may not be used for field coverage.

2. When registering, students should distribute their courses as follows:

Level II English 2A06; 12 additional units of Level II Area work

Level III 18 units of Level III Area work

Level IV 6 units of Level III Area work; 12 units of Level IV seminars (No student may take more than 12 units of Level IV seminars.)

3. In addition to the 54 units of English Area courses, students must successfully complete 6 units of non-introductory work in 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.

4. With special permission, students may substitute English 4X03 for 3 units of Level IV seminar work in the second term.

Area Courses:

English 2A06, 2B06, 2G06, 2H06, 3C06, 3D03, 3DD3, 3G06, 3H06, 3I03, 3J06, 3K06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3, 3T03, 3V06, 4X03, and all Level IV seminar courses.

Levels II, III, and IV: 90 units

R 54 units of English Area work as follows: English 2A06; 12 units of Level II Area courses; 24 units of Level III Area courses; and 12 units of Level IV seminars.

E 36 units, 12 of which may be from English. This must include 6 units of non-introductory work in a language other than English (if not completed in Level I).

COMBINED HONOURS IN ENGLISH AND ANOTHER SUBJECT

Students who entered this programme before September 1990 must consult the Departmental Counsellor to discuss ways of meeting their programme requirements.

Admission:

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with (a) a grade of at least B- in English 1D06, and (b) a weighted average of at least 7.0 in 18 units of Level I courses including English 1D06 and 6 additional units of Humanities.

Programme Notes:

1. Students should plan their programmes in consultation with the Departmental Counsellor. A minimum of 6 units of work from **four** of the six fields in Department Note #2 (listed above under Department Notes) must be taken. English 2A06, 4X03 and the Level IV seminars may not be used for field coverage.

2. When registering, students should distribute their courses as follows:

Level II English 2A06; 6 additional units of Level II Area work

Level III 12 units of Level III Area work

Level IV 6 units of Level III Area work and 6 units of Level IV seminars (No student may take more than 6 units of Level IV seminars.)

3. In addition to the 36 units of English Area courses, students combining with a subject other than a language must successfully complete 6 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.
4. With special permission, students may substitute English 4X03 for 3 units of Level IV seminar work in the second term.

Area Courses:

English 2A06, 2B06, 2G06, 2H06, 3C06, 3D03, 3DD3, 3G06, 3H06, 3I03, 3J06, 3K06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3, 3T03, 3V06, 4X03 and all Level IV seminar courses.

The **English component** of a Combined Honours programme will be as follows:

Levels II, III and IV: 90 units minimum

- R English 2A06; 6 units from 2B06, 2G06, 2H06; 18 units of Level III Area courses; and 6 units of Level IV seminars. 6 units of a language other than English, if not completed in Level I.
- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond their Level I programme.

B.A. IN ENGLISH

Students who entered this programme before September 1990 must consult the Departmental Counsellor to discuss ways of meeting their programme requirements.

Admission:

Enrolment in this programme is limited. Selection is based on academic achievement but requires, as a minimum, completion of any Level I programme with (a) a grade of at least C- in English 1D06 and (b) a weighted average of at least 4.0 in 18 units of Level I courses including English 1D06 and 6 additional units of Humanities.

Programme Notes:

1. Students should plan their programmes in consultation with the Departmental Counsellor, so as to take a minimum of 6 units of work from **four** of the six fields in Department Note #2 (listed above under Department Notes). English 2A06 may not be used for field coverage.
2. In addition to the 30 units of English Area courses students must successfully complete 6 units of a language other than English, if this was not completed in Level I. The Department strongly advises students to fulfill the language requirement before Level III.

Area Courses:

English 2A06, 2B06, 2G06, 2H06, 3C06, 3D03, 3DD3, 3G06, 3H06, 3I03, 3J06, 3K06, 3M03, 3MM3, 3N06, 3Q03, 3QQ3, 3T03, 3V06.

Levels II and III: 60 units

- R English 2A06; 6 units of Level II Area courses; 18 units of Level III Area courses.
- E 30 units, 12 of which may be from English. This must include 6 units of a language other than English (if not completed in Level I).

Department of French

HONOURS ARTS AND SCIENCE AND FRENCH (B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS FRENCH

Programme A: Language and Literature

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 French 1A06 or 2M06.

Programme 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.

Area Courses:

All Level II, III and IV courses in French, except 3Y03.

Levels II, III and IV: 90 units

R 15 units of French Language Practice courses, including French 2A03, 3C03, 4A03; 27 units of French/Francophone Literature and Civilization courses, including one of French 2J03, 2JJ3, one of French 2W03, 2WW3, one of French 2D03, 2E03, 3AA3, 3BB3, 4U03, one of French 3K03, 3KK3, one of French 3Q03, 3QQ3, 9 units of Level IV French courses; 12 additional units of French. (The overall total must include a minimum of 36 units of Level III and IV French Area Courses.)

E 36 units elective, 12 of which may be French.

Programme B: Language and Linguistics

Admission:

Completion of **any Level I** programme (including a Level I English course) with a weighted average of at least 7.0 in 12 units of Level I work, including a grade of at least B- in French 1A06 or 2M06. Students who are interested in entering this programme are advised to take Linguistics 1A06; those who lack a Level I English course should consult the Department for ways of meeting the programme requirements.

Programme Notes:

1. French 2G03 and 2H03 will be included in calculating the Graduation Average.
2. 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.

Area Courses:

All Level II, III and IV courses in French, except French 3Y03.

Levels II, III and IV: 90 units

R 54 units of French as follows:
 French 2A03, 2G03, 2H03, 3C03, 3CC3, 4A03, 4BB3;
 3 units from French 2J03, 2JJ3;
 3 units from French 2W03, 2WW3;
 3 units from French 3AA3, 3BB3, 4U03;
 9 units of Level III or IV French/Francophone Literature or Civilization courses;
 15 units from French 3B03, 3E03, 3G03, 3I03, 3R03, 4C03, 4H03, 4X03, 4Z03
 12 units of English and/or Linguistics beyond Level I (to be determined in consultation with the Departmental Counsellor).

E 24 units, 12 of which may be French.

COMBINED HONOURS IN FRENCH 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 French 1A06 or 2M06.

Programme Note:

Upon completion of 60 units of work (including at least 12 units of required Level II French Area 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.

Area Courses:

The **French component** of a Combined Honours Programme will be as follows: all Level II, III and IV courses in French, except 3Y03.

Levels II, III and IV: 90 units minimum

R 36 units of work as follows:
 12 units of French Language Practice courses (French 2A03, 3C03, 4A03 and 3 units from 2C03, 2G03, 3CC3, 3F03, 4BB3);

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21 units of French/Francophone Literature:

- one of 2J03, 2JJ3;
- one of 2W03, 2WW3;
- one of 3K03, 3KK3;
- one of 3Q03, 3QQ3;
- one of 3AA3, 3BB3, 4U03;
- and 6 units of Level IV French;

3 additional units of Level III or IV French.

(The overall total must include a minimum of 24 units of Level III and IV French Area courses.)

- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

B.A. IN FRENCH

Admission:

Completion of **any Level I** programme with a weighted average of at least 4.0 in 12 units of Level I work including a grade of at least C- in French 1A06 or 2M06.

Area Courses:

All Level II, III and IV French courses, except 3Y03.

Levels II and III: 60 units

- R 33 units of French as follows:

French 2A03, 3C03 and two from French 2C03, 2G03, 3CC3 and 3F03;

9 units of French/Francophone Literature and Civilization courses, including:

- one of French 2J03, 2JJ3;
- one of French 2W03, 2WW3;
- one of French 3K03, 3KK3, 3Q03, 3QQ3;

12 additional units of French.

- E 27 units elective, 12 of which may be from French.

Department of History

Department Note:

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, 2I06, 2K06, 2M06, 3D03, 3F03, 3HH3, 3H06, 3I03, 3II6, 3J06, 3R03, 3W03

Ancient: 2L06, 3LL3, 3MM3, 3UU3, 3VV3, 3WW3

Asian: 2B06, 2E06, 3A03, 3AA3, 3B03, 3DD3

Canadian: 2J06, 3EE3, 3K03, 3L03, 3M03, 3N03, 3P03, 3U03

British: 2N06, 3JJ3, 3NN3, 3Q03, 3QQ3, 3RR3, 3SS3, 3TT3

The Americas: 2H06, 3BB3, 3E06, 3O03, 3X03, 3XX3, 3YY3

HONOURS ARTS AND SCIENCE AND HISTORY (B.Arts Sc.)

(See Arts and Science Programme)

HONOURS HISTORY

For 1993-94, the Faculty of Humanities has proposed that enrolment in this programme be limited.

Admission:

Completion of **any Level I** programme with a weighted average of at least 7.0 in 12 units of Level I work acceptable to the Department, including a grade of at least B- in any Level I History course.

Programme Notes:

1. In selecting courses, students must ensure that they take a minimum of 6 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 Area

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; normally no more than 12 units of Level IV History seminars may be taken in any session (a CAA of at least 8.0 is required before exceptions will be considered.)

Area Courses:

All Level II, III and IV History courses.

Levels II, III and IV: 90 units

- R 18 additional units of Level II History; 18 units of Level III History and 18 units of Level IV History.

- E 36 units, 12 of which may be from History courses approved by the Department.

COMBINED HONOURS IN HISTORY AND ANOTHER SUBJECT

For 1993-94, the Faculty of Humanities has proposed that enrolment in this programme be limited.

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 any Level I History course.

Programme Notes:

1. In selecting courses, students must ensure that they take a minimum of 3 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 18 units of Area 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.

Area Courses:

All Level II, III and IV History courses.

Levels II, III and IV: 90 units minimum

- R 12 units of Level II History; 12 units of Level III History; 12 units of Level IV History.

- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond the Level I programme.

B.A. IN HISTORY

Admission:

Completion of **any Level I** programme with a weighted average of at least 4.0 in 12 units of Level I work, including a grade of at least C- in any Level I History course.

Programme Notes:

1. History students who achieve a Cumulative Area Average of at least 7.0 in their Level II History courses in the B.A. programme may be admitted to Honours History in Level III.
2. In selecting courses, students must ensure that they take a minimum of 3 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 Area work in any one of the preceding fields. Additional History courses may be taken as electives.
3. With the approval of the Departmental Counsellor, 6 units of Level III History may be replaced by Level IV History if the student has completed at least 12 units of History beyond Level I and has a minimum CAA of 7.0.

Area Courses:

All Level II, III and IV History courses.

Levels II and III: 60 units

R 12 units of Level II History; 12 units of Level III History.

E 36 units elective, 12 of which may be History courses above Level I.

Japanese Studies

COMBINED HONOURS IN JAPANESE 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 Japanese 1Z06. Students who have not fulfilled this requirement should consult the Director of the Committee of Instruction.

Area Courses:

All Level II, III and IV Japanese and Japanese Studies courses, History 4BB6, Political Science 4MM6.

Levels II, III, IV: 90 units minimum

R 36 units of work as follows: Japanese 2Z06, 3ZZ6, 4Z03; Japanese Studies 2P06, 4L03; and 12 units from Japanese Studies 3B03, 3E03, 3J03, 3JJ3, 3UU3, 4A06, History 4BB6, Political Science 4MM6.

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

Department of Modern Languages

The Department of Modern Languages offers Single Honours programmes in Comparative Literature and Modern Languages and Linguistics. The Department also offers Combined Honours programmes in Comparative Literature, German, Hispanic Studies, Italian and Russian.

The Department of Modern Languages intends to offer the following new programmes, beginning in 1993-94:

Honours Linguistics

Combined Honours Literary Studies and Another Subject

Honours Modern Languages

Combined Honours in Modern Languages and Another Subject

The offering of these degree programmes is contingent upon approval by the Ontario Council on University Affairs. Further information should be obtained from the Associate Dean of Humanities (Studies).

HONOURS COMPARATIVE LITERATURE

This programme provides students with a study of specially designed courses in Comparative Literature taught in English in conjunction with the study of one national literature normally taught in the original language.

Admission:

Completion of any Level I programme, including Comparative Literature 1A06 with a grade of at least B-, and 6 units from French 1A06, 1B06, 2M06, German 1A06, 1A03 and 1AA3, 1Z06, Greek 1Z06, Hispanic Studies 1A06, 1Z06, Italian 1A06, 1ZZ6, 1Z06, Latin 1Z06, Russian 1Z06 with a grade of at least B-.

Programme Notes:

1. Students must maintain averages of at least 7.0 on two *Cumulative Area Averages*, one in Comparative Literature courses and the other in the language courses selected. However, only a *single Graduation Average* will be computed on the Level III and IV Area courses.
2. Upon completion of 60 units of work and with the approval of the Programme Coordinator 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 where the student's modern language is spoken.

Area Courses:

All Level II, III, and IV courses in Comparative Literature, and approved Level II, III, and IV courses in the language and literature other than English.

Levels II, III, and IV: 90 units

R 72 units of work consisting of: Comparative Literature 2A03, 2AA3, 3D03, 3DD3, 3QQ3; two of Comparative Literature 4AA3, 4B03, 4C03, 4E03; 15 additional units of Comparative Literature courses; 36 units of courses in the language and literature other than English as specified in the description in the Combined Honours component of the language selected. (The overall total must include at least 36 units of Level III and IV work.)

E 18 units elective.

COMBINED HONOURS IN COMPARATIVE LITERATURE AND ANOTHER SUBJECT

Admission:

Completion of any Level I programme, including Comparative Literature 1A6 with grade of at least B-; 6 units from French 1A06, 1B06, 2M06, German 1A06, 1A03 and 1AA3, 1Z06, Greek 1Z06, Hispanic Studies 1A06, 1Z06, Italian 1A06, 1ZZ6, 1Z06, Latin 1Z06, or Russian 1Z06 with a grade of at least B-; and a grade of at least B- in the Level I course of the other subject.

Programme Note:

Students selecting this option have no free elective choice in the programme.

Area Courses:

All Level II, III, and IV courses in Comparative Literature and approved Level II, III and IV courses in the language other than English.

Levels II, III, IV: 93 units minimum

R 57 units of work consisting of: Comparative Literature 2A03, 2AA3, 3D03, 3DD3, 3QQ3; two of Comparative Literature 4AA3, 4B03, 4C03, 4E03; 36 units in the language and literature other than English as specified in the description in the Combined Honours component of the language selected. (The overall total must include at least 36 units of Level III and IV Area work.)

To the total of 57 units of Area work, students must add at least 36 units of Area work in the other component to make a minimum overall total of 93 units beyond Level I.

HONOURS MODERN LANGUAGES AND LINGUISTICS

This programme combines the study of two or more modern languages (French, German, Italian, Russian, Spanish) with a concentration in Linguistics.

Admission:

Completion of any Level I programme with 12 units covering two different languages from the following: French 1A06 or 1B06 or 1N06 or 2M06, German 1A03 and 1AA3 or 1A06 or 1Z06 or 2Z06, Hispanic Studies 1A06 or 1Z06, Italian 1A06 or 1Z06 or 1ZZ6, Russian 1Z06 with grades of at least B-. Students are strongly urged to complete Linguistics 1A06 in their Level I programmes. If not, Linguistics 1A06 must be included in Level II of their programme.

Programme Notes:

1. Students must maintain averages of at least 7.0 on two *Cumulative Area Averages*, one in Linguistics courses, and the other in the Modern Language courses selected. However, only a *single Graduation Average* will be computed on the Level II, III and IV Area courses.
2. Upon completion of 60 units and with the approval of the Programme Co-ordinator 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 where one or more of the student's modern languages is spoken. Nevertheless, students will be required to complete Linguistics 2A03, 2AA3, 3A06 at McMaster University.

Area Courses:

All Level II, III, and IV courses in Linguistics, French, German, Hispanic Studies, Italian, and Russian.

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Levels II, III, and IV: 90 units

R 72 units of Area work as follows: Linguistics 2A03, 2AA3, 3A06, 4B03, 4C03; 18 units, above Level I, in each of two languages other than English; 18 units of Area courses.

E 18 units elective.

HONOURS LINGUISTICS

The offering of this programme, beginning in 1993-94, is contingent upon approval by the Ontario Council on University Affairs. Further information should be obtained from the Associate Dean of Humanities (Studies).

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.

Admission:

Completion of any Level I with a weighted average of at least 7.0 in 12 units of Level I work, including a grade of at least B- in Linguistics 1A06 and completion of at least 6 units of language study.

Programme Notes:

1. In this programme students are required to study at least two languages. The department has defined three language groups (see below) for this purpose and students must take at least 6 units from two of these groups. By graduation, therefore, students will have completed at least 6 units of one language and 18 units of a second language, including 12 units above Level I.

- (a) *Modern Indo-European*
French, German, Italian, Russian, Spanish
- (b) *Classical*
Greek, Hebrew, Latin, Sanskrit
- (c) *Modern Non-Indo-European*
Chinese, Japanese

2. All Level II, III and IV Area courses will be included in calculating the Graduation Average.

Area Courses:

All Linguistics courses beyond Level I; all language courses; Humanities 2C03; Philosophy 2B03; Psychology 2H03, 2W06, 3A03, 3B03, 3G03, 3H03.

Levels II, III and IV: 90 units

R 66 units of work consisting of:

12 units from Linguistics 2L03, 2M03, 3I03, 3M03, 4K03, 4T03; 12 units from Linguistics 2LL3, 2Q03, 3A06, 3P03; 6 units from Linguistics 2A03, 2AA3, 3Y03; 6 units from Linguistics 4B03, 4C03, 4L03; 12 additional units of one of the languages taken in Note #1 above; and 18 additional units of Area courses.

E 24 units elective, 12 of which may be from Area courses.

COMBINED HONOURS LITERARY STUDIES AND ANOTHER SUBJECT

The offering of this programme, beginning in 1993-94, is contingent upon approval by the Ontario Council on University Affairs. Further information should be obtained from the Associate Dean of Humanities (Studies).

This programme offers a combination of literary theory, comparative literature and an introduction to the masterworks of world literature.

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 Comparative Literature 1A06. Students are strongly advised to include English 1D06 and a language other than English in their Level I programme.

Programme Notes:

1. Students may not combine Literary Studies with any of the Combined Honours programmes in a modern language. They should instead enrol in the Single Honours programme in Comparative Literature.
2. Students must successfully complete a non-introductory course in a language other than English. The Department strongly advises students to fulfill this requirement before Level III.

3. All Level II, III and IV Comparative Literature courses will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV courses in Comparative Literature and Modern Languages.

Level II, III and IV: 90 units

R Comparative Literature 2A03, 2AA3, 3D03, 3DD3, 3QQ3; 6 units from Comparative Literature 4AA3, 4B03, 4C03, 4E03; 15 units of Area courses.

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

HONOURS MODERN LANGUAGES

The offering of this programme, beginning in 1993-94, is contingent upon approval by the Ontario Council on University Affairs. Further information should be obtained from the Associate Dean of Humanities (Studies).

This programme combines the study of two modern languages and their respective literatures (German, Italian, Russian and Spanish) with literary and linguistic theory.

Admission:

Completion of any Level I programme with 12 units covering two different languages from the following: German 1A03 and 1AA3 or 1Z06, Hispanic Studies 1A06, 1Z06, Italian 1A06, 1Z06, 1ZZ6, Russian 1Z06 with grades of at least B-, and at least 6 units from Comparative Literature 1A06 or Linguistics 1A06. In the case of Comparative Literature 1A06 and Linguistics 1A06, whichever course was not taken in Level I must be included in Level II of the programme.

Programme Notes:

1. All Level II, III and IV Area courses will be included in calculating the Graduation Average.
2. Students who wish to pursue the study of Chinese or Japanese in this programme should consult the Programme Co-ordinator, Department of Modern Languages (TSH-611).
3. Upon completion of 60 units and with the approval of the Programme Coordinator 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 where one or more of the student's modern languages is spoken.

Area Courses:

All Level II, III and IV courses in Comparative Literature, Linguistics, Modern Languages, German, Hispanic Studies, Italian and Russian.

Levels II, III and IV: 90 units

R 72 units of Area work as follows:

Modern Languages 2A03; Linguistics 2A03, 2AA3; one of Comparative Literature 2A03 or 2AA3; 27 units above Level I in each of two languages and their literatures other than English (excluding literature courses in English translation); 6 additional units of Area courses (excluding the two languages chosen). (The overall total must include a minimum of 24 units of Level III and IV Area courses.)

E 18 units elective.

COMBINED HONOURS IN MODERN LANGUAGES AND ANOTHER SUBJECT

The offering of this programme, beginning in 1993-94, is contingent upon approval by the Ontario Council on University Affairs. Further information should be obtained from the Associate Dean of Humanities (Studies).

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 a subject offered by another department.

Admission:

Completion of any Level I programme with a grade of at least B- in 6 units from the following: German 1A03 and 1AA3 or 1Z06, Hispanic Studies 1A06, 1Z06, Italian 1A06, 1Z06, 1ZZ6, Russian 1Z06, and at least 6 units from Comparative Literature 1A06 or Linguistics 1A06. In the case of

Comparative Literature 1A06 and Linguistics 1A06, whichever course was not taken in Level I, must be included in the Level II programme.

Programme Notes:

1. This programme cannot be combined with another programme offered by the Department of Modern Languages.
2. All Level II, III and IV Area courses will be included in calculating the Graduation Average.
3. Upon completion of 60 units and with the approval of the Programme Coordinator 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 where one or more of the student's modern languages is spoken.

Area Courses:

All Level II, III and IV courses in Comparative Literature, Linguistics, Modern Languages, German, Hispanic Studies, Italian and Russian.

Levels II, III and IV: 90 units minimum

- R 39 units as follows: Modern Languages 2A03; Linguistics 2A03, 2AA3; one of Comparative Literature 2A03 or 2AA3; and 27 units above Level I from one of: German, Hispanic Studies, Italian or Russian. (The overall total must include a minimum of 18 units of Level III and IV Area courses.)
- E To the minimum of 75 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

MODERN LANGUAGES - GERMAN

COMBINED HONOURS IN GERMAN AND ANOTHER SUBJECT

Programme A (for students entering with German 1A03 and 1AA3 or German 1A06)

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 German 1A03 and 1AA3 or 1A06.

Programme Notes:

1. Upon completion of 60 units of work (including 12 units of required Level II German Area courses), and with the approval of the Department of Modern Languages, and of the Associate Dean of Humanities (Studies), up to 15 units of Level III German may be replaced by courses of study at a university in a German-speaking country.
2. Students are strongly advised to take History 3J06 as an elective.

Area Courses:

All Level II, III and IV German courses, excluding 2AA3 and 2Z06; Modern Languages 2H03, 3G03.

Levels II, III and IV: 90 units minimum

- R German 2A03, 2E03, 3Z03, 3ZZ3; 21 units from German 2G03, 3A03, 3B03, 4CC3, 4G03, 4HH3, 4II3, 4T03, 4TT3, 4Z03; one of Modern Languages 2H03, 3G03.
- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

Programme B (for students entering with German 1Z06)

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 German 1Z06.

Programme Notes:

1. All Level II, III and IV German courses will be included in calculating the Graduation Average.
2. Students are strongly advised to take History 3J06 as an elective.
3. Upon completion of 60 units of work (including 12 units of required Level II German Area courses) and with the approval of the Department of Modern Languages, and of the Associate Dean of Humanities (Studies), up to 15 units of Level III German may be replaced by courses of study at a university in a German-speaking country.

Area Courses:

All Level II, III and IV German courses; Modern Languages 2H03, 3G03.

Levels II, III and IV: 90 units minimum

- R German 2A03, 2AA3, 2E03, 2G03, 2Z06, 3Z03, 3ZZ3; 9 units from German 3A03, 3B03, 4CC3, 4G03, 4HH3, 4T03, 4TT3; one of Modern Languages 2H03, 3G03.
- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

HONOURS ARTS AND SCIENCE AND GERMAN (B.Arts Sc.)

(See *Arts and Science Programme*)

MODERN LANGUAGES - HISPANIC STUDIES

COMBINED HONOURS IN HISPANIC STUDIES AND ANOTHER SUBJECT

Programme A (for students entering with Hispanic Studies 1A06)

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 Hispanic Studies 1A06.

Programme Note:

Upon completion of 60 units of work (including 12 units of Level II Hispanic Studies courses), and with the approval of the Department of Modern Languages, and the Associate Dean of Humanities (Studies), up to 15 units of Level III Hispanic Studies work may be replaced by courses of study at a university in a Spanish-speaking country.

Area Courses:

All Level II, III and IV Hispanic Studies courses except 2Z06; Modern Languages 2A03.

Levels II, III and IV: 90 units minimum

- R Modern Languages 2A03; Hispanic Studies 2A03, 2B03, 2C03, 3D03, 3DD3, 4DD3 and 15 additional units of Hispanic Studies courses.
- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

Programme B (for students entering with Hispanic Studies 1Z06)

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 Hispanic Studies 1Z06.

Programme Notes:

1. All Level II, III and IV Area courses will be included in calculating the Graduation Average.
2. Upon completion of 60 units of work (including 12 units of Level II Hispanic Studies Area courses), and with the approval of the Department of Modern Languages, and the Associate Dean of Humanities (Studies), up to 15 units of Level III Hispanic Studies work may be replaced by courses of study at a university in a Spanish-speaking country.

Area Courses:

All Level II, III and IV Hispanic Studies courses, Modern Languages 2A03.

Levels II, III and IV: 90 units minimum

- R 39 units of work consisting of: Modern Languages 2A03; Hispanic Studies 2A03, 2B03, 2C03, 2Z06, 3D03, 3DD3, 4DD3 and 12 additional units of Hispanic Studies courses.
- E To the minimum total of 75 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

MODERN LANGUAGES - ITALIAN

COMBINED HONOURS IN ITALIAN AND ANOTHER SUBJECT

Programme A (for students entering with Italian 1A06)

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 Italian 1A06.

Programme Note:

Upon completion of 60 units of work (including 12 units of required Level II Italian Area courses), and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), up to 15 units of Level III Italian work may be replaced by courses of study at an Italian university.

Area Courses:

All Level II, III and IV Italian courses except 2Z06.

Levels II, III and IV: 90 units minimum

R Italian 2A03, 2D03, 3D03, 3DD3, 4M03; 21 units of Area courses.

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

Programme B (for students entering with Italian 1Z06 or 1ZZ6)

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 Italian 1Z06 or 1ZZ6.

Programme Notes:

1. All Level II, III and IV Area courses will be included in calculating the Graduation Average.
2. Upon completion of 60 units of work (including 12 units of required Level II Italian Area courses), and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), up to 15 units of Level III Italian work may be replaced by courses of study at an Italian university.

Area Courses:

All Level II, III and IV Italian courses.

Levels II, III and IV: 90 units minimum

R Italian 2A03, 2D03, 2Z06, 3D03, 3DD3; 18 units of Area courses.

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

MODERN LANGUAGES - RUSSIAN

COMBINED HONOURS IN RUSSIAN 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 Russian 1Z06.

Programme Notes:

1. All Level II, III and IV Area courses will be included in calculating the Graduation Average.
2. Upon completion of 60 units of work (including 12 units of required Level II Russian courses), and with the approval of the Department of Modern Languages and the Associate Dean of Humanities (Studies), up to 15 units of Level III Russian may be replaced by courses of study at a university in a Russian-speaking country.
3. Students are strongly advised to take Modern Languages 2A03 as an elective.

Area Courses:

All Level II, III and IV Russian courses, Modern Languages 2R03, 2RR3, 3D03, 3K03, 3KK3.

Levels II, III and IV: 90 units minimum

R Russian 2B03, 2C06, 3C06, 4C06; and 15 units of Area courses.

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

Department of Music

Completion of a Music degree requires considerable daytime attendance.

HONOURS PROGRAMMES FOR THE B.MUS. DEGREE

Programme A - Alternative 1: Music Education

Admission:

Completion of **Music I** with a weighted average of at least 7.0 in Music 1B06, 1CC3 or 1CC2, 1D03 (or 1D02 and 1DD2); one of 1E03, 1E04, 1E06; and 1G03.

Programme Notes:

1. The Cumulative Area Average for the Honours Music programmes and for the music portion of the Combined Honours programmes is termed the Cumulative Music Average and is the weighted average of grades in all Area courses attempted. To continue in an Honours Music Programme, a student must maintain a CMA of at least 7.0.
2. Students must complete the minimum of 24 units of non-Music electives as follows:
12 units by the end of Level I
18 units by the end of Level II
24 units by the end of Level III

Area Courses:

Music 2B03, 2B06, 2BB3, 2C03, 2CC3, 2D02, 2D03, 2DD2, 2E03, 2E04, 2G03, 2H03, 2H04, 3AA3, 3E03, 3E04, 3G03, 3J03, 3J04, 3K03, 3L03, 3M03, 3M04, 3N03, 3O03, 3T03, 3U03, 3V03, 4E03, 4E04, 4G03, 4K03, 4L03, 4M03, 4M04, 4N03, 4O03, 4P03, 4Q03, 4U03, 4X03.

Levels II, III and IV: 90 units

R Music 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2G03, 2H03, 3E03, 3G03, 3J03; and 24 units from Music 3AA3, 3K03, 3L03, 3M03, 3N03, 3O03, 3T03, 3U03, 3V03, 4K03, 4L03, 4M03, 4N03, 4O03, 4P03, 4Q03, 4U03, 4X03 (only two of 3T03, 3U03, 4X03 may be taken for R-credit); 3 units of Level III or IV Area courses, and 3 additional units of any Level III or IV Music. (The overall total must include a minimum of 12 units of Level IV Music Area courses.)

E 24 units, 12 of which may be from Music.

Programme A - Alternative 2: Music Education/Performance

Alternative 2 is intended for those students in the Education stream who are able to benefit from an increased performance component in their programme.

Admission:

Completion of **Music I** with a weighted average of at least 7.0 in Music 1B06, 1CC3 or 1CC2, 1D03 (or 1D02 and 1DD2), 1E06, 1G03. Under exceptional circumstances, students may use Music 1E03 or 1E04 in place of 1E06 as a prerequisite for Music 2E06. Students interested in this option should consult the Department Counsellor before March Preregistration.

Programme Notes:

1. The Cumulative Area Average for the Honours Music programmes and for the music portion of the Combined Honours programmes is termed the Cumulative Music Average and is the weighted average of grades in all Area courses attempted. To continue in an Honours Music Programme, a student must maintain a CMA of at least 7.0.
2. Students must complete the minimum of 24 units of non-Music electives as follows:
12 units by the end of Level I
18 units by the end of Level II
24 units by the end of Level III
3. The Graduation Average will be computed on a minimum of 45 units of Area courses for the B.Mus. degree in Music Education/Performance.

Area Courses:

Music 2B03, 2B06, 2BB3, 2C03, 2CC3, 2D02, 2D03, 2DD2, 2E06, 2G03, 2H03, 2H04, 3AA3, 3E06, 3G03, 3J03, 3J04, 3K03, 3L03, 3M03, 3M04, 3N03, 3O03, 3T03, 3U03, 3V03, 4E06, 4G03, 4K03, 4L03, 4M03, 4M04, 4N03, 4O03, 4P03, 4Q03, 4U03, 4X03.

Levels II, III, IV: 93 units

R Music 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2G03, 2H03, 3E06, 3G03, 3J03, 4E06, 4G03, and 24 units from Music 3AA3, 3K03, 3L03, 3M03, 3N03, 3O03, 3T03, 3U03, 3V03, 4K03, 4L03, 4M03, 4N03, 4O03, 4P03, 4Q03, 4U03, 4X03. (Only two of 3T03, 3U03, 4X03 may be taken for R-credit.) The overall total must include a minimum of 12 units of Level IV Music Area courses.

E 18 units, 6 of which may be from Music.

Programme B - Alternative 1: Music History and Theory**Admission:**

Completion of **Music I** with a weighted average of at least 7.0 in Music 1B06, 1CC3 or 1CC2, 1D03 (or 1D02 and 1DD2); one of 1E03, 1E04, 1E06; and 1G03.

Programme Notes:

1. The Cumulative Area Average for the Honours Music programmes and for the music portion of the Combined Honours programmes is termed the Cumulative Music Average and is the weighted average of grades in all Area courses attempted. To continue in an Honours Music Programme, a student must maintain a CMA of at least 7.0.
2. Students must complete the minimum of 24 units of non-Music electives as follows:
12 units by the end of Level I
18 units by the end of Level II
24 units by the end of Level III

Area Courses:

Music 2B03, 2B06, 2BB3, 2C03, 2CC3, 2D02, 2DD2, 2D03, 2E03, 2E04, 2G03, 2H03, 2H04, 3B03, 3BB3, 3C03, 3C04, 3CC3, 3E03, 3E04, 3H03, 3H04, 3J03, 3J04, 3R03, 3T03, 3U03, 4B03, 4BB3, 4C03, 4C04, 4E03, 4E04, 4H03, 4I03, 4S03, 4U03, 4X03, 4Z03, 4ZZ3.

Levels II, III and IV: 90 units

R Music 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2G03, 2H03, 3C03, 3CC3, 3E03, 3H03, 3J03, 3R03; 6 units from Music 3B03, 3BB3, 4B03, 4BB3; 12 units from Music 3T03, 3U03, 4C03, 4H03, 4I03, 4U03, 4X03 (only two of 3T03, 3U03, 4X03 may be taken for R-credit); 3 additional units of any Level III or IV Music.

E 24 units, 12 of which may be from Music.

Programme B - Alternative 2: 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.

Admission:

Completion of **Music I** with a weighted average of at least 7.0 in Music 1B06, 1CC3 or 1CC2, 1D03 (or 1D02 and 1DD2), 1E06, 1G03. Under exceptional circumstances, students may use Music 1E03 or 1E04 in place of 1E06 as a prerequisite for Music 2E06. Students interested in this option should consult the Department Counsellor before March Preregistration.

Programme Notes:

1. The Cumulative Area Average for the Honours Music programmes and for the music portion of the Combined Honours programmes is termed the Cumulative Music Average and is the weighted average of grades in all Area courses attempted. To continue in an Honours Music Programme, a student must maintain a CMA of at least 7.0.
2. Students must complete the minimum of 24 units of non-Music electives as follows:
12 units by the end of Level I
18 units by the end of Level II
24 units by the end of Level III
3. The Graduation Average will be computed on a minimum of 51 units of Area courses for the B.Mus. degree in Music History and Theory/Performance.

Area Courses:

Music 2B03, 2B06, 2BB3, 2C03, 2CC3, 2D02, 2D03, 2DD2, 2E06, 2G03, 2H03, 2H04, 3B03, 3BB3, 3C03, 3C04, 3CC3, 3E06, 3G03, 3H03, 3H04, 3J03, 3J04, 3R03, 3T03, 3U03, 4B03, 4BB3, 4C03, 4C04, 4E06, 4G03, 4H03, 4I03, 4S03, 4U03, 4X03, 4Z03, 4ZZ3.

Levels II, III, IV: 93 units

R Music 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E06, 2G03, 2H03, 3C03, 3CC3, 3E06, 3G03, 3H03, 3J03, 3R03, 4E06, 4G03; 6 units from Music 3B03, 3BB3, 4B03, 4BB3; 12 units from Music 3T03, 3U03, 4C03, 4H03, 4I03, 4U03, 4X03 (only two of 3T03, 3U03, 4X03 may be taken for R-credit.)

E 12 units of non-Music courses.

COMBINED HONOURS B.A. IN MUSIC AND ANOTHER SUBJECT**Admission:**

Completion of **Music I** with a weighted average of at least 7.0 in Music 1B06, 1CC3 or 1CC2, 1D03 (or 1D02 and 1DD2); one of 1E03, 1E04, 1E06; 1G03.

Programme Notes:

1. The Cumulative Area Average for the Honours Music programmes and for the music portion of the Combined Honours programmes is termed the Cumulative Music Average, and is the weighted average of grades in all Area courses attempted. To continue in an Honours Music Programme, a student must maintain a CMA of at least 7.0.
2. Music 2H03 or 2H04 will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Music courses except Music 2G03, 3G03, 4E03, 4E04, 4G03.

Levels II, III and IV: 90 units

R Music 2B06, 2BB3, 2C03, 2CC3, 2D03, 2E03, 2H03, 3E03, and 18 additional units of Level III and IV Area courses (only one of 3T03, 3U03, 4X03 may be taken for R-credit).

E To the minimum total of 81 units of Area work in the two components of this Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

B.A. IN MUSIC

Alternative A (for students entering from any Level I programme other than Music I)

Admission:

Completion of any Level I with a weighted average of at least 4.0 in 12 units of Level I work including a grade of at least C- in Music 1A06; a successful music audition.

Programme Note:

Students must complete the minimum of 24 units of non-Music electives as follows:

12 units by the end of Level I
18 units by the end of Level II
24 units by the end of Level III

Area Courses:

All Level II, III and IV Music courses, except Music 2E03, 2E04, 2G03, 3E03, 3E04, 3G03, 4E03, 4E04, 4G03.

Levels II and III: 60 units

R Music 1CC3, 1D03, 1E03, 1G03, 2B06, 2BB3, 2C03, 2H03; 9 units of Level III or IV Area courses.

E 24 units, 12 of which may be from Music.

Alternative B (for students entering from Music I)

Admission:

Completion of **Music I** with a weighted average of at least 4.0 in Music 1B06, 1CC3 or 1CC2, 1D03 (or 1D02 and 1DD2); one of 1E03, 1E04, 1E06; 1G03.

Programme Note:

Students must complete the minimum of 24 units of non-Music electives as follows:

FACULTY OF HUMANITIES

12 units by the end of Level I
18 units by the end of Level II
24 units by the end of Level III

Area Courses:

All Level II, III and IV Music courses, except Music 2E03, 2E04, 2G03, 3E03, 3E04, 3G03, 4E03, 4E04, 4G03.

Levels II and III: 60 units

R Music 2B06, 2BB3, 2C03, 2H03; 12 additional units of Area courses, including at least 6 units beyond Level II.

E 33 units, 12 of which may be from Music.

Department of Philosophy

HONOURS ARTS AND SCIENCE AND PHILOSOPHY

(B. Arts Sc.)

(See Arts and Science Programme)

HONOURS BIOLOGY AND PHILOSOPHY (B.Sc.)

See Faculty of Science, Department of Biology)

HONOURS PHILOSOPHY

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 any Level I Philosophy course or, if no such course was taken, in 6 units of work acceptable to the Department of Philosophy.

Area Courses:

All Level II, III and IV Philosophy courses.

Levels II, III and IV: 90 units

R Philosophy 2A06, 2C06, 3A06, 3G03, 3O03, 4H03; one of 2B03, 2R03; and 24 additional units of Philosophy, at least 21 units of which must be Level III or IV Philosophy courses and at least 6 units of which must be Level IV Philosophy courses.

E 36 units, 12 of which may be from Philosophy beyond Level I.

COMBINED HONOURS IN PHILOSOPHY 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 any Level I Philosophy course or, if no such course was taken, in 6 units of work acceptable to the Department of Philosophy.

Programme Note:

Philosophy 2C06 will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Philosophy courses.

Levels II, III and IV: 90 units minimum

R Philosophy 2A06, 2C06; one of 2B03, 2R03; and 21 units of Level III and IV Philosophy (including at least 6 units of Level IV Philosophy).

E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

HONOURS PHILOSOPHY AND BIOLOGY (B.A.)

Admission:

Completion of any Level I programme with a grade of at least B- in any Level I Philosophy course (or, if no such course was taken, in 6 units of work acceptable to the Department of Philosophy) and Biology 1A06 or 1G06 with a grade of at least B- and 6 units of Level I Mathematics. Students are cautioned to observe that Chemistry 1A06 is the normal prerequisite for Biology 2B03 and Biology 2C03, which are required courses in the programme.

Programme Note:

The degree programme has unified Area courses; therefore, only a single Cumulative Area Average and Graduation Average is calculated. Students are advised to note carefully the prerequisites for all courses listed in this programme.

Area Courses:

All Level II, III and IV Philosophy courses; all Level II, III and IV Biology courses; Chemistry 2O06.

Levels II, III and IV: 90 units

R Biology 2B03, 2C03, 2E03, 2F03; 24 units from Level III and IV Biology Area courses (Chemistry 2O06 may replace 6 units of the above Biology courses); Philosophy 2A06; 2C06; 2M03; 3M03; 3O03; 3WW3; 4WW3; one of 2B03, 2R03; one of 2D03, 2F03, 2G03; one of 3G03, 3N06.

E To the minimum total of 72 units of work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond Level I.

HONOURS PHILOSOPHY AND MATHEMATICS (B.A.)

Admission:

Completion of any Level I programme with a weighted average of at least 7.0 in Mathematics 1A06 and Mathematics 1B03, and a grade of at least B- in any Level I Philosophy course or, if no such course was taken, in 6 units of work acceptable to the Department of Philosophy.

Programme Note:

The degree programme has unified Area courses; therefore, only a single Cumulative Area Average and Graduation Average is calculated.

Area Courses:

All Level II, III and IV Mathematics and Philosophy courses.

Levels II, III and IV: 90 units

R Mathematics 2A06, 2B06, 2F03, 3A06, 3E03, 3EE3; 9 units from Mathematics 2C03, 3B03, 3L06, 3P03, 4B03, 4BB3; 6 units from Mathematics 4A06, 4E03, 4K03, 4I03; Philosophy 2A06; 2C06; one of Philosophy 2B03, 2R03; 24 units of Level III or Level IV Philosophy (including at least one Level IV Philosophy course).

E 9 units elective.

B.A. IN PHILOSOPHY

Admission:

Completion of any Level I programme with a weighted average of at least 4.0 in 12 units of Level I work, including a grade of at least C- in any Level I Philosophy course.

Area Courses:

All Level II, III and IV Philosophy courses.

Levels II and III: 60 units

R Philosophy 2A06, 2C06, one of Philosophy 2B03, 2R03; 9 units of Philosophy, including at least 6 units of Level III or IV Philosophy.

E 36 units, 12 of which may be from Philosophy.

Faculty of Science

R.H. McNutt/B.Sc., Ph.D., Dean of Science
D.E.N. Jensen/M.A., Ph.D., Associate Dean of Science (Studies)
A.J. Yarwood/B.Sc., Ph.D., Associate Dean of Science (Studies)
E. Calligan/Student Advisor
P.G. Henry/B.Sc./Student Advisor
J. Kapshey, Programmes Assistant

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

All Departments offer four-level Honours B.Sc. programmes which prepare students for graduate studies, Ontario Teacher's Certificate, and industry. A number of Departments offer Combined Honours degrees. Honours Degrees in Molecular Biology and Biotechnology and in Biology and Pharmacology (a five-level CO-OP programme) are organized by Committees of Instruction involving the Faculties of Health Sciences and Science.

Major programmes (offered by all Departments except Geography) require four levels and offer in-depth studies suitable for students who will be seeking employment immediately upon graduation. Some of the Major programmes can also lead to an Ontario Teacher's Certificate.

Three-level B.Sc. programmes provide a science education which is less demanding than the Honours and Major programmes. Three-level B.Sc. programmes are offered in each of the areas - Earth Science, General Science, Life Science, Mathematical Science and Physical Science.

Academic Regulations

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

LIMITED ENROLMENT

Because of resource limitations, the University reserves the right to limit enrolment in any programme or course to the number which can be effectively taught. In the Faculty of Science, enrolment will be by selection, based on academic achievement. Students should consult with the Departments concerned if there are any questions about entry to limited enrolment programmes. In the 1992-93 Session enrolment is limited in the Honours Biology and Pharmacology Programme.

Beginning in the 1993-94 academic session enrolment may be limited in all Honours, Major and B.Sc. programmes in Life Science (including all single and combined programmes involving Biochemistry, Biological Chemistry, Biology, Molecular Biology and Biotechnology, and Psychology).

CO-OPERATIVE EDUCATION

The Faculty of Science has instituted an Honours Biology and Pharmacology Co-op Programme. Subject to resource availability an Honours Biochemistry Co-op Programme beginning in Level III and an Honours Computer Science Co-op Programme beginning in Level II will be offered in 1993-94. Additional Honours Co-op programmes are in the planning stages and may be offered in the future.

All co-op programmes will have limited enrolment and admission will be by selection. Employment must be full-time and during the academic

terms students must be on a full academic workload. An additional co-op fee will be assessed on the academic terms in the various programmes.

For further information, please consult the Associate Deans of Science (Studies) or the Office of Co-operative Education for the Faculty of Science.

INTERNATIONAL STUDY

There are two ways to undertake international studies, via a Formal Exchange Programme or a Third Year Study Elsewhere Programme.

Formal Exchange Programme

See the *Academic Regulations* section of this Calendar.

Third Year Study Elsewhere 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 or Major 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 University Average of at least 7.0. Students must pay all associated travel, study and living expenses. For students in need of financial assistance O.S.A.P. (the Ontario Student Assistance Programmes) grants and loans may be available for this programme. Furthermore, McMaster University offers some bursaries to those in need of help. Student interested in this programme should begin discussion with the Associate Deans of Science (Studies) about one year before they plan to enrol elsewhere.

Students must propose an academic programme which must be submitted to the Department for approval. Academic approval must be completed by the end of February for registration in the 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 entry into their final year of study. The maximum credit available in this way is normally thirty units for the full year of study, equivalent to Level III. In certain cases, students may be recommended for the Dean's Honour List on the basis of work undertaken in the programme.

*Including any approved university in the following areas: Rhone-Alps (France), Baden-Wurtemberg (Germany), Lombardy (Italy) and Catalonia (Spain).

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-.

SEQUENCE OF COURSES

Students in the Faculty of Science must have completed or be registered in the courses for Natural Sciences I before they may register for courses beyond Level I, and students must have completed or be registered in the courses for Level II before they may register in courses for Levels III or IV.

WORK LOAD

With the exception of the Honours Biology and Pharmacology Programme (which requires students to be on a full academic load) all programmes in the Faculty of Science may be studied by full-time and part-time students. Students must maintain a full academic load during the Winter Session in order to be eligible for scholarships available to full-time students. A full academic load in the Winter Session is also required of applicants for Natural Sciences and Engineering Research Council (NSERC) Undergraduate Research Awards. To be eligible for the Deans' Honour List an academic load in the Winter Session of at least 30 units

FACULTY OF SCIENCE

is necessary. Students are expected to avoid timetable conflicts between their courses, and students on a full academic load should ensure the number of courses is balanced in each term.

EXTRA COURSES

Extra courses are courses taken in addition to those required for the degree programme in which the student is registered. Permission to take *Extra* courses must be obtained from the Office of the Deans of Science (Studies) and such courses must be designated *Extra* at the time of registration. The grades obtained in *Extra* courses will be included in neither the Cumulative Area Average nor the number of units required for graduation.

PROGRAMME AND COURSE CHANGES

All programme and course changes must be made through the Office of the Deans of Science (Studies) and are subject to the deadline dates established by the University. (See *Sessional Dates* section of this Calendar.)

Beyond the September deadline date, first-term courses may be cancelled up to the October deadline but may not be replaced by second-term courses; 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 second-term course provided that their second-term work load is not thereby increased.

Up to the end of Level III, students may be permitted to transfer between B.Sc. and Major, and Major and Honours programmes on the recommendation of the Department concerned and with the approval of an Associate Dean (Studies).

Students who did not meet the admission requirements for the programme will require high averages to be allowed to transfer.

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 Application Procedures and Sessional Dates unless written documentation is provided showing good cause.

RE-ADMISSION TO THE FACULTY OF SCIENCE

A student who is ineligible to continue in the Faculty of Science or who is 'May Not Continue Without Permission' may apply for re-admission. Application for re-admission must be made in writing by **June 15** to the Chair of the Committee on Re-admissions, Office of the Deans 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 re-admitted. If the student has been Required to Withdraw for one calendar year, a letter of reference from an employer may be required.

Readmission is not guaranteed.

FORMER SCIENCE STUDENTS

If you were previously registered in a Science programme and in good standing but did not attend last year, you must write to the Deans of Science (Studies) Office to seek readmission. The letter should describe your activities (academic and otherwise) since you were last registered.

If five years have passed since you were last registered at McMaster please see the *Application Procedures - Former McMaster Students* section of this Calendar.

REGULATIONS FOR CURRENT HONOURS, MAJOR AND B.SC. PROGRAMMES

In order to graduate from a programme, students must meet the requirements of the Calendar in force when they enter that programme, with the exception that a later Calendar may explicitly modify such requirements.

COMBINED HONOURS AND MAJOR PROGRAMMES

For all Honours and Major programmes in the Faculty of Science which combine the work of two disciplines, a single Cumulative Area Average and a single Graduation Average will be computed.

HONOURS AND B.SC. PROGRAMMES

The requirements for continuation in, and graduation from these

programmes is described in the *General Academic Regulations* section of this Calendar.

MAJOR PROGRAMMES

Continuation in a Major Programme:

Students admitted to a Major programme who obtain a Cumulative Area Average of 5.0 may continue in a Major programme. If you fail to obtain a Cumulative Area Average of 5.0, but have an average of at least 4.5, you may continue on Programme Probation for one reviewing period. You may be on Programme Probation only once. If you fail to obtain a Cumulative Area Average of 4.5 you may not continue in the programme and must seek entry to another programme.

Graduation: Graduation standing in Major degree programmes is awarded in three classes. For first-class standing, a minimum Graduation Average of 9.5 is required; for second-class standing 7.0; and for third-class standing 5.0.

GRADUATION AVERAGES

For students in a Major programme this average will be based on a minimum of 36 units of specified Area courses. Where a student has taken more than 36 units of such courses the Graduation Average will be computed from the best 80% of the specified Area courses or on the best 36 units, whichever number of units is greater.

For students admitted to a Major programme in Materials Science, to either of the options in Physics Major, or to a combined Major programme, the specified Area courses will be all Level III and IV Area courses.

For students admitted to any other Major programme before September 1992, the specified Area courses will be all Level III and Level IV Area courses (plus any Level II courses specified in the Programme Notes of specific Major programmes).

For students admitted to any other Major programme after August 1992, the specified Area courses will be all Level II, III and IV Area courses.

REQUIREMENTS FOR MAJOR PROGRAMMES

Most Major Programmes require:

- 45 units beyond Level I specified by a particular Department.
- 21 units Complementary Studies (see below).
- 18 units of Electives which include 6 units of Level III or IV courses.
- 6 units electives.

The exceptions are Combined Major Programmes, Materials Science Major and Physics Major Programmes.

REQUIREMENTS FOR B.SC. PROGRAMMES

The programme requirements for B.Sc. programmes, in each of the areas Earth, General, Life, Mathematical and Physical Science are listed under the heading *Science* in the *Programmes* section of this Calendar.

Students registered in these three-level B.Sc. Programmes must complete Complementary Studies Requirements A, B, and C (see below).

Before September 1992 three-level B.Sc. degrees were offered by each Department. Students who were registered in Level II or III of those programmes must continue to meet those requirements. Students are not admitted to the Departmental B.Sc. degrees after the 1991-92 academic session.

COMPLEMENTARY STUDIES REQUIREMENTS

All students registered in a Major Programme must complete the following four requirements. The exceptions are Combined Major Programmes, the Materials Science Major and any Major Programmes in Physics.

Course units selected to meet each of these requirements cannot also be used to satisfy other degree requirements.

- A: 6 units chosen from the World History, Culture, Thought menu (see below).
- B: 3 units chosen from Humanities 2C03 (Critical Thinking), or Mathematics 2E03 (Introduction to Modelling).
- C: 6 units chosen from courses offered by the School of Business or Faculties of Humanities or Social Sciences.
- D: 6 units chosen from Science Inquiry courses (see below). Science 4I03 is strongly recommended.

WORLD HISTORY, CULTURE, THOUGHT

Note: Many of these courses have prerequisites. It is the student's responsibility to ensure that these have been met.

Anthrop 2I03	History of Anthropology
Art Hist 1A06	Introduction to the Study and History of the Visual Arts
Classics 1B06	Mythology and Literature of Greece and Rome
Classics 1L06	History and Archaeology of the Ancient World
Drama 1A06	Introduction to Drama
Econ 2K03	Economic History of Canada
Econ 3R03	The International Economy Since 1945
History 1C06	The Modern World: The Era of European Primacy
History 1D06	The Civilization of the West
History 1L06	History of Archaeology of the Ancient World
History 2A06	Early Modern Europe: 1400-1715
History 2B06	China: From the Opium War to the Present
History 2H06	United States History
History 2I06	Europe in the Middle Ages
History 2J06	The History of Canada
History 2K06	The History of Science
History 2L06	The History of Greece and Rome
History 2M06	European Society from Absolutism to Democracy
Music 1A06	Introduction to Music
Philos 1B06	Philosophy and Society
Philos 1D06	Problems in Philosophy
Philos 2A06	Ancient Greek Philosophy
Philos 2C06	Descartes to Hume
Pol Sci 2O06	Introduction to Political Philosophy
Relig St 1B06	World Religions
Relig St 1E06	Ideas of Love
Relig St 1I06	Religious Themes in Modern Literature
Relig St 2D06	The Biblical World: An Introduction to the Background of the Old Testament
Relig St 2E06	Introduction to the Study of the New Testament
Relig St 2FF6	History of Ancient Judaism
Relig St 2G06	Religion and the Culture of the Twentieth Century
Relig St 2II3	Christianity in the Patristic Period (100-800)
Relig St 2J06	India: Its Culture, Social History, Religion and Philosophy
Relig St 2JJ3	Christianity in the Medieval Period (800-1500)
Relig St 2KK3	Christianity in the 16th Century
Relig St 2LL3	Christianity after 1600
Relig St 2MM6	East Asia: Religion and Thought
Relig St 2P06	Japanese Civilization
Relig St 2PP3	Indian Philosophy
Relig St 2R06	Divine Justice
Relig St 3MM3	Scepticism, Atheism, and Religious Faith
Relig St 3NN3	The Encounter of Science and Religion
Relig St 3U03	The Buddhist Tradition in India and South-East Asia
Relig St 3UU3	The Buddhist Tradition in East Asia
Soc Sci 2B06	Introduction to the Study of Peace
Soc Sci 2D03	Peace and Development
Soc Sci 2S06	Introduction to Sociological Theory

SCIENCE INQUIRY

Biochemistry 4C06	Biochemistry Inquiry
Biology 4C09	Senior Thesis
Biology 4F06	Senior Project
Chemistry 4I03	Inquiry in Chemistry
Chemistry 4G06	Senior Thesis

Computer Science 4ZP6

Geology 4K06

Geology 4W03

Mathematics 3G03

Mathematics 3Z03

Mathematics 4W03

Science 4I03

Project

Geology Thesis

Environmental Analysis: A Case History Approach

Problem Solving

History of Mathematics

Directed Reading

Inquiry

SECOND BACHELOR'S DEGREE PROGRAMMES

In addition to the regulations stated in the section *Academic Regulations, Second Bachelor's Degree Programmes* in this Calendar, the following Faculty regulations will apply, effective September 1987.

Students will be admitted to Second Degree studies only if the second degree studies involve a significant component of work in the Area courses of a programme. Accordingly, permission will not be granted to take Second Degrees in the following cases or subject combinations:

1. in a subject which was a title component of a first combined Honours or Major degree. (e.g. Computer Science *following* Computer Science and Mathematics)
2. in a combined Honours or Major degree to a holder of another degree in a component subject of that degree. (e.g. Computer Science and Mathematics *following* Computer Science)
3. an Honours degree to a holder of a Major degree in the same subject.
4. in B.Sc. General Science to a holder of another B.Sc. degree, either three- or four-year.
5. in three-year area B.Sc. programmes requiring courses which constitute a significant component of an initial B.Sc. Science degree.

Level I Programme**NATURAL SCIENCES I: 30 UNITS**

Mathematics 1A06, 1AA6, or 1C06.

One or two of a) or b):

a. Chemistry 1A06

b. Physics 1A06 or 1B06 or 1C06

Additional selections from c.) to k.) to make a total of 30 units:

c. Biology 1A06

d. Computer Science 1ZA3 and/or 1MA3 or 1MA3 and 1MB3

e. Environmental Science 1A06

f. Geography 1C03 and/or 1G03

g. Geology 1C03

h. Materials Science 1A03, or 1A03 and 1B03

i. Mathematics 1B03

j. Psychology 1A06

k. 3 to 6 units from Level I Humanities and Social Sciences.

With the exception of Mathematics, no more than one full-year course may be taken from any subject.

With the permission of the Associate Dean (Studies), well-prepared students may be permitted to elect up to six additional units.

The choice in the programme that a first level student may elect is considerable and should be made carefully with the Level II admission requirements of a specific programme in mind. A suitable choice of Level I options will allow successful students to enter Level II of any one of several programmes.

Students in the Faculty of Science registering in Mathematics 1B03 should register in Mathematics 1A06 or 1AA6 rather than Mathematics 1C06.

Students who complete Natural Sciences I with high standing but who lack a Level I course required for entry into the desired Level II programme may be permitted entry to that programme after consultation with an Associate Dean (Studies) and the appropriate Departmental Chair.

Department of Biochemistry

HONOURS ARTS AND SCIENCE AND BIOCHEMISTRY

(B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS BIOCHEMISTRY

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

General Biochemistry and Biotechnology and Genetic options are available at Level IV.

Admission:

Completion of **Natural Sciences I**, with an average of at least 7.0 in Biology 1A06, Chemistry 1A06, and one of Mathematics 1A06, 1C06, Physics 1A06, 1B06, 1C06. The election of one of Physics 1A06, 1B06, 1C06 in Level I or II is recommended.

Programme Note:

Biochemistry 2A03 or 2A06 will be included in calculating the Graduation Average.

Area Courses:

All Biochemistry courses; Biology 2B03, 2C03, 3O03, 4I03, 4M03, 4MM3, 4V03; Chemistry 2N03, 2O06, 2P06, 2Q06, 2R03, 3D03, 3F03, 4A03, 4D03, 4DD3.

Level II: 30 units

R Biochemistry 2A06; Chemistry 2N03, 2O06; and one of Chemistry 2R03, 2P06; Biology 2B03 and 2C03.

E 3 to 6 units. Chemistry 2C03, Computer Science 1ZA3 (or 1MA3) and Statistics 2M03 or 2MA3 are suggested.

Level III: 30 units

R Biochemistry 3A03 and 3AA3 or 3A06, 3L03, 3P03; Chemistry 3F03; Biology 3O03; 6 units from Level III and IV Biochemistry, Biology and Chemistry courses.

E 6 units, excluding Biochemistry.

Level IV (General Biochemistry Option): 30 units

R One of Biochemistry 4B06, 4L03, 4G03, 4P03; Biochemistry 4E03, 4I03, 4M03; 6 to 9 units of Level III and IV Biochemistry courses to make a total of 21 units (maximum of 6 units from Biochemistry 4B06, 4G03, 4L03, 4P03); 3 units from Level III and IV Science courses excluding Biochemistry.

E 6 units.

Level IV (Biotechnology and Genetic Engineering Option): 30 units

A CAA of at least 7.0 on completion of Level III is required for admission.

R One of Biochemistry 4B06, 4G03, 4P03; Biochemistry 4D03, 4E03, 4I03, 4M03; 3 to 6 units of Level III and IV Biochemistry courses to make a total of 21 units (maximum of 6 units from Biochemistry 4G03, 4P03, 4B06); 3 units from Level III and IV Science courses excluding Biochemistry (Biology 4I03 and 4V03 are recommended).

E 6 units.

HONOURS BIOCHEMISTRY AND CHEMISTRY

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Biology 1A06, Chemistry 1A06, Mathematics 1B03, 1A06, 1AA6 or 1C06 and one of Physics 1A06, 1B06, 1C06, with an average of at least 7.0 in Chemistry 1A06 and Mathematics 1A06, 1AA6 or 1C06.

Area Courses:

All Biochemistry courses and all Chemistry courses above Level I.

Level II: 30 units

R Biochemistry 2A06; Chemistry 2A03, 2B06, 2C03, 2P06; Mathematics 2N03;

E 3 units. Students considering Level III Honours Biochemistry should elect Biology 2C03. Students considering Level III Honours Chemistry should elect Physics 2A03.

Level III: 30 units

R Biochemistry 3A06 or 3A03 and 3AA3, 3L03, 3P03; Chemistry 3B03, 3D03; one of Chemistry 3A03, 3Q03, or 3E06.

E Electives to make a total of 30 units.

Level IV: 30 units

R Biochemistry 4E03, 4I03 and 4M03, and one of Biochemistry 4D03, 4Q03; Biochemistry 4B06, or 4U06 (same as Chemistry 4U06), or Chemistry 4G06; one of Chemistry 4A03, 4D03, 3C03 or 3KK6; 3 units from Level III and IV Chemistry courses.

E Electives to make a total of 30 units.

BIOCHEMISTRY MAJOR

Admission:

Completion of **Natural Sciences I**, with an average of at least 5.0 in Biology 1A06, Chemistry 1A06, and one of Mathematics 1A06, 1C06, Physics 1A06, 1B06, 1C06. The election of one of Physics 1A06, 1B06, 1C06 in Level I or II is recommended.

Programme Notes:

1. The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section of this Calendar.
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.

Area Courses:

All Level II, III and IV Biochemistry courses; Biology 2B03, 2C03, 3O03, 4I03, 4M03, 4MM3, 4V03; Chemistry 2B06, 2N03, 2O06, 2Q06, 2R03, 3D03, 3F03.

Level II: 30 units

R Biochemistry 2A06; Chemistry 2O06, 2R03; Biology 2C03.

6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).

E 6 units excluding Biochemistry.

Level III: 30 units (Last offered in 1992-93)

R Biochemistry 3A03 and 3AA3 or 3A06, and 3L03; Chemistry 3F03; 6 units of Level III or IV Biochemistry or Biology Area courses; and 6 units from any Science discipline.

E 6 units.

Level III: 30 units (Beginning in 1993-94)

R Biochemistry 3A03, 3AA3, 3L03; Biology 2B03; Chemistry 2N03. Humanities 2C03 or Mathematics 2E03.

6 units from Business, Humanities and Social Science.

E 6 units excluding Biochemistry (students wishing to take Biochemistry 4I03 in Level IV must elect Chemistry 3F03).

Level IV: 30 units (Last offered in 1993-94)

R One of Biochemistry 4E03, 4I03, 4M03, and 12 units from Level III and IV Biochemistry Area courses and 9 units of courses from any Science discipline.

E 6 units.

Level IV: 30 units (Beginning in 1994-95)

R One of Biochemistry 3H03, 3N03, 4Q03, one of Biochemistry 4D03, 4E03, 4I03, 4M03; 3 units from Level IV Biochemistry courses. 3 units from Level III and IV Biochemistry and Biology 3O03, 4I03, 4V03.

6 units from Science Inquiry.

6 units from Level III and IV courses excluding Biochemistry.

E 6 units.

Department of Biology

HONOURS PHILOSOPHY AND BIOLOGY (B.A.)

(see *Faculty of Humanities, Department of Philosophy*)

HONOURS ARTS AND SCIENCE AND BIOLOGY (B.Arts Sc.)

(see *Arts and Science Programme*)

HONOURS MOLECULAR BIOLOGY AND BIOTECHNOLOGY(see *Molecular Biology and Biotechnology*)**HONOURS BIOLOGY****Admission:**

Completion of **Natural Sciences I**, including Chemistry 1A06 and one of Physics 1A06, 1B06, 1C06 with at least B- in Biology 1A06 and at least B- in one of Mathematics 1A06, 1C06, Chemistry 1A06, Physics 1A06, 1B06, 1C06. Computer Science 1ZA3 (or 1MA3) must be completed by the end of Level II.

Programme Notes:

1. Students are advised to note carefully the prerequisites for all Levels III and IV courses listed in the following programme, particularly Biochemistry 3G06.
2. Students interested in Honours Biology and Pharmacology must elect Chemistry 2R03 in Level II.

Area Courses:

All Levels II, III and IV Biology courses; Biochemistry 3A06, 3A03, 3AA3, 3G06, 4D03, 4E03, 4M03; Engineering 4X03; Geography 3P03, 4P03; Geology 2J03, 3D06, 3J03, 4D03, 4F03; Molecular Biology 4H03; Pharmacology 4B03; Psychology 3F06 3F03, 3FF3, 3R03, 3S03, 3T03.

Level II: 30 units

R Biology 2B03, 2C03, 2D03, 2E03, 2F03; Statistics 2MA3; Chemistry 2O06; Computer Science 1ZA3 (or 1MA3), if not completed.

E 3 to 6 units excluding Biology and Biochemistry. Chemistry 2R03 is recommended.

Level III: 30 units

R 18 units from Levels III and IV Area courses in Biology; 6 units from Area courses.

E 3 units excluding Biology and Biochemistry; 3 units.

Level IV: 30 units

R Biology 4C09 or 4F06 and 9 to 12 units from Levels III and IV Area courses in Biology; 6 units from Area courses.

E 6 units

HONOURS BIOLOGY AND MATHEMATICS**Admission:**

Completion of **Natural Sciences I** including Biology 1A06, Chemistry 1A06 with a weighted average of at least 7.0 in Mathematics 1A06, 1AA6 or 1C06, Biology 1A06 and Chemistry 1A06.

Mathematics 1B03 must be completed by the end of Level II, and is recommended in Level I.

Area Courses:

Mathematics 2E03, 2G03, 2J06, 2O03; Statistics 2D03, 2MB3; all Levels III and IV Mathematics and Statistics courses. All Levels II, III and IV Biology courses. Psychology 4F03, 4I03.

Level II: 30 units

R Mathematics 2E03, 2G03, 2O03; Biology 2B03, 2C03, 2F03; Biology 2D03 or 2E03; Mathematics 1B03 (if not completed).

E 6 to 9 units.

Level III: 30 units (Beginning in 1993-94)

R Mathematics 2J06, 2F03; Statistics 2D03, 2MB3.
15 units from Level III and IV Biology courses.

Level IV: 30 units (Beginning in 1994-95)

R 18 units from Level III and IV Area courses.

E 12 units.

HONOURS BIOLOGY AND PHARMACOLOGY**Admission:**

Completion of **Level II Honours Biology** with a weighted average of at least 7.0 in 18 units of Biology 2B03, 2C03, 2D03, 2E03, 2F03, Chemistry 2O06 and 2R03 (2Q06). Computer Science 1ZA3 (or 1MA3) is required.

These are the minimal academic requirements. The student enrolment in this programme will be limited to 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.

Programme Note:

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. Pharmacology 3A06, 3B06, 4A03, 4AA3, 4C03, 4D03 and 4E03 will be based on a self-directed problem based learning approach. Pharmacology 4B03 may be taught in a lecture format in some years.
2. New students must be registered full-time and take a full academic work load.

Area Courses:

Biochemistry 3G06; Biology 2B03, 2C03, 2D03, 2E03, 2F03, 3A06, 3B03, 3BB3, 3C03, 3E03, 3H03, 3HH3, 3I03, 3K06, 3N06, 3N03, 3NN3, 3O03, 3P03, 3U06, 3U03, 3UU3, 3V03, 3Y03, 4D03, 4E03, 4I03, 4II3, 4L09, 4M03, 4MM3, 4N03, 4P03, 4PP3, 4R03, 4V03, 4X03; Chemistry 2O06, 2R03; Pharmacology 3A06, 3B06, 4A03, 4AA3, 4B03, 4C03, 4D03, 4F09.

Level III: 30 units

R Biology 3P03, 3U06 or both 3U03 and 3UU3; Biochemistry 3G06; Pharmacology 3A06, 3B06.

E 3 units. Biochemistry 3H03, Biology 3O03, Chemistry 2N03, Statistics 2R06 or 2MA3 are recommended.

Level IV: 39 units

R One of Pharmacology 4F09 or Biology 4L09 to be taken in the summer term; Biology 4I03; one of Biology 4M03, 4MM3 or 4N03; 6 units from Level III and IV Area courses; Pharmacology 4A03, 4AA3 and two of Pharmacology 4B03, 4C03, 4D03, 4E03.

E 6 units. Statistics 2R06 or 2MA3 is recommended (if not completed).

HONOURS BIOLOGY AND PHILOSOPHY**Admission:**

Completion of **Natural Sciences I**, including Chemistry 1A06 with at least B- in Biology 1A06 and at least B- in a course acceptable to the Department of Philosophy.

Programme Note:

Students are advised to note carefully the prerequisites for all courses listed in this programme. No student may register in any level of this programme without the approval of the Chair of the Biology Department. Students are advised to consult the Chair for counselling in March.

Area Courses:

All Levels II, III and IV Biology courses except Biology 4L09; Biochemistry 3B03, 3G06; all Levels II, III and IV Philosophy courses.

Levels II, III and IV: 93 units

R Biology 2B03, 2C03, 2E03, 2F03; 12 units from Biology 3F06, 3F03, 3FF3, 3H03, 3HH3, 3I03, 3J03, 3N06, 3N03, 3NN3, 3O03, 3Q03, Biochemistry 3G06; 12 additional units from Levels III and IV Biology Area courses; Chemistry 2O06 or Chemistry 2D03; Philosophy 2A06; one of Philosophy 2B03, 2R03; Philosophy 2C06; one of Philosophy 2D03, 2F03, 2G03; Philosophy 2M03; one of Philosophy 3G03, 3N06; Philosophy 3M03; 3O03; 3WW3; 4WW3.

E 12 to 15 units. Chemistry 2R03 is recommended.

HONOURS BIOLOGY AND PSYCHOLOGY**Admission:**

Completion of **Natural Sciences I**, including one of Physics 1A06, 1B06, 1C06, with at least B- in each of Biology 1A06, Chemistry 1A06 and Psychology 1A06.

Programme Notes:

1. Students must complete a minimum of one laboratory course in Levels III or IV Biology, and at least one of Psychology 3E03, 3L03, 3QQ3, 3S03, 3V03, 4G03 or 4QQ3. A minimum of 21 units from Psychology and a minimum of 21 units from Biology must be included in the total required courses for Levels III and IV combined.
2. Enrolment is limited for the Psychology laboratory courses. Permission of the department must be obtained by March 1.
3. Biology 2E03 and 2F03 will be included in calculating the Graduation Average.
4. Students who hope to obtain scholarships should complete all 33 units of Levels II and III in the fall and winter terms.

Area Courses:

Biology 2B03, 2C03, 2E03, 2F03, 3AA3, 3F06, 3F03, 3FF3, 3H03, 3HH3, 3I03, 3J03, 3K06, 3K03, 3N06, 3N03, 3NN3, 3O03, 3P03, 3Q03, 3SS3, 3U06, 3U03, 3UU3, 4BB3, 4C08, 4C09, 4E03, 4F04, 4F06, 4G06, 4I03, 4II3, 4J03, 4M03, 4MM3, 4N03, 4X03; Pharmacology 4B03; Psychology 2E03, 2H03, 2R06, 2T03, 3A03, 3B03, 3E03, 3F06, 3F03, 3FF3, 3G03, 3H03, 3IC3, 3IM3, 3IN3, 3K03, 3L03, 3N06, 3P03, 3Q03, 3QQ3, 3P03, 3R03, 3S03, 3T03, 3U03, 3V03, 3W06, 3X03, 3Y03, 3Z03, 4A03, 4B03, 4D06, 4F03, 4G03, 4H03, 4I03, 4Q03, 4QQ3; Statistics 2R06.

Level II: 33 units

- R Biology 2B03 and 2C03; 6 units from Psychology 2E03, 2H03, 2T03; Statistics 2R06 or Psychology 2R03 and 2RR3; Chemistry 2O06.
- E 9 units. Students are advised to take English 3A03 and Chemistry 2R03 as electives in Levels II and III.

Level III: 33 units

- R Biochemistry 3G06; 12 units from Biology 2E03, 2F03, 3AA3, 3F06, 3F03, 3FF3, 3H03, 3HH3, 3I03, 3J03, 3N06, 3N03, 3NN3, 3O03, 3P03, 3U06 or 3U03 and 3UU3; 12 units from Psychology 2E03, 2H03, 2T03, 3A03, 3E03, 3F06, 3G03, 3H03, 3K03, 3L03, 3N06, 3P03, 3Q03, 3QQ3, 3R03, 3S03, 3T03, 3U03, 3V03, 3W06, 3X03, 3Y03, 3Z03.
- E 3 units, excluding Biology or Psychology.

Level IV: 30-33 units

- R At least 9 units from Biology area courses and at least 9 units from Level III and IV Psychology area courses. Additional Biology and/or Psychology Level III and IV area courses to make a total of 24-27 units. One of Biology 4C09, 4F06 or Psychology 4D06 is strongly recommended.
- E 6 to 9 units.

BIOLOGY MAJOR

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06, with a grade of at least C in Biology 1A06, and at least C in one of Mathematics 1A06, 1C06, Chemistry 1A06, Physics 1A06, 1B06, 1C06. The election of Physics 1A06, 1B06, 1C06, is recommended.

Programme Notes:

1. Students in Levels III and IV of this programme should select Area courses in consultation with the Chair of the Department of Biology.
2. Computer Science 1ZA3 is recommended.
3. The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section in this calendar.
4. 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 (III) programme.

Area Courses:

All Levels II, III and IV Biology courses, except Biology 4C08, 4C09; Biochemistry 3A06, 3A03, 3AA3, 3B03, 3G06, 4D03, 4E03, 4M03; Engineering 4X03; Geography 3P03, 4P03; Geology 2J03, 3J03, 4D03, 4F03; Psychology 3F06, 3R03, 3S03, 3T03.

Level II: 30 units

- R 12 units from Biology 2B03, 2C03, 2D03, 2E03, 2F03; Chemistry 2O06, or both Chemistry 2D03 and Biochemistry 2E03.

6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).

- E 3 units excluding Biology and Biochemistry; 3 units.

Level III: 30 units (Last offered in 1992-93)

- R 18 units of Area courses, of which 12 units must be Biology courses.
- E 12 units, at least 3 units of which may not be from Biology or Biochemistry.

Level III: 30 units (Beginning in 1993-94)

- R 3 units from Biology 2B03, 2C03, 2D03, 2E03, 2F03 (whichever not completed).
6 units from Level III and IV Biology courses.
6 units from Area courses.
Humanities 2C03 or Mathematics 2E03.
6 units from Business, Humanities and Social Sciences.
- E 6 units excluding Biology.

Level IV: 30-31 units (Last offered in 1993-94)

- R 18 to 19 units of Area courses, of which 12-13 units must be Biology courses.
- E 3 units excluding Biology or Biochemistry; 9 units.

Level IV: 30 units (Beginning in 1994-95)

- R 6 units from Level III and IV Biology courses.
6 units from Area courses.
6 units from Science Inquiry.
6 units from Level III and IV courses excluding Biology.
- E 6 units.

B.Sc. IN BIOLOGY

Area Courses:

All Levels II and III Biology courses; Geography 3P03, Geology 2J03, 3J03; Psychology 3F06, 3T03.

Level III: 30 units (Last offered in 1992-93)

- R 18 units of Level III Area courses, of which at least 12 units must be from Biology.
- E 12 units, of which 6 units must not be from Biology.

Note: Level II of the B.Sc. in Biology programme will not be offered after August 1992. For those interested in a three-level programme with a Biology orientation, please see the **B.Sc. in Life Science** which is listed under the heading *Science* in this Programmes section.

Department of Chemistry

HONOURS BIOCHEMISTRY AND CHEMISTRY

(See *Department of Biochemistry*)

HONOURS APPLIED CHEMISTRY

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06, and Mathematics 1A06 or 1AA6, and Mathematics 1B03. A grade of at least B- must be achieved in Chemistry 1A06 and one of Mathematics 1A06, 1AA6, 1B03, Physics 1A06, 1B06, 1C06. One of Physics 1A06, 1B06, 1C06 must be taken before entry into Level III; its election in **Natural Sciences I** is strongly recommended. Computer Science 1MA3 must be taken before entry into Level III if Computer Science 1MA3 or 1ZA3 is not completed in Level I.

Programme Note:

Recommended electives throughout the programme include Engineering 2O03; Materials 2C04, 4D03, 4E03; Metallurgy 3C03, 4C04, 4N03; Chemical Engineering 3D03, 3P03, 3Q03, 4C03, 4K03, 4N04; Business 3W06, 3X03, 3Y03, 3Z03; Physics 2A03.

Area Courses:

All Level II, III and IV Chemistry courses; Chemical Engineering 2D04, 2F04, 3K04, 3M04.

Level II: 32 units

R Chemistry 2A03, 2B06, 2C03; Chemical Engineering 2D04, 2F04; Computer Science 1MA3, if Computer Science 1ZA3 not completed in Level I; Mathematics 2N03.

E 6 to 9 units excluding Chemistry.

Level III: 31 units

R Chemistry 3B03, 3D03, 3E06, 3I03 and 3C03 or 3KK6; Chemical Engineering 3M04.

E 6 to 9 units excluding Chemistry.

Level IV: 30-31 units

R Chemistry 3A03, 4G06 or 4T06; either Chemistry 4L03 or Chemical Engineering 3K04; 6 units of Level IV Area courses; an additional 3 units from Level III or IV Science or Engineering courses.

E 9 units.

HONOURS BIOLOGICAL CHEMISTRY

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06, Biology 1A06, and Mathematics 1A06 or 1AA6, and 1B03. A grade of at least B- must be achieved in Chemistry 1A06 and one of Mathematics 1A06, 1AA6, 1B03, Biology 1A06. One of Physics 1A06, 1B06, 1C06 and Computer Science 1MA3 (1ZA3) must be taken before entry into Level III; election in Natural Sciences I is strongly recommended.

Area Courses:

All Level II, III and IV Chemistry courses; Biochemistry 2A03, 3A06, 3A03, 3AA3, 3G06, 3L03, 4D03, 4E03, 4I03, 4M03, 4Q03; Biology 2B03, 2C03, 3C03, 3E03, 3J03, 3O03, 3P03, 3Q03.

Level II: 30 units

R Chemistry 2A03, 2B06, 2C03, 2P06; Biology 2B03; Mathematics 2N03; one of Physics 1A06, 1B06, 1C06 if not completed in Level I; Computer Science 1MA3, if Computer Science 1ZA3 not completed in Level I.

E 0 to 6 units excluding Chemistry. (Students considering Biochemistry 3A03 in Level III should take Biochemistry 2A06.)

Level III: 30 units

R Chemistry 3A03, 3B03 or 3C03, 3E06 or 3Q03, 3F03 or 3D03; Biochemistry 3A03 and 3AA3 or 3G06; Biology 2C03.

E 6 to 9 units. (Students taking Biochemistry 3A03 and 3AA3 should consider Biochemistry 3L03.)

Level IV: 30 units

R Chemistry 3B03 or 3C03, 4D03, 4DD3, 4G06; Biochemistry 4I03; 3 additional units from Level IV Biochemistry; 3 units from Level III and IV Biology courses.

E 6 units.

HONOURS CHEMISTRY

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06, Mathematics 1A06 or 1AA6, and Mathematics 1B03. A grade of at least B- must be achieved in Chemistry 1A06 and one of Mathematics 1A06, 1AA6, 1B03, Physics 1A06, 1B06 (or 1C06). One of Physics 1A06, 1B06, 1C06 must be taken before entry into Level III; its election in Natural Sciences I is strongly recommended. Students will also be considered for admission (to Level II) if they have completed Mathematics 1B03 and 1C06. However, Mathematics 1A06 or 1AA6 is strongly recommended over Mathematics 1C06.

Programme Note:

For students interested in physical chemistry, recommended electives throughout the programme include Statistics 2MA3 and Mathematics 3C03, 3D03 (if Mathematics 2G03 and 2O03 were taken instead of Mathematics 2N03).

Area Courses:

All Level II, III and IV Chemistry courses.

Level II: 30 units

R Chemistry 2A03, 2B06, 2C03, 2P06; Mathematics 2N03; Physics 2A03; Computer Science 1MA3, if Computer Science 1ZA3 not completed in Level I.

E 3 to 6 units excluding Chemistry.

Level III: 30 units

R Chemistry 3A03, 3B03, 3D03, 3E06, 3KK6.

E 6 units excluding Chemistry; 3 units.

Level IV: 30 units

R Chemistry 4G06, 4L03; 9 units from Level IV Area courses; an additional 6 units from Level III and IV Science or Engineering courses.

E 6 units.

HONOURS CHEMISTRY AND GEOLOGY

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06, Geology 1A03 or 1C03, Mathematics 1A06 or 1AA6, and Mathematics 1B03, with a grade of at least B- in each of Chemistry 1A06 and Geology 1A03 or 1C03. The election of Physics 1A06 is recommended. Students will also be considered for admission (to Level II) if they have completed Mathematics 1B03 and 1C06. However, Mathematics 1A06 or 1AA6 is strongly recommended over Mathematics 1C06.

Programme Notes:

1. Geology 2D06 will be included in calculating the Graduation Average.
2. Geology 3E02 is normally taken at the end of Level II and is scheduled outside the regular term. Geology 2E01 is taken during the regular term of Level II.

Area Courses:

All Level II, III and IV Chemistry courses; all Level II, III and IV Geology courses except Geology 3E02 and 2E01.

Level II: 34 units

R Chemistry 2B06, 2C03, 2P06; Geology 2E01, 2B06, 2C03, 2DD3; Mathematics 2N03.

E 3 units excluding Chemistry and Geology.

Level III: 32 units

R Chemistry 2A03, 3B03, 3E06; Geology 3CC6, 3E02, 3G03, 3Q03; Geology 2I03 or 2J03.

E 3 units.

Level IV: 30 units

R 21 units selected as follows: Chemistry 3A03; 18 units from Level III and IV Chemistry and Geology courses to include at least 6 units of Area courses from each.

E 9 units.

HONOURS CHEMISTRY AND PHYSICS

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 or 1AA6, and Mathematics 1B03, Chemistry 1A06 and Physics 1A06 with a grade of at least B- in Chemistry 1A06, Physics 1A06, and one of Mathematics 1A06, 1AA6, or 1B03. Students will also be considered for admission if they have completed Physics 1B06 or 1C06, instead of 1A06. However, Physics 1A06 is strongly recommended. Students will also be considered for admission if they have completed Mathematics 1B03 and 1C06. However, Mathematics 1A06 or 1AA6 is strongly recommended over Mathematics 1C06.

Programme Note:

Chemistry 2A03 will be included in calculating the Graduation Average.

Area Courses:

All Level II, III and IV Chemistry courses; Physics 2B06, 2C05, 3B06, 3K04, 3M06, 3M03, 3MM3, 3N03, 4F03, 4J04, 4K03, 4Q04.

FACULTY OF SCIENCE

Level II: 33 units

R Chemistry 2B06, 2C03, 2P06; Physics 2B06, 2D03; Mathematics 2G03, 2O03.

E 3 units. Computer Science 1MA3 is recommended (if not taken in Level I).

Level III: 33-34 units

R Chemistry 2A03, 3Q03, 3C03 or 3KK6; Physics 3M03, 3MM3; 6 to 10 units from Physics 3B06, 3K04, 3N03; Mathematics 3C03, 3D03.

E 0 to 7 units. (Courses which are prerequisites for desired Level IV courses should be considered.)

Level IV: 31-34 units

R At least 25 units from Level III and Level IV Chemistry and Physics, which must include: Chemistry 4G06 or Physics 4J04 or Physics 4Q04; Physics 4F03; Chemistry 4L03, 4B03; Chemistry 4Y03 or Physics 3K04, if not taken in Level III.

E 6 to 9 units.

CHEMISTRY MAJOR

This programme fulfills the academic requirements for membership in the Chemical Institute of Canada.

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06 and Mathematics 1B03 and Mathematics 1A06 or 1AA6; with a weighted average of at least 5.0 in Chemistry 1A06 and at least 6 units of Mathematics 1A06, 1AA6, 1B03, Physics 1A06, 1B06, 1C06. One of Physics 1A06, 1B06, 1C06 must be taken before entry into Level III; its election in **Natural Sciences I** is strongly recommended. Students will be considered for admission to Level II if they have completed Mathematics 1C06 instead of Mathematics 1A06 or 1AA6, but Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Notes:

1. Computer Science 2MF3 and Physics 2A03 are recommended electives.
2. 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.
3. 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.
4. The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section in this calendar.

Area Courses: (For those enrolled in the programme prior to September 1992)

Chemistry 2A03, 2B06, 2C03, 2F03, 2K03, 2O06, 2P06, 3A03, 3B03, 3D03, 3F03, 3G03, 3I03, 3K03, 3KK6, 3Q03, 4A03, 4B03, 4C03, 4D03, 4DD3, 4G06, 4K06, 4L03, 4P03, 4Q03, 4R03, 4S03, 4TA3, 4TB3, 4T06, 4Y03.

Area Courses: (For those enrolled in the programme September 1992 and later)

All Level II, III and IV Chemistry courses; Biochemistry 3G06; Biology 2B03; Materials Science 2C04, 3D03, 3D06; Metallurgy 3C03; Physics 2A03, 3O03; Geology 4W03.

Level II: 30 units

R Chemistry 2A03, 2B06, 2C03, 2P06; Mathematics 2N03; 6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*); Computer Science 1MA3, if Computer Science 1ZA3 was not completed in Level I; Physics 1A06, 1B06, or 1C06 if not completed in Level I.

E 0 to 3 units excluding Chemistry.

Level III: 30 units (Last offered in 1992-93)

R Chemistry 3A03, 3B03, 3D03, 3KK6, 3Q03; Physics 2A03 if not already taken.

E 9 to 12 units.

Level III: 30 units (Beginning in 1993-94)

R Chemistry 3A03, 3B03, 3C03, 3D03, 3Q03; Humanities 2C03 or Mathematics 2E03; 6 units from Business, Humanities and Social Sciences.

E 6 units excluding Chemistry

Level IV: 30 units (Last offered in 1993-94)

R Chemistry 4L03, 4T06 and 9 units from Level IV Area courses.

E 12 units.

Level IV: 30 units (Beginning in 1994-95)

R Chemistry 4T06 and 6 units from Level IV Chemistry courses; 6 units from Level III and IV courses excluding Chemistry; 6 units from Science Inquiry.

E 6 units.

B.Sc. IN CHEMISTRY

Area Courses:

Chemistry 2A03, 2B06, 2C03, 2F03, 2K03, 2O06, 2P06, 3A03, 3B03, 3F03, 3G03, 3I03, 3K03, 3Q03.

Level III: 30 units (Last offered in 1992-93)

R Chemistry 3A03, 3B03, 3I03, 3Q03.

E 18 units, at least 6 units of which may not be Chemistry.

Note: Level II of the B.Sc. in Chemistry programme will not be offered after August 1992. For those interested in a three-level programme with a Chemistry orientation, please see the **B.Sc. in Physical Science** which is listed under the heading *Science* in this Programmes section.

Department of Computer Science and Systems

If courses are chosen carefully, a student upon completion of Level II of the following programmes may satisfy the requirements for a related programme. Such students may request a transfer to another programme if they wish. For example, students may wish to transfer from Honours Computer Science to Honours Statistics or from Honours Mathematics to Honours Computer Science and Mathematics.

HONOURS MATHEMATICS AND MATHEMATICS MAJOR AND B.Sc. IN MATHEMATICS

(See *Mathematics and Statistics*)

HONOURS STATISTICS AND STATISTICS MAJOR

(See *Mathematics and Statistics*)

HONOURS ECONOMICS AND COMPUTER SCIENCE (B.A.)

(See *Faculty of Social Sciences, Department of Economics*)

HONOURS ARTS AND SCIENCE AND COMPUTER SCIENCE (B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS COMPUTER SCIENCE

Admission:

Completion of **any Level I** programme with a weighted average of at least 7.0 in Computer Science 1MA3, 1MB3, and Mathematics 1A06 or 1AA6 and 1B03. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is recommended.

Programme Notes:

1. Students entering from another Faculty must complete the requirements of the Natural Sciences I programme *before entry* to Level IV.
2. It is recommended that students choose a coherent set of electives. The following possibilities should be noted:
Numerical Analysis Option: Mathematics 2A06, 3Q03, 4Q03, 4QQ3 and 4RR3.
Hardware Option: Mathematics 2A06, 2C03; Physics 2B06, 3B06, 4D06.
3. Computer Science 3EA3 must be taken in Level III or IV.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3; all Level III and IV Computer Science courses; Mathematics 2A06, 2B06, 2C03, 2E03, 2F03, 2G03, 2J06, 3B03, 3E03, 3EE3, 3L06, 3O06, 3Q03, 3R03, 4C03, 4J03, 4Q03, 4QQ3, 4RR3, 4S03; Statistics 2D03; all Level III and IV Statistics courses; Physics 2B06, 3B06, 4D06.

Level II: 30 units

- R Computer Science 2MC3, 2MD3, 2ME3, 2MF3; either Mathematics 2B06 and 2F03, or 2J06; Mathematics 2A06 or 2G03.
E 3 to 9 units.

Level III: 30 units

- R Computer Science 3MG3, 3MH3, 3MI3; two of Computer Science 3CA3, 3EA3, 3IA3, 3TA3; 6 units from Level III and IV Area courses in Mathematics and Statistics. Students must select courses carefully so that prerequisites for the Level IV courses in the desired area of specialization are satisfied.
E 6 units excluding Computer Science, Mathematics and Statistics; 3 units.

Level IV

Students will make their Level IV course selection according to their chosen area of specialization. They are urged to note carefully the prerequisites for these courses. The project chosen for Computer Science 4ZP6 must be suitable for the student's area of specialization, subject to approval of the Chair.

Level IV: 30 units Computer Systems

- R Computer Science 4ZP6; three of Computer Science 4CB3, 4CC3, 4CD3, 4TB3; 9 units from Level III and IV Area courses, including Computer Science 3EA3 if not already completed.
E 6 units.

Level IV: 30 units Software Engineering

- R Computer Science 4ZP6; three of Computer Science 4EB3, 4EC3, 4ED3, 4TB3; 9 units from Level III and IV Area courses, including Computer Science 3EA3 if not already completed.
E 6 units.

Level IV: 30 units Artificial Intelligence

- R Computer Science 4ZP6; three of Computer Science 4IB3, 4IC3, 4ID3, 4EB3; Mathematics 4C03, 4J03; Computer Science 3EA3 if not already completed, otherwise 3 units from Level III and IV Area courses.
E 6 units.

Level IV: 30 units Theory of Computation

- R Computer Science 4ZP6; three of Computer Science 4TB3, 4TC3, 4TD3, 4GB3; Mathematics 4C03, 4J03; Computer Science 3EA3 if not already completed, otherwise 3 units from Level III and IV Area courses.
E 6 units.

HONOURS COMPUTER SCIENCE AND MATHEMATICS**Admission**

Completion of **any Level I** programme with a weighted average of at least 7.0 in Computer Science 1MA3, 1MB3 and Mathematics 1A06 or 1AA6 and 1B03. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is recommended.

Programme Note:

Mathematics 2F03 is recommended in Level II, but may be deferred.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3; all Level III and IV Computer Science courses; Mathematics 2A06, 2B06, 2C03, 2E03, 2F03, 3A06, 3B03, 3E03, 3EE3, 3F03, 3FF3, 3G03, 3L06, 3Q03, 3R03, 3T03, 3X03, 3Y03, 4A06, 4C03, 4G03, 4J03, 4O03, 4Q03, 4RR3, 4S03; Physics 2C03, 2D03; Statistics 2D03, 2M03, 2MA3, 2MB3, 3D06, 3S03, 3U03, 4H03, 4K03, 4M03, 4R03, 4S03, 4T03, 4U03, 4V03, 4X03, 4Z03.

Level II: 30 units

- R Computer Science 2MC3, 2MD3, 2MF3; Mathematics 2A06, 2B06.
E 9 units.

Levels III and IV: 60 units

- R Computer Science 2ME3, 3MG3, 3MH3, 3MI3, 4MP6; one of Computer Science 3CA3, 3EA3, 3GA3, 3IA3, and 3TA3; Mathematics 2C03 or 2O03 (if neither completed), 2F03 (if not completed); Mathematics 3A06 and one of Mathematics 4A06, 4C03, 4J03, 4Q03, 4S03; 6 units from Level III and IV Mathematics and Statistics Area

courses; 3 units from Area courses. (Computer Science 3EA3 is strongly recommended.)

- E 6 units excluding Computer Science, Mathematics and Statistics; 6 to 15 units.

HONOURS COMPUTER SCIENCE AND PSYCHOLOGY**Admission:**

Completion of **Natural Sciences I** with a weighted average of 7.0 in Computer Science 1MA3, 1MB3, Mathematics 1A06 or 1AA6, 1B03, Psychology 1A06, including a grade of at least B- in each of Computer Science 1MA3, 1MB3 and Psychology 1A06. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is recommended.

Programme Note:

Students must complete at least one laboratory course in Psychology. Enrolment is limited in the laboratory courses, and *permission* of the department must be obtained by *March 1*.

Area courses:

All Level II, III and IV Psychology courses; Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3; all Level III and IV Computer Science courses; Statistics 2D03, 2M03, 2MA3, 2MB3, 2R06; Mathematics 4S03.

Level II: 30 units

- R Computer Science 2MC3, 2MD3, 2MF3; Psychology 2E03, 2H03, 2T03; one of Statistics 2MA3, 2MB3, 2R06 or Psychology 2R03 and 2RR3; either Mathematics 2F03 and 2B06 or Mathematics 2J06.
E 0 to 3 units.

Level III: 30 units

- R Computer Science 3MG3, 3MH3, 3MI3; one of Computer Science 3CA3, 3EA3, 3IA3, 3TA3; 3 units from Computer Science Area courses; 12 units from Level III Psychology courses.
E 3 units.

Level IV: 30 units

- R Computer Science 4MP6 or Psychology 4D06 (the project or thesis must be approved by the Chairs of *both* departments); Computer Science 3SD3, 4TC3; 6 units from Level III and IV Computer Science (Computer Science 3EA3 is strongly recommended); 9 units from Level III and IV Psychology courses.
E 3 units.

HONOURS COMPUTER SCIENCE AND STATISTICS**Admission:**

Completion of **any Level I** programme with a weighted average of at least 7.0 in Computer Science 1MA3, 1MB3, and Mathematics 1A06 or 1AA6 and 1B03. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is recommended.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3, and all Level III and IV Computer Science courses; Mathematics 2A06, 2B06, 2C03, 2E03, 3Q03, 3R03, 3T03, 4G03, 4H03, 4K03, 4O03, 4Q03, 4QQ3, 4RR3, 4S03; Physics 2C03, 2D03; Statistics 2D03, 2M03, 2MB3; all Level III and IV Statistics courses.

Level II: 30 units

- R Computer Science 2MC3, 2MD3; Computer Science 2MF3 or 2MJ3; Mathematics 2A06, 2B06; Statistics 2D03.
E 6 units.

Levels III and IV: 60 units

- R Computer Science 2ME3, 2MF3 (if not completed), 3MG3, 3MH3, 3MI3, 4MP6; one of Computer Science 3CA3, 3EA3, 3GA3, 3IA3, 3TA3; Mathematics 2C03 or 2O03 (if neither completed), and 3T03; Statistics 3D06, Statistics 2M03 or 2MB3 (if not completed); 15 units from Level III and IV Area courses selected as follows: 6 units from Statistics, 6 units from Mathematics, 3 additional units. (Computer Science 3EA3 is strongly recommended.)
E 6 units excluding Computer Science, Mathematics and Statistics; 0 to 9 units.

COMPUTER SCIENCE MAJOR**Admission:**

Completion of **Natural Sciences I** with an average of at least 5.0 in Computer Science 1MA3, 1MB3, Mathematics 1A06 or 1AA6 or 1C06 and 1B03.

Programme Notes:

- It is recommended that students choose a coherent set of electives. The following possibilities should be noted:
Numerical Analysis Option: Mathematics 2G03, 2O03, 3Q03, 4Q03, 4QQ3 and 4RR3.
Hardware Option: Mathematics 2G03, 2O03; Physics 2B06, 3B06, 4D06.
- Computer Science 3EA3 must be taken in Levels III or IV.
- The calculation of the Graduation Average is described in the Faculty of Science: Academic Regulations section in this calendar.
- 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.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3; all Level III and IV Computer Science courses; Mathematics 2E03, 2G03, 2J06, 2O03, 3B03, 3E03, 3EE3, 3L06, 3O06, 3Q03, 3R03, 4C03, 4J03, 4Q03, 4QQ3, 4RR3, 4S03; Statistics 2D03, 2M03, 2MA3, 2MB3 and all Level III and IV Statistics courses; Physics 2B06, 3B06, 4D06.

Level II: 30 units

- R Computer Science 2MC3, 2MD3, 2MF3, 2MJ3.
 Mathematics 2B06 or 2J06.
 6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
 E 6 units excluding Computer Science.

Level III: 30 units (Last offered in 1992-93)

- R Computer Science 3MG3, 3MH3, 3MI3, and two of 3CA3, 3EA3, 3IA3, 3TA3; 3 units of Mathematics or Statistics Area courses. Students must select courses carefully so that prerequisites for the Level IV courses in the desired area of specialization are satisfied.
 E 6 units excluding Computer Science, Mathematics and Statistics; 6 units.

Level III: 30 units (Beginning in 1993-94)

- R Computer Science 3MG3, 3MH3.
 6 units from Computer Science 3CA3, 3GA3, 3IA3, 3TA3.
 3 units from Computer Science 2ME3, Mathematics 2F03, 2G03, 3B03. Humanities 2C03 or Mathematics 2E03.
 6 units from Business, Humanities and Social Sciences.
 E 6 units excluding Computer Science.

Level IV: (Last offered in 1993-94)

Students will make their Level IV course selection according to their chosen area of specialization. They are urged to note carefully the prerequisites for these courses. The project chosen for Computer Science 4ZP6 must be suitable for the student's area of specialization, subject to the approval of the Chair.

Level IV: 30 units Computer Systems (Last offered in 1993-94)

- R Computer Science 4ZP6 and three of Computer Science 4CB3, 4CC3, 4CD3, 4TB3; 6 units from Level III and IV Area courses, including Computer Science 3EA3 if not already completed.
 E 9 units.

Level IV: 30 units Software Engineering (Last offered in 1993-94)

- R Computer Science 4ZP6 and three of Computer Science 4EB3, 4EC3, 4ED3, 4TB3; 6 units from Level III and IV Area courses, including Computer Science 3EA3 if not already completed.
 E 9 units.

Level IV: 30 units Artificial Intelligence (Last offered in 1993-94)

- R Computer Science 4ZP6 and three of Computer Science 4IB3, 4IC3, 4ID3, 4EB3; Mathematics 4C03 or 4J03; Computer Science 3EA3 if not already completed, otherwise 3 units from Level III and IV Area courses.
 E 9 units.

Level IV: 30 units Theory of Computation (Last offered in 1993-94)

- R Computer Science 4ZP6 and three of Computer Science 4TB3, 4TC3, 4TD3, 4GB3; Mathematics 4C03 or 4J03; Computer Science 3EA3 if not already completed, otherwise 3 units from Level III and IV Area courses.
 E 9 units.

Level IV: 30 units (Beginning in 1994-95)

- R Computer Science 3EA3, 3MI3.
 6 units from Level IV Computer Science courses.
 Computer Science 4ZP6 (Science Inquiry).
 6 units from Level III and IV courses excluding Computer Science.
 E 6 units.

COMPUTER SCIENCE AND MATHEMATICS MAJOR**Admission:**

Completion of **any Level I** programme with a weighted average of at least 5.0 in Computer Science 1MA3, 1MB3, and Mathematics 1A06 or 1AA6 and 1B03. Students will be considered for admission if they have Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is recommended.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3; all Level III and IV Computer Science courses; Mathematics 2E03, 2G03, 2J06, 2O03, 3B03, 3E03, 3EE3, 3F03, 3FF3, 3L06, 3O06, 3Q03, 3R03, 3T03, 4C03, 4G03, 4J03, 4K03, 4O03, 4Q03, 4QQ3, 4RR3, 4S03; Statistics 2D03, 2M03, 2MB3, 3D06, 3S03, 3U03, 4H03, 4J03, 4K03, 4M03, 4R03, 4S03, 4T03, 4U03, 4Z03.

Level II: 30 units

- R Computer Science 2MC3, 2MD3; Mathematics 2G03, 2O03, 2J06; Statistics 2D03; Computer Science 2MF3 or 2MJ3.
 E 6 units.

Level III and IV: 60 units

- R Computer Science 2ME3, 2MF3 (if not completed), 3MG3, 3MH3, 3MI3, 4MP6; one of Computer Science 3CA3, 3EA3, 3GA3, 3IA3, 3TA3; Mathematics 3O06 and 6 units from Mathematics 3Q03, 3T03, 4C03, 4J03, 4O03, 4Q03, 4S03; 6 units from Level III and IV Mathematics and Statistics Area courses; 3 units from Level III and IV Area courses. (Computer Science 3EA3 is strongly recommended.)
 E 6 units excluding Computer Science, Mathematics and Statistics; 9 to 12 units.

COMPUTER SCIENCE AND STATISTICS MAJOR**Admission:**

Completion of **any Level I** programme with a weighted average of at least 5.0 in Computer Science 1MA3, 1MB3, and Mathematics 1A06 or 1AA6 and 1B03. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is recommended.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3; all Level III and IV Computer Science courses; Mathematics 2E03, 2G03, 2J06, 2O03, 3Q03, 3R03, 3T03, 4G03, 4O03, 4Q03, 4RR3; Physics 2C03, 2D03; Statistics 2D03, 2M03, 2MB3; Level III and IV Statistics courses.

Level II: 30 units

- R Computer Science 2MC3, 2MD3; Mathematics 2G03, 2O03, 2J06; Statistics 2D03; Computer Science 2MF3 or 2MJ3
 E 6 units.

Levels III and IV: 60 units

- R Computer Science 2ME3, 2MF3 (if not completed), 3MG3, 3MH3, 3MI3, 4MP6; one of Computer Science 3CA3, 3EA3, 3GA3, 3IA3, 3TA3; Mathematics 3T03, Statistics 2MB3 (if 2M03 not completed), 3D06; 15 units from Level III and IV Area courses selected as follows: 6 units from Statistics, 6 units from Mathematics and Statistics, 3 additional units. (Computer Science 3EA3 is strongly recommended.)
 E 6 units excluding Computer Science, Mathematics and Statistics; 3 to 9 units.

B.Sc. IN COMPUTER SCIENCE**Programme Notes:**

1. It is recommended that students should choose their electives so that 18 units of Level II and Level III courses are in a single subject. Economics 1A06 and Business 3W06 are recommended.
2. It is recommended that students elect Statistics 2MB3 (if 2M03 not completed) in Level III.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3, and all Level III and IV Computer Science courses; all Level II, III and IV Mathematics and Statistics courses; Business 3W06.

Level III: 30 units (Last offered in 1992-93)

R Computer Science 3MG3, 3MH3, 3MI3, 3MP6, and one of Computer Science 3CA3, 3EA3, 3IA3, 3TA3. (Computer Science 3EA3 is strongly recommended.)

E 6 units excluding Computer Science, Mathematics and Statistics; 6 units.

Note: Level II of the B.Sc. in Computer Science programme will not be offered after August, 1992. For those interested in a three-level programme with a Computer Science orientation, please see the **B.Sc. in Mathematical Science** which is listed under the heading *Science* in this Programmes section.

Department of Geography**HONOURS GEOGRAPHY (B.A.) AND B.A. IN GEOGRAPHY, AND HONOURS GEOGRAPHY AND GEOLOGY (B.A.)**

(See B.A. Programmes in Geography, *Faculty of Social Sciences, Department of Geography*)

HONOURS ECONOMICS AND GEOGRAPHY (B.A.)

(See *Faculty of Social Sciences, Department of Economics*)

HONOURS ARTS AND SCIENCE AND GEOGRAPHY

(B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS GEOGRAPHY (B.Sc.)**Admission:**

Completion of **Natural Sciences I**, with at least a B- in Geography 1A06, or 1C03 and 1G03, and an average of at least 7.0 in those 6 units and in 6 additional units of Mathematics, Geology, Chemistry, Environmental Science, Physics or Biology.

Area Courses:

Geography 2F03, 2K03, 2LL3, 2NN3, 2T03, 2U03, 2W03, 3E03, 3F03, 3I03, 3K03, 3L03, 3M03, 3NN3, 3O03, 3P03, 3U03, 3V03, 3W03, 4A03, 4C06, 4D03, 4E03, 4H03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4W03.

Level II: 30 units

R Geography 2LL3, 2NN3; 12 units from Geography 2F03, 2K03, 2T03, 2U03, 2W03.

E 12 units

Levels III-IV: 60 units

R Geography 3E03, 3O03, and 4C06; 24 units from Levels III and IV area courses which must include at least 9 units from Level IV area courses.

E 12 units excluding Geography; 12 units.

HONOURS GEOGRAPHY AND ENVIRONMENTAL SCIENCE (B.Sc.)

Admission: (For 1992-93 only)

Completion of **Natural Sciences I**, including Chemistry 1A06, with at least a B- in both Biology 1A06 and Geography 1A06.

Admission: (Beginning in 1993-94)

Completion of **Natural Sciences I**, including Chemistry 1A06, with a grade of B- in Biology 1A06, Environmental Science 1A06 and one of Geography 1A06, 1C03, 1G03. Students must complete 6 units from Geography 1A06, 1C03, 1G03 by the end of Level II.

Area Courses:

Biochemistry 2E03; Biology 2D03, 2E03, 2F03, 3A06, 3SS3, 3TT3, 4D03, 4Y03; Chemistry 2D03; Geography 2F03, 2K03, 2LL3, 2NN3, 2T03, 2U03, 2W03, 3C03, 3E03, 3F03, 3G03, 3J03, 3K03, 3M03, 3NN3, 3O03, 3P03, 3U03, 3V03, 3W03, 4A03, 4C06, 4D03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4V06, 4W03; Geology 2C03, 4S03, 4U03.

Level II: 30 units (Last offered in 1992-93)

R Geography 2LL3, 2NN3, 2U03; Biology 2F03; Chemistry 2D03; 6 units from Geography 2F03, 2K03, 2T03, 2W03; 3 units from Area courses excluding Geography. Biochemistry 2E03 is recommended.

E 6 units.

Level II: 30 units (Beginning in 1993-94)

R Geography 1C03 or 1G03 if not completed in Level I, Geography 2LL3, 2NN3, 2U03; Biology 2F03; 6 units from Geography 2F03, 2K03, 2T03, 2W03; 3 to 6 units from Area courses excluding Geography.

E 6 to 9 units.

Level III: 30 units

R Geography 3C03, 3E03, 3J03, 3O03, 3U03; Biochemistry 2E03 (if not completed); 3 units from Level III and IV Area courses; 3 units from Area courses excluding Geography.

E 6 units.

Level IV: 30 units

R Geography 4C06, 4V06; 6 units from Level III and IV Area courses; 6 units from Area courses excluding Geography.

E 6 units.

HONOURS GEOGRAPHY AND GEOLOGY (B.Sc.)**Admission:**

Completion of **Natural Sciences I**, including Geography 1A06, or 1C03 and 1G03, Geology 1A03 or 1C03 and Mathematics 1A06 or 1C06, with a grade of at least B- in both Geography 1A06 or 1C03 and 1G03, and Geology 1A03 or 1C03. Chemistry 1A06 must be completed by the end of Level II. Environmental Science 1A06 is strongly recommended.

Programme Note:

Geology 3E02 is normally taken at the end of Level II. This course is scheduled outside of the regular term.

Area Courses:

Geography 2F03, 2K03, 2LL3, 2NN3, 2T03, 2U03, 2W03, 3C03, 3E03, 3F03, 3I03, 3K03, 3L03, 3M03, 3NN3, 3O03, 3P03, 3U03, 3V03, 3W03, 4A03, 4C06, 4D03, 4E03, 4K03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4W03; all Geology courses above Level I except Geology 2E01 and 3E02.

Level II: 31 units

R Geography 2LL3, 2NN3, 2T03; one of Geography 2F03, 2K03, 2U03, 2W03; Geology 2B06, 2C03, 2DD3, 2E01 and 3 to 6 units from Science or Engineering courses approved by the Departments.

E 0 to 3 units excluding Geography and Geology.

Level III: 32 units

R Geography 3E03, 3M03, 3O03; one of 3F03, 3K03, 3NN3, 3P03, 3U03, 3W03; Geology 3CC6, 3E02 and one of Geology 2I03, 2J03, 3DD3 and 3F03.

E 3 units excluding Geography and Geology; 6 units.

Level IV: 30-33 units

R 18 units of Area courses including 6 units of Level IV Geography Area courses, 6 units of Level IV Geology Area courses, 6 units from Level III and IV Geography Area courses and Level III and IV Geology courses. Geology 3S03 must be taken if not already completed.

E Electives to make a total of 30 to 33 units. Geology 3G03 is strongly recommended.

B.Sc. IN GEOGRAPHY**Area Courses:**

Geography 2F03, 2K03, 2LL3, 2NN3, 2T03, 2W03, 3E03, 3F03, 3I03, 3K03, 3L03, 3M03, 3NN3, 3O03, 3P03, 3V03, 3W03.

FACULTY OF SCIENCE

Level III: 30 units (*Last offered in 1992-93*)

R 18 units of Level III Area courses.

E 12 units, 6 of which may not be in Geography.

Note: Level II of the B.Sc. in Geography programme will not be offered after August 1992. For those interested in a three-level programme with a Geography orientation, please see the **B.Sc. in Earth Science** which is listed under the heading *Science* in this Programmes section.

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

Admission: (*for 1992-93 only*)

Completion of **Natural Sciences I** including Geology 1A03 or 1C03, Mathematics 1A06 or 1C06, Chemistry 1A06, and one of Physics 1A06, 1B06, 1C06. A grade of at least B- must be obtained in Geology 1A03 or 1C03 and one other course listed. Mathematics 1B03 or 2E03 or Statistics 2MA3 is required by the end of Level II.

Admission: (*Beginning in 1993-94*)

Completion of **Natural Sciences I** including one of Geology 1A03 or Environmental Science 1A06, Mathematics 1A06 or 1C06, Chemistry 1A06, and one of Physics 1A06, 1B06, 1C06. A grade of at least B- must be obtained in Geology 1C03 or Environmental Science 1A06 and one other course listed. Mathematics 1B03 or 2E03 or Statistics 2MA3 is required by the end of Level II.

Programme Note:

Geology 3E02 is normally taken at the end of Level II and is scheduled outside of the regular term.

Area Courses:

All Level II, III and IV Geology courses except Geology 2E01 and 3E02.

Level II: 31 units

R Geology 2B06, 2C03, 2D03, 2E01, 2I03, 2J03; Chemistry 2P06; Mathematics 1B03, 2E03 or Statistics 2MA3.

E 3 units, excluding Geology.

Level III: 32 units

R Geology 3CC6, 3E02, 3F03, 3G03, 3J03, 3Q03, 3S03.

E 3 units excluding Geology; 6 units. Materials 3D03 is recommended.

Level IV: 30 units

R Geology 4T03; 12 units from Level IV Geology courses.

E 15 units.

HONOURS GEOLOGY AND PHYSICS

Admission:

Completion of **Natural Sciences I**, including one of Geology 1A03, 1C03 or Environmental Science 1A06, Physics 1A06, Chemistry 1A06, Mathematics 1A06, 1B03. A grade of at least B- must be obtained in each of Geology 1A03 or 1C03 or Environmental Science 1A06 and Physics 1A06. 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.

Programme Note:

Geology 3E02 is normally taken at the end of Level II and is scheduled outside of the regular term.

Area Courses:

All Level II, III and IV Geology courses except Geology 2E01 and 3E02; Physics 2B06, 2D03, 3G03, 3M06, 3M03, 3MM3, 3S03, 4B04, 4K03; Mathematics 3C03, 3D03.

Level II: 34 units

R Geology 2B06, 2C03, 2D03, 2E01, 2I03; Physics 2B06, 2D03; Mathematics 2G03, 2O03.

E 3 units excluding Geology and Physics. Computer Science 1MA3 is strongly recommended.

Level III: 32 units

R Geology 3CC6, 3E02; Physics 2H03 or Chemistry 2P06; Physics 3M03, 3MM3; Physics 3G03 or 3S03; Mathematics 3C03 and 3D03.

E 3 to 6 units; Geology 3A03 or 3B03 is strongly recommended.

Level IV: 31-34 units

R Geology 3S03 or 3F03; 4J03, 4T03; Physics 4B04, 4K03; one of Physics 3G03 or 3S03, whichever not already completed; 6 units from Level III and IV Geology and Physics.

E 6 to 9 units. Geology 3A03 or 3B03 is strongly recommended.

GEOLOGY MAJOR

Admission:

Completion of **Natural Sciences I**, including one of Geology 1A03, 1C03 or Environmental Science 1A06, Mathematics 1A06 or 1C06, Chemistry 1A06, and one of Physics 1A06, 1B06, or 1C06. A weighted average of at least 5.0 must be obtained in Geology 1A03, 1C03 or Environmental Science 1A06 and 9 to 12 units of the other courses listed.

Programme Notes:

1. Geology 3E02 is normally taken at the end of Level II, and is scheduled outside of the regular term.
2. The description of the calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section in this calendar.
3. 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.

Area Courses:

All Level II, III and IV Geology courses except Geology 2E01 and 3E02.

Level II: 31 units

R Geology 2B06, 2C03, 2D03, 2E01, and Geology 2I03 or 2J03.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
Humanities 2C03 or Mathematics 2E03.

E 6 units excluding Geology.

Level III: 32 units (*Last offered in 1992-93*)

R Geology 3CC6, 3DD3, 3E02, 3F03, 3G03, 3J03, 3Q03.

E 3 units excluding Geology; 6 units. Geology 3S03 must be completed in Level III or IV. Chemistry 2W03 and Materials 3D03 are recommended.

Level III: 29 units (*Beginning in 1993-94*)

R Geology 3E02 and 12 units from Level III and IV Geology courses.
6 units from Business, Humanities and Social Science.

E 6 units excluding Geology.

3 units.

Level IV: 30 units (*Last offered in 1993-94*)

R Geology 4T03; 9 units from Level IV Geology courses; Geology 3S03, if not completed.

E 3 units excluding Geology; 12 to 15 units.

Level IV: 30 units (*Beginning in 1994-95*)

R 15 units from Level III and IV Geology courses.

6 units from Science Inquiry.

6 units from Level III and IV courses excluding Geology.

E 3 units.

GEOLOGY AND PHYSICS MAJOR

Admission:

Completion of **Natural Sciences I**, including one of Geology 1A03, 1C03 or Environmental Science 1A06, Physics 1A06, Chemistry 1A06, Mathematics 1A06 and 1B03. A grade of at least C must be obtained in each of Geology 1A03, 1C03 or Environmental Science 1A06 and

Physics 1A06. Students will also be considered for admission if they have completed Physics 1B06, or 1C06; however, Physics 1A06 is strongly recommended.

Programme Note:

Geology 3E02 is normally taken at the end of Level II and is scheduled outside of the regular term.

Area Courses:

All Level II, III and IV Geology courses except Geology 2E01 and 3E02; Physics 2B06, 2G03, and all Levels III and IV Physics courses.

Level II: 34 units

R Geology 2B06, 2C03, 2D03, 2E01, 2I03; Physics 2B06, 2G03; Mathematics 2G03, 2O03.

E 3 units excluding Physics and Geology. Computer Science 1MA3 is strongly recommended.

Level III: 32 units

R Geology 3CC6, 3E02; Physics 2H03 or Chemistry 2P06; Physics 3O03; Physics 3G03 or 3S03; 6 units from Geology and Physics.

E 6 to 9 units. Geology 3A03 or 3B03 is strongly recommended.

Level IV: 30 units

R One of Geology 3A03, 3B03 or 4J03; 3S03 or 3F03; 4T03; one of Physics 3G03 or 3S03, whichever not already completed; 9 units from Level III and IV Geology and Physics, of which 6 units must be Level III or IV Physics.

E 9 units.

B.Sc. IN GEOLOGY

Programme Note:

Geology 3E02 is normally taken at the end of Level II and is scheduled outside of the regular term.

Area Courses:

All Level II, III and IV Geology courses except Geology 2E01 and 3E02.

Level III: 29 units (Last offered in 1992-93)

R Geology 3CC6, 3DD3; 3J03 or 3G03; 3S03 or 3F03; 3E02.

E 12 units, 6 of which may not be from Geology. Geology 3J03 or 3G03, whichever not already completed as an R-group course is strongly recommended.

Note: Level II of the B.Sc. in Geology programme will not be offered after August 1992. For those interested in a three-level programme with a Geology orientation, please see the **B.Sc. in Earth Science** which is listed under the heading *Science* in this Programmes section.

Materials Science and Engineering

HONOURS MATERIALS SCIENCE

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 and 1B03, Chemistry 1A06, Physics 1A06 with a weighted average of at least 7.0 in Chemistry 1A06 and one of Mathematics 1A06, 1B03, or Physics 1A06.

Programme Notes:

1. Attention is drawn to Materials 4A01, which requires a report based on employment in the summer between Levels III and IV.
2. Statistics 2M03 or 2MA3 will be included in calculating the Graduation Average.

Area Courses:

All Ceramics, Materials and Metallurgy courses; Chemistry 2P06; Engineering 3Q03, and 4J03; Mathematics 2A06, 2C03, 2G03, and 2O03; Chemical Engineering 3Q03; Engineering Physics 3E03, 4F03, 4Z03; Mechanical Engineering 3O04; Physics 4K03; Statistics 2MA3, 2M03, 3N03.

Levels II: 32 to 35 units

R Chemistry 2P06; Computer Science 1MA3 (if not completed); Mathematics 2G03, 2O03; Engineering 2P04 or 2R04; Materials 2C04, 2G04, 2H02; Physics 2B06.

Level III: 32 units

R Materials 3D06, 3E06, 3F02; Ceramics 3G03 or Materials 3G03 or Metallurgy 3G03; Mathematics 3C03, 3D03; Chemistry 3B03 or both Physics 3M03 and 3MM3.

E 3 to 6 units.

Level IV: 30 units

R Materials 4A01, 4E03, 4K04, 4L04; 12 units from Level III and IV Area courses and Statistics 2MA3.

E 6 units excluding Ceramics, Chemistry, Computer Science, Engineering, Engineering Physics, Mathematics, Materials, Metallurgy, Physics, Statistics.

MATERIALS SCIENCE MAJOR

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 or 1AA6, 1B03, and Chemistry 1A06 with a weighted average of at least 5.0 in Mathematics 1A06 or 1AA6 and Chemistry 1A06. Computer Science 1MA3 and Physics 1A06 must be completed before the end of Level II, their election in Level I is strongly recommended.

Programme Notes:

1. Attention is drawn to Materials 4A01, which requires a report based on employment in the summer between Levels III and IV.
2. Statistics 2MA3 or 2M03 will be used in calculating the Graduation Average. The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section in this calendar.

Area Courses:

All Ceramics, Materials and Metallurgy courses; Chemistry 2P06; Engineering 3Q03 and 4J03; Mathematics 2G03 and 2O03; Chemical Engineering 3Q03; Engineering Physics 3E03, 4F03, 4Z03; Mechanical Engineering 3O04; Physics 4K03; Statistics 2MA3, 2M03, 3N03.

Levels II: 31 units

R Chemistry 2P06; Mathematics 2G03, 2O03; Materials 2C04, 2G04, 2H02; Physics 2B06 (if Physics 1A06 completed) or Physics 1A06; Computer Science 1MA3 (if not completed).

E 0 to 3 units.

Level III: 30 to 33 units

R Materials 3D06, 3E06, 3F02; Ceramics 3G03 or Materials 3G03 or Metallurgy 3G03; Mathematics 3V06; Engineering 2P04 or 2R04; Physics 2B06 (if not completed).

E 0 to 6 units.

Level IV: 30 to 32 units

R Materials 3P03, 4A01, 4E03, 4L04.
9 units chosen from Level III and IV Area courses and Statistics 2MA3.

E 6 units excluding Ceramics, Chemistry, Computer Science, Engineering, Engineering Physics, Mathematics, Materials, Metallurgy, Physics or Statistics; 4 to 6 units.

Department of Mathematics and Statistics

HONOURS BIOLOGY AND MATHEMATICS

(See *Biology*)

HONOURS COMPUTER SCIENCE AND COMPUTER SCIENCE MAJOR AND B.SC. IN COMPUTER SCIENCE

(See *Computer Science and Systems*)

HONOURS COMPUTER SCIENCE AND MATHEMATICS, AND COMPUTER SCIENCE AND MATHEMATICS MAJOR

(See *Computer Science and Systems*)

HONOURS COMPUTER SCIENCE AND STATISTICS AND COMPUTER SCIENCE AND STATISTICS MAJOR

(See *Computer Science and Systems*)

FACULTY OF SCIENCE

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 AND SCIENCE AND MATHEMATICS (B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS ARTS AND SCIENCE AND STATISTICS

(See *Arts and Science Programme*)

Programme Note:

If courses are chosen carefully, a student upon completion of Level II may satisfy the requirements for a related programme. Such students may request transfer to the other programme. For example, students may wish to transfer from Honours Computer Science to Honours Statistics, or from Honours Mathematics to Honours Computer Science and Mathematics.

HONOURS MATHEMATICS

Admission:

Completion of **any Level I** programme, with a weighted average of at least 7.0 in Mathematics 1A06 or 1AA6 and 1B03, and 6 units acceptable to the Department of Mathematics and Statistics. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Notes:

1. The Department of Mathematics and Statistics requires that all Honours students entering Level III or IV must have their programmes approved by the Chair or designate.
2. By electing Statistics 2D03 and Statistics 2MB3 in Level II of this programme, a student can also complete Level II Honours Statistics.

Area Courses:

Mathematics 2A06, 2B06, 2C03, 2E03, 2F03; Statistics 2D03, 2M03, 2MA3, 2MB3 and all Level III, IV Mathematics and Statistics courses.

Level II: 30 units

R Mathematics 2A06, 2B06, 2C03; 6 units from Area courses.

E 9 units.

Level III and IV: 60 units

R Mathematics 3A06, 3B03, 3E03, 3EE3, 4A06; 15 units from Level III and IV Area courses; 6 units from Area courses.

E 18 units.

HONOURS MATHEMATICS AND PHYSICS

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 or 1AA6 and 1B03; Physics 1A06 and Chemistry 1A06, with a weighted average of at least 7.0 in the Physics and Mathematics courses. It is also recommended that Computer Science 1MA3 be taken in Level I. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Note:

Students who complete Level II of Honours Mathematics and Physics are eligible to proceed to any Level III Honours programme in Mathematics or Physics.

Area Courses:

Mathematics 2A06, 2B06, 2C03, 2E03, 2F03; Statistics 2D03, 2MB3; all Level III and IV Mathematics and Statistics courses; Physics 2B06, 2C03, 2D03, 2H03; all Level III and IV Physics courses *except* Physics 3G03, 3S03, 3T03, 4R03 and 4T03; Computer Science 2MC3, 2MD3.

Level II: 33 units

R Mathematics 2A06, 2B06, 2C03; Physics 2B06, 2C03, 2D03, 2H03.

E 3 units

Levels III and IV: 61-62 units

R Mathematics 3A06, 3F03, 4A06; Physics 3C03, 3K04, 3M03, 3MM3, 4B04; 17 to 18 units from Area courses.

Note: Physics 3C03 is offered in alternate years.

E 12 units

HONOURS STATISTICS

Admission:

Completion of **any Level I** programme, with a weighted average of at least 7.0 in Mathematics 1A06 or 1AA6 and 1B03, and 6 units acceptable to the Department of Mathematics and Statistics. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, but Mathematics 1A06 or 1AA6 is strongly recommended.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2SB3, 3IA3, 3SC3; Mathematics 2A06, 2B06, 2C03, 2E03, 3A06, 3E03, 3EE3, 3F03, 3FF3, 3O06, 3Q03, 3R03, 3S03, 3T03, 3W03, 3X03, 3Y03, 4A06, 4C03, 4G03, 4J03, 4K03, 4Q03, 4QQ3, 4RR3, 4W03; Statistics 2D03, 2MB3 and all Level III and IV Statistics courses.

Level II: 30 units

R Mathematics 2A06, 2B06, 2C03; Statistics 2D03 and Statistics 2M03, 2MB3.

E 9 units.

Levels III and IV: 60 units

R Mathematics 3A06 or 3O06, 3T03; Statistics 3D06, 4M03; 9 units from Statistics Area courses; 9 units from Level III and IV Area Courses; 6 from Area Courses.

E 18 units.

MATHEMATICS MAJOR

Admission:

Completion of **any Level I** programme, with an average of at least 5.0 in Mathematics 1A06 or 1AA6 and 1B03, and 6 units acceptable to the Department of Mathematics and Statistics. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, instead of Mathematics 1A06, but Mathematics 1A06 or 1AA6 is strongly recommended.

Students with a weighted average of at least 10.0 in Mathematics 2G03, 2J06 and 2O03 in Level II Mathematics Major may be permitted to transfer to Honours Mathematics in Level III.

Programme Notes:

1. The calculation of the Graduation average is described in the *Faculty of Science, Academic Regulations* section of this calendar.
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.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MJ3, 2SB3; Mathematics 2E03, 2G03, 2J06, 2K03, 2O03; Statistics 2D03, 2M03, 2MB3; all Levels III and IV Mathematics and Statistics courses.

Level II: 30 units

R Mathematics 2G03, 2J06, 2O03, Statistics 2D03.

6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
Humanities 2C03 or Mathematics 2E03.

E 6 units excluding Mathematics and Statistics.

Levels III and IV : 60 units (Level IV Last offered in 1993-94)

R Mathematics 3O06, 3T03, and 6 units from Mathematics 3B03, 3E03, 3F03, 3H03; 21 units from Level III and IV Area courses.

E 6 units excluding Mathematics and Statistics; 18 units.

Level III: 30 units (Beginning in 1993-94)

R 9 units from Mathematics 3B03, 3E03, 3F03, 3H03, 3O03, 3T03.
6 units from Level III and IV Mathematics and Statistics courses.
6 units from Business, Humanities and Social Sciences.

E 6 units excluding Mathematics and Statistics; 3 units.

Level IV: 30 units (Beginning in 1994-95)

R 6 additional units from Mathematics 3B03, 3E03, 3F03, 3H03, 3O06, 3T03.

9 units from Level III and IV Mathematics and Statistics courses.

6 units from Science Inquiry.

6 units from Level III and IV courses excluding Mathematics and Statistics.

E 3 units.

STATISTICS MAJOR**Admission:**

Completion of **any Level I** programme, with an average of at least 5.0 in Mathematics 1A06 or 1AA6 and 1B03, and 6 units acceptable to the Department of Mathematics and Statistics. Students will be considered for admission if they have completed Mathematics 1B03 and 1C06, instead of Mathematics 1A06, but Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Notes:

1. The calculation of the Graduation average is described in the *Faculty of Science: Academic Regulations* section of this calendar.
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.

Area Courses:

Computer Science 2MC3, 2ME3, 2MG3, 2SB3, 3CA3, 3MG3, 3SD3, 4EC3; Mathematics 2E03, 2G03, 2J06, 2K03, 2O03, 3O06, 3Q03, 3R03, 3S03, 3T03, 3X03, 3Y03, 4C03, 4C04, 4G03, 4J03, 4Q03, 4QQ3, 4RR3, 4W03; Statistics 2D03, 2M03, 2MB3; all Level III and IV Statistics courses.

Level II: 30 units

- R Mathematics 2G03, 2J06; Statistics 2D03, 2MB3.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
Humanities 2C03 or Mathematics 2E03.

- E 6 units excluding Mathematics and Statistics.

Levels III and IV: 60 units (Level IV Last offered in 1993-94)

- R Mathematics 3O06, 3T03; Statistics 3D06 and 2MB3 (if 2M03 not completed); 12 units from Level III and IV Statistics Area courses, 9 units from Level III and IV Area courses.

- E Electives to make a total of 60 units at least 6 of which must not be from Mathematics and Statistics.

Level III: 30 units (Beginning in 1993-94)

- R Mathematics 3T03; Statistics 3D06.
6 units from Level III and IV Mathematics and Statistics courses.
6 units from Business, Humanities and Social Sciences.

- E 6 units excluding Mathematics and Statistics; 3 units.

Level IV: 30 units (Beginning in 1994-95)

- R 12 units from Level III and IV Statistics courses.
3 units from Level III and IV Mathematics and Statistics courses.
6 units from Science Inquiry.
6 units from Level III and IV courses excluding Mathematics and Statistics.

- E 3 units.

B.Sc. IN MATHEMATICS**Area Courses:**

Mathematics 2E03, 2G03, 2J06, 2K03, 2O03; Computer Science 2ME3, 2SB3, 3SC3; Statistics 2D03, 2M03; all Level III Mathematics and Statistics courses.

Level II and III: 60 units (Level III Last offered in 1992-93)

- R Mathematics 2G06, 2J06, 2O03, 3O06; one of Mathematics 3B03, 3E03, 3T03; 6 units of Area courses.

- E Electives to make a total of 60 units, at least 12 units of which must not be from the Department of Mathematics and Statistics.

Note: Level II of the B.Sc. in Mathematics programme will not be offered after August 1992. For those interested in a three-level programme with a Mathematics orientation, please see the **B.Sc. in Mathematical Science** which is listed under the heading Science in this Programmes section.

Molecular Biology and Biotechnology

HONOURS MOLECULAR BIOLOGY AND BIOTECHNOLOGY

This Honours degree programme is administered within the Faculty of

Science, jointly by the Departments of Biochemistry and Biology, through a Committee of Instruction and also draws on the Department of Pathology and the McMaster Institute for Molecular Biology and Biotechnology. Information and counselling may be obtained from the Departments of Biology and Biochemistry or the Programme Co-ordinator.

Admission:

Completion of **Natural Sciences I** including Biology 1A06, Chemistry 1A06, one of Physics 1A06, 1B06, or 1C06, with at least a B- in Biology 1A06, Chemistry 1A06, and in one of Mathematics 1A06, 1C06, Physics 1A06, 1B06, 1C06. The inclusion of Computer Science 1MA3 or 1ZA3 in Level I is strongly recommended.

Programme Note:

Level IV programme registrations must be approved by the Programme Co-ordinator for Molecular Biology and Biotechnology.

Area Courses:

Biochemistry 2A03, 2A06, 3A06, 3A03, 3AA3, 3B03, 3C03, 3G06, 3L03, 4B06, 4D03, 4E03, 4G03, 4I03, 4M03, 4P03, 4Q03; Biology 2B03, 2C03, 2D03, 2E03, 3BB3, 3E03, 3EE3, 3H03, 3HH3, 3I03, 3NN3, 3O03, 3V03, 4B03, 4C08, 4C09, 4F04, 4F06, 4I03, 4II3, 4M03, 4R03, 4V03; Chemistry 2B06, 2N03, 2O06, 2Q06, 2R03, 3D03, 3F03; Molecular Biology 3A06, 4A03, 4B03, 4C03, 4D03, 4E03, 4F03, 4H03.

Level II: 30 units

- R Biochemistry 2A06; Biology 2B03, 2C03; Chemistry 2O06, 2R03; Computer Science 1ZA3 (or 1MA3) if not completed; one of Biology 2D03, 2E03, Chemistry 2N03.

- E 3 to 6 units. Biology 2D03, 2E03, Chemistry 2N03 are recommended if not taken in the R group.

Level III: 30 units

- R Biochemistry 3A06 or both 3A03 and 3AA3, Biochemistry 3L03; Biology 3H03, 3NN3, 3O03, 3V03; Chemistry 3F03.

- E 6 units.

Level IV: 30 units

- R Either Biochemistry 4G03 and Biochemistry 4P03, or one of Biology 4F06, Biochemistry 4B06, Biology 4C09; Biochemistry 4D03 and 4E03; Biology 4M03; 9 units chosen from Biochemistry 4I03, 4M03, 4Q03, Biology 4H03, 4I03, 4II3, 4V03, Molecular Biology 4F03, 4H03.

Students who have opted in either Biochemistry 4B06 or Biology 4F06 or 4C09 for a topic which is outside the Molecular Biology discipline will be required to take Biochemistry 4G03.

- E 3 to 6 units.

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 AND SCIENCE AND PHYSICS (B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS APPLIED PHYSICS**Admission:**

Completion of **Level II Honours Physics** or **Level II Honours Mathematics and Physics**.

Area Courses:

Applicable Level II Area courses; Physics 3B06, 3H04, 3M03, 3MM3, 3M06, 4A02, 4A03, 4B04, 4D06, 4J04; Mathematics 3C03, 3D03; Engineering Physics 3W04.

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Level III: 34-35 units

R Physics 3B06, 3H04, 3M03, 3MM3, 3N03; Mathematics 3C03, 3D03; Computer Engineering 2HA3 (if not completed).

E 6 to 10 units.

Level IV: 33-35 units

R Physics 4A03, 4B04, 4D06, 4J04; Engineering Physics 3W04; 6 to 8 units from Level III and IV Physics and Engineering Physics.

E 6 units.

HONOURS APPLIED PHYSICS (MEDICAL AND HEALTH OPTION)

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 or 1AA6 and 1B03, Physics 1A06, Chemistry 1A06, and one of Biology 1A06, Computer Science 1MA3, with a weighted average of at least 7.0 in the Physics and Mathematics courses. Students will also be considered for admission if they have completed Physics 1B06 or 1C06, instead of 1A06. However, Physics 1A06 is strongly recommended. It is also recommended that Computer Science 1MA3 be taken in Natural Sciences I. Students will also be considered for admission (to Level II) if they have completed Mathematics 1B03 and 1C06. However, Mathematics 1A06 or 1AA6 is strongly recommended.

Area Courses:

Physics 2B06, 2C03, 2C05, 2D03, 2H03, 3H04, 3M03, 3MM3, 3M06, 3T03, 4A02, 4A03, 4B04, 4D06, 4E03, 4Q04, 4R03, 4T03; Mathematics 2A06, 3C03, 3D03; Biology 3Q03.

Level II: 33-36 units

R Physics 2B06, 2C03, 2D03, 2H03; Mathematics 2A06, 2C03; Computer Science 1MA3 (if not completed), and Biology 1A06 (if not completed).

E 3 to 12 units. Chemistry 2D03, Computer Science 1MB3, 2SB3 are strongly recommended.

Level III: 31-34 units

R Physics 3H04, 3M03, 3MM3, 3T03; Mathematics 3C03, 3D03, 3Q03; Biology 3Q03; Computer Engineering 2HA3.

E 3 to 6 units. Chemistry 2C03 is strongly recommended.

Level IV: 36 units

R Physics 4A03, 4B04, 4D06, 4E03, 4Q04, 4R03, 4T03; Engineering Physics 3W04; one of Engineering Physics 3X03 or Engineering 4X03. The project of Physics 4Q04 must be taken in the field of Medical and Health Physics.

E 3 units.

HONOURS PHYSICS

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 or 1AA6 and 1B03, Physics 1A06 and Chemistry 1A06, with a weighted average of at least 7.0 in the Physics and Mathematics courses. Students will also be considered for admission if they have completed Physics 1B06 or 1C06, instead of 1A06. However, Physics 1A06 is strongly recommended. It is also recommended that Computer Science 1MA3 be taken in Natural Sciences I. Students will also be considered for admission (to Level II) if they have completed Mathematics 1B03 and 1C06. However, Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Note:

Students who have completed Level II of Honours Physics are eligible to proceed to Level III of Honours Physics, Honours Physics (Theory Option) and Honours Applied Physics. They may also be considered for admission to Level III of Honours Materials Science, preferably if Materials 1A06 or 1A03 and 1B03, or Engineering 2003, has been completed in Level II.

Area Courses:

Physics 2B06, 2C03, 2C05, 2D03, 2H03, 3A03, 3B06, 3C03, 3H04, 3K04, 3M03, 3MM3, 3M06, 3N03, 3X03, 3Y03, 4A02, 4A03, 4B04, 4C03, 4D06, 4E03, 4F03, 4G03, 4J04, 4K03, 4U03; Mathematics 2A06, 3C03, 3D03.

Level II: 33 units

R Physics 2B06, 2C03, 2D03, 2H03; Mathematics 2A06, 2C03; Computer Science 1MA3 (if not completed).

NOTE: Students wishing to take Physics 4D06 in either Level III or IV must have completed Computer Engineering 2HA3. However, they are encouraged to take Computer Engineering 2HA3 in Level III and Physics 4D06 in Level IV.

E 6 units excluding Physics; 0 to 3 units.

Level III: 32-35 units

R Physics 3H04, 3K04, 3M03, 3MM3, 3N03; Mathematics 3C03, 3D03. At least one of Physics 3B06 or 4D06 must be completed in either Level III or 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.

NOTE: Students wishing to take Physics 4D06 in Level IV must take Computer Engineering 2HA3 (if not completed) in Level III.

E 9 to 12 units.

Level IV: 32-35 units

R Physics 4A03, 4B04, 4F03, 4J04; two of Physics 3A03, 3B06 or 4D06, 3C03, 3X03, 3Y03, 4C03, 4E03, 4K03, 4U03; 6 units from Level III and IV Science courses.

E 3 to 9 units.

HONOURS PHYSICS (THEORY OPTION)

Admission:

Completion of **Level II Honours Physics** or **Level II Honours Mathematics and Physics**.

Area Courses:

Applicable Level II Area courses; Mathematics 3C03, 3D03, 3Q03, 4O03, 4V03, Physics 3A03, 3C03, 3H04, 3K04, 3M03, 3MM3, 3N03, 3X03, 3Y03, 4A02, 4A03, 4B04, 4C03, 4E03, 4F03, 4G03, 4K03, 4Q04, 4U03.

Level III: 32-35 units

R Mathematics 3C03, 3D03, 3Q03; Physics 3C03 (if offered), 3H04, 3K04, 3M03, 3MM3, 3N03.

NOTE: Physics 3C03, which is offered in alternate years, must be taken in Level III or Level IV.

E 3 units excluding Physics and Engineering Physics; 3 to 6 units.

Level IV: 32-35 units

R Mathematics 4B03 or 4V03; Physics 3C03 (if 4C03 not completed), 4A03, 4B04, 4F03; 9 units from Physics 3A03, 3X03, 3Y03, 4E03, 4G03, 4K03, 4U03; 6 units from Level III from IV Science courses.

NOTE: Physics 3C03, which is offered in alternate years, must be taken in Level III or Level IV.

E 4 to 7 units.

PHYSICS MAJOR

Admission:

Completion of **Natural Sciences I**, including Chemistry 1A06, Mathematics 1A06 or 1AA6, and Physics 1A06 with a weighted average of at least 5.0 in Mathematics 1A06 or 1AA6, and Physics 1A06.

Mathematics 1B03 and Computer Science 1MA3 are required by the end of Level II, and are very strongly recommended in Level I.

Students will also be considered for admission if they have completed Mathematics 1C06 instead of 1A06 or 1AA6 but Mathematics 1A06 or 1AA6 is strongly recommended. Students will be considered for admission if they have completed Physics 1B06 or 1C06 instead of 1A06, but Physics 1A06 is strongly recommended.

Programme Notes:

1. The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section of this calendar.
2. Students selecting Physics 4D06 in Level IV must complete Computer Engineering 2HA3 in Level II or III. However, Computer Engineering 2HA3 is recommended in Level III.
3. Students should consider the courses listed under the Complementary Studies Requirements in the *Faculty of Science: Academic Regulations* section in this Calendar when choosing their electives.

Area Courses:

Physics 2B06, 2C03, 2D03, 2G03, 2H03 and all Level III and IV Physics courses; Mathematics 2G03, 2O03, 3C03; Engineering Physics 3D03, 3F03, 3W04, 4D03, 4E03, 4F03, 4G03, 4K03, 4N03, 4S04.

Level II: 30 units

R Physics 2B06, 2H03; *either* 2G03 *or* both 2C03 and 2D03; Mathematics 2G03, 2O03.

If not completed: Computer Science 1MA3 and Mathematics 1B03.

E 6 units excluding Physics; 0 to 6 units.

Level III: 31-32 units

R Physics 3H04; Mathematics 3C03.

12 to 13 units selected as follows:

either Physics 3M03, 3MM3 and Mathematics 3D03 or Physics 3O03 and 3Q03; additional units from Levels III and IV Physics courses. Humanities 2C03 or Mathematics 2E03.

E 6 units excluding Physics and Engineering Physics; 3 units.

Level IV: 30-32 units

R Physics 4A03, 4I04, and 3B06 or 4D06.

3 to 4 units from Level III and IV Physics courses.

6 units from Level III and IV Area courses.

E 8 to 9 units.

PHYSICS MAJOR (MEDICAL AND HEALTH OPTION)**Admission:**

Completion of **Natural Sciences I**, including Chemistry 1A06, Mathematics 1A06 or 1AA6, Physics 1A06 and one of Biology 1A06, Computer Science 1MA3, with a weighted average of at least 5.0 in Physics 1A06, Mathematics 1A06 or 1AA6, and Biology 1A06 or Computer Science 1MA3.

Mathematics 1B03, Biology 1A06 and Computer Science 1MA3 must be completed by the end of Level II, and are very strongly recommended in Level I.

Students will also be considered for admission if they have completed Physics 1B06 or 1C06, instead of 1A06. However, Physics 1A06 is strongly recommended. Students will also be considered for admission if they have completed Mathematics 1C06 instead of Mathematics 1A06 or 1AA6, but Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Note:

The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section of this Calendar.

Area Courses:

Physics 2B06, 2C03, 2D03, 2G03, 2H03 and all Levels III and IV Physics courses; Mathematics 2G03, 2O03, 3C03; Biology 3Q03; Engineering 4X03; Engineering Physics 3X03.

Level II: 30 units

R Physics 2B06, 2H03; *either* 2G03 *or* both 2C03 and 2D03; Mathematics 2G03, 2O03.

If not completed: Biology 1A06, Computer Science 1MA3 and Mathematics 1B03.

E Electives to make a total of 30 units. Chemistry 2D03, Computer Science 1MA3, 2SB3 are strongly recommended.

Level III: 31 units

R Physics 3H04, 3O03, 3Q03, 3T03; Mathematics 3C03; Biology 3Q03; Chemistry 2C03; Computer Engineering 2HA3.

E 6 units.

Level IV: 31-33 units

R Physics 4A03, 4D06, 4E03, 4Q04, 4R03, 4T03; one of Engineering Physics 3X03, Engineering 4X03. The project of 4Q04 must be taken in the field of Medical and Health Physics.

E 6 to 8 units.

B.Sc. IN PHYSICS**Area Courses:**

Physics 2B06, 2G03, 2H03 and all Levels III and IV Physics courses; Mathematics 2G03; Chemistry 2P06.

Level III: 29-31 units (Last offered in 1992-93)

R Physics 3H04, 3O03; 6 to 9 units of Levels III and IV Physics.

E 16 to 18 units, at least 6 of which must not be from Physics or Engineering Physics.

Note: Level II of the B.Sc. in Physics programme will not be offered after August 1992. For those interested in a three-level programme with a Physics orientation, please see the **B.Sc. in Physical Science** which is listed under the heading *Science* in this Programmes section.

Department of Psychology**HONOURS PSYCHOLOGY (B.A.), 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 AND SCIENCE AND PSYCHOLOGY

(B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS PSYCHOLOGY (B.Sc.)**Admission:**

Completion of **Natural Sciences I**, with a grade of at least B- in Psychology 1A06, and a grade of at least B- in 6 additional units of Biology, Chemistry, Physics, or Mathematics.

Programme Notes:

- At some time during the programme, the student must meet a laboratory requirement by completing one of Psychology 3C06, 3E03, 3L03 (formerly 2U03), 3QQ3, 3S03, 3V03, 4G03, or 4QQ3. *Enrolment in Psychology Laboratory courses is limited. Permission of the department is required by March 1.*
- Students who entered this programme **prior to September 1988**, must complete *either* Psychology 2E03 or 3W06. Students who entered this programme **since September 1988**, must complete Psychology 2E03.
- The electives taken during Levels III and IV must include a minimum of 6 units which are *not* Psychology.
- Students who are planning on graduate studies in Psychology and who meet the prerequisites should complete Psychology 4D06.

Area Courses:

Psychology 2E03, 2H03, 2R06, 2R03, 2RR3, 2T03; all Level III and IV Psychology courses.

Level II: 30 units

R Psychology 2E03, 2H03, 2R03, 2RR3, 2T03; one of English 1D06, 3A03; 9 units chosen from Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics and Physics courses.

E 0 to 3 units. Psychology 3L03 may be taken in Level II.

Level III: 30 units

R 18 units of Level III Psychology courses; 6 units chosen from Levels III and IV Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Statistics, and Physics courses.

E 6 units. (See *Programme Notes* above.)

Level IV: 30 units

R 18 units from Levels III and IV Psychology.

E 12 units. (See *Programme Notes* above.)

PSYCHOLOGY MAJOR (B.Sc.)**Admission:**

Completion of **Natural Sciences I** with at least a grade of C in Psychology 1A06 and in 6 additional units of Science courses.

FACULTY OF SCIENCE

Programme Notes:

1. The calculation of the Graduation Average is described in the *Faculty of Science: Academic Regulations* section of this Calendar.
2. At some time during the programme the student must meet a laboratory requirement by completing one of: Psychology 3C06, 3E03, 3L03 (formerly 2U03), 3QQ3, 3S03, 3V03, 4G03.
Enrolment in Psychology laboratory courses is limited. Permission of the Department is required by March 1.
3. 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.

Area Courses:

Psychology 2E03, 2H03, 2R06, 2R03, 2RR3, 2T03 and all Level III and IV Psychology courses *except* Psychology 3Z03 and 4D06.

Level II: 30 units

- R Psychology 2R03 and 2RR3.
6 units from Psychology 2E03, 2H03, 2T03.
3 units from Level II Psychology courses and Psychology 3L03.
English 1D06.
9 units from Science courses excluding Psychology.

Level III: 30 units (Last offered in 1992-93)

- R 12 units from Level III Psychology courses.
6 units from Business, Humanities and Social Sciences.
6 units from Level III and IV Science courses excluding Psychology.
6 units from Science courses excluding Psychology.

Level III: 30 units (Beginning in 1993-94)

- R 12 units from Level III Psychology courses.
6 units from the World History, Culture and Thought menu (see *Faculty of Science: World History, Culture and Thought Menu*).
6 units from Level III and IV Science courses excluding Psychology.
6 units from Science courses excluding Psychology.

Level IV: 30 units (Last offered in 1993-94)

- R 12 units Level III and IV Psychology courses.
6 units from Business, Humanities and Social Sciences.
12 units from Level III and IV Science courses excluding Psychology.

Level IV: 30 units (Beginning in 1994-95)

- R 12 units from Level III and IV Psychology.
12 units from Level III and IV Science courses excluding Psychology.
E 6 units.

B.Sc. IN PSYCHOLOGY

Programme Notes:

1. At some time during the programme, the student must meet a laboratory requirement by completing one of Psychology 3C06, 3E03, 3L03 (formerly 2U03), 3QQ3, 3S03, or 3V03.
Enrolment in Psychology laboratory courses is limited. Permission of the department is required by March 1.

Area Courses:

Psychology 2D06, 2E03, 2H03, 2R06, 2R03, 2RR3, 2T03; All Level III and IV Psychology courses.

Level III: 30 units (Last offered in 1992-93)

- R 12 units of Level III Psychology; 6 units beyond Level I chosen from Biochemistry, Biology, Chemistry, Mathematics and Statistics, Computer Science or Physics.
E 12 units, at least 6 of which must not be from Psychology.

Note: Level II of the B.Sc. in Psychology programme will not be offered after August 1992. For those interested in a three-level programme with a Psychology orientation, please see the **B.Sc. in Life Science** which is listed under the heading *Science* in this Programmes section.

Science

B.Sc. IN EARTH SCIENCE

The offering of this programme is contingent upon approval by the Ministry of Colleges and Universities.

Admission:

Completion of **Natural Sciences I** with a weighted average of at least 4.0 in 6 units of Environmental Science 1A06, Geography 1A06, 1C03, 1G03, Geology 1A03, 1C03.

Programme Notes:

1. Students wishing to choose a coherent set of courses in a single discipline should consider the courses required in the Major programmes in Geography and Geology.
2. Initial information on counselling for this programme may be obtained from the Department of Geology.
3. There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II programme.

Area Courses:

Geography 2F03, 2K03, 2LL3, 2NN3, 2T03, 2U03, 2W03, 3E03, 3F03, 3I03, 3K03, 3L03, 3M03, 3NN3, 3O03, 3P03, 3U03, 3V03, 3W03; and all Level II and III Geology courses except 2E01 and 3E02.

Level II: 30 units

- R 15 units from Level II Area courses.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
Humanities 2C03 or Mathematics 2E03.
E 3 units excluding Area courses; 3 units.

Level III: 30 units (Beginning in 1993-94)

- R 12 units from Level III Area courses.
3 units from Area courses.
6 units from Business, Humanities and Social Sciences.
E 6 units excluding Area courses; 3 units.

B.Sc. IN GENERAL SCIENCE

Admission:

Completion of **Natural Sciences I**, including Mathematics 1A06 or 1C06, and two of Chemistry 1A06, Physics 1A06, 1B06, 1C06 and either Biology 1A06 or Psychology 1A06 with an average of at least 4.0 in two of the specified courses. Chemistry 1A06, one of Physics 1A06, 1B06, 1C06, one of Biology 1A06 or Psychology 1A06, and one of Environmental Science 1A06, Geography 1A06, 1C03, 1G03, Geology 1A03, 1C03 must be completed by the end of Level II. The completion of all the requirements in Level I is strongly recommended.

Programme Notes:

1. Initial information on counselling for this programme may be obtained from the Department of Geology.
2. No more than 18 units of R-group courses may be taken in any one department; Mathematics and Statistics form one department.
3. No more than 24 units of the R- and E-group courses may be taken in any one department.
4. No more than 12 units of Level I courses may be taken in Levels II and III.
5. There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II programme.

Area Courses:

All Level II and III courses in Biochemistry, 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.

Level II: 30 units

- R 18 units from Level II Area courses.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
If not completed: Chemistry 1A06, one of Physics 1A06, 1B06, 1C06, one of Biology 1A06, Psychology 1A06 and one of Environmental Science 1A06, Geography 1A06, 1C03, 1G03, Geology 1A03, 1C03.
E 0 to 6 units.

Level III: 30 units

- R 12 units from Level III Area courses.
Humanities 2C03 or Mathematics 2E03.
6 units from Business, Humanities and Social Sciences.
- E 3 units excluding Area courses; 6 units.

B.SC. IN LIFE SCIENCE

The offering of this programme is contingent upon approval by the Ministry of Colleges and Universities.

Admission:

Completion of **Natural Sciences I** with a grade of at least C- in one of Biology 1A06 or Psychology 1A06.

Programme Notes:

- Students wishing to choose a coherent set of courses in a single discipline should consider the courses required in the Major programmes in Biochemistry, Biology and Psychology.
- Initial information on counselling for this programme may be obtained from the Department of Biology.
- There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II programme. Many Level III Psychology courses have as a prerequisite a statistics course offered by the Faculty of Science.
- Enrolment in Psychology laboratory courses is limited. Permission of the Psychology Department is required by March 1.

Area Courses:

All Level II and III Biochemistry and Biology courses; Chemistry 2D03, 2O06; Psychology 2E03, 2H03, 2R03, 2RR3, 2T03 and all Level III Psychology courses.

Level II: 30 units

- R 18 units from Level II Area courses.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
- E 6 units excluding Biochemistry, Biology and Psychology.

Level III: 30 units (Beginning in 1993-94)

- R 12 units from Level III Area courses.
Humanities 2C03 or Mathematics 2E03.
6 units from Business, Humanities and Social Sciences.
- E 3 units excluding Biochemistry, Biology and Psychology; 6 units.

B.SC. IN MATHEMATICAL SCIENCE**Admission: (For September 1992 only)**

Completion of of **Any Level I** Programme with a weighted average of at least 4.0 in Mathematics 1A06 or 1AA6 and either Mathematics 1B03 or both Computer Science 1MA3 and 1MB3. Mathematics 1B03, Computer Science 1MA3 and 1MB3 must be completed by the end of Level II.

Admission: (Beginning in September 1993)

Completion of **Any Level I** programme with a weighted average of at least 4.0 in Mathematics 1A06 or 1AA6, Computer Science 1MA3, and one of Computer Science 1MB3, Mathematics 1B03. Computer Science 1MB3 and Mathematics 1B03 must be completed by the end of Level II.

Students will also be considered for admission if they have completed Mathematics 1C06 instead of Mathematics 1A06 or 1AA6, but Mathematics 1A06 or 1AA6 is strongly recommended.

Programme Notes:

- Students wishing to choose a coherent set of courses in a single discipline should consider the courses required in the Major programmes in Computer Science, Mathematics and Statistics.
- Initial information on counselling for this programme may be obtained from the Department of Mathematics and Statistics.

- There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II programme.

Area Courses:

Computer Science 2MC3, 2MD3, 2ME3, 2MF3, 2MJ3, 2SB3; Mathematics 2E03, 2G03, 2J06, 2K03, 2O03; Statistics 2D03, 2MB3 and all Level III and IV Computer Science, Mathematics and Statistics courses.

Level II: 30 units

- R 15 units from Level II Area courses.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
3 units of Humanities 2C03 or Mathematics 2E03.
If not completed: Computer Science 1MA3, 1MB3, Mathematics 1B03.
- E 3 units excluding Computer Science, Mathematics and Statistics; 0 to 3 units.

Level III: 30 units (Beginning in 1993-94)

- R 12 units from Level III and IV Area courses.
3 units from Area courses.
6 units from Business, Humanities and Social Sciences.
- E 6 units excluding Computer Science, Mathematics and Statistics; 3 units.

B.SC. IN PHYSICAL SCIENCE**Admission:**

Completion of **Natural Sciences I** including Mathematics 1A06 or 1AA6 or 1C06 and two of Chemistry 1A06, Mathematics 1B03 or Physics 1A06 (1B06 or 1C06) with a grade of at least C- in one of Chemistry 1A06, Physics 1A06, 1B06, 1C06. Chemistry 1A06, Mathematics 1B03 and one of Physics 1A06, 1B06, 1C06 must be completed by the end of Level II. Chemistry 1A06, Mathematics 1B03, and one of Physics 1A06, 1B06 or 1C06 are very strongly recommended in Level I.

Programme Notes:

- Students wishing to choose a coherent set of courses in a single discipline should consider the courses required in the Major programmes in Chemistry, Materials Science and Physics.
- Initial information on counselling for this programme may be obtained from the Department of Physics.
- There are Level II prerequisites for many Level III courses. These should be considered when choosing your Level II programme.

Area Courses:

Chemistry 2A03, 2B06, 2C03, 2O06, 2P06, 3A03, 3B03, 3I03, 3Q03; Mathematics 2G03, 2N03, 2O03; Physics 2A03, 2B06, 2G03, 2H03 and all Level III Physics courses; Materials 2C04, 3D03, 3D06; Metallurgy 3C03.

Level II: 30 units

- R 18 units from Level II Area courses.
6 units from World History, Culture and Thought (see *Faculty of Science: World History, Culture and Thought Menu*).
If not completed: Chemistry 1A06, Mathematics 1B03 and one of Physics 1A06, 1B06, 1C06.
- E 0 to 6 units.

Level III: 30 units

- R 6 units from Level III Area courses.
6 units from Area courses.
Humanities 2C03 or Mathematics 2E03.
6 units from Business, Humanities and Social Sciences.
- E 3 units excluding Area courses; 6 units.

Faculty of Social Sciences

J.A. Johnson/M.A., Ph.D., Dean of Social Sciences
W.K. Whillier/B.A., Ph.D., Associate Dean (Studies)
E. Frank/M.A., Academic Assistant to the Dean
M. Foster/M.A., Student Advisor
J. Weston/B.A., Student Advisor
E. Moore/Programmes Co-ordinator

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, Labour Studies, Physical Education, 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.

PROGRAMMES:

The Faculty offers Bachelor of Arts, Honours Bachelor of Arts and Professional programmes. It also offers a B.A. Major programme in Psychology.

Level I Programmes

SOCIAL SCIENCES I: 30 units

Programme Notes:

1. Students registered in Hons. B.A. programmes in the Faculty of Social Sciences are required to complete 6 units of courses chosen from the World, History, Culture and Thought Menu (see Menu). It is recommended that this requirement be completed in Level I.
 2. Students registered in B.A. programmes in the Faculty of Social Sciences are required to complete 6 units of courses chosen from the Faculty of Humanities as stated above (Academic Regulations, Humanities requirement). It is recommended that this requirement be completed in Level I.
 3. Normally a student will take only 6 units of Level I work in any one discipline. In special circumstances a student may be permitted to take up to 12 units in one discipline.
- R 12 units from: Anthropology 1A03, 1L03, 1Z03, Canadian Studies 1A06; Economics 1A06; Geography 1A06 or 1C03 and 1G03, 1B06; Gerontology 1A06; Labour Studies 1A03, 1AA3; Political Science 1A06 or 1B03 and 1C03; Psychology 1A06; Religious Studies 1B06, 1D06, 1E06, 1F06, 1H03, 1I06; Sociology 1A06.
- E 18 units elective which may include Social Science courses.

PHYSICAL EDUCATION I: 31 UNITS

- R 19 Units: Physical Education 1A06, 1B03, 1E03, 1F03; Practicum: PR02 (Basic Gymnastics I), plus the McMaster Swimming Test (1S00) and Physical Education 1S01 (CPR/First Aid); Biology 1J03.
- E 12 units.

Honours Programmes:

The Honours (Specialist) programmes provide a richer 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. In many cases, students may combine work in two departments with a somewhat lesser degree of concentration in each field and be graduated with a Combined Honours Degree in two subjects. Students may also combine work in two departments and be graduated with an Honours Degree in one subject with a Minor in a second subject. A minor concentration consists of fewer units of work in a particular field than that

which is required for the Combined Honours degree. The Honours Gerontology degree is offered *only* in combination with another subject. The Faculty of Social Sciences is participating fully in helping interested students combine concentration in a social science area with concentration in Arts and Science, or any discipline in the Faculty of Humanities.

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 University's statement on *Academic Regulations* in this Calendar) must also fulfill the following breadth and skills requirements prescribed by the Faculty: at least 12 units of Level I Social Sciences courses; 6 units, not in the candidate's Honours subject(s) or minor subject, drawn from the World History, Culture, Thought menu; 6 units of Research Methods courses, in the candidate's Honours subject(s), prescribed by the Department(s); and 3 units of Informal Logic, Humanities 2C03. Honours Programmes in the Faculty of Social Sciences consist of a total of 120 units of work and include in the body of work prescribed by the Department(s) at least 3 units of the History of Thought of the candidate's Honours Social Science discipline(s) and 6 units of Inquiry and Honours seminar. *Students who have enrolled in an Honours programme in the Faculty of Social Sciences prior to September, 1991 may fulfill the requirements for the B.A. Honours Degree either by completing the work specified in the 1990-91 Undergraduate Calendar for that degree or by fulfilling the requirements specified in the 1991-92 Undergraduate Calendar.*

Honours (Specialist) Programmes: A specialist programme includes at least 48 and no more than 60 units of work beyond Level I, prescribed by a single department or programme.

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 in the two subjects.

All Combined Honours programmes must be approved by both Departments concerned as well as by the Associate Dean(s) (Studies). These programmes will normally include approximately 36 units of work beyond Level I in each Department (normally 12 units of work per Level in each).

Honours Programmes with a Minor in a Second Subject: Subject to possible timetable restrictions, and provided that the student meets the requirements for entry into both the Honours and the Minor components of the programme, a student may combine work in two departments in the Faculty of Social Sciences and be graduated with an Honours Degree in one subject with a Minor in a second subject.

All combined programmes involving a Minor must be approved by both Departments concerned as well as by the Associate Dean (Studies).

These programmes will normally include approximately 36 units of work beyond Level I prescribed by the student's Honours Department (normally 12 units of work per level) and 18 units of work beyond Level I prescribed by the student's Minor Department. (Note: Not all instructional units in the Faculty of Social Sciences offer a Minor concentration.)

Major Programme: For requirements of the Major programme see the University's statement on *Academic Regulations* in this calendar.

Combined BA/BSW (see *Faculty of Social Sciences, School of Social Work* section of this calendar)

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.

The B.S.W. Degree may be attained separately only by those who have already received one undergraduate degree.

B.P.E. Degree (see *Faculty of Social Sciences, Department of Physical Education* section of this calendar)

The Department of Physical Education offers a programme of studies leading to the B.P.E. Degree.

Bachelor of Arts Programmes: For requirements of Bachelor of Arts programmes see the University's Statement on *Academic Regulations* in this Calendar.

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.P.E. 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).

WORLD HISTORY, CULTURE, THOUGHT MENU

The Faculty of Social Sciences is committed to the principle of Liberal Studies, and requires that Social Science students obtain a broad knowledge of the cultural, philosophic and historical facts of the world around them.

Students enrolled in an Honours Programme in the Faculty of Social Sciences must successfully complete at least 6 units of work from this menu in a subject different from that of either their Honours or Minor area of concentration. *Students enrolled in Combined Honours involving programmes in both Social Sciences and Humanities or Social Sciences and Arts and Science are exempt from this requirement.*

Note: Many of these courses have prerequisites. It is the student's responsibility to ensure that these have been met.

Anthrop 2I03	History of Anthropology
Classics 1B06	Mythology and Literature of Greece and Rome
Classics 1L06	History and Archaeology of the Ancient World
Econ 2K03	Economic History of Canada
Econ 3R03	The International Economy Since 1945
History 1C06	The Modern World: The Era of European Primacy
History 1D06	The Civilization of the West
History 1L06	History of Archaeology of the Ancient World
History 2A06	Early Modern Europe: 1400 - 1715
History 2B06	China: from the Opium War to the Present
History 2H06	United States History
History 2I06	Europe in the Middle Ages
History 2J06	The History of Canada
History 2K06	The History of Science
History 2L06	The History of Greece and Rome
History 2M06	European Society from Absolutism to Democracy
Philos 1B06	Philosophy and Society
Philos 1D06	Problems in Philosophy
Philos 2A06	Ancient Greek Philosophy
Philos 2C06	Descartes to Hume
Pol Sci 2O06	Introduction to Political Theory
Relig St 1B06	World Religions
Relig St 1E06	Ideas of Love
Relig St 1I06	Religious Themes in Modern Literature
Relig St 2D06	The Biblical World: An Introduction to the Background of the Old Testament
Relig St 2E06	Introduction to the Study of the New Testament
Relig St 2FF6	History of Ancient Judaism
Relig St. 2G06	Religion and the Culture of the Twentieth Century
Relig St 2II3	Christianity in the Patristic Period (100-800)

Relig St 2J06	India: Its Culture, Social History, Religion and Philosophy
Relig St 2JJ3	Christianity in the Medieval Period (800-1500)
Relig St 2KK3	Christianity in the 16th Century
Relig St 2LL3	Christianity after 1600
Relig St 2MM6	East Asia: Religion and Thought
Relig St 2P06	Japanese Civilization
Relig St 2PP3	Indian Philosophy
Relig St 2R06	Divine Justice
Relig St 3MM3	Scepticism, Atheism, and Religious Faith
Relig St 3NN3	The Encounter of Science and Religion
Relig St 3U03	The Buddhist Tradition in India and South-East Asia
Relig St 3UU3	The Buddhist Tradition in East Asia
Sociol 2S06	Introduction to Sociological Theory

INFORMAL LOGIC

Students enrolled in an Honours Programme in the Faculty of Social Sciences must successfully complete 3 units of work. *Students enrolled in Combined Honours involving programmes in both Social Sciences and Arts and Sciences are exempt from this requirement.*

Humanities 2C03 Critical Thinking

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 Re-Admission

Students from other Faculties are able to transfer to degree programmes offered by the Faculty of Social Sciences provided that they have obtained a University Average of at least 4.0 and have completed the necessary programme 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 Without Permission* may apply for re-admission. Application for re-admission must be made in writing to 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 re-admission application are the same as application deadlines for admission to the University. *See Sessional Dates.* Re-admission 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.

Re-admission is not automatic or guaranteed.

In the case of students who have been Required to Withdraw, re-admission will not normally be considered for a session beginning within 12 months of the withdrawal date.

Decisions on requests for transfer and requests for re-admission will be made after July 15 for entry or re-entry in September.

Humanities Requirements

Students registered in B.A. programmes in the Faculty of Social Sciences, are required to complete 6 units of courses chosen from the Faculty of Humanities before graduation, preferably before Level II.

Students registered in the B.A., B.A. (Major) in Psychology or B.A. programme in Economics will fulfill this requirement by completing the English requirement for their programme. Students in the B.A. and B.A. (Major) Psychology programmes should note the additional Science or Humanities requirements for those programmes.

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

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under *Application Procedures and Sessional Dates* 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 *Sessional Dates*.

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 identity 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 Physical Education and Social Work available for undergraduate credit

Several courses offered by the Department of Physical Education and the School of Social Work may be taken by students in other programmes as electives for undergraduate credit. Enrollment in these courses requires written permission of the instructor. These courses are:

Physical Education 3J03, 3P03, 3Q03, 3SS3, 4E03, 4J03, 4L03, 4M03, 4Q03

Social Work 3C03, 3G03, 3H03, 3J03, 4J03, 4M03, 4Z03. **All other courses in Social Work and Physical Education are open only to students registered in those programmes.**

Letters 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 McMaster averages, 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 Letter of Permission.

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 *Course Listings* by department in the Calendar).

Cultural/Social Anthropology:

Anthropology 2B03, 2F03, 2H03, 2I03, 2KK3, 2P03, 2Q03, 2R03, 2S03, 2X03, 2Z03, 3A03, 3B03, 3D03, 3F03, 3G03, 3J03, 3JJ6, 3L03, 3P03, 3Q03, 3S03, 3T03, 3V03, 3Z03, 3ZZ3, 4A03, 4D03, 4I03, 4N03, 4Y03.

Physical/Biological Anthropology:

Anthropology 2DD3, 2E03, 2FF3, 2JJ3, 2U03, 3C03, 3N03, 3NN3, 3Z03, 3ZZ3, 4C03, 4J03, 4R03 (relevant courses are also offered by Biology and Physical Education).

Archaeology:

Anthropology 2O03, 2PA3, 2V03, 3AS3, 3E03, 3EE3, 3K03, 3NP3, 3U03, 4F03, 4H03, 4HF3, 4PI3, 4U03 (relevant courses are also offered by History and Classics).

Linguistics:

Anthropology 2AA3, 2AL3, 2L03, 2LL3, 2M03, 2Q03, 3AL3, 3I03, 3M03, 3PL3, 3Y03, 4BL3, 4K03, 4L03, 4T03.

Other courses:

Courses not distinguished by subfield include the reading courses 2Y03, 3W03, 3WW3, 4BB3, 4G03, 4GG3 as well as the seminar course 4B03.

In planning your programme, it is important to take note of the prerequisites of certain of the higher level courses.

HONOURS ARTS AND SCIENCE AND ANTHROPOLOGY

(B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS ANTHROPOLOGY (SPECIALIST)

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in six units drawn from Anthropology 1A03, 1L03 and/or 1Z03 and 6 other units, including a grade of at least B- in 6 units Level I Anthropology. Linguistics 1A06 may be substituted for Anthropology 1L03.

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Anthropology courses.

Graduation Average (G.A.):

is computed using at least 36 units of Levels II, III and IV Area courses.

Course Requirements: 120 units Total (Levels I-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)

54 units Anthropology 2E03, 2F03, 2I03, 2PA3, 2Q03; one of 3A03, 3B03, 3D03, 3F03; 4I03; and at least 9 additional units of Level IV Anthropology; 24 units Anthropology Area courses.

6 units Research Methods from the following list:

Statistics 1A03 or one of: Economics 2B03, Geography 2LL3, Political Science 2F06, Psychology 2G03, Psychology 2R03, Sociology 2Y03, Sociology 3H06 or Statistics 2R06.

If only 3 units are taken from the list above, an additional 3 units from Anthropology 2FF3, 2DD3, 2Z03, 3K03, 3P03 and 4L03 must be completed.

3 units Informal Logic: Humanities 2C03.

6 units Social Sciences I courses other than Anthropology 1A03, 1L03 and/or 1Z03. If requirement completed in Level I, these units can be added to electives.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these may be added to electives.

15 units Electives.

COMBINED HONOURS IN ANTHROPOLOGY AND ANOTHER SUBJECT

Admission:

Completion of any Level I programme with an average of at least 7.0 in six units drawn from Anthropology 1A03, 1L03 and/or 1Z03. Satisfaction of admission requirements for the Honours programme in the other B.A. subject. Linguistics 1A06 may be substituted for Anthropology 1L03.

PROGRAMME REQUIREMENTS:

Area Courses:

For the Anthropology component all Level II, III and IV Anthropology courses.

Graduation Average (G.A.):

Graduation Averages are computed separately for each component. The G.A. for the Anthropology component is computed on at least 24 units of Level II, III and IV Area courses. The G.A. for the other component is computed as specified by the other department.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of the grades obtained in Levels II, III and IV Area course in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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 *Admissions* above)

36 units Anthropology 2E03, 2F03, 2I03, 2PA3, 2Q03; one of 3A03, 3B03, 3D03, 3F03; 4I03, 3 additional units of Level IV Anthropology; 12 units Anthropology Area courses.

36 units Area courses for the other subject.

6 units Research Methods: 6 units from the following list:

Statistics 1A03 or one of: Economics 2B03, Geography 2LL3, Political Science 2F06, Psychology 2G03, Psychology 2R03, Sociology 2Y03, Sociology 3H06 or Statistics 2R06.

If only 3 units are taken from the list above, an additional 3 units from Anthropology 2DD3, 2FF3, 2Z03, 3K03, 3P03 and 4L03 must be completed.

or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the Other Subject.

3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Anthropology are exempt from this requirement.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). 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.

HONOURS ANTHROPOLOGY WITH A MINOR IN ANOTHER SOCIAL SCIENCES SUBJECT**Admission:**

Completion of **any Level I** programme with an average of at least 7.0 in six units drawn from Anthropology 1A03, 1L03 and/or 1Z03. Satisfaction of admission requirements in the minor subject (normally C- in 6 units Level I course(s)). Linguistics 1A06 may be substituted for Anthropology 1L03.

PROGRAMME REQUIREMENTS:**Area Courses:**

All Level II, III and IV Anthropology courses and Area courses in the minor subject.

Graduation Average (G.A.):

is computed using at least 36 units of Levels II, III and IV Area courses in Anthropology and in the minor subject.

Cumulative Area Average (C.A.A.):

is computed using the best 80% of all Level II, III, and IV Area courses in Anthropology and in the minor subject.

Course Requirements: 120 units Total (Levels I - 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)

36 units Anthropology 2E03, 2F03, 2I03, 2PA3, 2Q03; one of 3A03, 3B03, 3D03, 3F03; 4I03; 3 additional units of Level IV Anthropology; 12 units Anthropology Area courses.

18 units Area courses in the minor subject.

6 units Research Methods from the following list:

Statistics 1A03 or one of: Economics 2B03, Geography 2LL3, Political Science 2F06, Psychology 2G03, Psychology 2R03, Sociology 2Y03, Sociology 3H06 or Statistics 2R06.

If only 3 units are taken from the list above, an additional 3 units from Anthropology 2DD3, 2FF3, 2Z03, 3K03, 3P03 and 4L03 must be completed.

3 units Informal Logic: Humanities 2C03.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these may be added to electives.

21 units Electives.

MINOR IN ANTHROPOLOGY**Admission:**

Admission to any Social Sciences Honours programme and an average of at least C- (4.0) in six units drawn from Anthropology 1A03, 1L03 and/or 1Z03. Linguistics 1A06 may be substituted for Anthropology 1L03.

PROGRAMME REQUIREMENTS:**Area Courses:**

All Level II, III and IV Anthropology courses

Course Requirements:

18 units one of Anthropology 2E03, 2F03, 2PA3, 2Q03; 15 units Anthropology Area courses.

See Honours Subject with a Minor for additional requirements.

B.A. IN ANTHROPOLOGY**Admission:**

Completion of **any Level I** programme with an average of at least C- (4.0) in six units drawn from Anthropology 1A03, 1L03, and/or 1Z03. Linguistics 1A06 may be substituted for Anthropology 1L03.

PROGRAMME REQUIREMENTS:**Area Courses:**

All Level II, III and IV Anthropology courses.

Course Requirements: 90 units Total (Levels I-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)

24 units two of Anthropology 2E03, 2F03, 2PA3, 2Q03; 18 units Anthropology Area courses.

6 units Humanities (see *Faculty of Social Sciences: Academic Regulations*). If requirement completed in Level I, these units may be added to electives.

30 units Electives.

Department of Economics**HONOURS ARTS AND SCIENCE AND ECONOMICS (B. Arts Sc.)**
(See *Arts and Science Programme*)**HONOURS ECONOMICS (SPECIALIST)****Admission:**

Completion of **any Level I** programme with an average of at least 7.0 in Economics 1A06 and 6 additional units, including a grade of B- in Economics 1A06. Credit in OAC Calculus, or Mathematics 1K03, or equivalent.

PROGRAMME REQUIREMENTS:**Area Courses:**

All Level II, III and IV Economics courses.

Graduation Average (G.A.):

is computed using at least 36 units of Levels II, III and IV Area courses.

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Course Requirements: 120 units Total (Levels I - 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)
- 51 units Economics 2G03, 2GG3, 2H03, 2HH3, 3A03, 3AA3, 3F03, 3LL3, 4A03; one of Economics 2K03, 3I03, 3R03; 21 units Economics Area courses.
- 3-6 units Calculus drawn from Mathematics 1A06, 1C06, 1M03. If requirement completed in Level I, these units may be added to electives.
- 3 units Probability Theory: one of Mathematics 1L03, Statistics 1L03, Statistics 2D03. If requirement is completed in Level I these units may be added to electives.
- 6 units Research Methods: Economics 3006.
- 3 units Informal Logic: Humanities 2C03.
- 6 units Social Science I courses other than Economics 1A06. If requirement completed in Level I, these units may be added to electives.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these may be added to electives.
- 9-12 units Electives (the maximum Economics Area courses to be taken is 60 units.)

COMBINED HONOURS IN ECONOMICS WITH ANOTHER SUBJECT

Admission:

Completion of **any** Level I programme with a grade of B- in Economics 1A06. Credit in OAC Calculus, or Mathematics 1K03, or equivalent. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. One of Mathematics 1L03, Statistics 1L03, or Statistics 2D03 is a prerequisite for research methods courses offered by the Department of Economics.
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 Economics 3F03 and 4A03 with another 6 units Economics Area courses.

Area Courses:

for the Economics component all Level II, III and IV Economics courses.

Graduation Average (G.A.):

Graduation averages are computed separately for each component. The G.A. for the Economics component is computed on at least 24 units of Level II, III and IV Area courses. The G.A. for the other component is computed as specified by the other department.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of Levels II, III and IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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)
- 33 units Economics 2G03, 2GG3, 2H03, 2HH3, 3LL3; Economics 3F03 and 4A03 (see *Programme Note #2*) one of Economics 2K03, 3I03, 3R03; 9 units Economics Area Courses
- 36 units Area courses for the other subject
- 3-6 units Calculus drawn from Mathematics 1A06, 1M03 or equivalent. If requirement completed in Level I, these units may be added to electives.
- 6 units Research Methods: Economics 2B03 and 3U03 or Economics

3006 or in Combined programmes within the Faculty of Social Sciences, the Research Methods specified for the Other Subject. (see *Programme Note #1*)

- 3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Economics are exempt from this requirement.
- 6 units World History, Culture and Thought: (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). Students combining Economics 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.
- 0-3 units Electives.

HONOURS ECONOMICS AND COMPUTER SCIENCE

Admission:

Completion of **any** Level I programme, including Computer Science 1MA3 and 1MB3, and including a grade of at least 7.0 in Economics 1A06, and an average of at least 7.0 in Economics 1A06, Computer Science 1MB3, Mathematics 1A06 and Mathematics 1B03. Mathematics 1B03 may be postponed until Level II.

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Economics and Computer Science courses.

Graduation Average (G.A.):

A single G.A. is computed on at least 36 units of Level II, III and IV Economics and Computer Science courses.

Cumulative Area Average (C.A.A.):

A single C.A.A. is computed using the best 80% of all Level II, III, and IV Area courses in Economics and Computer Science.

Course Requirements: 120 units Total (Levels I-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)
- 36 units Economics 2G03, 2GG3, 2H03, 2HH3, 3LL3; 3F03 and 4A03; one of 2K03, 3I03, 3R03; 12 units Economics Area courses.
- 30 units Computer Science Area courses: 2MC3, 2MD3, 2MF3, 3MG3, 4MP6; two of Computer Science 3CA3, 3EA3, 3MI3, 3MH3; 6 units Computer Science Area courses. Computer Science 3EA3 is strongly recommended. Computer Science 2ME3, 4EB3, 4EC3 are recommended as preparation for Business Data Processing.
- 6-9 units Research Methods: Statistics 2D03; one of Statistics 2MB3 or 3D06 or Economics 3006.
- 3 units Informal Logic: Humanities 2C03.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 6-9 units Electives.

HONOURS ECONOMICS AND GEOGRAPHY

Admission:

Completion of **any** Level I programme with a grade of at least B- in each of Economics 1A06 and Geography 1B06. Credit in OAC Calculus, or Mathematics 1K03, or equivalent.

PROGRAMME REQUIREMENTS:

Programme Note:

One of Mathematics 1L03, Statistics 1L03 or Statistics 2D03 is a prerequisite for research methods courses offered by the Department of Economics (Economics 2B03 and 3O06).

Area Courses:

Geography 2A03, 2B03, 2LL3, 2NN3, 2R03, 2U03, 2Y03, 3G03, 3J03, 3L03, 3NN3, 3O03, 3Q03, 3T03, 3U03, 3X03, 4C06, 4F03, 4H03, 4J03, 4NN3, 4S03, 4T03, 4X03, 4Z03; all Level II, III and IV Economics courses.

Graduation Average (G.A.):

A single G.A. will be computed using at least 24 units of Economics Area courses (Levels II,III and IV) and at least 24 units of Level III and IV Geography courses.

Cumulative Area Average (C.A.A.):

A single C.A.A. will be computed using the best 80% of all Area courses.

Course Requirements: 120 units Total (Levels I-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)
- 33 units Economics 2G03, 2GG3, 2H03, 2HH3, 3LL3, one of 2K03, 3I03, 3R03; 15 units Economics Area courses.
- 33 units 9 units from Geography 2A03, 2B03, 2R03, 2Y03, 3O03, 3Q03; 6 units from Geography 3G03, 3T03, 3X03; Geography 4C06; 6 units of Level IV Area courses in Geography; 6 units Geography Area courses.
- 3-6 units Calculus drawn from Mathematics 1A06, 1C06 or 1M03. If requirement completed in Level I, these units may be added to electives.
- 6 units Research Methods: Economics 2B03 and 3U03; or Economics 3006; or Geography 2LL3 and 2NN3.
- 3 units Informal Logic: Humanities 2C03
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 3-6 units Electives.

HONOURS ECONOMICS AND MATHEMATICS

Admission:

Completion of **any Level I** programme, including a grade of at least B- in Economics 1A06 and an average of at least 7.0 in Mathematics 1A06 and 1B03.

Area Courses:

All Level II, III and IV Economics, Mathematics and Statistics courses.

Graduation Average (G.A.):

A single G.A. will be computed using all Level II, III and IV Economics Mathematics and Statistics courses.

Cumulative Area Average (C.A.A.):

A single C.A.A. will be computed using the best 80% of all Level II, III and IV Economics and Mathematics courses.

Course Requirements: 120 units Total (Levels I-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)
- 36 units Economics 2G03, 2GG3, 2H03, 2HH3, 3LL3; one of 2K03, 3I03, 3R03; Economics 3F03; 4A03; 12 units Economics Area courses.
- 36 units Mathematics 2A06 2B06, 2C03; one of 3A06 or 3O06; 15 units from Mathematics 3E03, 3EE3, 3F03, 3FF3, 3P03, 3Q03, 3R03, 3S03, 3T03, 4A06, 4C03, 4J03, 4K03, 4RR3, Statistics 3S03, 3U03, 4H03, 4K03, 4M03.
- 6-9 units Research Methods: Statistics 2D03; one of Statistics 2MB3, Statistics 3D06, or Economics 3006.
- 3 units Informal Logic: Humanities 2C03.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 3 units Electives.

HONOURS ECONOMICS WITH A MINOR IN ANOTHER SOCIAL SCIENCE SUBJECT

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in

Economics 1A06 and 6 additional units, including a grade of B- in Economics 1A06. Credit in OAC Calculus, or Math 1K03, or equivalent. Satisfaction of the admission requirements for the Minor subject (normally C- in 6 units Level I course(s)).

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Economics courses and Area courses in the minor subject.

Graduation Average (G.A.):

is computed using at least 36 units of Level II, III and IV Area courses in Economics and in the minor subject.

Cumulative Area Average (C.A.A.):

is computed using the best 80% of all Level II,III and IV area courses in Economics and in the minor subject.

Course Requirements: 120 units Total (Levels I-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)
- 33 units Economics 2G03, 2GG3, 2H03, 2HH3, 3LL3; one of Economics 2K03, 3I03, 3R03; Economics 3F03; Economics 4A03; 9 units Economics Area courses.
- 3-6 units Calculus drawn from Mathematics 1A06, 1C06 or 1M03. If requirement completed in Level I, these units may be added to electives.
- 3 units Probability Theory: one of Mathematics 1L03, Statistics 1L03, Statistics 2D03. If requirement is completed in Level I these units may be added to electives.
- 18 units Area courses in the minor subject.
- 6 units Research Methods: Economics 2B03 and 3U03; or 3006.
- 3 units Informal Logic: Humanities 2C03.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 15-18 units Electives (the maximum Economics Area courses to be taken is 60 units).

MINOR IN ECONOMICS

Admission:

Admission to any Social Sciences Honours programme and completion of Economics 1A06 with at least a C-. Credit in OAC Calculus or Mathematics 1K03 or equivalent.

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II,III and IV Economics courses.

Course Requirements:

18 units Economics 2G03 and Economics 2H03 and 12 additional units Economics Area courses.

See Honours Subject with a Minor for additional requirements.

B.A. IN ECONOMICS

Admission:

Completion of **any Level I** programme with a grade of at least C- in Economics 1A06. Credit in OAC Calculus, or Mathematics 1K03, or equivalent.

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Economics courses.

Course Requirements: 90 units Total (Levels I-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)
- 24 units Economics 2G03, 2H03; 2B03 or 3006; one of 2K03, 3I03, 3R03.

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9-12 units Economics Area courses.

6 units English 1D06 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 Calculus drawn from Mathematics 1A06, 1C06 or 1M03. If requirement completed in Level I, these units may be added to electives.

3 units One of Mathematics 1L03, Statistics 1L03 or Statistics 2D03. If requirement completed in Level I, these units may be added to electives.

21-24 units Electives (the maximum Economics Area courses to be taken is 36 units.)

Department of Geography

HONOURS GEOGRAPHY (B.Sc.) AND B.Sc. IN GEOGRAPHY AND HONOURS GEOGRAPHY AND GEOLOGY (B.Sc.)

(See B.Sc. Programmes in Geography, *Faculty of Science, Department of Geography*)

HONOURS ECONOMICS AND GEOGRAPHY (B.A.)

(See *Department of Economics*)

HONOURS HISTORY AND GEOGRAPHY (B.A.)

(See *Faculty of Humanities, Department of History*)

HONOURS ARTS AND SCIENCE AND GEOGRAPHY (B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS GEOGRAPHY (B.A., SPECIALIST)

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in 6 units of Level I Geography (and 6 other units), including a grade of at least B- in Level I Geography. One of Mathematics 1A06, 1C06 or 1M03 must be completed by the end of Level II. Its inclusion in the student's Level I programme is strongly recommended.

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Geography courses.

Graduation Average (G.A.):

is computed using at least 36 units of Levels III and IV Area courses.

Course Requirements: 120 units Total (Levels I-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)

48 units 12 units from Geography 2A03, 2B03, 2D03, 2F03, 2K03, 2R03, 2T03, 2U03, 2W03, 2Y03; Geography 3003 and 4C06; 9 additional units Level IV Geography; 18 units Level III and Level IV Area courses (excluding Geography 3JJ3, 3R03).

3-6 units Mathematics 1A06, 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: Geography 2LL3 and 2NN3.

3 units Informal Logic: Humanities 2C03.

6 units Social Science I course other than Geography. If requirement completed in Level I, these units may be added to electives.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

12 units Electives which must be outside Geography.

3-6 units Electives.

COMBINED HONOURS B.A. GEOGRAPHY AND ANOTHER SUBJECT

Admission:

Completion of **any Level I** programme with a grade of at least 7.0 in 6 units of Level I. Satisfaction of admission requirements for the Honours programme in the other B.A. subject. One of Mathematics 1A06, 1C06 or 1M03 must be completed by the end of Level II. Its inclusion in the student's Level I programme is strongly recommended.

PROGRAMME REQUIREMENTS:

Area Courses:

For the Geography component, all Level II, III and IV Geography courses.

Graduation Average (G.A.):

Graduation Averages are computed separately for each component. The G.A. for the Geography component is computed on at least 24 units of Level III and IV Area courses. The G.A. for the other component is computed as specified by the other academic unit.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of the grades obtained in Levels II, III and IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-IV), of which 48 units may be Level I courses.

30 units from the Level I programme completed prior to admission to the programme. (see *Admission* above)

30 units 6 units Level II Geography (excluding 2C03, 2E03, 2P03); 3O03 and 9 units Level III (excluding Geography 3B03, 3JJ3, 3R03); Geography 4C06 and 6 additional units Level IV (or 6 units of the thesis or Honours Seminar specified by the other department).

36 units Area courses for the other subject.

3-6 units Mathematics 1A06, 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: Geography 2LL3 and 2NN3 or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the other subject.

3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Geography are exempt from this requirement.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). 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 added to electives.

3-6 units Electives.

HONOURS GEOGRAPHY AND ENVIRONMENTAL STUDIES (B.A.)

Admission:

Completion of **Social Sciences I** including Mathematics 1K03 or 1M03, Economics 1A06, Environmental Sciences 1A06, Geography 1A06 or 1C03 and 1G03 with a grade of at least B- in all Level I Geography courses and in Environmental Science 1A06.

PROGRAMME REQUIREMENTS:

Area Courses:

Anthropology 2E03, 2F03, 2H03, 3C03, 3F03, 3V03, 3Z03, 4A03, 4C03; Biology 2D03, 2E03, 2F03, 3A06, 3SS3, 3TT3, 4D03, 4Y03; Economics 2G03, 3B03, 3C03, 3J06, 3V03, 3W03, 3Z03, 4E03, 4H03; Geography 2F03, 2K03, 2LL3, 2NN3, 2R03, 2T03, 2U03, 2W03, 3C03, 3F03, 3G03, 3J03, 3K03, 3L03, 3M03, 3NN3, 3P03, 3U03, 3V03, 4A03, 4D03, 4J03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4S03, 4T03, 4V06, 4W03; Philosophy 2G03, 3M03; Political Science 2E06, 2G06, 3S03, 3Z06, 4F06, 4G06, 4K06, 4O06; Sociology 2H06, 3G03, 3HH3, 3V03.

Graduation Average (G.A.):

is computed using at least 36 units of Levels III and IV Area courses.

Cumulative Area Average (C.A.A.):

is computed using the best 80% of all Level II, III and IV Area courses.

Course Requirements: 120 units Total (Levels I-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)

69 units Geography 2U03; Biology 2F03; Geography 3C03, 3E03, 3J03, 3O03, 3U03, 4C06, 4V06; 24 units Level II, III or IV Area courses; 12 units Level III or IV Area courses (at least 3 units of unspecified Area courses must be from Geography and at least 18 units may not be from Geography).

6 units Research Methods: Geography 2LL3 and 2NN3.

3 units Informal Logic: Humanities 2C03.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

6 units Electives.

Geology 1C03 is strongly recommended.

HONOURS GEOGRAPHY AND GEOLOGY (B.A.)

Admission:

Completion of **any Level I** programme with a grade of at least B- in both Geography 1A06 or 1C03 and 1G03 and Geology 1A03 or 1C03. Six units of Mathematics (either 1A06 or 1C06, or two of 1K03, 1L03, 1M03 or Statistics 1L03) which must be completed by the end of Level II. Their inclusion in the student's Level I programme is strongly recommended. Chemistry 1C03 must be completed by the end of Level II.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. Students wishing to enter this programme are to follow the procedures for admission to the Limited Enrolment Programme in Geology.
2. Geology 3E02 is normally taken at the end of Level II. This course is scheduled outside of the regular term.

Area Courses:

Geography 2F03, 2K03, 2LL3, 2NN3, 2T03, 2W03, 3E03, 3F03, 3I03, 3K03, 3L03, 3M03, 3NN3, 3O03, 3P03, 3V03, 3W03, 4A03, 4C06, 4D03, 4E03, 4KK3, 4NN3, 4P03, 4Q03, 4R03, 4W03; All Geology courses above Level I except Geology 2E01 and 3E02.

Graduation Average (G.A.):

a single G.A. will be computed using at least 36 units of all Level III and IV courses

Cumulative Area Average (C.A.A.):

a single C.A.A. will be computed using the best 80% of all Area courses.

Course Requirements: 123-126 units Total (Levels I-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)

63 units Geography 2T03; one of Geography 2F03, 2K03, 2U03, 2W03; Geology 2B06, 2C03, 2DD3, 2E01; Geography 3E03, 3M03, 3O03; one of 3F03, 3K03, 3NN3, 3P03, 3W03; Geology 3CC6, 3E02, 3S03, two of Geology 2J03, 2I03, 3DD3, 3F03; 6 units of Level IV Geography Area courses and 6 units of Level IV Geology Area courses; 3 units of Level III or IV Geography Area courses or Level III or IV Geology courses. 3 units Chemistry 1C03. If requirement completed in Level I, these units may be added to electives.

6 units Mathematics (1A06 or 1C06; or two of 1K03, 1L03, 1M03, or Statistics 1L03). If requirement completed in Level I, these units may be added to electives.

6 units Research Methods: Geography 2LL3 and 2NN3.

3 units Informal Logic: Humanities 2C03.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

6 units Electives.

HONOURS GEOGRAPHY WITH A MINOR IN ANOTHER SOCIAL SCIENCE SUBJECT

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in 6 units of Level I Geography and 6 additional units, including a grade of at least B- all in Level I Geography. Satisfaction of admission requirements in the Minor subject (normally C- in 6 units Level I course(s)). One of Mathematics 1A06, 1C06 or 1M03 must be completed by the end of Level II. Its inclusion in the student's Level I programme is strongly recommended.

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Geography courses and Area courses in the minor subject.

Graduation Average (G.A.):

is computed using at least 36 units of Level III and IV Area courses in Geography and in the minor subject.

Cumulative Area Average (C.A.A.):

is computed using the best 80% of all Level II, III and IV Area courses in Geography and in the minor subject.

Course Requirements: 120 units Total (Levels I-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)

33 units Geography 3O03; 4C06; 6 additional units of Level IV Geography; 18 units Geography Area courses. (excluding 2C03, 2E03, 2P03, 3IJ3, and 3R03).

18 units Area courses in the minor subject.

3-6 units Mathematics 1A06, 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: Geography 2LL3 and 2NN3.

3 units Informal Logic: Humanities 2C03.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

18 units Electives.

MINOR IN GEOGRAPHY

Admission:

Admission to any Social Sciences Honours programme and completion of 6 units of Level I Geography with at least a C- (4.0)

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Geography courses.

Course Requirements:

18 units Geography Area courses, no more than 6 of which may come from Geography 2C03, 2E03, 2P03, 3IJ3 and 3R03.

See other Honours subject with a Minor for additional requirements.

B.A. IN GEOGRAPHY

Admission:

Completion of **any Level I** programme with a grade of at least C- (4.0) in 6 units of all Level I Geography and 6 units of one other subject with a grade of at least C- (4.0).

PROGRAMME REQUIREMENTS:

Area Courses:

All Level II, III and IV Geography courses.

FACULTY OF SOCIAL SCIENCES

Course Requirements: 90 units Total (Levels I-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)

24 units 6 units from Geography 2A03, 2B03, 2D03, 2F03, 2K03, 2LL3, 2NN3, 2R03, 2T03, 2U03, 2W03, 2Y03; 6 additional units of Level II Geography; 6 units from Geography 3F03, 3G03, 3K03, 3M03, 3P03, 3NN3, 3Q03, 3T03, 3W03, 3X03; 6 additional units of Level III Geography.

6 units Humanities (see *Faculty of Social Sciences: Academic Regulations*). If requirement completed in Level I, these units may be added to electives.

30 units Electives. (The maximum Geography Area courses to be taken is 36 units).

Gerontological Studies

HONOURS ARTS AND SCIENCE AND GERONTOLOGY

(B. Arts Sc.)

(See *Arts and Science Programme*)

COMBINED HONOURS IN GERONTOLOGY AND ANOTHER SUBJECT

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in 12 units of Level I work, including a grade of at least B- in Gerontology 1A06 or Social Science 2G06, and satisfaction of admission requirements for the Honours B.A. programme in the other subject.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. Enrolment in programmes in Gerontology is limited.

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 15**. The Admissions Committee *may* wish to interview the applicants.

2. Students who have not taken Gerontology 1A06 or Social Science 2G06 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 those listed below as *Area Courses*, may qualify as Gerontology Area courses. Students wishing to designate an Area course not on the list of Gerontology Area courses must do so at registration, with the permission of the Chair of the Committee of Instruction.

4. Students should refer to the section *Course Listings* in this Calendar, and take note of the prerequisites for the Area courses.

5. Students in the Combined Honours Programme must consult both departments regarding completion of the Research Methods requirement.

Area Courses:

All Level II, III and IV Gerontology courses, and all designated Gerontology Area courses: Anthropology 3Z03; Economics 3D03, 3Z03; Geography 4S03; Health Sciences 3B04, 4C03, 4D03; History 3EE3; Philosophy 3C03; Religious Studies 2M03, 2N03, 2WW3; Social Work 3C03; Sociology 3CC3, 3G03, 3HH3, 3X03, 4P03; or other designated and approved Area courses. (See *Programme Note #3*)

Graduation Average (G.A.):

Graduation averages are computed separately for each component. The G.A. for the Gerontology component is computed using at least 24 units of Level III & IV Area courses. The G.A. for the other component is computed as specified by the other Department.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of the grades obtained in Levels II, III & IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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)

33 units Gerontology 2A03, 3B03; one of 2B03 or 3D03; 4A06 (Thesis) or Psychology 4D06; 3 additional units Level IV; 15 units of Gerontology Area courses.

36 units Area courses for the other subject.

6 units Research Methods: Gerontology 3C03 and 3G03 and/or the corresponding courses in the other subject.

3 units Informal Logic: Humanities 2C03. Students combining Arts and Science with Gerontology are exempt from this requirement.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

6 units Electives.

B.A. IN GERONTOLOGY AND ANOTHER SUBJECT

Admission:

Completion of **any Level I** programme with a Grade of at least C- in Gerontology 1A06 or Social Science 2G06, and satisfaction of admission requirements for the B.A. in the other subject.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. Enrolment in programmes in Gerontology is limited.

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 15**. The Admissions Committee may wish to interview the applicants.

2. Students who have not taken Gerontology 1A06 or Social Science 2G06 *may* be considered for admission to the programme and should consult the Chair of the Committee of Instruction.

3. Courses other than those listed below as *Area Courses*, may qualify as Gerontology Area courses. Students wishing to designate an Area course not on the list of Gerontology Area courses must do so at registration, with the permission of the Chair of the Committee of Instruction.

4. No more than 6 units of work in the other subject of the combined programme which are also Gerontology Area courses may be used to fulfill the requirements of both programme components.

5. Students in the Combined Gerontology and Another Subject must consult both departments regarding completion of the Research Methods and/or Statistics area courses.

6. Students should refer to the section *Course Listings* in this Calendar, and take note of the prerequisites for some of the Area courses.

Area Courses:

All Level II and Level III Gerontology courses and the following designated Gerontology Area Courses: Anthropology 3Z03; Economics 3D03, 3Z03; Geography 4S03; Health Sciences 3B04, 4C03, 4D03; History 3EE3; Philosophy 3C03; Religious Studies 2M03, 2N03, 2WW3; Social Work 3C03; Sociology 3CC3, 3G03, 3HH3, 3X03, 4P03; or other designated and approved Area courses. (See *Programme Note #3*)

Course Requirements: 90 units Total (Levels I-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)

24 units Gerontology 2A03, 3B03, 3C03; one of 2B03 or 3D03; 12 units of Area courses.

24 units Area courses for the other subject. (see *Programme Note #4*)

6 units Humanities (see *Faculty of Social Sciences, Academic Regulations*). If requirement completed in Level I, these units may be added to electives.

6 units Electives.

B.A. IN GERONTOLOGY AS A SECOND DEGREE**Admission:**

Completion of an undergraduate degree from a recognized university normally with a Graduation Average of at least 4.0 (or its equivalent), a grade of at least C- in Gerontology 1A06 (or its equivalent), and evidence of 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.

Enrolment in programmes in Gerontology is limited.

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 15**.

As Second Degree candidates, applicants must **also** apply for admission to the University through the office of the Associate Registrar (Liaison and Admissions).

Students who have not included Gerontology 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.

PROGRAMME REQUIREMENTS:**Programme Notes:**

1. Students are required to complete a total of 30 units for the Second Degree, all of which must be completed at McMaster. If advanced credit is granted for Gerontology Area courses, additional courses must be taken at McMaster to total 30 units.
2. Gerontology Area courses. Students wishing to designate an Area course not on the list of Gerontology Area courses must do so at registration, with the permission of the Chair of the Committee of Instruction.

Area Courses:

All Level II and Level III Gerontology courses and the following designated Gerontology Area Courses: Anthropology 3Z03; Economics 3D03, 3Z03; Geography 4S03; Health Sciences 3B04, 4C03, 4D03; History 3EE3; Philosophy 3C03; Religious Studies 2M03, 2N03, 2WW3; Social Work 3C03; Sociology 3CC3, 3G03, 3HH3, 3X03, 4P03; or other designated and approved Area courses. (See *Programme Note #2*)

Graduation Average (G.A.):

Is computed using all Area courses completed for the second degree

Course Requirements: 30 units Total

24 units Gerontology 2A03, 3B03, 3C03; one of 2B03 or 3D03;
12 additional units of Area courses.

6 units Electives.

HONOURS B.A. IN GERONTOLOGY AND ANOTHER SUBJECT AS A SECOND DEGREE PROGRAMME**Admission:**

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 Programme if they have a Graduation Average of at least 7.0. The other subject must be the same as in the first degree and students must be accepted for Honours by Gerontology and by the other department.

Enrolment in programmes in Gerontology is limited.

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 15**.

Applicants must **also** apply for admission to the University through the office of the Associate Registrar (Liaison and Admissions).

PROGRAMME REQUIREMENTS:**Programme 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 as Area Courses may qualify as Gerontology Area courses. Students wishing to designate an Area course not on the list of Gerontology Area courses must do so at

registration, with the permission of the Chair of the Committee of Instruction.

Area Courses:

All Level II, Level III and Level IV Gerontology courses and the following designated Gerontology Area Courses: Anthropology 3Z03; Economics 3D03, 3Z03; Geography 4S03; Health Sciences 3B04, 4C03, 4D03; History 3EE3; Philosophy 3C03; Religious Studies 2M03, 2N03, 2WW3; Social Work 3C03; Sociology 3CC3, 3G03, 3HH3, 3X03, 4P03; or other designated and approved Area courses. (See *Programme Note #2*)

Graduation Average (G.A.):

Graduation Averages are computed separately for each subject using only Area courses taken for the second degree. If fewer than 12 units are taken in a subject, no Graduation Standing will be given.

Course Requirements: 30 units Total

Gerontology Area courses to complete the Honours requirement including 3G03, 4A06 and 3 additional units of Level IV Gerontology. Area courses to complete the Honours requirements in the other subject.

Japanese Studies

(See *Japanese Studies, Faculty of Humanities*)

Labour Studies**HONOURS LABOUR STUDIES (SPECIALIST)****Admission:**

Completion of **any Level I** programme with an average of at least 7.0 in Labour Studies 1AA3 and 1A03, and an overall average of at least 7.0 in 12 units, which includes Labour Studies 1AA3 and 1A03, and 6 units from Economics 1A06, History 1C06, Mathematics 1K03, Mathematics 1L03 or Statistics 1L03, Political Science 1A06 or 1B03 and 1C03, Psychology 1A06, Sociology 1A06.

PROGRAMME REQUIREMENTS:**Programme Notes:**

1. **Enrolment in the Labour Studies Programme is limited.**
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. Labour Studies 2A06 and Commerce 2BA3 should be taken in Level II; Commerce 4BC3 and 4BD3 should be taken in Level III.

Area Courses:

All Level II, III and IV Labour Studies courses; Commerce 2BA3, 4BC3, 4BD3.

Graduation Average (G.A.):

is computed using at least 36 units of Levels III and IV area courses

Course Requirements: 120 units Total (Levels I-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) |
| 54 units | Labour Studies 2A06, 2B03, 2C03, Commerce 2BA3; Labour Studies 3C03, Commerce 4BC3 and 4BD3; 12 units from Labour Studies 3A03, 3AA3, 3B03, 3D03, 3E03, 3I03; Labour Studies 4A09, 4B03, 4C03, 4D03. (see <i>Programme Note #4</i>) |
| 12 units | Sociology 1A06 and Economics 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 Economics 2B03, Economics 3O06, Sociology 2Y03, Sociology 3H06, Political Science 2F06, Statistics 1A03, Statistics 2R06. |

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- 3 units Informal Logic: Humanities 2C03.
6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If re-requirement completed in Level I, these units may be added to electives.
9-12 units Electives which may include Commerce 3BB3.

COMBINED HONOURS IN LABOUR STUDIES AND ANOTHER SUBJECT.

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in Labour Studies 1AA3 and 1A03, and an overall average of at least 7.0 in 12 units, which includes Labour Studies 1AA3 and 1A03, and 6 units from Economics 1A06, History 1C06, Mathematics 1K03, Mathematics 1L03 or Statistics 1L03, Political Science 1A06 or 1B03 and 1C03, Psychology 1A06, Sociology 1A06. Satisfaction of admission requirements for the Honours B.A. programme in the other subject.

PROGRAMME REQUIREMENTS:

Programme Notes:

- Enrolment in the Labour Studies Programme is limited.**
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.
- 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 Religious Studies must complete Research Methods, Inquiry and Honours Seminar as specified by the Labour Studies Programme (Labour Studies 4A09 and 4B03, and 3 units from the Labour Studies Research and 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 Labour Studies 4A09 and 4B03 with 3 units Level III or IV and 3 units Level IV Labour Studies Area courses.
- Students are encouraged to consult the Labour Studies Programme Handbook which is available from the Labour Studies Office.
- Students may not transfer from Honours Labour Studies to a Minor in Labour Studies except by the normal application process.
- Labour Studies 2A06 should be taken in Level II. Commerce 4BC3 should be taken in Level III if needed as a prerequisite for Level IV courses.

Area Courses:

For the Labour Studies component, all Level II, III and IV Labour Studies courses; Commerce 2BA3, 4BC3, 4BD3.

Graduation Average (G.A.):

Graduation averages are computed separately for each component. The G.A. for the Labour Studies component is computed using at least 24 units of Level III and IV Labour Studies Area courses. The G.A. for the other component is computed as specified by the other department.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of the grades obtained in Levels II, III and IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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).
39 units Labour Studies 2A06, 2C03; 15 units from: Labour Studies 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3I03, Commerce 4BC3 and 4BD3; Labour Studies 4A09, 4B03 and either Labour Studies 4C03 or 4D03 (see *Programme Note #2*).
36 units Area courses for the other subject.

- 12 units Sociology 1A06 and Economics 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 Economics 2B03, Economics 3O06, Sociology 2Y03, Sociology 3H06, Political Sciences 2F06, Statistics 1A03, Statistics 2R06 or in Combined programmes within the Faculty of Social Sciences, the Research Methods Specified for the other subject (see *Programme Note #2*).
3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Labour Studies are exempt from this requirement.
6 units World History, Culture and Thought (see *Faculty of Social Sciences, World History, Culture and Thought Menu*): Students combining Labour 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.
0 units Electives (Students who are planning to combine Honours Labour Studies with another subject should include Sociology 1A06, Economics 1A06 and 6 units of World History, Culture and Thought in their Level I programmes to provide some electives in their programme. Electives may include Commerce 3BB3.

HONOURS LABOUR STUDIES WITH A MINOR IN ANOTHER SOCIAL SCIENCE SUBJECT

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in Labour Studies 1AA3 and 1A03, and an overall average of at least 7.0 in 12 units, which includes Labour Studies 1AA3 and 1A03, and 6 units from Economics 1A06, History 1C06, Mathematics 1K03, Mathematics 1L03 or Statistics 1L03, Political Science 1A06 or 1B03 and 1C03, Psychology 1A06, Sociology 1A06. Satisfaction of the admission requirements for the Minor subject (normally C- in 6 units Level I courses).

PROGRAMME REQUIREMENTS:

Programme Notes:

- Enrolment in the Labour Studies Programme is limited.**
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.
- Labour Studies 2A06 should be taken in Level II. Commerce 4BC3 should be taken in Level III if needed as a prerequisite for Level IV courses.

Area Courses:

All Level II, III and IV Labour Studies courses; Commerce 2BA3, 4BC3, 4BD3 and Area courses in the minor subject.

Graduation Average(GA):

is computed using at least 36 units of Levels III and IV Area courses in Labour Studies and in the minor Subject.

Cumulative Area Average (C.A.A.)

is computed using the best 80% of Level II, III and IV Area courses in Labour Studies and in the minor subject.

Course Requirements: 120 units Total, (Levels I-IV) of which 48 units may be Level 1 courses.

- 30 units from the Level I programme completed prior to admission to the programme. (see *Admission* above)
39 units Labour Studies 2A06, 2C03; 15 units from: Labour Studies 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3I03, Commerce 4BC3 and 4BD3; Labour Studies 4A09, 4B03, and either 4C03 or 4D03.

- 18 units Area courses in the minor subject.
- 12 units Sociology 1A06 and Economics 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 Economics 2B03, Economics 3O06, Sociology 2Y03, Sociology 3H06, Political Sciences 2F06, Statistics 1A03, Statistics 2R06.
- 3 units Informal Logic: Humanities 2C03.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 6-9 units Electives which may include Commerce 3BB3.

MINOR IN LABOUR STUDIES

Labour Studies will admit a maximum of 10 students to the Minor Programme in Labour Studies each year.

Admission:

Admission to any Social Sciences Honours programme and completion of Labour Studies 1A03 and 1AA3 with an average of at least 4.0

PROGRAMME REQUIREMENTS:

Programme Notes:

1. **Enrolment in the Labour Studies Programme is limited.**
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 3 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.

Area Courses:

All Level II, III and IV Labour Studies courses excluding 4A09 and 4B03; Commerce 2BA3, 4BC3, 4BD3.

Course Requirements:

- 18 units Labour Studies Area courses, including Labour Studies 2A06 and 2C03.
- 12 units Economics 1A06 and Sociology 1A06 which must be completed by the end of 60 units. If requirement completed in Level I, these units may be added to electives.

See Honours subject with a Minor for additional requirements.

B.A. IN LABOUR STUDIES

Admission:

Completion of any Level I programme with an average of at least 4.0 in Labour Studies 1AA3 and 1A03 and an overall average of at least 4.0 in 12 units, which includes Labour Studies 1AA3 and 1A03, and 6 units from Economics 1A06, History 1C06, Mathematics 1K03, Mathematics 1K03 or Statistics 1L03, Political Science 1A06 or 1B03 and 1C03, Psychology 1A06 Sociology 1A06.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. **Enrolment in the Labour Studies Programme is limited.**
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. Labour Studies 2A06 should be taken in Level II.

Area Courses:

All Level II and III Labour Studies courses; Commerce 2BA3, 4BC3, 4BD3.

Course Requirements: 90 units Total (Levels I-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)
- 33 units Labour Studies 2A06, 2B03, 2C03, Commerce 2BA3, Commerce 4BC3, 4BD3; 12 units from Labour Studies 3A03, 3AA3, 3B03, 3C03, 3D03, 3E03, 3I03.
- 12 units Sociology 1A06 and Economics 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 Humanities (see *Faculty of Social Sciences: Academic Regulations* section of this Calendar). If requirement completed in Level I, these units may be added to electives.
- 9 units Electives which may include Commerce 3BB3.

Department of Physical Education

PROGRAMME FOR THE B.P.E. DEGREE

The Department of Physical Education offers a four-year programme leading to the degree of Bachelor of Physical Education (B.P.E.). The programme differs somewhat from the majority of Physical Education programmes in the province in that students begin to take courses leading to the degree in Level I. The programme is divided into two distinct parts.

During Levels I and II students take a core of thirty-six units of required theoretical courses in which they are introduced to the various sub-disciplines of Physical Education, a core of seven units of required practicum courses.

During Levels III and IV students are free to select from a variety of Physical Education 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.

ACADEMIC REGULATIONS

Students enrolled in Physical Education, in addition to meeting the General Academic Regulations of the University, shall be subject to a number of Department regulations.

Continuation in Programme

Students in Physical Education I must:

1. Obtain a University Average (UA) of at least 4.0 computed on the grades obtained in all courses taken.
 2. Obtain a Cumulative Area Average (CAA) of at least 4.0 calculated as a weighted average of grades in all Physical Education courses.
- Effective 1992-93 for Incoming Level I students, practicum courses will be graded as A, B, or F and will no longer be included in the calculation of the C.A.A. For students already in course, Levels II, III or IV practicum courses will continue to be graded on a 12 point scale and used in the calculation of the C.A.A.**
3. Obtain a grade of at least D- in each Physical Education course.

Beyond Level I a student must achieve a minimum grade of D- in each Area course taken and a CAA of at least 4.0 at each review in order to continue in the programme.

Failure to meet the above requirements leads to one of two conditions:

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1. May Not Continue in the Programme: Re-Admission

A student who is ineligible to continue in the B.P.E. programme may apply for re-admission after not less than one year. Application for re-admission must be made in writing to the Undergraduate Coordinator in **March** of the year in which re-admission is desired. Students normally will not be considered for readmission unless they have achieved a B- (7.0) average in at least 24 units of university course work.

Re-admission Is Not Guaranteed.

2. May Continue on Probation: Repeated Courses

Students who have failed (F grade) any Area course, but who have achieved a CAA of 4.0 at the review period may be permitted to continue on probation *subject to the approval* of the Department of Physical Education Admissions, Study and Review Committee. In such cases the student must repeat any failed *Required Area* course or repeat/replace any failed *Elective Area* course and achieve a grade of at least C-.

Work Load

All B.P.E. students must complete a Winter Session workload of 31 units in Level I, and 34 units in each of Levels II, III, and IV. Advanced credit and credit earned during Summer Sessions may be used to reduce the time required to complete the degree. In any Winter Session, a student may not register for any more than the required number of units without the approval of the Undergraduate Coordinator.

TRANSFERRING INTO THE DEPARTMENT OF PHYSICAL EDUCATION

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 eligible.

PROGRAMME REQUIREMENTS:

Programme Note:

Normally, the requirements for each Level must be completed satisfactorily before a student is allowed to proceed to the next Level of the Physical Education programme.

Area Courses:

All Level I, II, III and IV Physical Education courses (including Practicum) and Biology 1J03.

Effective 1992-93 for incoming Level I students, practicum courses will be graded as A, B, F and will not longer be included in the calculation of the C.A.A. or G.A.

Graduation Average (G.A.): (for students who entered prior to 1992) is computed using at least 60 units of Level II, III and IV Area courses.

Cumulative Area Average (C.A.A.): (for students who entered prior to 1992)

is computed using *all* Area courses (Levels I-IV).

Course Requirements: 133 units Total (Levels I-IV), of which 49 units may be Level I courses.

66 units Physical Education Theory

Level I: 18 units: Physical Education 1A06, 1B03, 1E03, 1F03 and Biology 1J03.

Level II: 18 units: Physical Education 2A03, 2B03, 2C06, 2D03, 2F03.

Level III and IV: 30 units (see *Programme Note #1*).

13 units Physical Education Practicum

Level I: Physical Education 1S00 (McMaster Swimming Test), Physical Education 1CA0 (CPR/First Aid), PR02 (Gymnastics I).

Level II: PR03 (Track & Field I), PR04 (Games), PR05 (Dance), PR06 (Fitness I).

Level III and IV: 6 additional Practicum units

54 units Electives (the maximum Physical Education theory courses to be taken is 66 units).

B.P.E. AS A SECOND DEGREE

Admission:

Completion of any undergraduate degree from a recognized university normally with an average of at least 7.0 (B-) or its equivalent.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. Applications must be made to the Undergraduate Physical Education Co-ordinator *prior to May 15*.

2. The degree must be completed on a full-time basis.

3. Level I and II theory and practicum courses must be taken in sequence prior to Level III and IV courses.

4. Students must obtain a grade of at least D- in each Area course and a Cumulative Area Average (CAA) of at least 4.0.

Effective 1992-93 for incoming second degree students, practicum courses will be graded as A, B, or F and will no longer be included in the calculation of the C.A.A.

Area courses:

All Level I, II, III and IV Physical Education courses (excluding practicum) and Biology 1J03.

Graduation Average (G.A.):

is computed using at least 48 units of Level II, III and IV Area courses.

Cumulative Area Average (C.A.A.):

is computed using *all* Area courses (Levels I-IV).

Course Requirements: 79 units Total (66 Theory and 13 Practicum).

66 units Physical Education Theory:

Level I: 18 units: Physical Education 1A06, 1B03, 1E03, 1F03 and Biology 1J03.

Level II: 18 units: Physical Education 2A03, 2B03, 2C06, 2D03, 2F03.

Level III and IV: 30 units

13 units Physical Education Practicum

Level I: Physical Education 1S00 (McMaster Swimming Test), Physical Education 1S01 (CPR/First Aid), PR02 (Gymnastics I).

Level II: PR03 (Track & Field I), PR04 (Games), PR05 (Dance), PR06 (Fitness I).

Level III and IV: 6 additional Practicum units

Department of Political Science

HONOURS ARTS AND SCIENCE AND POLITICAL SCIENCE (B. Arts Sc.)

(See *Arts and Science Programme*)

HONOURS POLITICAL SCIENCE (SPECIALIST)

Admission:

Completion of any Level I programme with an average of at least 7.0 in Political Science 1A06 or 1B03 and 1C03 and 6 other units, including an average of at least 7.0 in Level I Political Science course(s).

PROGRAMME REQUIREMENTS:

Programme Notes:

1. **Prerequisites** 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. **Required Courses** Political Science 2F06 and 2O06 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes. However, if students take both these required courses at Level II, they may experience difficulties acquiring the necessary prerequisites for courses at

Levels III and IV. Therefore the Department strongly encourages students to take one of these courses at Level II and the other at Level III. Because Political Science 2006 is a prerequisite for Level III and IV courses in political theory, the order in which Political Science 2006 and 2F06 should be taken will depend on the particular course of study chosen; further advice on this may be sought from an Undergraduate Advisor.

If either Political Science 2F06 or Political Science 2006 is taken at Level III, it will be considered as a Level III course and will be included in the Graduation average.

Area Courses:

All Level II, III and IV Political Science courses.

Graduation Average (G.A.):

is computed using at least 36 units of Level III and IV Area courses with the exception noted in *Programme Note #2*.

Course Requirements: 120 units Total (Levels I-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)
- 48 units Political Science 2006, Political Science 4Z06; 6 additional units of Level IV Political Science; 30 units Level II, III or IV Political Science of which a maximum of 12 units may be Level II.
- 6 units Research Methods: Political Science 2F06.
- 3 units Informal Logic: Humanities 2C03.
- 6 units Social Sciences I courses other than Political Science 1A06 or 1B03 and 1C03. If requirement completed in Level I, these units may be added to electives.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 21 units Electives (the maximum Political Science Area courses to be taken is 60 units).

COMBINED HONOURS IN POLITICAL SCIENCE AND ANOTHER SUBJECT

Admission:

Completion of any Level I programme with a weighted average of at least 7.0 Political Science 1A06 or 1B03 and 1C03. Satisfaction of the admission requirements for the Honours B.A. programme in the other subject.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. **Prerequisites** 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. **Required Courses** Political Science 2F06 and 2006 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes. However, if students take both these required courses at Level II, they may experience difficulties acquiring the necessary prerequisites for courses at Levels III and IV. Therefore the Department strongly encourages students to take one of these courses at Level II and the other at Level III. Because Political Science 2006 is a prerequisite for Level III and IV courses in political theory, the order in which Political Science 2006 and 2F06 should be taken will depend on the particular course of study chosen; further advice on this may be sought from an Undergraduate Advisor.

If either Political Science 2F06 or Political Science 2006 is taken at Level III, it will be considered as a Level III course and will be included in the Graduation average.

Area Courses:

For the Political Sciences component, all Level II, III and IV Political Science courses.

Graduation Average (G.A.):

Graduation Averages are computed separately for each component. The G.A. for the Political Science component is computed using at least 24 units of Level III and IV area courses. For exception see *Programme Note #2*. The G.A. for the other component is computed as specified by the other department.

Cumulative Area Averages (C.A.A.):

Separate C.A.A.'s are computed for each subject using the best 80% of the grades obtained in Levels II, III and IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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)
- 36 units Political Science 2006, 12 units Level III Political Science; 6 units Level IV Political Science; 12 units Level II, III or IV Political Science.
- 36 units Area courses for the other subject.
- 6 units Research Methods: Political Science 2F06 or in combined programmes within the Faculty of Social Sciences, the Research Methods specified for the Other Subject.
- 3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Political Science are exempt from this requirement.
- 6 units World History, Culture and Thought (see *Faculty of Social Sciences, World History, Culture and Thought Menu*). Students combining Political Science 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 (the maximum Political Science Area courses to be taken is 48 units).

HONOURS POLITICAL SCIENCE WITH A MINOR IN ANOTHER SOCIAL SCIENCES SUBJECT

Admission:

Completion of any Level I programme with an average of at least 7.0 Political Science 1A06 or 1B03 and 1C03 and 6 additional units, including at least 7.0 in Political Science 1A06 or 1B03 and 1C03. Satisfaction of the admission requirements for the minor subject (normally C- in 6 units Level I course(s)).

PROGRAMME REQUIREMENTS:

Programme Notes:

1. **Prerequisites** 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. **Required Courses** Political Science 2F06 and 2006 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes. However, if students take both these required courses at Level II, they may experience difficulties acquiring the necessary prerequisites for courses at Levels III and IV. Therefore the Department strongly encourages students to take one of these courses at Level II and the other at Level III. Because Political Science 2006 is a prerequisite for Level III and IV courses in political theory, the order in which Political Science 2006 and 2F06 should be taken will depend on the particular course of study chosen; further advice on this may be sought from an Undergraduate Advisor.

If either Political Science 2F06 or Political Science 2006 is taken at Level III, it will be considered as a Level III course and will be included in the Graduation average.

Area Courses:

All Level II, III and IV Political Science courses and Area courses in the minor subject.

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Graduation Average (G.A.):

is computed using at least 36 units of Level III and IV Area courses in Political Science and in the minor subject, (with the exception noted in *Programme Note #2*).

Cumulative Area Average (C.A.A.):

is computed using the best 80% of all Level II, III and IV Area courses in Political Science and in the minor subject.

Course Requirements: 120 units Total (Levels I-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)
- 36 units Political Science 2006; 12 units Level III Political Science; 6 units Level IV Political Science; 12 units Level II, III or IV Political Science.
- 18 units Area courses in the minor subject.
 - 6 units Research Methods: Political Science 2F06.
 - 3 units Informal Logic: Humanities 2C03.
 - 6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 21 units Electives (the maximum Political Science Area courses to be taken is 54 units).

MINOR IN POLITICAL SCIENCE

Admission:

Admission to any Social Sciences Honours programme and completion of Political Science 1A06 or 1B03 and 1C03 with an average of at least C- (4.0).

PROGRAMME REQUIREMENTS:

Programme Notes:

1. Prerequisites: All students should note those Level II Political Science courses that are required in order to register in a number of Level III and Level IV courses.
2. Level IV courses have limited enrolment with preference given to Honours Political Science students. Students must apply by ballot through the Department.

Area Courses:

All Level II, III and IV Political Science courses excluding 4Z06.

Course Requirements:

- 18 units Political Science Area courses (excluding Political Science 4Z06) of which up to 12 units may be Level II courses.

See Honours Subject with a Minor for additional requirements.

B.A. IN POLITICAL SCIENCE

Admission:

Completion of any Level I programme, with an average of at least C- (4.0) in Political Science 1A06 or 1B03 and 1C03.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. **Prerequisites** 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. **Required Courses** Political Science 2F06 and 2006 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes. However, if students take both these courses at Level II, they may experience difficulties acquiring the necessary prerequisites for courses at Levels III and IV. Therefore the Department strongly encourages students to take one of these courses at Level II and the other at Level III. Because Political Science 2006 is a prerequisite for Level III and IV courses in political theory, the order in which Political Science 2006 and 2F06 should be taken will depend on the particular course of study chosen; further advice on this may be sought from an Undergraduate Advisor.

Area Courses:

All Level II, III and IV Political Science courses.

Course Requirements: 90 units Total (Levels I-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)
- 24 units 12 units Level II Political Science; 12 units Level III Political Science.
- 6 units Humanities (see *Faculty of Social Sciences, Academic Regulations*). If requirement completed in Level I these units may be added to electives.
- 30 units Electives (the maximum Political Science Area courses to be taken is 36 units).

Department of Psychology

HONOURS PSYCHOLOGY (B.Sc.), MAJOR PSYCHOLOGY (B.Sc.) AND B.Sc. IN PSYCHOLOGY

(See B.Sc. Programmes in Psychology, *Faculty of Science, Department of Psychology*)

HONOURS BIOLOGY AND PSYCHOLOGY (B.Sc.)

(See *Faculty of Science, Department of Biology*)

HONOURS COMPUTER SCIENCE AND PSYCHOLOGY (B.Sc.)

(See *Faculty of Science, Department of Computer Science & Systems*)

HONOURS ARTS AND SCIENCE AND PSYCHOLOGY (B. Arts Sc.)

(See *Arts and Science Programme*)

HONOURS PSYCHOLOGY (B.A.)

Admission:

Completion of any Level I programme with a grade of at least B- in Psychology 1A06, at least B- in six additional units, at least C- in English 1D06 or equivalent, and credit in Mathematics 1A06 or 1C06 or at least C- in Mathematics 1M03.

Students who did not complete the English requirement in Level I should obtain the permission of the department to register for Level II Psychology. They may be admitted to the Honours Psychology programme on completion of Level II, subject to the completion of the English requirement, and obtaining a CAA of at least 7.0 or greater in the required Level II Psychology courses.

Programme Notes:

1. *Psychology 2R06, 2R03 and 2RR3 will be included in calculating the Graduation Average, if taken after Level II.*
2. Students who entered this programme prior to September 1988, must complete either Psychology 2E03 or 3W06. Students who enter this programme in or after September 1988, must complete Psychology 2E03.
3. At some time during the programme, the student:
 - a. must meet a laboratory requirement by completing one of Psychology 3C06, 3E03, 3L03 (formerly 2U03), 3QQ3, 3S03, 3V03, 4G03, 4QQ3.
Enrolment in Laboratory courses is limited. Permission of the Department must be obtained by March 1.
 - b. must complete 6 units not from Psychology, from the World History, Culture and Thought Menu.
 - c. must complete 3 units from the Informal Logic Menu.
 - d. must complete 12 units of Level I Social Sciences including Psychology 1A06.
4. Students who are planning on graduate studies in Psychology and who meet the prerequisites should complete Psychology 4D06.

5. Computation of the Graduation Average (GA) is based on at least 36 units of Level III and IV Area courses including Psychology 2R06, 2R03 and 2RR3, if taken after Level II. The Cumulative Area Average (CAA) is computed using the best 80% of Levels II, III and IV Area courses.

Area Courses:

Psychology 2E03, 2H03, 2R06, 2R03, 2RR3, 2T03. All Level III and IV Psychology courses.

Level II: 30 units

R Psychology 2E03, 2H03, 2R03, 2RR3, 2T03; 6 units of courses chosen from the Faculty of Science, excluding Psychology and the Mathematics course taken to meet the Admission requirements (e.g. Mathematics 1M03).

E 9 units, at least 6 of which must not be from Psychology. Psychology 3L03 may be taken in Level II.

Level III: 30 units

R 18 units of Level III Psychology, or 12 units of Level III Psychology and Psychology 2R03 and 2RR3 (if not completed).

E 12 units, 6 of which must not be from Psychology.

Level IV: 30 units

R 18 units of Levels III or IV Psychology. See Programme Note 4.

E 12 units.

COMBINED HONOURS IN PSYCHOLOGY AND ANOTHER SUBJECT (B.A.)

Admission:

Completion of **any Level I** programme with a grade of at least B- in Psychology 1A06, at least B- in six additional units, at least C- in English 1D06 or equivalent, and credit in Mathematics 1A06 or 1C06 or at least C- in Mathematics 1M03.

Students who did not complete the English requirement in Level I should obtain the permission of the department to register for Level II Psychology. They may be admitted to the Honours Psychology programme on completion of Level II, subject to the completion of the English requirements, and obtaining a CAA of at least 7.0 or greater in the required Level II Psychology courses.

Programme Notes:

1. *Psychology 2E03, 2H03, 2T03, 2R06, 2R03 and 2RR3 will be included in calculating the Graduation Average, if taken after Level II.*
2. Students who entered this programme **prior to September 1988**, must complete *either* Psychology 2E03 or 3W06.
Students who enter this programme **in or after September 1988**, must complete Psychology 2E03.

3. At some time during the programme, the student:

- a. must meet a laboratory requirement by completing one of Psychology 3C06, 3E03, 3L03 (formerly 2U03), 3QQ3, 3S03, 3V03, 4G03, 4QQ3.

Enrolment in Laboratory courses is limited. Permission of the Department must be obtained by March 1.

- b. must complete 6 units, not in Psychology or the other subject, from the World History, Culture and Thought Menu.
- c. must complete 3 units from the Informal Logic Menu.
- d. must complete 12 units of Level I Social Sciences including Psychology 1A06.
- e. units prescribed by another department

4. Computation of the Graduation Average (GA) for the Psychology component is based on at least 24 units of Levels III and IV Area courses, including Psychology 2E03, 2H03, 2T03, 2R06, 2R03 and 2RR3, if taken after Level II. The Cumulative Area Average (CAA) is computed using the best 80% of Levels II, III and IV Area courses.

Area Courses:

Psychology 2E03, 2H03, 2R06, 2R03, 2RR3, 2T03. All Level III and IV Psychology courses.

Level II: 30 units

R Psychology 2R03 and 2RR3; 6 units from Psychology 2E03, 2H03

and 2T03; 6 units of courses chosen from the Faculty of Science, excluding Psychology and the Mathematics course taken to meet the Admission requirements (e.g. Mathematics 1M03); units required for the other subject.

E To total 30 units.

Level III: 30 units

R One of Psychology 2E03, 2H03, 2T03 not completed for Level II; 9 units of Level III Psychology, or 3 units of Level III Psychology and Psychology 2R03 and 2RR3 (if not completed); units required for the other subject.

E To total 30 units.

Level IV: 30 units

R 12 units of Levels III or IV Psychology; units required for the other subject.

E To total 30 units.

PSYCHOLOGY MAJOR (B.A.)

Admission:

Completion of **any Level I** programme with at least a C in Psychology 1A06 and in 6 additional units of Social Sciences or Natural Science, and at least a C- in English 1D06.

Students who did not complete the English requirement in Level I will be admitted to the programme only with the approval of a departmental counsellor and must complete the requirement by the end of Level II.

Programme Note:

The Graduation Average (GA) is computed using at least 36 units of Levels II, III and IV Area courses. The Cumulative Area Average (CAA) is computed using the best 80% of Levels II, III and IV Area courses.

Area Courses:

All Levels II, III and IV Psychology courses except 3Z03 and 4D06.

Level II: 30 units

R Psychology 2G03 or 2R03; 6 units from Psychology 2E03, 2H03, and 2T03; 3 additional units of Level II Psychology; 3 units Level I Mathematics; 6 units from the School of Business, Faculty of Humanities or the Faculty of Science excluding Psychology.

E Electives excluding Psychology to make a total of 30 units.

Level III: 30 units

R 12 units Level III Psychology; 6 units Business, Humanities or Science excluding Psychology.

E 12 units excluding Psychology, at least 6 of which must be from Level III or IV.

Level IV: 30 units

R 12 units Level III or IV Psychology; 6 units Business, Humanities or Science excluding Psychology.

E 12 units Level III or IV excluding Psychology.

B.A. IN PSYCHOLOGY

Admission:

Completion of **any Level I** programme with a grade of at least C- in Psychology 1A06, and at least C- in English 1D06.

Students who did not complete the English requirement in Level I will be admitted to the programme only with the approval of a departmental counsellor and must complete the requirement by the end of Level II.

Area Courses:

All Levels II, III and IV Psychology courses except 3Z03 and 4D06.

Level II: 30 units

R Psychology 2G03, and 6 units from 2E03, 2H03, or 2T03; 3 units of Level II Psychology; Mathematics 1L03 or Statistics 1L03 or any other 3 units of Level I Mathematics; 6 units of courses chosen from the School of Business, Faculty of Science or the Faculty of Humanities, excluding Psychology, English 1D06 (if not completed), and the 3 units of Mathematics required by the programme.

E 9 units, 3 of which must not be from Psychology. Psychology 3L03 may be taken in Level II.

FACULTY OF SOCIAL SCIENCES

Level III: 30 units

R 12 units of Level III Psychology; 6 units of courses chosen from the School of Business, Faculty of Science or the Faculty of Humanities, excluding Psychology.

E 12 units, 6 of which must not be from Psychology.

Department of Religious Studies

PROGRAMME NOTE: (Applicable to all Religious Studies programmes.)

Religious Studies at McMaster includes three major subfields of Biblical Studies, Western Religious Traditions, and Asian Religions. Students may concentrate 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. Courses listed below are considered central to the subfield and are strongly recommended for any student wishing such a concentration.

Biblical Studies

Hebrew Bible: Religious Studies 2D06, 2DD3, 2EE3, 3M03

Christianity: Religious Studies 2E06, 2FF6, 3O03, 3T03, 3X03

Western Religious Traditions

Religious Studies 2II3, 2JJ3, 2KK3, 2LL3, 3D03, 3MM3, 3NN3

Asian Religions

Religious Studies 2J06, 2MM6, 3U03, 3UU3.

(For the *Social Scientific Study of Religion*, the following courses are recommended: Religious Studies 3J06, 3JJ6.)

HONOURS ARTS AND SCIENCE AND RELIGIOUS STUDIES (B.Arts Sc.)

(See *Arts and Science Programme*)

HONOURS RELIGIOUS STUDIES PROGRAMMES (SPECIALIST)

Admission:

Completion of any Level I programme with an average of at least 7.0 in 12 units acceptable to the Department, preferably including one Level I Religious Studies course.

PROGRAMME REQUIREMENTS:

Programme 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. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.
2. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies courses and may then be designated as Area courses.
3. Students who entered Religious Studies prior to **September 1989**, must complete: either 2GG3 or six units from the Eastern Pool; and either 2NN3 or six units from the Western Pool.
4. The "Western Pool" consists of the following Religious Studies courses: 2D06, 2E06, 2FF6, 2II3, 2JJ3, 2K03, 2KK3, 2LL3, 2R06, and 2S06. The "Eastern Pool" consists of the following Religious Studies courses: 2J06, 2MM6, 2TT3, 3E03, 3H03, 3I03, 3U03, and 3UU3.
5. To complete Research Methods, students may substitute 6 units of statistics with the approval of the Departmental Advisor.

Area Courses:

All Level II, III, and IV Religious Studies courses or approved substitutions.

Graduation Average (G.A.):

is computed using at least 36 units of Level III and IV Area courses.

Course Requirements: 120 units Total (Levels I-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)

48 units 6 units from the Eastern pool, 6 units from the Western Pool; 3F03 and 9 additional units of Level III; 4A06, 4J06; 12 additional units Religious Studies Area courses or approved substitutions.

6 units Research Methods: 6 units of a language other than English, or Linguistics. (see *Programme Note #5*). If requirement completed in Level I, these units may be added to electives.

3 units Informal Logic: Humanities 2C03.

6 units Social Sciences I courses other than Religious Studies. If requirement completed in Level I, these units may be added to electives.

6 units World History Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

21 units Electives.

COMBINED HONOURS IN RELIGIOUS STUDIES AND ANOTHER SUBJECT

Admission:

Completion of any Level I Programme with an average of at least 7.0 in 12 units acceptable to the Department, preferably including one Level I Religious Studies course. Satisfaction of admission requirements for the Honours B.A. programme in the other subject.

PROGRAMME REQUIREMENTS:

Programme 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. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.
2. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies courses and may then be designated as Area courses.
3. Students who entered Religious Studies prior to **September 1989**, must complete: either 2GG3 or six units from the Eastern Pool; and either 2NN3 or six units from the Western Pool.
4. The "Western Pool" consists of the following Religious Studies courses: 2D06, 2E06, 2FF6, 2II3, 2JJ3, 2K03, 2KK3, 2LL3, 2R06, and 2S06. The "Eastern Pool" consists of the following Religious Studies courses: 2J06, 2MM6, 2TT3, 3E03, 3H03, 3I03, 3U03, and 3UU3.
5. Students must consult with both departments to determine the manner in which the Research Methods requirement is to be satisfied. Options include 6 units of Language other than English or Linguistics or 6 units of statistics.

Area Courses:

All Level II, III, and IV Religious Studies courses or approved substitutions.

Graduation Average (G.A.):

Graduation averages are computed separately for each component. The G.A. for Religious Studies is computed using at least 24 units of Level III and IV Area courses. The G.A. for the other component is computed as specified by the other Department.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of the grades obtained in Levels II, III and IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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)

36 units 6 units from the Eastern Pool; 6 units from the Western Pool; 3F03 and 9 additional units of Level III Religious Studies;

Level III Religious Studies or approved substitutions; 4A06 and 4J06.

- 36 units Area courses for the other subject.
- 6 units Research Methods. 6 units of a language other than English or Linguistics or statistics. (See *Programme Note #5*). If requirement completed in Level I, these units may be added to electives.
- 3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Religious Studies are exempt from this requirement.
- 6 units World History Culture and Thought. 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.

HONOURS RELIGIOUS STUDIES WITH A MINOR IN ANOTHER SOCIAL SCIENCES SUBJECT

Admission:

Completion of any Level I programme with an average of at least 7.0 in 12 units acceptable to the Department preferably including one Level I Religious Studies course. Satisfaction of the admission requirements in the Minor subject (normally C- in 6 units of a Level I course(s)).

PROGRAMME REQUIREMENTS:

Programme 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. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.
2. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies courses and may then be designated as Area courses.
3. Students who entered Religious Studies prior to **September 1989**, must complete: either 2GG3 or six units from the Eastern Pool; and either 2NN3 or six units from the Western Pool.
4. The "Western Pool" consists of the following Religious Studies courses: 2D06, 2E06, 2FF6, 2II3, 2JJ3, 2K03, 2KK3, 2LL3, 2R06, and 2S06. The "Eastern Pool" consists of the following Religious Studies courses: 2J06, 2MM6, 2TT3, 3E03, 3H03, 3I03, 3U03, and 3UU3.
5. Research Methods for Religious Studies consists of 6 units of a Language other than English or Linguistics; or 6 units of statistics taken with approval of the Departmental Advisor.

Area Courses:

All Level II, III, and IV Religious Studies courses or approved substitutions, and all Area courses in the Minor programme as specified by the other department.

Graduation Average (G.A.):

is computed on at least 36 units of Level III and IV Area courses; in Religious Studies and in the minor subject.

Cumulative Area Average (C.A.A.):

is computed using the best 80% of the grades obtained in Levels II, III and IV Area courses in Religious Studies and in the minor subject.

Course Requirements: 120 units Total (Levels I-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)
- 36 units 6 units from the Eastern Pool; 6 units from the Western Pool; 3F03, 9 additional units of Level III Religious Studies or approved substitutions; 4A06 and 4J06.
- 18 units Area courses in the minor subject.
- 6 units Research Methods. 6 units of a language other than English or Linguistics or statistics. (see *Programme Note #5*). If requirement completed in Level I, these units may be added to elec-

tives.

- 3 units Informal Logic: Humanities 2C03.
- 6 units World History Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.
- 21 units Electives.

MINOR IN RELIGIOUS STUDIES

Admission:

Admission to any Social Science Honours Programme and at least C- in 6 units acceptable to the Department.

PROGRAMME REQUIREMENTS:

Programme Note:

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.

Area Courses:

All Level II, III and IV Religious Studies courses.

Course Requirements:

- 18 units Religious Studies Area courses.
- See Honours Subject with a Minor for additional requirements.

B.A. IN RELIGIOUS STUDIES

Admission:

Completion of any Level I programme with an average of at least 4.0 in six units of work acceptable to the Department preferably including one of the Level I Religious Studies courses.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. All students should consult the Departmental Handbook. All are strongly urged to consult the Departmental Advisor at least once each 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. Students who anticipate difficulty in fulfilling departmental requirements should consult the Departmental Undergraduate Advisor as early as possible in their programmes.
2. With the written approval of the Departmental Advisor, courses from other departments may be substituted for Religious Studies courses and may then be designated as Area courses.
3. The "Western Pool" consists of the following Religious Studies courses: 2D06, 2E06, 2FF6, 2II3, 2JJ3, 2K03, 2KK3, 2LL3, 2R06, and 2S06. The "Eastern Pool" consists of the following Religious Studies courses: 2J06, 2MM6, 2TT3, 3E03, 3H03, 3I03, 3U03, and 3UU3.
4. Students who entered this programme prior to **September 1989**, must complete either Religious Studies 2GG3 or six units from the Eastern Pool; and either 2NN3 or six units from the Western Pool.

Area Courses:

All Level II, III and IV Religious Studies courses or approved substitutions.

Course Requirements: 90 units Total (Levels I-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)
- 30 units 6 units from the Eastern Pool; 6 units from the Western Pool; 3F03 and 9 additional units of Level III Religious Studies or approved substitutions; 6 units Level II or III Religious Studies or approved substitutions. With advisor's approval Level IV courses may be included.
- 6 units Humanities (see *Faculty of Social Sciences: Academic Regulations*). If requirement completed in Level I, these units may be added to electives.
- 24 units Electives. (The maximum Religious Studies area courses to be taken is 48 units).

School of Social Work

COMBINED B.ARTS SC./B.S.W.

Students interested in this combined programme should consult *both* the Director of the Arts and Science Programme and the Director of the School of Social Work *prior to enrolment in Level I*.
(See *Arts & Science Programme*.)

COMBINED B.A./B.S.W.

Admission:

Completion of **any Level I** programme, including Psychology 1A06 and Sociology 1A06, normally with a University Average 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 Associate Dean of the Faculty.

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 term.

Applicants **transferring** from other universities (see *Two-tier Applications below*) **must also apply** through the Ontario Universities' Application Centre (OUAC) for full-time study, or through the Associate Registrar (Liaison and Admissions) for part-time study, 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 (early December):

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 BA/BSW programme, and the subject you wish to take for the BA component. The form should be returned to OUAC, with the appropriate fee.

If you wish to study *part-time*, fill out a McMaster Application form which can be obtained directly from McMaster, at Gilmour Hall, Room 120.

In order to allow adequate time for the processing of the General Application, applicants are advised to submit their applications **in early December**.

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.

PROGRAMME REQUIREMENTS:

Programme Notes

1. **Course Groupings:** There are **three** groups of courses in the Social Work programme:

Group I are those which are required core courses;

Group II are those which are primarily practice oriented;

Group III are those which are primarily policy oriented. Only Group III courses may be taken for elective credit by undergraduates not in Social Work. Social Work students must in *each* of Levels III and IV take 6 units from Group III courses for Elective credit. Permission of the School for Group III courses is required for all students.

Group I:

Social Work 2B06, 2C03, 2D03, 3D06, 3DD6, 4D06, 4DD6

Group II:

Social Work 3N03, 3O03, 3P03, 3R03, 4G03, 4K03, 4O03, 4P03, 4T03, 4V03, 4W03, 4X03, 4Y03

Group III:

Social Work 3C03, 3G03, 3H03, 3J03, 4J03, 4M03, 4Z03

2. **Progression Within Programme:** Students must achieve a minimum grade of C+ in each of Social Work 2B06, 2C03, 2D03, 3D06, and 4D06, and a 'Pass' in Social Work 3DD6 and 4DD6, *and* a Cumulative Area average of at least 6.0 in Social Work courses at each review in order to continue in the programme.
3. **Graduation:** To qualify for the B.A. and 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.

The B.S.W. degree will be granted only if the student has achieved a grade of at least C+ in each of Social Work 2B06, 2C03, 2D03, 3D06, and 4D06, and a 'Pass' in Social Work 3DD6 and 4DD6, *and* a Cumulative Area average of at least 6.0 in Social Work courses. Graduation from the three-year B.A. portion of the programme requires a Graduation Average of at least 4.0.

4. Students are expected to assume the cost of travelling to and from field practice agencies.

Area courses for the B.S.W. Component:

All Social Work courses.

Graduation Average (G.A.):

Two G.A.'s are calculated. The G.A. for the B.S.W. is computed on 60 units of Social Work area courses (see Course Requirements).

Cumulative Area Average (C.A.A.):

Two C.A.A.'s are calculated. The C.A.A. for the B.S.W. is based on the best 80% of Level II, III and IV Social Work area courses (see *Programme Note #2*).

Course Requirements: 138 units Total (Levels I-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)

60 units Social Work Area courses, including Social Work 2B06, 2C03 and 2D03 (which must be completed prior to enrolling in Social Work 3D06 and 3DD6); Social Work 3D06 and 3DD6 (which must be completed prior to enrolling in Social Work 4D06 and 4DD6); one of Social Work 3N03, 3R03; one of Social Work 4O03, 4X03, 4Y03; 6 units additional Group II Social Work courses; Social Work 4D06 and 4DD6; 12 units Group III Social Work courses.

3 units Psychology 2A03 (which must be completed prior to enrolling in Social Work 3D06 and 3DD6).

24 units Area courses for the B.A. (this may vary according to the B.A. programme).

21 units Electives (other requirements may be specified by the B.A. programme).

B.S.W. AS A SECOND DEGREE

Admission:

Completion of an undergraduate degree from a recognized university including *introductory* Psychology and Sociology, (equivalent to the McMaster courses Psychology 1A06 and Sociology 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.

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. Second Degree programme is limited. Students who intend to apply for the B.S.W. as a Second Degree 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 term. Applicants **must also apply** to the University through the Associate Registrar (Liaison and Admissions) for full- or part-time study.

Programme Notes:

1. **McMaster Work:** Students are required to take courses to total 60 units, all of which must be completed at McMaster. If advanced standing is granted, additional courses must be taken at McMaster to total 60 units.

2. **Course Groupings:** There are **three** groups of courses in the Social Work programme:

Group I are those which are required core courses;

Group II are those which are primarily practice oriented;

Group III are those which are primarily policy oriented. Only Group III courses may be taken for elective credit by undergraduates not in Social Work. 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:

Social Work 2B06, 2C03, 2D03, 3D06, 3DD6, 4D06, 4DD6

Group II:

Social Work 3N03, 3O03, 3P03, 3R03, 4G03, 4K03, 4O03, 4P03, 4T03, 4V03, 4W03, 4X03, 4Y03

Group III:

Social Work 3C03, 3G03, 3H03, 3J03, 4J03, 4M03, 4Z03

2. **Progression Within Programme:** Students must achieve a minimum grade of C+ in each of Social Work 2B06, 2C03, 2D03, 3D06, and 4D06, and a 'Pass' in Social Work 3DD6 and 4DD6, and a Cumulative Area average of at least 6.0 overall at each review in order to continue in the programme.

3. **Graduation:** To qualify for the B.S.W. as a Second Degree, students must complete a total of 60 units of credit at McMaster. The B.S.W. as a Second Degree will be granted only if the student has achieved a grade of at least C+ in each of Social Work 2B06, 2C03, 2D03, 3D06, and 4D06, and a 'Pass' in Social Work 3DD6 and 4DD6, and a Cumulative Area average of at least 6.0 overall.

4. Students are expected to assume the cost of travelling to and from field practice agencies.

Area Courses:

All Social Work courses, Psychology 2A03.

Graduation Average:

is computed on all Social Work Area courses taken for the Second Degree

Course Requirements:

60 units Social Work 2B06, 2C03, 2D03 and *Psychology 2A03 (which must be completed prior to enrolling in 3D06 and 3DD6); 3D06 and 3DD6 (which must be completed prior to enrolling in Social Work 4D06 and 4DD6); 4D06 and 4DD6; one of Social Work 3N03 or 3R03; one of Social Work 4O03, 4X03, 4Y03; 12 units Group III Social Work courses; *3 - 6 additional units of Group II Social Work to total 60 units.

* 6 units of additional Group II must be chosen if Psychology 2A03 was completed prior to admission to the B.S.W. Second Degree Programme.

Department of Sociology

HONOURS ARTS AND SCIENCE AND SOCIOLOGY (B. Arts Sc.).
(See *Arts and Science Programme*)

HONOURS SOCIOLOGY (SPECIALIST)

Admission:

Completion of **any Level I** programme with an average of at least 7.0 in Sociology 1A06 and 6 other units, including a grade of at least B- in Sociology 1A06.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. A student may take a maximum of 6 units of Level IV independent research (Sociology 4M03/4N03 or 4MM6).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

Area Courses:

All Level II, III and IV Sociology courses.

Graduation Average (G.A.):

is computed using at least 36 units of Levels II, III, IV Area courses.

Course Requirements: 120 units Total (Levels I-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)

48 units Sociology 2S06 and one of 3A03, 3P03, 3PP3; one of 3O03 or 3W03; at least 12 units of Level IV Sociology; 24 units Sociology Area courses.

6 units Research Methods: Sociology 3H06.

3 units Informal Logic: Humanities 2C03.

6 units Social Sciences I courses other than Sociology 1A06. If requirement completed in Level I, these units may be added to electives.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

21 units Electives.

COMBINED HONOURS IN SOCIOLOGY AND ANOTHER SUBJECT

Admission:

Completion of **any Level I** programme with a grade of at least B- in Sociology 1A06. Satisfaction of admission requirements for the Honours programme in the other B.A. subject.

PROGRAMME REQUIREMENTS:

Programme Notes:

1. A student may take a maximum of 6 units of Level IV independent research (Sociology 4M03/4N03 or 4MM6).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.
3. Where 6 units of Research Methods and Statistics are required by both Departments, a comparable course may be substituted for Sociology 3H06. Permission of the Sociology Department must be obtained to make this substitution.

Area Courses:

For the Sociology component Level II, III and IV Sociology courses.

Graduation Average (G.A.):

Graduation averages are computed separately for each component. The G.A. for the Sociology component is computed using at least 24 units of Level II, III and IV Area courses. The G.A. for the other component is computed as specified by the other department.

Cumulative Area Average (C.A.A.):

Separate C.A.A.'s are computed for each component using the best 80% of the grades obtained in Levels II, III and IV Area courses in each subject except where otherwise specified.

Course Requirements: 120 units Total (Levels I-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)

FACULTY OF SOCIAL SCIENCES

36 units Sociology 2S06; one of 3A03, 3P03, 3PP3; one of 3O03 or 3W03; at least 12 units of Level IV Sociology; 12 units Sociology Area courses.

36 units Area courses for the other subject.

6 units Research Methods: Sociology 3H06 or in Combined programmes within the Faculty of Social Sciences, the Research Methods specified for the Other Subject. (see *Programme Note #3*).

3 units Informal Logic: Humanities 2C03. Students combining Honours Arts and Science with Sociology are exempt from this requirement.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). Students combining Sociology 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.

HONOURS SOCIOLOGY WITH A MINOR IN ANOTHER SOCIAL SCIENCE SUBJECT

Admission:

Completion of any Level I programme, with an average of at least 7.0 in Sociology 1A06, and 6 additional units, including a grade of at least B- in Sociology 1A06. Satisfaction of admission requirements in the minor subject (normally C- in 6 units Level I course(s)).

PROGRAMME REQUIREMENTS:

Programme Notes:

1. A student may take a maximum of 6 units of Level IV independent research (Sociology 4M03/4N03 or 4MM6).
2. Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

Area Courses:

All Level II, III and IV Sociology courses and Area courses in the minor subject.

Graduation Average (G.A.):

is computed using at least 36 units of Level II, III and IV Area courses in Sociology and in the minor subject.

Cumulative Area Average (C.A.A.):

is computed using the best 80% of all Level II, III and IV Area courses in Sociology and in the minor subject.

Course Requirements: 120 units Total, (Levels I-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)

36 units Sociology 2S06; one of 3A03, 3P03, 3PP3; one of 3O03 or 3W03; at least 12 units of Level IV Sociology; 12 units Sociology Area courses.

18 units Area courses in the minor subject.

6 units Research Methods: Sociology 3H06.

3 units Informal Logic: Humanities 2C03.

6 units World History, Culture and Thought (see *Faculty of Social Sciences: World History, Culture and Thought Menu*). If requirement completed in Level I, these units may be added to electives.

21 units Electives.

MINOR IN SOCIOLOGY

Admission:

Admission to any Social Sciences Honours Programme and completion of Sociology 1A06, with at least a C- (4.0).

PROGRAMME REQUIREMENTS:

Programme Note:

Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

Area Courses:

All Level II, III and IV Sociology courses.

Course Requirements:

18 units one of Sociology 2D06, 2006, 2S06, or 2V06; 12 units Sociology Area courses.

See Honours Subject with a Minor for additional requirements.

B.A. IN SOCIOLOGY

Admission:

Completion of any Level I programme, with a grade of at least C- (4.0) in Sociology 1A06.

PROGRAMME REQUIREMENTS:

Programme Note:

Students should check both this Calendar and the Departmental Handbook for prerequisites and course descriptions.

Area Courses:

All Level II, III and IV Sociology courses.

Course Requirements: 90 units Total (Levels I-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)

24 units Sociology 2S06; one of Sociology 2Y03, 2Z03, 3H06 or Gerontology 3C03 (with permission of the department); 12-15 units Sociology Area courses.

6 units Humanities (see *Faculty of Social Sciences: Academic Regulations*). If requirement completed in Level I, these units may be added to electives.

30 units Electives.

Women's Studies Programme

Joan Coldwell/B.A., M.A. (London), Ph.D., (Harvard), Director
Pat Fraser, Administrative Assistant

Women's Studies is a rapidly expanding discipline which brings fresh new approaches to scholarship. It focusses 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 re-assessment of the traditional academic disciplines in order to create a more balanced understanding of women and men.

Courses designated as Women's Studies are team-taught by members of the Women's Studies Committee of Instruction. These 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 Area 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 not only in feminist theories but 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 workworld, local and international.

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 (see the Academic Regulations section of this Calendar) and the regulations described below.

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's Studies 1A06 and satisfaction of admission requirements for the Honours B.A. programme in the other subject.

Programme Notes:

1. **Enrolment in the Programme is limited.** Application for admission to the Combined Honours B.A. programme in Women's Studies and Another Subject is by selection of applicants who have completed or are completing 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's Studies 1A06 and satisfaction of admission requirements for the Honours B.A. programme in the other subject. Application for admission, including a letter explaining the applicant's interest in the Programme, should be made to the Director of Women's Studies prior to 15 April.
2. Students who have not taken Women's Studies 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's Studies 1A06.
3. Registration in each level of the programme requires written approval of the Director of the Women's Studies Programme and the appropriate Other Subject Counsellor.
4. In Levels II, III and IV, students must take the 6-unit Women's Studies course appropriate to their level and 6 additional units of approved Women's Studies area courses. 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.

Area Courses:

R Women's Studies 2A06, 3A06, 4A06 and 18 units of Area course work at the appropriate level.

Area Courses: Women's Studies 2B06, 2C06, 2H03, 3B03, 3BB3, 3C06, 3D06, 4B06, 4C06;

Area courses at the appropriate Level may also be selected where available from: Anthropology, Classics, Comparative Literature, English, French, Geography, History, Labour Studies, Philosophy, Physical Education, Religious Studies and Sociology. Students must select their Area courses in consultation with the Director of Women's Studies.

Note: The Area 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.

- E To the minimum total of 72 units of Area work in the two components of the Combined Honours programme, students must add elective work to make a minimum overall total of 90 units beyond the Level I programme.

Thematic Areas of Study

The following listing is designed to assist students 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 wishing to pursue *Asian Studies* may obtain further information from Dr. D. Barrett (History) or Dr. K. Shinohara (Religious Studies).

COURSES DEALING STRICTLY WITH ASIAN MATERIAL

Art History 3J03	Japanese Art
Art History 3K03	Arts of China
Geography 2C03	China: People and Land in Transition
Geography 3JJ3	Geography of Japan
History 2B06	China: From Late Imperial Times to the Present
History 2E06	An Introduction to the History of the Islamic World
History 3A03	Imperial Islam: The Ottomans, the Safavids, and the Moguls
History 3AA3	Islam and the West: Historical Perceptions of the Other
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	The Modern Middle East
Religious Studies 2J06	India: Its Culture, Social History, Religion and Philosophy
Religious Studies 2L03	Life, Work and Teachings of Mahatma Gandhi
Religious Studies 2MM6	East Asia: Religion and Thought
Religious Studies 2P06	Japanese Civilization
Religious Studies 2PP3	Indian Philosophy
Religious Studies 2TT3	Taoism and the Search for Immortality in China
Religious Studies 3I03	Storytelling in Indian Religion
Religious Studies 3AA3	Popular Religion in India
Religious Studies 3C03	Divination and Philosophy of <i>I-Ching</i> or the <i>Book of Changes</i>
Religious Studies 3U03	The Buddhist Tradition in India and Southeast Asia
Religious Studies 3UU3	The Buddhist Tradition in East Asia

COURSES WITH A SIGNIFICANT AMOUNT OF ASIAN CONTENT

Economics 3J06	Economic Development
Political Science 3VV3	Culture and Politics in the Middle East and Africa
Political Science 4MM6	International Relations of the Pacific Rim
Religious Studies 1B06	World Religions
Religious Studies 1F06	War and the Problem of Meaning
Religious Studies 2BB3	Images of the Divine Feminine
Religious Studies 2H03	Issues in War and Peace
Religious Studies 2QQ3	Cults in North America
Religious Studies 2SS3	Women and Religion
Religious Studies 2WW3	Health, Healing and Religion

LANGUAGE COURSES

Chinese 1Z06	Beginner's Intensive Chinese
Chinese 1ZZ6	Beginner's Intensive Chinese for Dialect Speakers
Chinese 2Z06	Intermediate Intensive Chinese

Chinese 3Z03
Japanese 1Z06
Japanese 2Z06
Japanese 3ZZ6
Sanskrit 3A06
Sanskrit 4B06

Advanced Chinese
Beginner's Intensive Japanese
Intermediate Intensive Japanese
Advanced Intensive Japanese
Introduction to Sanskrit Grammar
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 History 3B03	Canadian Art and Architecture
Drama 3BB3	Contemporary Quebec Theatre
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 3V06	The People of Ontario, 1790-1940: An Introduction to Regional Social History
History 4N06	Canadian Historiography
Music 3T03	Studies in Canadian Music

SOCIAL SCIENCES

Anthropology 3A03	Ethnology: The Canadian North
Anthropology 3F03	Contemporary Northern Peoples
Economics 2K03	Economic History of Canada
Geography 2E03	Canada
Geography 4U03	Selected Problems in Urban Planning
Geography 4Z03	Advanced Cultural Geography
Political Science 2G06	Politics in Canada
Political Science 3DD6	Political Parties, Movements and Elites in Canada
Political Science 3GG3	Politics of Federalism
Political Science 4S06	Canadian Political Theory
Religious Studies 3B03	Native and Ethnic Religions in Canada
Religious Studies 3BB3	Major Denominations in Canada
Sociology 2H06	A Sociological Analysis of Canadian Society
Sociology 3BB3	Major Denominations in Canada (<i>Same as Religious Studies 3BB3</i>)
Sociology 3Q03	Native and Ethnic Religions in Canada (<i>Same as Religious Studies 3B03</i>)

Eighteenth-Century Studies

There is no B.A. programme in *Eighteenth-Century Studies*, but students wishing to make a special study of the field may group electives from the following list of relevant courses offered by various departments. For a full description and requirements see the appropriate departmental listings. For information on year offered see the timetable.

Art History 2N03	Italian Baroque Art and Architecture
English 2R03	Topics in Restoration and 18th-Century Literature
English 3G06	English Literature 1660-1800
English 3M03	Romantic Poetry
French 3K03	Eighteenth-Century French Literature I
French 3KK3	Eighteenth-Century French Literature
French 4F03	Topics in Eighteenth-Century French Literature

German 3A03	Baroque and Enlightenment Literature
History 2M06	European Society from Absolutism to Democracy
History 2N06	British History 1500 to the Present
History 4F06	Special Topics in the Age of the Enlightenment
Philosophy 3A06	From Kant to Hegel

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 Faculty of Social Sciences. Those students desiring further information on specific courses should consult the departments listed 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 further information from Dr. Vivienne Walters (Sociology).

COURSES DEALING WITH HEALTH AND SOCIETY ISSUES

Anthropology 2U03	Plagues and People
Anthropology 3Z03	Medical Anthropology: The Biomedical Approach
Anthropology 3ZZ3	Medical Anthropology: Symbolic Healing
Anthropology 4C03	Human Adaptability/The Social Environment
Economics 3Z03	Health Economics
Geography 4S03	Geography of Health
History 3EE3	History of Medicine in Canada
History 4EE6	Society, Science and the Medical Profession in 19th and 20th Century in North America
Labour Studies 3D03	Occupational Health and Safety
Philosophy 2D03	Moral Issues
Philosophy 3C03	Advanced Bioethics
Physical Education 4F03	Health: Issues in Research and Consumerism
Physical Education 4P03	Health and Science: Behavioural
Psychology 3B03	Special Populations
Psychology 3N06	Abnormal Psychology
Religious Studies 2M03	Death and Dying: Comparative Views
Religious Studies 2N03	Death and Dying: The Western Experience
Religious Studies 2WW3	Health, Healing and Religion
Religious Studies 3SS3	Body, Mind, and Spirit
Science 2G03	The World's Food Supply
Social Work 3C03	Social Aspect of Health and Disease
Sociology 3G03	Sociology of Health Care
Sociology 3HH3	Sociology of Health
Sociology 4G03	The Social Production of Illness

Students will also find courses relevant to this theme in the listings of other Faculties.

Indigenous Peoples

(Including courses offered on First Nations)

While there is no B.A. programme on Indigenous Peoples, several departments offer courses on First Nations and indigenous peoples of the world. All students interested in this area may choose electives from among the following courses offered by various departments. For a full description of courses and requirements, see the listings under the department offering the course.

Students wishing to pursue Indigenous Studies may obtain further information from Dr. H. Feit (Anthropology) or Dr. L. W. Lee (Social Work).

COURSES DEALING PRIMARILY WITH INDIGENOUS PEOPLES

Anthropology 2B03	Native Peoples of North America
Anthropology 2O03*	New World Prehistory

Anthropology 2V03	The Aztecs, Maya and Inca
Anthropology 3A03*	Ethnology: The Canadian North
Anthropology 3F03*	Contemporary Northern Peoples
Anthropology 3U03*	Canadian/North American Prehistory
Religious Studies 3B03*	Native and Ethnic Religions in Canada
Sociology 3Q03*	(same as Religious Studies 3B03)

COURSES WITH A SIGNIFICANT SECTION ON INDIGENOUS PEOPLES

Anthropology 2U03	Plagues and People
Anthropology 3ZZ3*	Medical Anthropology: Symbolic Healing
Anthropology 4N03*	Anthropology and Education
Anthropology 4R03*	Skeletal Biology of Earlier Human Populations
Drama 3RR3*	The American Cinema II
Religious Studies 2K03	Myth
Religious Studies 2W03	Religion and the Environment
Religious Studies 2WW3	Health, Healing and Religion
Social Science 2C03	Genocide and Ethnocide
Social Work 4O03*	Community Work

* These courses may have prerequisites of other courses, registration in specific programmes, or permission of the instructor.

Peace Studies

While there is no B.A. programme in *Peace Studies*, students wishing to concentrate in this area should be aware of the following courses offered by various departments. Special note should be taken of the introductory course, Social Sciences 2B06. Those desiring further information on specific courses should consult the departmental listings in the Calendar.

Students wishing to pursue *Peace Studies* may obtain further information from Dr. Graeme MacQueen (Religious Studies).

Social Science 2B06	Introduction to the Study of Peace
Social Science 2C03	Genocide and Ethnocide
Social Science 2D03	Peace and Development
Anthropology 2X03	Warfare and Aggression
Anthropology 3T03	Competition and Conflict
Biology 3Q03	Radiation Biology
History 3I03	The International Relations of the European Powers, 1924-1945
History 3II6	The History of Warfare 1865-1945
History 3RR3	War and Society in Twentieth Century Britain
Philosophy 1B06	Philosophy and Society
Philosophy 2G03	Social and Political Issues
Philosophy 3P03	Philosophies of War and Peace
Political Science 2E06	International Politics
Political Science 3AA3	International Politics in the Post War Period
Political Science 4F06	Human Rights: International and National
Political Science 4M06	Issues in International Politics
Religious Studies 1F06	War and the Problem of Meaning
Religious Studies 2H03	Issues in War and Peace
Religious Studies 2L03	Life, Work and Teachings of Mahatma Gandhi
Science 2G03	The World's Supply of Food
Sociology 3F06	Political Sociology

Part-time Degree Studies

The University offers a broad range of educational opportunities for students who wish to take degree studies on a part-time basis. In addition to the day time offerings in the Winter and Summer sessions, a wide selection of evening classes is available throughout the year.

Each student taking degree courses will associate with one of the undergraduate faculties (Business, Humanities, Science or Social Sciences). By so doing, students will have the opportunity to consult with the academic counsellors of their Faculty, and with the departments whose courses are of interest to them. If their interests change, it is often possible to transfer to another department or Faculty.

The courses which part-time students take in the early stages of their education will form the basis for choosing their programme of study. The Level I courses will give them the information they 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 chart *Degrees by Programme*, in the *Degrees and Programmes* section of this Calendar. Students should also familiarize themselves with the requirements and information found in the following sections: *Admissions*, *Academic Regulations* and *Sessional Dates* as well as the programme descriptions found in the specific Faculty sections.

ADMISSION

Before you can register for any course or programme, you must apply for admission to the University. Applicants who satisfy the normal admission requirements of the University may choose to register for part-time study. Those who do not satisfy these requirements may be admissible as *Special Students* and given the opportunity to show that they can deal successfully with university work. Initially, *Special Students*, with the approval of the appropriate Associate Dean (Studies), may take only one course at a time until 12 units are completed.

Students who do not wish to enter a degree programme, but would like to take a course for credit, may be admissible as *Occasional Students* under the same conditions as apply to *Special Students*. Such students may subsequently transfer to a degree programme. If the courses already completed were relevant to the programme, then they could be counted towards the degree requirements.

Many part-time students enter degree study from other forms of post-secondary education. Students who want to inquire regarding credit recognition for work taken in non-degree programmes (e.g. diploma, certificate, CAAT) should contact the appropriate Faculty Office.

Please refer to the section *Admission Requirements* for details about the various avenues for admission to study at McMaster.

AVAILABILITY OF COURSES

Although both daytime and evening courses are open to all students, part-time students often have other responsibilities which restrict them to the

courses offered in the evenings, winter and summer. For those who can arrange to take day courses, 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.

CO-ORDINATOR OF PART-TIME DEGREE STUDIES

The Co-ordinator of Part-time Degree Studies, Mr. Gordon Raymond or his Assistant, Ms. Tina Horton, may be telephoned at 525-9140, extension 4325 or 4324 respectively, Gilmour Hall Room 103, for counselling and to discuss preparation and plans for degree study. His office 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: extension 3941

Humanities: extension 4326

Science: extension 2612

Social Sciences: extension 4604

Information about **application procedures and admission regulations** is available through the Admissions Office (525-9140, ext. 4796, Gilmour Hall, Room 120).

Information about **non-degree courses and programmes**, including courses for pre-university upgrading, is available through the Centre for Continuing Education (525-9140, ext. 4321).

OFF-CAMPUS 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 Centre in Hamilton is in the Hamilton Central Library just off Jackson Square, telephone (416)525-9140, extension 2020.

MAPS

The McMaster Association of Part-time Students (MAPS) maintains an office and student lounge in Room 102 of Kenneth Taylor Hall, telephone 525-9140, extension 2021 and publishes a newsletter, *Link*, which is sent to all part-time students. The coffee lounge is open day and evening from Monday to Thursday, and Friday during the day. MAPS Executive Director, Mr. Bruce Misch, 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, 1992

David R. Counts/*Chair*

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*)

David R. Counts/B.A. (*Texas*), Ph.D. (*Southern Illinois*)

Dorothy Counts (University of Waterloo)/B.A., M.A., Ph.D. (*Southern Illinois*)/part-time

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*)

Associate Professors

Matthew Cooper/B.A. (*Brooklyn College*), M.Phil., Ph.D. (*Yale*)

Laura Finsten/B.A. (*Western*), M.A. (*Calgary*), Ph.D. (*Purdue*)

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*)

Susan Pfeiffer (*University of Guelph*)/B.A. (*University of Iowa*), M.A., Ph.D. (*Toronto*)/part-time

William L. Rodman/B.A. (*Sydney*), M.A., Ph.D. (*Chicago*)

Shelley Saunders/B.A., M.A., Ph.D. (*Toronto*)

Michael Spence (*University of Western Ontario*)/B.A., M.A. (*Toronto*), Ph.D. (*Southern Illinois*)/part-time

Assistant Professors

Ellen Badone (*Religious Studies*)/B.A., M.A. (*Toronto*), Ph.D. (*California, Berkeley*)

Aubrey Cannon/B.A. (*Simon Fraser*), Ph.D. (*Cambridge*)

Sally Cole/B.Sc. (*Trent*), M.A. (*Memorial*), Ph.D. (*Toronto*)/part-time

Christopher Ellis (*University of Western Ontario*)/B.A. (*Waterloo*), M.A. (*McMaster*), Ph.D. (*Simon Fraser*)/part-time

D. Ann Herring/B.A., M.A., Ph.D. (*Toronto*)

William Thurston/B.A., M.A. (*McMaster*), Ph.D. (*Toronto*)/part-time

Wayne Warry/B.A., M.A. (*McMaster*), Ph.D. (*ANU*)

Associate Members

Henry Schwarcz (*Geology*)/B.A. (*Chicago*), M.S., Ph.D. (*California Institute of Technology*), F.R.S.C.

Dennis Willms (*Clinical Epidemiology*)/B.A. (*Waterloo*), M.A. (*McMaster*), Ph.D. (*UBC*)

Department Notes:

1. Not all Anthropology courses listed in this Calendar are taught every year. Students are advised to consult the department's brochure and the timetable which is published annually by the Registrar's Office to determine whether a course is offered.
2. The department offers three Level I Anthropology courses. Anthropology 1A03 and 1Z03, taken together, are designed to provide an introduction to the study of Anthropology. Anthropology 1L03 introduces the study of language as a sub-discipline of Anthropology.
3. 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.
4. To identify Anthropology courses by subdiscipline, students should refer to the lists of courses under *Anthropology Subfields* in the section *Faculty of Social Sciences, Department of Anthropology*.

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.

3 hrs.(lects. and discussion); one term

Prerequisite: Open.

ANTHROP 1L03 INTRODUCTION TO ANTHROPOLOGY: THE NATURE OF LANGUAGE

An introduction to the structures of language and non-verbal communication, and to the role of language in the cultures and societies of the world.

3 hrs. (lects. and discussion); one term

Prerequisite: Open except to students with credit in Linguistics 1A06.

ANTHROP 1Z03 INTRODUCTION TO ANTHROPOLOGY: HUMAN AND CULTURAL ORIGINS

Emphasis will be on the evolution of humans as seen in the fossil record and on the growth and development of human societies in prehistoric times.

3 hrs.(lects. and discussion); one term

Prerequisite: Open.

ANTHROP 2AA3 THE ORIGIN AND DEVELOPMENT OF THE EUROPEAN LANGUAGES

The phonetic, morphological, syntactic and lexical structures of Indo-European 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Linguistics 2A06.

Same as Linguistics 3B03.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Linguistics 2A03.

ANTHROP 2B03 INDIGENOUS PEOPLES OF NORTH AMERICA

A comparative study of selected cultures of this continent, dealing with traditional and modern situations.

3 hrs.(lects. and discussion); one term

Prerequisite: Open.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: 6 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.

3 hrs.(lects. and discussion); one term

Prerequisite: 6 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 anthropological concepts and theory underlying the comparative study of the social institutions of non-literate peoples.

3 hrs.(lects. and discussion); one term

Prerequisite: 6 units of Level I Anthropology or Anthropology 1A03.

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.

3 hrs.(lects. and discussion); one term

Prerequisite: Registration in Level II, III or IV of any programme.

Enrolment is limited.

ANTHROPOLOGY

ANTHROP 2H03 ECOLOGICAL ANTHROPOLOGY

An introduction to the study of the interdependence of human societies and their physical and biological environments in anthropological perspective.

3 hrs.(lects. and discussion); one term

Prerequisite: 6 units of Level I Anthropology or Anthropology 1A03.

ANTHROP 2I03 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.

3 hrs.(lects. and discussion); one term

Prerequisite: 6 units of Level I Anthropology or Anthropology 1A03.

This course is required of all students in an Honours Programme in Anthropology.

ANTHROP 2J3 HUMAN GROWTH AND CONSTITUTION

Variation in body form and composition examined in the context of normal growth and evolutionary development.

3 hrs.(lects. and discussion); one term

Prerequisite: Open, except to students with credit in 2J03.

ANTHROP 2KK3 MYTH

Major definitions and theories of myth are discussed in conjunction with primary readings from mythological texts.

2 lects., 1 tut., one term

Prerequisite: Open

Same as Religious Studies 2K03.

ANTHROP 2L03 PHONETICS

A study of the sounds of language and human articulatory capabilities.

3 hrs.(lects.); one term

Prerequisite: Open

Same as Linguistics 2L03.

ANTHROP 2LL3 LANGUAGES OF THE WORLD

A sociolinguistic survey of the world's languages under topics such as official and vernacular languages, multilingualism, language loss and spread, and language conflict.

3 hrs. (lects. and discussion); one term

Prerequisite: Open

Same as Linguistics 2LL3.

ANTHROP 2M03 PHONOLOGY

A study of the patterns of distinctive sounds in the world's languages.

3 hrs.(lects.); one term

Prerequisite: Anthropology or Linguistics 2L03.

Same as Linguistics 2M03.

ANTHROP 2O03 NORTH AMERICAN PREHISTORY

An examination of the origins and development of the major indigenous cultural groups of prehistoric North America.

3 hrs.(lects. and discussion); one term

Prerequisite: Anthropology 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.

3 hrs.(lects. and discussion); one term

Prerequisite: Open

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.

3 hrs.(lects. and discussion); one term

Prerequisite: 3 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.

3 hrs.(lects. and discussion); one term

Prerequisite: Registration in at least Level II of any programme.

This course is required of all students registered in an Honours Programme in Anthropology.

Same as Linguistics 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.

3 hrs.(lects. and discussion); one term

Prerequisite: Anthropology 1A03 or 2F03.

ANTHROP 2S03 THE PEOPLES OF THE SOVIET UNION

This survey course will acquaint the student with the ethnology, languages and histories of the multifarious peoples spanning the present-day Soviet Union and neighbouring territories. Where possible, historical accounts of particular groups will be given, from remote antiquity to the present, and accounts of long-vanished peoples and civilizations will be presented.

3 hrs.(lects.); one term

Prerequisite: Open

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.

3 hrs.(lects. and discussion); one term

Prerequisite: Open.

ANTHROP 2V03 THE AZTECS, MAYA AND INCA

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 Inca.

3 hrs.(lects.); one term

Prerequisite: Open.

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.

3 hrs.(lects. and discussion); one term

Prerequisite: Open.

ANTHROP 2Y03 HONOURS SEMINAR

This course will give students the opportunity to develop skills in critical thinking and in communicating their ideas by emphasizing individual work in a seminar format. Topics will vary from year to year.

3 hrs.(lects. and discussion); one term

Prerequisite: Registration in Level II or III Honours Anthropology.

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.

3 hrs.(lects. and discussion); one term

Prerequisite: Registration in Honours or B.A. Anthropology and either Anthropology 1A03 or 2F03.

Same as Sociology 2Z03.

Enrolment is limited.

ANTHROP 3A03 ETHNOLOGY: THE CANADIAN NORTH

A comparative ethnological analysis of selected societies in the Canadian North.

3 hrs.(lects. and discussion); one term

Prerequisite: Anthropology 1A03 or 2F03; or registration in a Health Sciences programme.

ANTHROP 3AL6 THE SOCIAL SITUATION OF THE MODERN EUROPEAN LANGUAGES

A survey of the social functions, changes in status and attendant linguistics problems of the languages of Europe. Among the topics covered are the growth of standard languages, modernization, dialects and dialect levelling, language planning, language attitudes, the impact of nationalism and internationalism, and the spread of European languages throughout the world.

3 lects; two terms

Prerequisite: Open to students in Level II and above.

Same as Linguistics 3A06.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: 3 units of Level I Anthropology.

ANTHROP 3B03 ETHNOLOGY: EUROPE

A comparative ethnological survey of selected societies in Europe.

3 hrs.(lects. and discussion); one term

Prerequisite: 6 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.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in Level III or IV of any programme. Anthropology 2E03 is highly recommended.

ANTHROP 3D03 ETHNOLOGY: PACIFIC ISLANDS

Analysis of selected issues in Pacific anthropology.

3 hrs.(lects. and discussion); one term

Prerequisite: Anthropology 2P03.

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*). Consult the department office for topics prior to registration.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 2PA3.

ANTHROP 3EE3 SPECIAL TOPICS IN ARCHAEOLOGY II

As per Anthropology 3X03, but on a different topic.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 2PA3.

ANTHROP 3F03 CONTEMPORARY NORTHERN PEOPLES

An examination of native-white interaction in northern Canada with an emphasis on present day events.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 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.

3 hrs. (lects. and discussion); one term

Prerequisite: Open

ANTHROP 3I03 SYNTAX

A study of the human capacity to form words into sentences. Emphasis will be on generative transformational grammar.

3 hrs. (lects.); one term

Prerequisite: Open

Same as Linguistics 3I03.

ANTHROP 3J03 ADVANCED SOCIAL ANTHROPOLOGY

Further study of the topics introduced in Anthropology 2F03.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 2F03.

ANTHROP 3JJ6 ANTHROPOLOGY OF RELIGION

Survey and evaluation of theoretical perspectives employed by anthropologists in the study of religion. Specific ethnographic examples will be drawn primarily, but not exclusively, from non-Western cultures.

2 lects., 1 tut.; two terms

Prerequisite: Open

Same as Religious Studies 3JJ6.

ANTHROP 3K03 ARCHAEOLOGICAL INTERPRETATION

Technique and methodology in the investigation of archaeological material.

3 hrs. (lects. and discussion); one term

Prerequisite: 3 units of Level II Archaeology.

Enrolment is limited.

ANTHROP 3L03 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.

3 hrs. (lects. and discussion); one term

Prerequisite: 6 units of Social/Cultural Anthropology.

ANTHROP 3M03 MORPHOLOGY AND SEMANTICS

The study of word formation and patterns of meaning in language.

3 hrs. (lects.); one term

Prerequisite: Anthropology 3I03 or Linguistics 3I03.

Same as Linguistics 3M03.

ANTHROP 3N03 PRIMATE BIOLOGY AND EVOLUTION

Comparative anatomy and development of our nearest living relatives as well as an examination of the fossil record from 70 to 5 million years ago.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in Level III or IV of any programme. Anthropology 2E03 is highly recommended.

ANTHROP 3NN3 HOMINID EVOLUTION

An evaluation of the anatomical, genetic and fossil evidence for the evolution of the human species.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in Level III or IV of any programme. Anthropology 2E03 is highly recommended.

ANTHROP 3NP3 NEOLITHIC PREHISTORY

A survey of the development of settled, food-producing human cultures from earliest villages to urban life.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 1Z03 or 2PA3.

ANTHROP 3P03 RESEARCH METHODS IN CULTURAL ANTHROPOLOGY

Methodologies and techniques of research, especially field study, in sociocultural anthropology.

3 hrs. (lects. 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: TBA

Same as Linguistics 3P03.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: 6 units of Social/Cultural Anthropology, or registration in any programme in Gerontology.

Same as Gerontology 3Q03.

ANTHROP 3R06 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.

3 hrs.; two terms

Prerequisite: Registration in Level III or IV of an Anthropology programme.

Same as Women St 3D06.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in Level III or IV Anthropology.

ANTHROP 3T03 COMPETITION AND CONFLICT

Focus is on the comparative study of political processes and the role which conflict and competition play in social life.

3 hrs. (lects. and discussion); one term

Prerequisite: 6 units of Social/Cultural Anthropology.

ANTHROP 3U03 CANADIAN PREHISTORY

A study of the development of native Canadian cultures prior to the arrival of Europeans.

3 hrs. (lects. and discussion); one term

Prerequisite: 3 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.

3 hrs. (lects. and discussion); one term

Prerequisite: 6 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 3WW3SPECIAL TOPICS IN ANTHROPOLOGY II**

As per Anthropology 3W03, but on a different topic.

One term

Prerequisite: Registration in Level II, III or IV Anthropology.

ANTHROP 3Y03 HISTORICAL LINGUISTICS

Internal and comparative techniques for reconstructing ancestral languages, language classification, and models of language change.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 1L03 or Linguistics 1A06.

Same as Linguistics 3Y03.

ANTHROP 3Z03 MEDICAL ANTHROPOLOGY: THE BIOMEDICAL APPROACH

Patterns of stress and disease with emphasis on the modern biomedical approach. Disease in the evolutionary context with emphasis on disease as a failure of adaptation and response.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in Level III or IV or any programme. Anthropology 2E03 or 2F03 is highly recommended.

ANTHROP 3ZZ3 MEDICAL ANTHROPOLOGY: SYMBOLIC HEALING

An interdisciplinary approach to traditional systems of healing such as Greek humoral medicine, Chinese, Shamanic, etc. Emphasis will be on cultural and psychological parameters of healing.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in Level III or IV of any programme. Anthropology 2E03 or 2F03 is highly recommended.

ART AND ART HISTORY

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.

3 hrs.(lects. and discussion); one term

Prerequisite: Anthropology 2F03 and 3 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*). Consult the department office for topics prior to registration.

3 hrs.(seminar); one term

Prerequisite: Registration in Level IV Honours Anthropology.

ANTHROP 4BB3 CURRENT PROBLEMS IN ANTHROPOLOGY II

As per Anthropology 4B03, but on a different topic.

3 hrs.(seminar); one term

Prerequisite: Registration in Level IV Honours Anthropology.

ANTHROP 4BL3 APPLIED LINGUISTICS: SECOND LANGUAGE TEACHING

The contributions made by the linguist, the psychologist, and the sociologist to the planning, organization, and implementation of a language-teaching methodology, with particular emphasis on CAI/CALL.

Prerequisite: TBA

Same as Linguistics 4B03.

ANTHROP 4C03 HUMAN ADAPTABILITY/THE SOCIAL ENVIRONMENT

Evaluates the impact that the social environment, as expressed in nutrition, disease, culture change, crowding and migration, has on human biology.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 3C03.

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.

3hrs. (lects. and discussion); one term

Prerequisite: Registration in Level IV Anthropology.

ANTHROP 4F03 CURRENT ISSUES IN ARCHAEOLOGICAL THEORY

A seminar in current topics and issues in archaeology.

3 hrs.(lects. and discussion); one term

Prerequisite: Three units of Level III Archaeology courses; or permission of the instructor.

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 Anthropology 4G03, but on a different topic.

One term

Prerequisite: Registration in Level IV Anthropology.

ANTHROP 4H03 TOPICS IN MESOAMERICAN PREHISTORY

An in-depth examination of problems in the prehistory of a major subregion of Mesoamerica, or of a temporal period across all Mesoamerica.

3 hrs. (seminar); one term

Prerequisite: 3 units of Level III Archaeology.

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.

3 hrs. (seminar); one term

Prerequisite: Anthropology 2PA3 and 3 units of Level III Archaeology.

ANTHROP 4I03 CONTEMPORARY ANTHROPOLOGICAL THEORY

Seminar on selected recent developments in anthropological theory.

3 hrs.(seminar); one term

Prerequisite: Registration in Level IV Honours Anthropology.

This course is required of all students registered in Honours Anthropology.

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.

3 hrs.(seminar); one term

Prerequisite: Anthropology 2E03.

ANTHROP 4K03 ADVANCED TOPICS IN LINGUISTICS

An advanced course covering many areas of linguistic theory through the intensive examination of a language or a set of languages.

3 hrs.(lects.); one term

Prerequisite: 12 units of Linguistics above Level I.

Same as Linguistics 4K03.

ANTHROP 4L03 FIELD LINGUISTICS

An advanced course in techniques of linguistic field research. The field situation is simulated by using an actual target language.

3 hrs.(seminar); one term

Prerequisite: 12 units of Anthropology or Linguistics above Level I.

Same as Linguistics 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.

3 hrs.(seminar); one term

Prerequisite: Registration in an Honours programme in Social Science; or permission of the instructor.

ANTHROP 4PI3 PREHISTORY OF THE IROQUOIS

A seminar course that examines the archaeological record of the development of Iroquois culture in the lower Great Lakes.

3 hrs. (seminar); one term

Prerequisite: Anthropology 2PA3 and 3 units of Level III Archaeology.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 2FF3. Not open to students with credit in Anthropology 3O06.

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.

3 hrs.(seminar); one term

Prerequisite: Anthropology/Linguistics 2Q03, 2L03 or 3I03. Not open to students with credit in Anthropology/Linguistics 2T03.

Same as Linguistics 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.

3 hrs. (seminar); one term

Prerequisite: 3 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.

3 hrs.(lects. and discussion); one term

Prerequisite: Registration in Level III or IV Honours Anthropology.

For Graduate Courses, see *Calendar of the School of Graduate Studies*.

Art and Art History

Faculty as of January 15, 1992

Glenn T. Scott/*Chair*

Professors Emeriti

George B. Wallace/M.A. (*Trinity College, Dublin*)

Paul H. Walton/B.A. (*Toronto*), A.M., Ph.D. (*Harvard*)

Associate Professors

Donald F. Carr/B.A. (*Guelph*), M.F.A. (*Chicago*)

Hugh G. Galloway/Dipl. Art (*Edinburgh*)

Hayden B.J. Maginnis/B.A. (*Western*), M.F.A., Ph.D. (*Princeton*)

Assistant Professors

Judy N. Major-Girardin/B.F.A. (*Windsor*), M.F.A. (*Alabama*)

Glenn T. Scott/B.A. (*McGill*), M.F.A., Ph.D. (*Princeton*)

Graham Todd/L.D.A.D. Dip. (*Chelsea School of Art*) M.F.A. (*Guanajuato*)

Warren D. Tresidder/B.A. (*New South Wales*), M.A. (*British Columbia*), Ph.D. (*Michigan*)

Lecturers

Niamh O'Laoghaire/B.A., M.A. (*Toronto*)

Elizabeth Horton Sharf/A.B. (*Wellesley College*), M.A. (*Michigan*)

Instructors

Jean Maddison/M.F.A. (*Royal College of Art, London*)/part-time
 Dan Olsen/B.F.A. (*York*)/part-time

Art Gallery Director and Curator

Kim G. Ness/B.A. (*McMaster*), M.Litt. (*Edinburgh*), M.M.St. (*Toronto*)

Associate Members

Katherine M.D. Dunbabin/Classics/B.A., D.Phil. (*Oxford*)
 Stephen B. Johnson/Drama/B.A. (*Guelph*), M.A. (*Toronto*), Ph.D. (*New York*)
 Graham Petrie/Drama/M.A. (*St. Andrews*), B.Litt. (*Oxford*) Art and Art History

Department Notes:

1. Art courses are open only to students registered in a programme in Honours Art.
2. DVSA Studio courses are open only to students registered in an Art History programme with the exception of Studio 1B03 and 2B03 which may be taken by students registered in an Honours Art programme.

ART**ART 1F06 INTRODUCTION TO STUDIO PRACTICE**

An exploration of composition by two- and three-dimensional methods.

2 studio practice (3 hrs. each); two terms

Prerequisite: Submission of an acceptable portfolio, and an interview with the Department.

Portfolio Required: If you intend to take Art 1F06 you should present a portfolio and be interviewed by the Department of Art and Art History by the end of April. The portfolio should contain a variety of original works in different media including works derived from both first-hand observation and the imagination. Aptitude in art and ability in academic subjects are both considered in our selection process. Personal interviews and portfolio reviews are conducted on weekends in April and the first selection for admission is made in early May. You should contact the Department of Art and Art History to arrange for a time for your interview. In exceptional circumstances, portfolios may be submitted in the form of colour slides. Late applications will be considered subject to space availability and merit after our first allocations have been confirmed. This final selection may not occur, depending on demand, until the beginning of classes in September.
Enrolment is limited.

ART 2A04 PAINTING I

An introduction to concepts, techniques and ideas related to the development of paintings from motif through organization to completed work.

1 studio practice (4 hrs.); two terms

Prerequisite: Art 1F06.

Enrolment is limited.

ART 2B04 SCULPTURE I

An introduction to concepts, techniques and ideas related to the development of sculpture from initial maquettes, through organization to completed work.

1 studio practice (4 hrs.); two terms

Prerequisite: Art 1F06.

Enrolment is limited.

ART 2C03 FIGURE DRAWING AND SUPERFICIAL ANATOMY

1 studio practice (3 hrs.); two terms

Prerequisite: Art 1F06.

Enrolment is limited.

ART 2F04 INTRODUCTORY PRINTMAKING

An introduction to methods of intaglio and relief printmaking, lithography and serigraphy.

1 studio practice (4 hrs.); two terms

Prerequisite: Art 1F06.

Enrolment is limited.

ART 3A03 ADVANCED PAINTING I

A continuation of subjects explored in Art 2A04 with encouragement towards independent development.

2 studio practice (3 hrs. each); one term

Prerequisite: Art 2A04.

Enrolment is limited.

ART 3AA3 ADVANCED PAINTING II

A continuation of Art 3A03 with greater emphasis on the establishment of independent ideas.

2 studio practice (3 hrs. each); one term

Prerequisite: Art 3A03.

Enrolment is limited.

ART 3B03 ADVANCED SCULPTURE I

A continuation of subjects explored in Art 2B04 with encouragement towards independent development.

2 studio practice (3 hrs. each); one term

Prerequisite: Art 2B04.

Enrolment is limited.

ART 3BB3 ADVANCED SCULPTURE II

A continuation of Art 3B03 with greater emphasis on the establishment of independent ideas.

2 studio practice (3 hrs. each); one term

Prerequisite: Art 3B03.

Enrolment is limited.

ART 3C03 ADVANCED DRAWING

1 studio practice (3 hrs.); two terms

Prerequisite: Art 2C03.

Enrolment is limited.

ART 3G06 CURRENT PRACTICES IN THE VISUAL ARTS

A series of seminars and/or workshops conducted by contemporary visual artists and individuals involved in the business of Art. A written thesis and a portfolio are requirements of the course.

3 hrs.; two terms

Prerequisite: Registration in Level III of any Honours programme in Art.

Enrolment is limited.

ART 3P03 ADVANCED PRINTMAKING I

A continuation of subjects explored in Art 2F04 with encouragement towards independent development.

2 studio practice (3 hrs. each); one term

Prerequisite: Art 2F04. Not available to students with credit in Art 3P06.

Enrolment is limited.

ART 3PP3 ADVANCED PRINTMAKING II

A continuation of Art 3P03 with greater emphasis on the establishment of independent ideas.

2 studio practice (3 hrs. each); one term

Prerequisite: Art 3P03. Not available to students with credit in Art 3P06.

Enrolment is limited.

ART 4B12 MAJOR STUDIO PROJECT

A summation of investigations into painting, sculpture, printmaking or drawing to be conducted under the supervision of two studio faculty members.

Prerequisite: Art 3G06 and registration in Level IV Honours Art or Combined Honours in Art and Another Subject with a grade of at least B- in 6 units of Level III work in the chosen field. Not open to students with credit in or registration in 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.
Enrolment is limited.

ART 4C06 MINOR STUDIO PROJECT

An investigation into painting, sculpture, printmaking or drawing to be conducted under the supervision of a studio faculty member.

Prerequisite: Art 3G06 and registration in Level IV of Combined Honours in Art and Another Subject with a grade of at least B- in 6 units of Level III work in the chosen field. Not open to students with credit in 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.
Enrolment is limited.

ART 4D03 MEDIA RESEARCH

Investigation of studio techniques, under the supervision of a studio faculty member.

Prerequisite: Registration in Level IV of any Honours programme in Art with a grade of at least B- in 6 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.

Enrolment is limited.

ART HISTORY**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.

3 lects.; two terms

Prerequisite: Open.

ART HIST 2B03 GREEK ART

The architecture, sculpture, and painting of the Greek and Hellenistic worlds.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Classics 2B03.

ART AND ART HISTORY

ART HIST 2C03 ROMAN ART

The architecture, sculpture, and painting of the Roman world.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Classics 2C03.

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.

3 lects.; one term

Prerequisite: Open to students 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.

3 lects.; one term

Prerequisite: One previous course in Philosophy; or permission of the Department of Philosophy.

Same as Philosophy 2H03.

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.

3 lects.; one term

Prerequisite: Open to students 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

ART HIST 2O03 THE ORIGINS OF MODERN ART 1780-1880

A study of the origin and development of modern styles from Neo-Classicism through Impressionism in light of the changing historical and intellectual background of the period.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

ART HIST 2P03 MOVEMENTS IN TWENTIETH-CENTURY ART AND ARCHITECTURE

A consideration of the development of the avant garde and modernism in Post-Impressionism, Expressionism, Cubism, Surrealism and related developments to c. 1960.

3 lects.; one term

Prerequisite: Open to students 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.

2 lects. plus one weekly film screening; two terms

Prerequisite: 6 units from the Faculty of Humanities and registration in Level II and above.

Same as 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.

3 lects.; one term

Prerequisite: Art History 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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of any programme, or permission of the Department.

Offered in alternate years.

ART HIST 3BB3 THE ART OF NORTHERN EUROPE IN THE SEVENTEENTH 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.

3 lects.; one term

Prerequisite: Art History 2N03 or permission of the instructor.

Offered in alternate years.

ART HIST 3C03 THE ICONOGRAPHY OF CHRISTIAN ART

An introduction to Christian iconography through the study of representations of the life of Christ from early Christian times to the present.

3 lects.; one term

Prerequisite: Registration in a programme in Art or Art History; or permission of the instructor.

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.

3 lects., plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama, Literature or Art History; or permission of the Drama Department. Art History 2X06 is recommended.

Not available to students with credit in Art History 4HH3.

Same as Comparative Literature 3L03, Drama 4H03, and English 3CC3.

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.

2 lects. plus one weekly film screening; one term

Prerequisite: Art History 2X06; or permission of the Drama Department.

Same as 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.

2 lects. plus one weekly film screening; one term

Prerequisite: Art History 2X06; or permission of the Drama Department.

Same as 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).

3 lects.; one term

Prerequisite: Art History 2C03 or 2G03; or permission of the Department.

Same as Classics 3G03.

Alternates with Art History 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.

3 lects.; one term

Prerequisite: Art History 2B03 or permission of the Department.

Alternates with Art History 3G03.

Same as Classics 3H03.

ART HIST 3J03 JAPANESE ART

An introduction and discussion of major aspects of the visual arts of Japan.

3 lects.; one term

Prerequisite: Art History 1A06; or permission of the instructor. Available as an elective only for students registered in an Art or Art History programme.

Same as Japanese Studies 3J03.

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 (2 hrs.); one term

Prerequisite: Art History 1A06; or permission of the instructor. Available as an elective only for students registered in an Art or 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.

3 lects.; one term

Prerequisite: Art History 2M03.

Offered in alternate years.

ART HIST 3Q03 THE HISTORY OF PRINTMAKING

A survey of the history of printmaking from the fifteenth century to the present.

3 lects.; one term

Prerequisite: Registration in Level III or IV of any programme, or permission of the Department.

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History; or permission of the instructor.

Offered in alternate years.

ART HIST 3T03 TOPICS IN NATIONAL CINEMAS I

Previous topics include: Soviet and East European Cinema. Consult the Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Art History 2X06, or permission of the Drama Department. Art History 3T03 may be repeated, if on a different topic, to a total of six units.

Same as Drama 3T03 and Modern Languages 3T03.

ART HIST 3TT3 TOPICS IN NATIONAL CINEMAS II

Previous topics include: Canadian Cinema, French Cinema. Consult the Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Art History 2X06, or permission of the Drama Department. Art History 3TT3 may be repeated, if on a different topic, to a total of six units.

Same as Drama 3TT3.

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 B- in a previous course in the chosen field; or permission of the Department. Not open to students taking Art 4D03.

ART HIST 3X03 TOPICS IN ANCIENT ART AND ARCHAEOLOGY

Previous topics include: Hellenistic and Roman Painting. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Art History 2B03 or 2C03, and registration in Level III or IV of a programme in Art History or Classics; or permission of the Department of Classics.

Offered in alternate years.

Same as Classics 3X03.

Art History 3X03 may be repeated, if on a different topic, to a total of six units.

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. 1960 to the present. Topics will vary from year to year, but will be drawn from a list including Pop-Art, Post-Painterly Abstraction, Minimal Art, Conceptual Art, Earthworks, Neo-Expressionism and Postmodernism.

Seminar (2 hrs.); one term

Prerequisite: Art History 3AA3 or permission of the instructor.

Offered in alternate years.

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 (2 hrs.); one term

Prerequisite: Art History 2M03, and permission of the instructor.

Offered in alternate years.

Enrolment is limited.

ART HIST 4F03 DUTCH PAINTING OF THE SEVENTEENTH CENTURY

A study of the so-called "minor masters" of Holland's Golden Age of painting.

Seminar (2 hrs.); one term

Prerequisite: Art History 3BB3; or permission of the instructor.

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.

3 lects.; one term

Prerequisite: Art History 2P03.

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 B- in a previous course in the chosen field, and permission of the Department.

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.

3 lects.; one term

Prerequisite: Art History 2N03.

Offered in alternate years.

ART HIST 4R03 PAINTING AND SCULPTURE OF FIFTEENTH-CENTURY ITALY

An examination of the representational arts of the early Renaissance with emphasis on the Florentine contribution.

3 lects.; one term

Prerequisite: Art History 2M03.

Offered in alternate years.

ART HIST 4S03 SPECIAL STUDIES IN FILM

Previous topics include: Genre Studies, Film Comedy. Consult the Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Art History 2X06, or permission of the Drama Department. Art History 4S03 may be repeated, if on a different topic, to a total of six units.

Same as Drama 4S03.

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 (2 hrs.); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History; or permission of the instructor.

Offered in alternate years.

Enrolment is limited.

ART HIST 4W03 MODERN LANDSCAPE ART

A discussion of the origins, development and significance of landscape art from the late eighteenth century to the present. The main emphasis will be on painting in England and France.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History; or permission of the instructor.

Offered in alternate years.

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 (2 hrs.); one term

Prerequisite: Registration in Level III or IV of a programme in Art or Art History, and permission of the Department.

Offered in alternate years.

Enrolment is limited.

STUDIO

The following Studio courses are taught at the Dundas Valley School of Art and are available only to students registered in programmes in the Department of Art and Art History.

STUDIO 1A06 FOUNDATION STUDIES IN VISUAL ART I AND II

The objective of this course is to establish a foundation of theoretical and practical experience necessary for subsequent study. Students will be introduced to a wide variety of materials, techniques and concepts inherent in two- and three-dimensional art.

Two terms.

Prerequisite: Registration in an Art History programme.

Enrolment is limited.

STUDIO 1B03 PHOTOGRAPHY AND PRINTMAKING I AND II

This course will introduce students to the practical, theoretical and conceptual concerns of camera art and autographic printmaking, including relief, intaglio, planographic and stencil techniques.

Two terms

Prerequisite: Registration in an Art or Art History programme.

Enrolment is limited.

STUDIO 2A03 PAINTING I

This course will provide the student with an awareness of both historical and contemporary concerns relevant to painting. Emphasis will be placed on the development of personal vision.

One term

Prerequisite: Studio 1A06 and registration in an Art History programme.

Enrolment is limited.

STUDIO 2B03 PHOTOGRAPHY AND PRINTMAKING III AND IV

This course builds on groundwork established in Studio 1B03 with emphasis on further development of technical skills and a broader understanding of relevant concepts. Students will establish individual objectives and focus their explorations on fulfilling these.

Two terms

Prerequisite: Studio 1B03 and registration in an Art or Art History programme.

Enrolment is limited.

STUDIO 2C03 THREE-DIMENSIONAL DESIGN I AND II

A series of structured projects utilizing both traditional and contemporary approaches will provide students with a broader understanding of the relationship between process and form that is inherent in three-dimensional visual expression.

Two terms

Prerequisite: Studio 1A06 and registration in an Art History programme.

Enrolment is limited.

ARTS AND SCIENCE

STUDIO 2D03 DRAWING I AND II

This course will focus on drawing as a tool for investigative research and visual communication. Emphasis will be placed on the relationship between drawing and other forms of visual expression.

Two terms

Prerequisite: Studio 1A06 and registration in an Art History programme.

Enrolment is limited.

STUDIO 2E03 INTERMEDIA I AND II

Interdisciplinary approaches to artistic expression will be utilized in this course. Students will explore contemporary materials and approaches and will investigate unconventional combinations of more traditional media.

Two terms

Prerequisite: Studio 1A06 and registration in an Art History programme.

Enrolment is limited.

STUDIO 3A12 SELECTED VISUAL MEDIA

Intensive individual exploration and resolution of a cohesive body of work are expected of students enrolled in this course. Students may elect to combine two areas of study or specialize in one area for more concentrated study. Individual proposals must be presented to faculty supervisors by the end of the first week of classes.

Two terms

Prerequisite: Registration in B.A. Art History (Stream B)

STUDIO 3B03 TOPICS IN CONTEMPORARY ART

The seminar format of this course will provide an opportunity to discuss contemporary art issues in an informal, open atmosphere. Through group discussion and presentations of their own work, students will develop critical skills and learn to articulate their ideas.

Two terms

Prerequisite: Registration in B.A. Art History (Stream B)

Studio 3B03 may be repeated, if on a different topic, to a total of 6 units.

STUDIO 4A12 STUDIO SPECIALIZATION

Students enrolled in this course are required to produce a body of individually motivated, mature work and present it in a professional manner at the year end exhibition. Students must present a proposed plan of study to their faculty supervisor by the end of the first week of classes.

Two terms

Prerequisite: Studio 3A12 and registration in B.A. Art History (Stream B)

Arts and Science

Council of Instructors

Barbara M. Ferrier (Biochemistry)/*Director*

Richard Bourbonniere (Inland Waters)

Sylvia Bowerbank (English)

Ihor Z. Chorneyko (Mathematics and Statistics)

James Deaville (Music)

David A. Goodings (Physics)

Louis I. Greenspan (Religious Studies)

H. Hansen (Visiting Professor)

Rhoda E. Howard (Sociology)

Robert C. Hudspeth (Mechanical Engineering)

Elizabeth M. Inman (Drama)

Graham K. Knight (Sociology)

Atif A. Kubursi (Economics)

Cyril H. Levitt (Sociology)

Alan Mendelson (Religious Studies)

P. K. Rangachari (Medicine)

Michael L. Ross (English)

James D. Stewart (Mathematics and Statistics)

Department Notes:

1. **Prerequisites:** The prerequisite for all Level I, II, III and IV courses is normally registration in the Arts and Science Programme.

2. **Limited Enrolment:** Enrolment in Level I of the Arts and Science Programme is limited to approximately 50 students.

ARTS & SCI 1A06 WESTERN THOUGHT I

An examination of central themes, from the time of the Greeks to the present, in Western religious, philosophical, and scientific thought. Students will study the formulation of these themes in such thinkers as Plato, Nietzsche, Rousseau, Augustine, and Descartes. Topics considered will include the legitimacy of the state; the scope and limits of reasoning; and the foundations of morality. Although the problems discussed will be formulated in a contemporary idiom, the

works will be viewed with respect to their historical context.

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 and Science 1D06 serves as a prerequisite for all upper level Mathematics, Statistics, Computer Science and Physics courses, for which Mathematics 1A06 is a prerequisite.

ARTS & SCI 2A06 WESTERN THOUGHT II

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 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. The course will require frequent brief written assignments.

ARTS & SCI 3B06 TECHNOLOGY AND SOCIETY

The role of technology in culture will be examined. Consideration will be given to models of the technology-society relationship and to problems encountered in the attempt to control technology.

ARTS & SCI 3CB6 INQUIRY TOPIC: Environment

Examination of the impact of economic, social, and political decisions on our local and regional environment.

ARTS & SCI 3CD6 INQUIRY TOPIC: Caring Society

Examination of such issues of health and sickness as the functions of hospitals, attitudes toward illness, and the funding of medical research.

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 3CF6 INQUIRY TOPIC: Human Rights

This course consists of readings, discussions and assignments on Canadian and international human rights.

ARTS & SCI 3CG6 INQUIRY TOPIC: Federalism

The future of multi-national federal political systems will be examined.

ARTS & SCI 3D06 CREATIVE ARTS

The nature of the dramatic arts and music, and their 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.

ARTS & SCI 3G06 INQUIRY TOPIC: Federalism

The future of multi-national federal political systems will be examined.

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

Same as Arts and Science 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

Same as Arts and Science 4C06 based on more extensive research.

Asian Studies

(See *Thematic Areas of Study*)

Biochemistry

Faculty as of January 15, 1992

G.E. Gerber/Chair

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*)

William W. Chan/M.A., Ph.D. (*Cambridge*)

Richard M. Epand/A.B. (*Johns Hopkins*), Ph.D. (*Columbia*)

Barbara M. Ferrier/B.Sc., Ph.D. (*Edinburgh*)

Karl B. Freeman/B.A., 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

John P. Capone/B.Sc. (*Western*), Ph.D. (*McMaster*)

Gerhard E. Gerber/B.Sc., Ph.D. (*Toronto*)

Calvin B. Harley/B.Sc. (*Waterloo*), Ph.D. (*McMaster*)

Richard A. Rachubinski/B.Sc., M.Sc., Ph.D. (*McGill*)

Assistant Professors

David W. Andrews/B.Sc. (*Ottawa*), Ph.D. (*Toronto*)

Douglas W. Bryant/B.Sc. (*McGill*), M.Sc., Ph.D. (*York*)/part-time

Corinne G. Lobe/B.Sc., Ph.D. (*Alberta*)

Daniel S.-C. Yang/B.Sc., M.Sc. (*Alberta*), Ph.D. (*Pittsburgh*)

Associate Members

Stephanie A. Atkinson/(Pediatrics) B.A. (*Western*), Ph.D. (*Toronto*)

Stanley T. Bayley/(Biology) B.Sc., Ph.D. (*London*)

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*)

BIOCHEM 2A06 PRINCIPLES OF BIOCHEMISTRY I

An overview of biochemical processes emphasizing the importance of structure, reactivity and energetics of molecules in biological systems. Designed for students intending to proceed to Biochemistry 3A03.

3 lects. or tut., 1 lab (3) every 3rd week; two terms

Prerequisite: Credit or registration in one of Chemistry 2B06, 2O06, and registration in a Biochemistry programme or Honours Biological Chemistry or Honours Molecular Biology and Biotechnology. Not open to students who have credit or are registered in Biochemistry 2A03, 2E03 or 3G06.

BIOCHEM 2E03 ELEMENTARY BIOCHEMISTRY

A treatment of the basic areas of biochemistry, including physiological chemistry. Designed for students who do not intend to pursue biochemistry.

3 lects.; one term

Prerequisite: Credit or registration in one of Chemistry 2D03, 2B06, 2O06. Not open to students who are registered in or have completed Biochemistry 2A03, 2A06, 3A03, 3AA3, 3A06, 3B03, 3C03 or 3G06.

BIOCHEM 3A03 PRINCIPLES OF BIOCHEMISTRY II

Major themes of biochemistry particularly concerning the structure and function of proteins and nucleic acids. An extension of Biochemistry 2A06.

3 lects.; one term

Prerequisite: Biochemistry 2A03 or 2A06. Not open to students who have completed Biochemistry 3A06, 3B03, 3C03 or 3G06.

BIOCHEM 3AA3 SPECIALIZED TOPICS

Selected areas of biochemistry such as nitrogen metabolism, connective tissues, excitable membranes and molecular physiology.

3 lects.; one term

Prerequisite: Biochemistry 3A03. Not open to students who have credit in Biochemistry 3A06.

BIOCHEM 3G06 COMPREHENSIVE BIOCHEMISTRY

Major concepts of biochemistry, and modern methods used in biochemical investigations, nature of cellular processes, structure and function of macromolecules, metabolism and its regulation.

3 lects.; two terms

Prerequisite: Chemistry 2B06 or 2O06. Not open to students who have completed Biochemistry 2A03, 2A06, 3A06, 3A03, 3AA3, 3B03, or 3C03. Students who receive special permission to register in this course after completing Biochemistry 2E03 will not retain credit for Biochemistry 2E03 on completion of this course.

BIOCHEM 3H03 CLINICAL BIOCHEMISTRY

An outline of clinical chemistry; its relation to disease and relevance to health care.

3 lects.; one term

Prerequisite: Credit or registration in Biochemistry 3A06 or 3A03 and 3AA3 or 3G06.

BIOCHEM 3L03 BIOCHEMISTRY LABORATORY

Illustration of fundamental principles and techniques of experimental biochemistry.

1 lab.(3), 1 tut.(3); one term

Prerequisite: Biochemistry 2A03 or 2A06, and registration in a programme in which Biochemistry 3L03 is required.

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.

3 lects.; one term

Prerequisite: Credit or registration in Biochemistry 3A06 or 3A03 and 3AA3 or credit in Biochemistry 3G06.

BIOCHEM 3P03 BIOCHEMISTRY LABORATORY PROJECTS

Research projects illustrating modern methods in biochemical research including molecular biology.

1 lab.(3), 1 tut.(3); one term

Prerequisite: Biochemistry 3L03 and registration in an Honours Biochemistry programme.

BIOCHEM 4A03 RECENT ADVANCES IN BIOCHEMISTRY

Student presentation and critical evaluation of selected topics from the current research literature in Biochemistry and Molecular Biology.

Seminar (3 hrs.); one term

Prerequisite: Registration in Level IV of an Honours Programme in Biochemistry. Permission of the Department must be sought during registration in March. Admission will be decided by June 1.

Enrolment is limited.

BIOCHEM 4B06 SENIOR THESIS

A thesis based on a project directly supervised by a member or associate member of the Department of Biochemistry.

3 labs.(3); two terms

Prerequisite: Biochemistry 3L06 or 3P03, or Molecular Biology 3A06, or Biology 3V03 and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme. Students must have a CAA of at least 9.5 are eligible. Potential registrants should consult the Chair before June 1st.

Enrolment is limited.

BIOCHEM 4C06 BIOCHEMISTRY INQUIRY

Broader aspects of biochemistry such as those relating to food, drugs, health and environment. A combination of projects, discussions, seminars and lectures as appropriate to the subject matter.

2 sessions (3); two terms

Prerequisite: Biochemistry 3A03 and registration in Level IV Biochemistry Major. Not open to students who have credit or are registered in Biochemistry 4Q03.

Enrolment is limited. (First offered in 1994-95)

BIOLOGY

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.
3 lects.; one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06.

BIOCHEM 4E03 GENE EXPRESSION
An advanced course covering molecular aspects of gene expression in eukaryotes: DNA replication, control of transcription, RNA processing and transport, translation, protein processing and targeting.
3 lects.; one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06.

BIOCHEM 4G03 BIOTECHNOLOGY AND GENETIC ENGINEERING LABORATORY
This lab is complementary to Biochemistry 4D03. Experiments may involve cloning, engineered mutagenesis, DNA sequencing, expression of cloned gene and fermentation.
2 labs. (4); one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06 and one of Biochemistry 3L06, 3P03, Biology 3V03, and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme. Permission of the Department is required before September 15.
Enrolment is limited.

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.
3 lects.; one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06, and one of Chemistry 3D03, 3D06, 3F03; or permission of the instructor.

BIOCHEM 4L03 ADVANCED BIOCHEMISTRY LABORATORY
Fundamental principles of experimental biochemistry with emphasis on modern methods in enzymology, membrane biochemistry and molecular biology.
2 labs. (4); one term
Prerequisite: Biochemistry 3A03, 3A06, 3G06 and one of Biochemistry 3L03, 3L06. Not open to students who are registered in or have completed Biochemistry 3P03 or 4G03.

BIOCHEM 4M03 MEMBRANE STRUCTURE AND FUNCTION
Chemical structure and molecular organization of membrane constituents. Molecular basis of the biological activity of membranes.
3 lects.; one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06.

BIOCHEM 4P03 RESEARCH PROJECT
A research project will be supervised by a member or associate member of the Department of Biochemistry.
3 labs. (3); one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06 and one of Biochemistry 3L06, 3P03, Biology 3V03, and registration in an Honours Biochemistry or Molecular Biology and Biotechnology programme. Permission of the Department required before September 15. Not open to students who have credit or are registered in Biochemistry 4B06 or 4U06.
Enrolment is limited.

BIOCHEM 4Q03 BIOCHEMICAL PHARMACOLOGY
Interactions of drugs with living systems. Drug absorption, distribution, mechanism of action, metabolism and elimination will be discussed.
3 lects.; one term
Prerequisite: One of Biochemistry 3A03, 3A06, 3G06. Not open to students who have credit or are registered in Biology 3AA3.

BIOCHEM 4U06 ADVANCED EXPERIMENTATION
Fundamental experimental principles of biochemistry and chemistry including modern instrumental methods. Three units selected from Chemistry 4T06 plus Biochemistry 4P03.
2 labs. (4); two terms
Prerequisite: Registration in Level IV Honours Biochemistry and Chemistry. Not open to students who have credit, or are registered in, one of Biochemistry 4L06, 4P03, Chemistry 4T04, 4T06.
Same as Chemistry 4U06.

For Graduate Courses, see *Calendar of School of Graduate Studies*.

Professors Emeriti

Douglas Davidson/B.Sc. (Durham), D.Phil. (Oxford)
Douglas M. Davies/B.A., Ph.D. (Toronto), F.R.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)
John J. Miller/B.A., 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

Stanley T. Bayley/B.Sc., Ph.D. (London)
Frank L. Graham/(Pathology) M.A., Ph.D. (Toronto)
John H. Hassell/B.Sc. (Brooklyn College), Ph.D. (Connecticut)
John N.A. Lotfi/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)
Ludvik 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)
Richard A. Vollenweider/Dipl. Biol. Math., Ph.D. (Science) (Zurich)/part-time
Bradley N. White/B.Sc. (Nottingham), Ph.D. (McMaster)
Christopher M. Wood/B.Sc., M.Sc. (British Columbia), Ph.D. (East Anglia)

Associate Professors

Allan D. Dingle/B.Sc. (McMaster), M.Sc. (Illinois), Ph.D. (Brandeis)
Turlough Finan/B.Sc., M.Sc. (National, Ireland), Ph.D. (Guelph)
Doris E.N. Jensen/M.A. (Toronto), Ph.D. (British Columbia)
Jurek Kolasa/M.Sc., Ph.D. (Poznan)
Colin A. Nurse/B.E.Sc. (Western), Ph.D. (Harvard)
Michael J. O'Donnell/B.Sc., Ph.D. (Toronto)
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)

Assistant Professors

Patricia Chow-Fraser/B.Sc., M.Sc. (Waterloo), Ph.D. (Toronto)
Darwyn S. Coxson/B.Sc. (Lethbridge), Ph.D. (McMaster)
Lisle Gibbs/B.Sc. (Queen's), M.S., Ph.D. (Michigan)
J. Roger Jacobs/B.Sc. (Calgary), M.Sc., Ph.D. (Toronto)
Herbert E. Schellhorn/B.Sc., M.Sc. (Guelph), Ph.D. (North Carolina)
Elizabeth A. Weretilnyk/B.Sc., Ph.D. (Alberta)

Instructional Assistants

Beryl Piccinin/B.Sc. (Mount Allison), M.Sc. (McMaster)
Herbert Pohl/B.Sc., M.Sc. (McMaster)
Raymond Procwat/B.Sc. (McMaster), B.Ed. (Toronto)

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.
3 lects., or 2 lects., 1 lab. (3); two terms
Prerequisite: OAC Biology or at least a 75% average in two OAC science or Mathematics courses. Registration in or completion of Chemistry 1A06 strongly recommended; in addition Chemistry 1A06 is a prerequisite for many Biology courses in Level II, III, and IV. OAC Biology is strongly recommended.

BIOLOGY 1J03 HUMAN PHYSIOLOGY

Physiology of respiration, circulation, energy and muscle metabolism and reproduction.
3 lects.; one term
Prerequisite: Not open to students in Natural Science I or in any Biology or Biochemistry 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.
3 lects.; 2 lects., 1 lab. (3); or 2 lects., 1 tut.; one term
Prerequisite: Biology 1A06 (or a grade of at least B- in Biology 1G06) and Chemistry 1A06.

Biology

Faculty as of January 15, 1992

B.N. White/Chair

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.

3 lects., or 2 lects., 1 lab.(3); one term

Prerequisite: Biology 1A06 (or a grade of at least B- in Biology 1G06) and Chemistry 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.

2 lects., 1 lab.(3); one term

Prerequisite: Completion of Biology 1A06 or Environmental Science 1A06; or a grade of at least B- in Biology 1G06.

BIOLOGY 2E03 THE ANIMAL KINGDOM

Selected aspects of design in the major animal groups, with emphasis on adaptations to terrestrial versus aquatic environments.

2 lects., 1 lab.(3); one term

Prerequisite: Completion of Biology 1A06 or Environmental Science 1A06; or a grade of at least B- in Biology 1G06, or registration in a programme for which Biology 2E03 is required.

BIOLOGY 2F03 FUNDAMENTALS OF ECOLOGY

A broad overview of ecology at the level of organisms, populations and communities.

3 lects.; one term

Prerequisite: Completion of Biology 1A06 or Environmental Science 1A06; or a grade of at least B- in Biology 1G06.

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.

3 lects., or 2 lects., 1 tut.; one term

Prerequisite: Chemistry 2O06 or 2B06, and registration or credit in one of Biology 3P03, 3U03, 3UU3, 3U06, and registration or credit in one of Biochemistry 3A03, 3AA3, 3A06, 3G06. Not open to students who have credit or are registered in Biochemistry 4Q03. Not open to students registered 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.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2B03 and 2D03.

BIOLOGY 3BB3 STRUCTURE AND DEVELOPMENT OF PLANT CELLS

Ultrastructure, development and function of plant cells, and tissues.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2B03 and 2D03.

BIOLOGY 3C03 MICROBIAL PHYSIOLOGY AND REGULATION

Basic energy-yielding metabolisms. Biochemical and genetic regulation of bacterial morphogenesis and reproduction.

3 lects.; one term

Prerequisite: Biology 3E03.

BIOLOGY 3E03 INTRODUCTORY MICROBIOLOGY

Biology of the prokaryotic cell including structure-function relationships, antimicrobial agents and bacterial taxonomy. Use of microorganisms in biotechnology.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2B03 and either Chemistry 2D03 or 2O06; or permission of the instructor.

BIOLOGY 3F03 VERTEBRATE ANATOMY

An introduction to the development of structure and function in vertebrates.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2E03; or permission of the instructor.

BIOLOGY 3FF3 EVOLUTION

An introduction to macroevolution, with emphasis on the vertebrates.

2 lects., 1 lab.(3) or 2 lects., 1 tut.; one term

Prerequisite: Biology 2E03; or permission of the instructor.

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

3 lects., or 2 lects., 1 lab.(3); one term

Prerequisite: Biology 2B03.

BIOLOGY 3HH3 MOLECULAR ORGANIZATION OF THE EUKARYOTIC CYTOPLASM

A detailed examination of structure and function of subcellular components, with particular focus on the differentiation and specialization of organelle systems including the cell membrane and cytoskeleton.

3 lects., or 2 lects., 1 tut.; 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.

2 lects., 1 tut.; or 2 lects. 1 lab.(3); one term

Prerequisite: Biology 2B03 and 2C03.

BIOLOGY 3J03 POPULATION GENETICS

Conceptual foundations of evolutionary theory and principles of population genetics.

3 lects. or 2 lects., 1 tut.; one term

Prerequisite: Biology 2C03.

BIOLOGY 3K03 ANIMAL HISTOLOGY

The structure, function, and organization of cells, tissues, organs and organ systems.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2E03; or a grade of at least B- in Biology 1G06; or permission of the instructor.

BIOLOGY 3MM3 INVERTEBRATE FORM AND FUNCTION

Analysis of sensory reception, nervous control systems, feeding, skeletal support, locomotion, excretion, respiration, and reproduction in selected invertebrates.

2 lects., 1 lab./tut. (3); 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.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2E03.

BIOLOGY 3NN3 DEVELOPMENTAL BIOLOGY

A study of principles underlying developmental phenomena: polarity, gradients and pattern formation; intra- and intercellular mechanisms governing cell determination and differentiation; cell lineage and cell recognition.

3 lects.; or 2 lects., 1 tut.; or 2 lects., 1 lab.(3); 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.

2 lects., 1 tut.; one term

Prerequisite: Biology 2C03. Biology 3E03 is strongly recommended.

BIOLOGY 3P03 CELL PHYSIOLOGY

Cell function with emphasis on cell membranes and transport processes. A quantitative physicochemical interpretation of the electrical properties of cells.

2 lects., 1 tut.; one term

Prerequisite: Biology 2B03 and registration, or credit, in one of Biochemistry 3A06, 3A03 and 3AA3, or 3G06; or permission of the instructor.

BIOLOGY 3Q03 RADIATION BIOLOGY

The effects of radiation upon biological material at the physical, molecular, cellular, tissue, and organismal levels. Applications of radiation in medicine and industry.

3 lects.; one term

Prerequisite: Biology 1A06; or a grade of at least B- in Biology 1G06; and one of Physics 1A06, 1B06, 1C06; or permission of the instructor.

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.

Prerequisite: Permission of the instructor.

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.

2 lects., 1 tut.; one term

Prerequisite: Biology 2F03; or permission of the instructor. Computer Science 1ZA3 (or 1MA3) and Statistics 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.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2F03; or permission of the instructor. One of Biology 2D03 or 2E03 and Computer Science 1ZA3 (or 1MA3) and Statistics 2MA3 or 2R06 is recommended.

BUSINESS

BIOLOGY 3U03 ANIMAL PHYSIOLOGY - HOMEOSTASIS

Respiration, circulation, metabolism and renal function.

2 lects., 1 lab./tut.(3); one term

Prerequisite: Biology 2B03. Biochemistry 3G06 is recommended.

BIOLOGY 3U03 ANIMAL PHYSIOLOGY - CONTROL SYSTEMS

Nervous function, endocrinology, muscle function and gastro-intestinal physiology.

2 lects., 1 lab./tut.(3); one term

Prerequisite: Biology 2B03. Biochemistry 3G06 is recommended.

BIOLOGY 3V03 TECHNIQUES IN MOLECULAR GENETICS

A laboratory course involving basic experience in Molecular Genetics.

1 lab.(3); one term.

Prerequisite: Credit or registration in Biology 3O03.

BIOLOGY 3Y03 PLANT DEVELOPMENT

An analysis of development in plants: cytological, genetical and biochemical studies.

3 lects.; one term

Prerequisite: Biology 2B03, 2C03 and 2D03. Biology 3BB3 is recommended.

Not open to students with credit in Biology 4H03.

BIOLOGY 4B03 PLANT METABOLISM AND MOLECULAR BIOLOGY

Analysis of plant cell metabolism and the regulation of metabolism at the biochemical and molecular genetic level.

3 lects.; one term

Prerequisite: Registration in or completion of, Biochemistry 3A06, 3A03 and 3AA3, or 3G06; or completion of Biochemistry 2A03 or 2A06. Biology 3H03 is recommended. Not open to students with credit in Biology 4B04 or 4B06.

Offered in alternate years.

Offered in 1992-93.

BIOLOGY 4C09 SENIOR THESIS

A thesis based upon a research project carried out under the direction of a member of the Faculty.

Prerequisite: Approval by the Chair in the preceding spring term. Open to students who have obtained a CAA of at least 9.0 and are registered in Level IV of a Biology programme. Not open to students with credit, or registration, in Biology 4C08, 4F04, 4F06 or Psychology 4D06.

BIOLOGY 4E03 PRINCIPLES OF EVOLUTIONARY, POPULATION AND QUANTITATIVE GENETICS

Experimental and theoretical aspects of the genetic basis of evolutionary changes in populations.

2 lects., 1 tut.; one term

Prerequisite: Biology 3J03 and Biology 2C03 and one of Mathematics 1A06, 1C06.

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: Approval by the Chair in the preceding spring term. Open to students registered in a Level IV Biology programme. Not open to students with credit, or registration, in Biology 4C08, 4C09, 4F04 or Psychology 4D06.

BIOLOGY 4G06 HUMAN ANATOMY

A study of the human body by dissection, self-teaching modules and videotapes.

2 labs. (2.5); two terms

Prerequisite: A grade of at least B- in Biology 3F06 (or 3F03 and 3FF3) or 3K06, or a B+ in Biology 2E03 and current registration in Biology 3F03, 3FF3, 3K03. These are minimal requirements, and final selection by the Chair of the Department of Biology will be based on academic merit.

Enrolment limit: 16.

Offered in alternate years.

Offered in 1992-93.

BIOLOGY 4I03 IMMUNOLOGY

An introduction to humoral and cellular immunity. The molecular and cellular basis of immunity, and an introduction to immunological techniques.

2 lects., 1 tut.(2); one term

Prerequisite: Registration or credit in, one of Biochemistry 3A06, 3A03 and 3AA3, 3B03 or 3G06; or permission of the instructor.

BIOLOGY 4II3 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 in a small group, self-learning environment.

2 lects., 1 tut.(2); one term

Prerequisite: Biology 4I03; or permission of the instructor.

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.

Prerequisite: Permission of the instructor.

BIOLOGY 4L09 SENIOR THESIS FOR CO-OP STUDENTS

A thesis based upon a research project carried out under the direction of a member of the Biology Department.

Prerequisite: Registration in the Honours Biology and Pharmacology Co-op programme. Approval of the project must be obtained from the Programme Director and the Chair of the Department by the end of preregistration.

BIOLOGY 4M03 MOLECULAR ASPECTS OF EUKARYOTIC CHROMOSOMES

Chromatin structure, repeated DNA sequences, concerted evolution of gene families, telomeres, centromeres, gene transfer, oncogenes, transposable elements.

3 lects.; one term

Prerequisite: Completion of Biology 3O03 and either Biochemistry 3A06, 3A03 and 3AA3, or 3G06.

BIOLOGY 4P03 MEDICAL MICROBIOLOGY

Bacterial diseases: identification, epidemiology and treatment.

3 lects.; one term

Prerequisite: Biology 3E03.

Offered in alternate years. Not offered in 1992-93.

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.

3 lects.; one term

Prerequisite: Biology 3E03.

Offered in alternate years. Offered in 1992-93.

BIOLOGY 4Q03 ENVIRONMENTAL PLANT PHYSIOLOGY

The examination of environmental constraints on plant growth and development. An emphasis will be placed upon experimentation and analysis of recent literature.

2 lects., 1 lab.(3); one term

Prerequisite: Biology 2D03 and one of Biology 3B03 or 3TT3; or permission of the instructor.

Offered in alternate years. Not offered in 1992-93.

BIOLOGY 4R03 HUMAN GENETICS

The Human Genome will be considered using both genetic and molecular approaches. Topics include: genetic diseases, prenatal diagnosis, gene therapy, cytogenesis and genetic counselling.

2 lects., 1 tut.(2); one term

Prerequisite: Registration or credit in Biology 3I03.

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.

2 lects., 1 tut.(2); one term

Prerequisite: Registration, or credit, in Biochemistry 3A06, 3A03 and 3AA3, 3B03 or 3G06; or permission of the instructor.

BIOLOGY 4X03 ENVIRONMENTAL PHYSIOLOGY

Advanced physiology of animals with an emphasis on interactions with and adaptation to the environment.

2 lects., 1 lab. (3); one term

Prerequisite: A grade of at least B- in one of Biology 3U06, 3U03, 3U03, 3P03, 3MM3; or permission of the instructor.

BIOLOGY 4Y03 ECOLOGY OF INLAND WATERS

Physical, chemical and biological inter-relationships of inland waters, including aspects of pollution.

2 lects.; 1 lab.; one term

Prerequisite: Biology 2F03 and one of Biology 2D03 or 2E03.

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.

3 lects. or 2 lects. and 1 tut.; one term

Prerequisite: Pharmacology 3A06 or Biology 3AA3.

Business

Faculty Notes:

1. The following courses are offered by the School of Business as electives for students in other Faculties. Eligible students will be registered in courses on a first-come/first-served basis.
2. Business courses are open to students registered in Level III or Level IV of programmes other than Commerce, and Engineering

and Management. Business 3Z03 is not open to students registered in the degree programme in Labour Studies.

BUSINESS 3V03 BUSINESS LAW

An introduction to the relevance of law to the Canadian Business environment. Basic concepts of the judicial process and legal procedures, contracts, primary sources of law, and other aspects of the relationship between business and law will be examined.

3 lects.; one term

Prerequisite: Economics 1A06. Not open to students who have received credit for Commerce 4PD3.

Enrolment limit: 45

BUSINESS 3W06 ACCOUNTING

An introduction to the basic principles and practices of accounting. Major topics to be considered include the economic valuation model, the fundamental concepts underlying, and the operation of, the traditional accounting model, external financial reporting and the preparation and use of accounting information for management planning and control.

3 lects.; two terms

Prerequisite: Economics 1A06. Not open to students who have received credit for Commerce 2AA3.

Enrolment Limit: 90

BUSINESS 3X03 BUSINESS FINANCE

An introduction to the theory and practice of business finance. An examination of the major financial decisions that businesses face: the problems of determining the overall level of sources and uses of funds by the firm, the evaluation of alternative uses of funds (capital budgeting and working capital management), and the choice among alternative sources of funds. Analytical approaches to assist with these decisions are developed.

3 lects.; one term

Prerequisite: Business 3W06 or Commerce 2AA3, and Economics 1A06 (Business 3W06 may be taken concurrently with 3X03). Not open to students who have received credit for Commerce 2FA3.

Enrolment Limit: 45

BUSINESS 3Y03 MARKETING

An introduction to the role that marketing plays in our society and in the Canadian economy. The course will take a macro-marketing viewpoint to deal with theoretical and social aspects of the exchanges that take place between organizations and their publics.

3 lects.; one term

Prerequisite: Economics 1A06. Not open to students who have received credit for Commerce 2MA3.

Enrolment Limit: 90

BUSINESS 3Z03 EMPLOYEE RELATIONS

An introduction to basic concepts, theories and practice in human resource management. Various problems which arise from the employer-employee relationship as well as the techniques designed to handle them will be considered.

3 lects.; one term

Prerequisite: Economics 1A06. Not open to students who have received credit for Commerce 3BA3, or 3BB3.

Enrolment Limit: 45

Canadian Studies

(See *Thematic Areas of Study*)

Ceramics

(See *Materials Science and Engineering, Ceramics*)

Chemical Engineering

Faculty as of January 15, 1992

P.E. Wood/Chair

Professor Emeritus

Leslie W. Shemilt/B.A.Sc., Ph.D. (Toronto), M.Sc. (Manitoba), 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)

Cameron M. Crowe/B.Eng. (McGill), Ph.D. (Cambridge), F.C.I.C., P.Eng.
Irwin A. Feuerstein/B.Chem.Eng. (City College of New York), M.S. (Newark College of Engineering), Ph.D. (Massachusetts)

Alvin E. Hamielec/B.A.Sc., M.A.Sc., Ph.D. (Toronto), F.R.S.C., P.Eng./NSERC Industrial Research Chair in Polymer Production Technology.
John F. MacGregor/B.Eng. (McMaster), M.Sc., Ph.D. (Wisconsin), 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)

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.)

Donald R. Woods/B.Sc. (Queen's), M.S., Ph.D. (Wisconsin), F.C.I.C., P.Eng.

Joseph D. Wright/B.Sc. (Alberta), Ph.D. (Cambridge), P.Eng./part-time

Associate Professors

James M. Dickson/B.A.Sc., M.A.Sc. (Waterloo), Ph.D. (Virginia Tech.)

Andrew N. Hrymak/B.Eng. (McMaster), Ph.D. (Carnegie-Mellon).

Paul A. Taylor/B.Sc., Ph.D. (Univ. of Wales), P.Eng.

Marios Tsezos/Dipl. Mining Metallurgical Eng. (Nat. Tech. Univ. of Athens), M. Eng. (McMaster), Ph.D. (McGill), P. Eng.

Department Note:

The Department of Chemical Engineering reserves the right to withdraw permission to take a second term course if a prerequisite first term course is not completed.

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.

3 lects., 1 tut.(2); second term

Corequisite: Chemical Engineering 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.

1 lect., first term; 1 lab.(3), both terms, alternate weeks

Prerequisite: Registration in Level II Chemical Engineering or Chemical Engineering and Management; or permission of the Department.

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.

3 lects., 1 tut.(3); first term

Prerequisite: Registration in Level II Chemical Engineering, Chemical Engineering and Management or Honours Applied Chemistry; or permission of the Department.

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.

3 lects., 1 tut.(3); second term

Prerequisite: Credit or registration in Chemical Engineering 2D04.

CHEM ENG 2G02 PROBLEM SOLVING

Developing awareness, strategies, creativity, analysis and interpersonal skills in the context of solving homework problems and projects.

2 tuts.(2); first term

Prerequisite: Credit or registration in Chemical Engineering 2D04, 2F04, 2C02.

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.

2 lects., 1 tut. (2); first term

Prerequisite: Chemical Engineering 2F04.

CHEM ENG 3E03 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.

3 lects.; first term

Prerequisite: Chemical Engineering 2F04.

CHEMICAL ENGINEERING

CHEM ENG 3G03 SIMULATION, MODELING AND PROBLEM SOLVING

Executive programs modeling heat exchangers, separators and reactors. Creativity, analysis, heuristics and defining open-ended problems.

1 lect., 2 tuts.(2); second term

Prerequisite: Chemical Engineering 2G02 or 2G03 and credit or registration in Chemical Engineering 2A04, 3E03, 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 nonideal CSTR and plug flow reactors.

3 lects.; 1 tut. (2); second term

Prerequisite: Credit or registration in Chemical Engineering 3D03, 3E03; or registration in Level IV Honours Applied Chemistry.

CHEM ENG 3L02 INTERMEDIATE LABORATORY SKILLS

Experiments and projects in heat transfer, thermodynamics, mass transfer, process control and fluid mechanics.

1 lect., 1 lab. (3); second term

Prerequisite: Chemical Engineering 2A04, and credit or registration in Chemical Engineering 3D03, 3M04, 3O04.

CHEM ENG 3M04 MASS TRANSFER AND STAGewise OPERATIONS

Stagewise operations, diffusion, mass transfer coefficients, distillation, differential contacting and absorption.

3 lects., 1 tut. (2); first term

Prerequisite: Chemical Engineering 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.

3 lects., 1 tut. or lab.(3); first term

Prerequisite: Mathematics 2M06, or Mathematics 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.

3 lects.; second term

Prerequisite: Mathematics 2M06, and credit or registration in Chemical Engineering 3E03; or permission of the Department.

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.

3 lects.; second term

Prerequisite: Chemistry 2O06 or 2B06 or 2D03, or permission of the Department.

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.

3 lects.; first term

Prerequisite: Chemical Engineering 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.

3 lects.; second term

Prerequisite: One of Statistics 3M03, 3N03, 3Y03, and permission of the Department.

CHEM ENG 4D03 DISPERSED PHASE AND PARTICLE PROCESSING

Particle size characterization, filtration, fluidization, sedimentation, centrifugation and flotation.

3 lects.; second term

Prerequisite: Registration in Level IV Chemical Engineering or Level V Chemical Engineering and Management.

Not offered in 1992-93.

CHEM ENG 4E03 DIGITAL COMPUTER PROCESS CONTROL

Sampled data control systems: z-transform methods, design of digital controllers; advanced digital control techniques: dead time compensation, feedforward, multivariable systems.

3 lects.; first term

Prerequisite: Chemical Engineering 3P03 and permission of the Department.

CHEM ENG 4K03 REACTOR DESIGN FOR HETEROGENEOUS SYSTEMS

Catalytic kinetics, mass transfer limitations, packed and fluidized bed reactors, two phase reactors.

3 lects.; first term

Prerequisite: Chemical Engineering 3K04; or permission of the Department.

CHEM ENG 4L02 ADVANCED LABORATORY SKILLS

Experiments and projects in transport phenomena, reaction kinetics and reactor design.

1 lab. (3), 1 lect.; first term

Prerequisite: Chemical Engineering 3L02, and registration in Level IV Chemical Engineering or Level V Chemical Engineering and Management.

CHEM ENG 4M03 SEPARATIONS

Distillation column design; transport phenomena, laminar, turbulent and unsteady state mass transfer; analogies; adsorption, extraction, absorption, ion exchange, drying, humidification, crystallization.

3 lects.; first term

Prerequisite: Chemical Engineering 2A04, 2O04 or 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.

3 lects., 1 tut.(2); first term

Prerequisite: Chemical Engineering 2A04 or 3A04, 3E03, 3G03, 3K04, 3M04, 3P03.

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.

3 lects.; second term

Prerequisite: Chemical Engineering 2O04 or 3O04; or permission of the Department.

CHEM ENG 4W04 CHEMICAL PLANT DESIGN AND SIMULATION

Projects, often in cooperation with industry, usually involve steady-state computer simulation of an existing process or design of a new process. Plant equipment may be tested to develop simulation models.

2 project labs.(3); 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.

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.

3 lects.; second term

Prerequisite: Chemical Engineering 2A04, Mechanical Engineering 3R03 or Materials 3E06, and one of Chemical Engineering 2O04 or 3O04 or Mechanical Engineering 3O04.

CHEM ENG 4Y04 UNDERGRADUATE RESEARCH PROJECT

Research projects with students working on their own under the direction of a Faculty member.

2 labs.(3); 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, and a Cumulative Engineering Average 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.

3 lects.; second term

Prerequisite: Registration in Level IV Chemical Engineering or Level V Chemical Engineering and Management.

ENGINEER 4U03 UNIT OPERATIONS AND PROCESSES IN ENVIRONMENTAL ENGINEERING

Offered jointly by the Departments of Chemical Engineering and Civil Engineering and Engineering Mechanics. 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.

2 lects. 1 tut. (2); first term

Prerequisite: Chemical Engineering 2O04 or 3O04, or Civil Engineering 3Q03 or 3Q04, or Mechanical Engineering 3O04, and registration in Level IV or above of any Engineering programme.

For Graduate courses, see the *Calendar of the School of Graduate Studies*.

Chemistry

Faculty as of January 15, 1992

B.E. McCarry/*Chair*

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.

Ronald P. Graham/M.A. (*Queen's*), A.M., Ph.D. (*Columbia*), 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. Spenser/B.Sc. (*Birmingham*), Ph.D., D.Sc. (*London*), F.R.S.C., 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*, *Queen's*, *McMaster*, *York*), F.R.S., F.R.S.C., F.C.I.C.

Richard H. Tomlinson/B.Sc. (*Bishop's*), 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.

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.

Herbert L. Holland/M.Sc. (*Warwick*), Ph.D. (*Queen's*)/part-time

David A. Humphreys/B.Sc., M.Sc. (*London*), Ph.D. (*McMaster*), 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. Laposa/B.Sc. (*St. Louis*), M.S. (*Chicago*), Ph.D. (*Loyola*)

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.

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. (*Dubuque, 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. Werstiuk/B.Sc. (*Alberta*), M.A., Ph.D. (*Johns Hopkins*), F.C.I.C.

Associate Professors

Alexander D. Bain/B.Sc. (*Toronto*), M.Sc. (*British Columbia*), Ph.D. (*Cambridge*)

William J. Leigh/B.Sc., M.Sc., Ph.D. (*Western*)

Brian E. McCarry/B.Sc. (*British Columbia*), Ph.D. (*Stanford*)

A. John Yarwood/B.Sc., Ph.D. (*Birmingham*)

Assistant 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*)

Paul H.M. Harrison/B.A. (*Oxford*), Ph.D. (*Alberta*)

Harald D.H. Stover/B.Sc. (*Darmstadt*), Ph.D. (*Ottawa*)

Associate Members

I. David Brown/(Physics) B.Sc., Ph.D. (*London*) F.C.I.C.

Richard M. Eppard/(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*)

Department Notes:

- *indicates this course is not necessarily offered every session.
- Students not in a Science programme should note that Chemistry 1A06 is a prerequisite for Chemistry 2D03 and Chemistry 2D03 is a prerequisite for Biochemistry 2E03.

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 co-ordinates with it.

3 lects., 1 tut., 1 lab.(3) every other week; two terms

Prerequisite: OAC Chemistry

CHEM 1C03 GENERAL CHEMISTRY

A general interest course in Chemistry discussing topics relevant to society and the environment.

3 lects.; one term

Prerequisite: A minimum of one High School Chemistry course. Not open to students in Science or Engineering. Not open to students with credit in Chemistry 1A06, 1B06 or 1E03.

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.

3 lects., 1 tut.(1), 1 lab.(3) every other week; first term

Prerequisite: OAC Chemistry and registration in an Engineering programme. Not open to students who are registered in or have credit in Chemistry 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.

2 lects., 2 labs.(3); one term

Prerequisite: Registration in a Chemistry programme. Not open to students who are registered in, or who have credit in any of Chemistry 2K03, 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.

2 lects., 1 lab.(3); two terms

Prerequisite: Registration in a Chemistry programme. Not open to students who are registered in, or who have credit in Chemistry 2O06.

CHEM 2C03 STRUCTURE AND REACTIONS OF THE MAIN GROUP ELEMENTS

Comparative chemistry of the non-transition elements; introduction to symmetry.

3 lects., 1 lab.(3); one term

Prerequisite: Registration in a Biochemistry or Chemistry programme; or permission of the instructor. Not open to students who are registered in, or have credit in, Chemistry 2F03 or 2W03.

CHEM 2D03 INTRODUCTORY ORGANIC CHEMISTRY

An introduction to the chemistry of monofunctional aliphatic and aromatic compounds.

3 lects., 1 lab.(3); one term

Prerequisite: Chemistry 1A06 or registration in a Chemical Engineering Programme.

CHEM 2M05 ANALYTICAL CHEMISTRY

An introduction to classical and modern analytical techniques with an emphasis on applications in Engineering.

1 lect., 1 lab.(3), first term; 2 lects., 1 lab.(3); second term

Prerequisite: Registration in a programme in Chemical Engineering. Not open to students who are registered in, or have credit in, any of Chemistry 2A03, 2K03, 2M05, 3K03.

CHEM 2N03 ANALYTICAL CHEMISTRY

An introduction to the basic principles of analytical chemistry with application to selected classical and instrumental methods of analysis.

2 lects., 1 lab.(3); one term

Prerequisite: One of Chemistry 2P06, 2Q06, 2R03 or 2T06, any of which may be taken concurrently. Not open to students who are registered in, or have credit in, any of Chemistry 2A03, 2K03, 2M05, 3K03.

CHEM 2O06 ORGANIC CHEMISTRY

An introduction to organic chemistry with emphasis on the reactions of functional groups.

3 lects., 1 lab.(3); two terms

Prerequisite: Chemistry 1A06 with a grade of at least C-, or registration in a programme in which Chemistry 2O06 is required. Not open to students who are registered in, or have credit in Chemistry 2B06 or 2D03.

CHEMISTRY

CHEM 2P06 THERMODYNAMICS

An introduction to the basic principles of thermodynamics, with applications to physical and chemical equilibria, including electrochemistry.

2 lects., 1 lab.(3) or tut.; two terms

Prerequisite: Chemistry 1A06 and one of Mathematics 1A06, 1C06, or registration in a programme in Ceramics, Materials or Metallurgical Engineering. Not open to students who are registered in, or have credit in, any of Chemistry 2Q06, 2R03, Physics 2H03.

CHEM 2R03 GENERAL PHYSICAL CHEMISTRY

A survey of thermodynamic and kinetic principles and their application to biological systems.

3 lects.; one term

Prerequisite: Chemistry 1A06 and Mathematics 1A06 or 1C06 or Arts and Science 1D06. Not open to students who are registered in, or have credit in, Chemistry 2P06, 2Q06, 2T06 or Physics 2H03.

CHEM 2W03 INORGANIC CHEMISTRY

Introductory inorganic chemistry of silicates, metals, their oxides and sulphides.

3 lects.; one term

Prerequisite: Chemistry 1A06 or registration in a Ceramic, Chemical, Materials or Metallurgical Engineering Programme. Not open to students who are registered in, or have credit in any of Chemistry 2C03, 2F03, 3E06, 3Q03.

CHEM 3A03 ANALYTICAL CHEMISTRY II

An introduction to modern instrumental methods of analysis.

3 lects., 1 lab.(3); one term

Prerequisite: Chemistry 2A03.

CHEM 3B03 QUANTUM CHEMISTRY

An introduction to quantum mechanics and spectroscopy.

2 lects., 1 tut. or 1 lab.(3); first term

Prerequisite: Chemistry 2P06 and one of Mathematics 2O03, 2N03 or 2P04. Not open to students who have credit in Chemistry 3L03 or 3U03.

CHEM 3C03 STATISTICAL THERMODYNAMICS AND CHEMICAL KINETICS

Introduction to statistical thermodynamics, chemical kinetics in gaseous, condensed and interfacial systems. First half of Chemistry 3KK6.

2 lects., and 1 tut.; first term

Prerequisite: Chemistry 2P06 and registration in, or completion of, Chemistry 3B03. Not open to students who are registered in, or have credit in Chemistry 3KK6 or 4K06.

CHEM 3D03 ORGANIC CHEMISTRY

A mechanistically-oriented discussion of mono- and polyfunctional organic compounds with emphasis on applications to synthesis.

3 lects., 1 lab.(3); one term

Prerequisite: Chemistry 2B06 and registration in a programme in which Chemistry 3D03 is required. Not open to students who are registered in, or have credit in Chemistry 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 Chemistry 3Q03 plus 3P03.

2 lects., 1 lab.(3); two terms

Prerequisite: Chemistry 2C03 and registration in a programme in which Chemistry 3E06 is required. Not open to students who are registered in or have credit in Chemistry 3Q03 or 3P03.

CHEM 3F03 BIO-ORGANIC CHEMISTRY

Topics in bio-organic chemistry; a sequel to Chemistry 2O06.

2 lects., 1 lab.(3); one term

Prerequisite: Chemistry 2O06 or registration in Honours Biological Chemistry.

CHEM 3I03 INDUSTRIAL CHEMISTRY

A survey of the chemical industry. Products obtained from petroleum, natural gas and soda ash. Petrochemicals, synthetic and natural polymers.

3 lects.; one term

Prerequisite: One of Chemistry 2B06, 2D03, 2O06, and one of Chemistry 2C03, 2F03 or 2W03, or registration in Level IV of a Chemical Engineering programme.

CHEM 3KK6 STATISTICAL THERMODYNAMICS, CHEMICAL KINETICS AND REACTION RATE THEORY

Introduction to statistical thermodynamics, chemical kinetics in gaseous, condensed and interfacial systems. Chemical reaction rate theory.

2 lects., 1 tut. or 1 lab.(3); two terms

Prerequisite: One of Chemistry 2P06 or 2Q06 or 2T06, and registration in, or completion of, one of Chemistry 3B03, Physics 3Q03, 3M06 or 3M03 and 3MM3. Not open to students who are registered in, or have credit in, Chemistry 3C03 or 4K06.

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 Chemistry 3E06.

2 lects., 1 lab.(3); second term

Prerequisite: Chemistry 3Q03. Not open to students who are registered in, or have credit in Chemistry 3E06.

CHEM 3Q03 INORGANIC CHEMISTRY

The properties, structures and reactions of inorganic compounds with emphasis on transition metal chemistry. The first half of Chemistry 3E06.

2 lects., 1 lab.(3); first term

Prerequisite: Chemistry 2C03, or registration in a programme in which Chemistry 3Q03 is required. Not open to students who are registered in, or have credit in Chemistry 3E06.

CHEM 4A03* ADVANCED ORGANIC CHEMISTRY

A discussion of some modern advances in organic chemistry including such topics as aromaticity, molecular rearrangements, and organic photochemistry.

2 lects.; one term

Prerequisite: One of Chemistry 3D03, 3F03.

CHEM 4B03 CHEMICAL APPLICATIONS OF SPECTROSCOPY

The applications of spectroscopy to the solution of chemical problems, quantum states and spectra; theory of microwave, infrared, Raman and electronic spectra; gas and tunable lasers.

2 lects.; second term

Prerequisite: Chemistry 3B03 or 3U03 and Chemistry 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.

2 lects.; one term

Prerequisite: One of Chemistry 3E06, 3Q03 and registration in Level IV of a Chemistry programme.

CHEM 4D03 ORGANIC STRUCTURE AND SYNTHESIS

Application of spectroscopic methods to structure determination. Synthetic methodology in organic chemistry.

2 lects.; one term

Prerequisite: One of Chemistry 3D03 or 3F03.

CHEM 4DD3 MECHANISTIC BIOLOGICAL CHEMISTRY

Amino acid, nucleic acid, enzyme and coenzyme chemistry with emphasis on molecular reaction mechanisms.

2 lects.; one term

Prerequisite: One of Chemistry 3D03 or 3F03.

CHEM 4G06 SENIOR THESIS

A thesis based on a project under the direction of a Chemistry Department faculty member.

Prerequisite: Registration in Level IV of an Honours programme in Chemistry. With departmental approval, students who are registered in Level IV of a Major programme in the Faculty of Science which requires Science Inquiry, and who have a CAA of at least 7.0, can select Chemistry 4G06 as Science Inquiry. Those enrolled in the Chemistry Major programme prior to September 1992 and who have a CAA of at least 7.0, will be considered, if sufficient projects are available.

CHEM 4I03 INQUIRY IN CHEMISTRY

Seminars and directed readings dealing with the impact of Chemistry on society.

2 lects.; one term

Prerequisite: Registration in Level IV of a Major programme in the Faculty of Science which requires Science Inquiry.

Enrolment is limited.

First offered in 1994-95.

CHEM 4L03 SPECTROSCOPY

A course introducing group theory and aspects of molecular spectroscopy.

2 lects.; first term

Prerequisite: Chemistry 3B03.

CHEM 4P03* ADVANCED ANALYTICAL CHEMISTRY

A course dealing with modern topics in analytical chemistry.

2 lects.; one term

Prerequisite: One of Chemistry 2M05, 2N03, 3A03.

CHEM 4Q03* ADVANCED QUANTUM MECHANICS

Further applications of quantum mechanics to problems of chemical interest.

2 lects.; one term

Prerequisite: One of Chemistry 3B03 or Physics 3M06 or 3M03 and 3MM3, and registration in Level IV of an Honours or Major programme.

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.

2 lects.; one term

Prerequisite: One of Chemistry 3E06, 3Q03 and registration in Level IV of a Chemistry programme.

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.

2 lects.; one term

Prerequisite: One of Chemistry 3E06, 3Q03 and registration in Level IV of a Chemistry programme.

CHEM 4TA3 INSTRUMENTATION AND RADIOCHEMISTRY

Instrumentation, interfacing and measurement system theory. Radiochemistry. The first half of Chemistry 4T06.

1 lect., 1 lab.(4); first term.

Prerequisite: Registration in Level IV of a Chemistry programme or permission of the Instructor.

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 Chemistry 4T06.

1 lect., 1 lab.(4); second term.

Prerequisite: Registration in Level IV of a Chemistry programme or permission of the Instructor.

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.

1 lect., 1 lab.(4); two terms

Prerequisite: Registration in Level IV of a Chemistry programme or permission of the instructor.

CHEM 4U06 ADVANCED EXPERIMENTATION

Fundamental principles of biochemistry and chemistry including modern instrumental methods. Three units selected from Chemistry 4T06 plus Biochemistry 4P03.

2 labs.(4); two terms

Prerequisite: Registration in Level IV Honours Biochemistry and Chemistry. Not open to students are registered in or have credit in any of Biochemistry 4L03, 4P03, Chemistry 4T06.

Same as Biochemistry 4U06.

CHEM 4Y03* STATISTICAL THERMODYNAMICS

Principles of statistical thermodynamics and their applications in chemistry.

2 lect., one term

Prerequisite: Chemistry 3C03 or 3KK6. Not open to students with credit in Chemistry 3Y03, or Physics 3K04.

For Graduate Courses see *Calendar of School of Graduate Studies*.

Chinese

Courses in *Chinese* are administered within the Department of Modern Languages of the Faculty of Humanities. Information and counselling may be obtained from the instructor (Togo Salmon Hall, Room 611).

CHINESE 1Z06 BEGINNER'S INTENSIVE CHINESE

An intensive beginner's course in modern standard (Mandarin) Chinese designed for students with no prior knowledge of the language. Equal emphasis will be placed on speaking, reading and grammar. 550 Chinese characters will be taught. 5 hrs. (including lab. practice); two terms

Prerequisite: Open, except to dialect speakers. Not available to students with credit in, or registered in, Chinese 1ZZ6.

CHINESE 1ZZ6 BEGINNER'S INTENSIVE CHINESE FOR DIALECT SPEAKERS

An intensive beginner's course in modern standard (Mandarin) Chinese designed for students who understand a Chinese dialect or Standard Chinese. Speaking, reading and grammar are equally emphasized.

5 hrs. (including lab. practice); two terms

Prerequisite: Open. Not available to students with credit in, or registered in, Chinese 1Z06.

Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

CHINESE 2Z06 INTERMEDIATE INTENSIVE CHINESE

This course aims to develop the student's communicative skills and to further an understanding of Chinese culture.

4 hrs.; two terms

Prerequisite: Chinese 1Z06 or 1ZZ6, or permission of the instructor.

CHINESE 3Z03 ADVANCED CHINESE

This course continues the study of written and spoken Standard Chinese and the

Chinese culture as begun in Chinese 1Z06/1ZZ6 and 2Z06. Literary materials will be used for oral presentations and short essays.

3 hrs.; one term

Prerequisite: Chinese 2Z06, or permission of the instructor.

Civil Engineering and Engineering Mechanics

Faculty as of January 15, 1992

A. Ghobarah/Chair

Professors Emeriti

Gunhard, Æ. Oravas/B.Eng., M.S. (Civil Eng., Eng. Mech), Ph.D. (Michigan)
Alan A. Smith/B.Sc. (Glasgow), Ph.D. (Strathclyde), P.Eng.

Professors

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.

Farooque A. Mirza/B.Sc. (Karachi), B.Eng. (McGill), M.Eng., Ph.D. (British Columbia)

Keith L. Murphy/B.A.Sc. (Toronto), M.Sc., Ph.D. (Wisconsin), P.Eng.,

Imperial Oil/WTC Chair, Environmental Systems Engineering

Gilles G. Patry/B.A.Sc., M.A.Sc. (Ottawa), Ph.D. (California, Davis), P.Eng.

Stan Pietruszczak/B.Sc., M.Sc. (Warsaw), Ph.D. (Polish Acad. Sci)

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.

Peter L. Dold/B.Sc.Eng. (Chemical), Ph.D. (Cape Town), Imperial Oil/WTC Chair, Environmental Systems Engineering

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.

Dieter Stolle/B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.

Assistant Professors

Brian Baetz/B.A.Sc., M.A.Sc. (Toronto), Ph.D. (Duke), P.Eng.

John C. Doering/B.Sc. (C.Eng.) (Queen's), Ph.D. (Dalhousie), P.Eng.

Bhagwant N. Persaud/B.S. (Iowa), M.Eng., Ph.D. (Toronto)/part-time

Ioannis K. Tsanis/Dip.Civ.Eng. (Aristotele Univ., Thessaloniki), M.A.Sc., Ph.D. (Toronto), P.Eng.

John C. Wilson/B.Eng., M.Eng. (McMaster), Ph.D. (Caltech.), P.Eng.

Associate Members

James R. Kramer/B.Sc. (M.I.T.), M.Sc., Ph.D. (Michigan)

Department Notes:

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.

CIV ENG 2A02 SURVEYING AND MEASUREMENT

Introduction to measurement and computational techniques of surveying, the theory of measurement and errors, adjustment of observations.

1 lect., 1 lab.(3) or 1 tut.(2); first term

CIV ENG 2C04 STRUCTURAL MECHANICS

Unsymmetrical bending, combined axial and flexural loading, shear stresses in thin-walled members, shear centre, plastic deformation, residual stress. Transformations of stress and strain; failure criteria; deflections of statically indeterminate beams; energy methods; Castigliano's theorem, column stability.

3 lects., 1 lab.(3); second term

Prerequisite: Engineering 2P04.

CIVIL ENGINEERING

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.

2 lects., 1 tut.(2); first term

Prerequisite: Engineering 1D04, and Physics 1D03, and registration in or completion of Engineering 2P04.

CIV ENG 2F03 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.

2 lects., 1 lab.(3) or 1 tut.(2) every other week; second term

Prerequisite: Registration in or completion of Civil Engineering 2C04.

CIV ENG 2I03 COMMUNICATIONS IN CIVIL ENGINEERING

Oral and written communication in context of civil engineering activity. A professional liaison programme involving site visits.

2 lects., 1 lab. or 1 tut.; first term

Prerequisite: Registration in or completion of Engineering 2P04.

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.

2 lects., 1 tut.(2); second term

Limited Enrolment.

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.

2 lects., 1 tut.(1), 1 lab.(2), every other week; second term

Prerequisite: Registration in or completion of Engineering 2P04 and Mathematics 2M06.

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.

2 lects., 1 lab.(3) or 1 tut.(2), every other week; first term

Prerequisite: Civil Engineering 2F03.

CIV ENG 3D03 GEOLOGY FOR ENGINEERING

Composition of earth; classification of rocks and minerals; weathering; geomorphology; subsurface exploration; groundwater; earth movements; case studies.

2 lects. each week, 1 lab.(3) or tut.(2), every other week; first term

Prerequisite: Civil Engineering 2F03, and registration in or completion of Engineering 3B03.

CIV ENG 3G03 STRUCTURAL ANALYSIS

Energy methods, moment area, virtual work; analysis of indeterminate structures; moment distribution, influence lines.

2 lects., 1 lab.(3); first term

Prerequisite: Civil Engineering 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.

3 lects., 1 lab.(3); second term

Prerequisite: Credit or registration in Civil Engineering 3G03.

CIV ENG 3K03 INTRODUCTION TO TRANSPORTATION ENGINEERING

Traffic flow characteristics; capacity and control for interrupted and uninterrupted flow roadways; travel demand forecasting.

2 lects., 1 tut.(2); second term

Prerequisite: Engineering 1D04.

CIV ENG 3M04 MUNICIPAL HYDRAULICS

Open channel flow: classification; hydraulic cross-sections; hydraulic jump, design of culverts. Analysis/design of water distribution networks. Analysis and design of wastewater collection systems.

3 lects., 1 lab.(3); second term

Prerequisite: Civil Engineering 2O03 and Mathematics 2M06, and registration in, or completion of Mathematics 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.

2 lects., 1 lab.(3); first term

Prerequisite: Civil Engineering 2J03, 2O03 and Mathematics 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.

2 lects. 1 tut. (2); second term

Prerequisite: Credit or registration in Civil Engineering 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; groundwater flow.

3 lects., 1 tut.(3); first term

Prerequisite: Civil Engineering 2I03 and 3M04.

CIV ENG 4B03 ENGINEERING SYSTEMS

Mathematical models and systems; economic comparison of projects; optimization; linear, non-linear and dynamic programming; simulation modelling.

2 lects., 1 tut.(2) or lab.(3); first term

Prerequisite: Completion of, or registration in, Civil Engineering 3B03, 3G03, 3J04, 3K03, 3M04, 3Q03 or 3Q04, 3S03.

CIV ENG 4C03 ENVIRONMENTAL PROTECTION

Environmental assessment; energy and elemental cycles; population control; global environmental concerns; solid waste management; hazardous waste management; air quality and control; environmental legislation; environmental economics.

2 lects., 1 tut.(2); second 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.

3 lects., 1 lab.(2); first term

Prerequisite: Civil Engineering 2I03 and 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.

2 lects., 1 lab.(3); second term

Prerequisite: Civil Engineering 3B03.

CIV ENG 4H03 LAND USE AND TRANSPORTATION

Quantitative models to predict transportation flows and land use patterns in urban areas, including gravity-type models, the Lowry model and discrete choice models.

3 lects.; first term

Prerequisite: Civil Engineering 3K03.

Same as Geography 4H03.

CIV ENG 4K04 MODERN METHODS OF STRUCTURAL ANALYSIS

Stiffness analysis; development and application of structural analysis. Introduction to finite element method. Influence lines, elastic stability analysis of frames with and without sway effects. Application of computer programs.

3 lects., 1 tut.(2); first term

Prerequisite: Civil Engineering 3G03 and Mathematics 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.

2 lects., 1 tut., 1 lab. (3); second term

Prerequisite: Civil Engineering 2I03 and 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.

3 lects., 1 lab.(3); first term

Prerequisite: Civil Engineering 2I03, 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.

3 lects., 1 tut.(2); first term

Prerequisite: Civil Engineering 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.

3 lects., 1 tut.(2); second term

Prerequisite: Civil Engineering 3G03, 3J04, 3S03.

CIV ENG 4Y04 BRIDGES AND OTHER HEAVY CIVIL STRUCTURES
Introduction to bridge engineering; design of post/prestressed prestressed concrete structures; calculation of ultimate strength and serviceability. Plate girders; composite construction. Applications to heavy civil structures.
3 lects., 1 lab.(3) or 1 tut.(2); second term
Prerequisite: Civil Engineering 3G03, 3J04, 3S03.

For **Graduate courses**, see *Calendar of the School of Graduate Studies*.

Classics

Faculty as of January 15, 1992

Katherine M. D. Dunbabin/*Chair*

Professors Emeriti

Harold F. Guite/B.A., M.A. (*London*)

Thomas F. Hoey/B.A. (*Montreal*), M.A. (*Toronto*), Ph.D. (*Harvard*), S.T.L., Ph.L. (*Immaculate Conception Seminary, Montreal*)

Alexander G. McKay/B.A. (*Toronto*), M.A. (*Yale*), A.M., Ph.D. (*Princeton*), F.R.S.C.

Donald M. Shepherd/M.A. (*Queen's*), Ph.D. (*Chicago*)

Professors

Katherine M. D. Dunbabin/M.A., D. Phil. (*Oxford*)

Daniel J. Geagan/A.B. (*Boston*), Ph.D. (*Johns Hopkins*)/History & Classics

Howard Jones/B.A. (*London*), M.A., Ph.D. (*Indiana*)

Paul Murgatroyd/B.A., M.A. (*Cambridge*), Ph.D. (*London*)

George M. Paul/M.A. (*Oxford*), Ph.D. (*London*)

William J. Slater/M.A., Ph.D. (*St. Andrews*)

Associate Professors

Peter Kingston/B.A., Ph.D. (*London*)

Assistant Professors

Johnson B. Clinard/B.A. (*North Carolina*), M.A. (*Columbia*), Ph.D. (*North Carolina*)

Evan Haley/A.B. (*Dartmouth*), Ph.D. (*Columbia*)/Classics & History

Karen Ros/A.B. (*Bryn Mawr*), A.M., Ph.D. (*Michigan*)

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, 3A03, 3G03, 3H03, 3R03, 3S03
- b. *Ancient History and Society*
Classics 2G06, 2U03, 2V03, 2Z03, 3LL3, 3MM3, 3UU3, 3VV3, 3WW3
- c. *Ancient Philosophy*
Classics 2P06, 4C03, 4J03
- d. *Classical Literature in Translation*
Classics 2D03, 2H03, 2HH3, 3C03, 3I03
- e. *Greek Language and Literature*
Greek 1Z06, 2A03, 2F03, 2G03, 2R03, 3BB3, 3R03, 4BB3, 4R03
- f. *Latin Language and Literature*
Latin 1Z06, 2A03, 2F03, 2G03, 2R03, 3BB3, 3R03, 4BB3, 4R03

CLASSICS

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.
2 lects., 1 tut.; two terms

Prerequisite: Open. Not available to students with credit in Classics 1A06.

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.
3 lects.; two terms

Prerequisite: Open
Same as 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.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

CLASSICS 2B03 GREEK ART

The architecture, sculpture and painting of the Greek and Hellenistic world.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Art History 2B03.

CLASSICS 2C03 ROMAN ART

The architecture, sculpture, and painting of the Roman world.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Art History 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.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Comparative Literature 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.
3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open to students in Level II and above.

Same as History 2L06.

CLASSICS 2H03 THE THEATRE OF GREECE AND ROME

The history of theatres and theatrical production in Greece and Rome.
3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Classics 2E03.

Same as Comparative Literature 2H03 and Drama 2H03.

CLASSICS 2HH3 GREEK AND ROMAN DRAMA

Readings from selected Greek and Roman tragedies and comedies.
3 lects.; one term

Prerequisite: Open to students in Level II and above. Classics 2H03 is recommended. Not available to students with credit in Classical Civilization 2E03.

Same as Comparative Literature 2HH3 and Drama 2HH3.

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.
3 lects.; two terms

Prerequisite: Open to students in Level II and above.

Same as Philosophy 2A06.

CLASSICS 2U03 GREEK SOCIETY

A description and analysis of selected aspects of the social life of Greece. The topics surveyed include work and leisure, slavery, marriage and family life, the roles of women, religion, law, social structure and social mobility.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

Alternates with Classics 2V03.

CLASSICS 2V03 ROMAN SOCIETY

A description and analysis of selected aspects of the social life of Rome. The topics surveyed include work and leisure, slavery, marriage and family life, the roles of women, religion, law, social structure and social mobility.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

Alternates with Classics 2U03.

CLASSICS 2Z03 GREEK AND ROMAN RELIGION

A study of the role of religion in Greek and Roman public and private life.
3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

Same as Religious Studies 2Z03.

CLASSICS 3A03 ARCHAEOLOGICAL FIELD WORK

Field work in archaeology at an approved Classical site.

Prerequisite: Permission of the Department and the Associate Dean of Humanities (Studies).

Classics 3A03 may be repeated to a total of six units.

CLASSICS

CLASSICS 3C03 GREEK AND ROMAN EPIC

A survey of epic poetry, including the origins, Homer and Greek epic, Vergil and Roman epic.

3 lects.; one term

Prerequisite: Classics 1A06 or 1B06 or 2D03; or permission of the Department.

Offered in alternate years.

CLASSICS 3G03 LATE ANTIQUE AND EARLY CHRISTIAN ART

The art and architecture of the later Roman Empire, and the birth of Christian art (A.D. 200-600).

3 lects.; one term

Prerequisite: Classics 2C03 or Art History 2G03; or permission of the Department.

Alternates with Classics 3H03.

Same as Art History 3G03.

CLASSICS 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.

3 lects.; one term

Prerequisite: Classics 2B03; or permission of the Department.

Alternates with Classics 3G03.

Same as Art History 3H03.

CLASSICS 3I03 TOPICS IN GREEK AND ROMAN LITERATURE

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.

3 lects.; one term

Prerequisite: Six units of Classics; or permission of the Department.

Same as Comparative Literature 3I03.

Classics 3I03 may be repeated, if on a different topic, to a total of 6 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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

Same as History 3LL3.

CLASSICS 3MM3 THE ROMAN EMPIRE

Rome, Italy and the provinces from the creation of an autocracy by Augustus until the end of the 2nd century A.D.: developments in government, society, defence and economy; the Romanization of the provinces. Archaeological evidence and new approaches to problems will be considered.

3 hrs. (lects. and discussion groups); one term

Prerequisite: Six units of Classics; or permission of the Department.

Offered in alternate years.

Same as History 3MM3.

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.

3 lects.; one term

Prerequisite: One of Classics 2A03, 2B03, 2F03, 3S03; or permission of the Department.

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.

3 lects.; one term

Prerequisite: One of Classics 2A03, 2C03, 2F03, 3R03; or permission of the Department.

Alternates with Classics 3R03.

CLASSICS 3UU3 GREEK SOCIETY IN THE AGE OF PERICLES

A description and analysis of selected aspects of the social life of Athens in the second half of the 5th century B.C., based upon contemporary literature, documents and artifacts. Lectures will deal in greater depth with topics introduced in Classics 2U03, as well as others peculiar to Periclean Athens: work and leisure, education, religion, marriage and family life, the roles of women, war and peace, social structure and social mobility.

3 lects.; one term

Prerequisite: Six units of Classics courses including 2U03; or Classics 1L06 or 2G06.

Alternates with Classics 3VV3.

Same as History 3UU3.

CLASSICS 3VV3 ROMAN SOCIETY IN THE AGE OF AUGUSTUS

A description and analysis of selected aspects of the social life of Rome at the end of the 1st century B.C. based upon contemporary literature, documents and artifacts. Lectures will deal in greater depth with topics introduced in Classics 2V03, as well as others peculiar to Augustan Rome: work and leisure, education, religion, marriage and family life, the roles of women, war and peace, social structure and social mobility.

3 lects.; one term

Prerequisite: Six units of Classics courses including 2V03; or Classics 1L06 or 2G06.

Alternates with Classics 3UU3.

Same as History 3VV3.

CLASSICS 3WW3 TOPICS IN GREEK AND ROMAN SOCIETY

Previous topics include: Women in Greek Society, Slavery in Greek and Roman Antiquity, Money and Money-Making in the Roman World. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Classics 2G06, or six units of Classics courses including 2U03 or 2V03.

Offered in alternate years.

Same as History 3WW3.

Classics 3WW3 may be repeated, if on a different topic, to a total of six units.

CLASSICS 3X03 TOPICS IN ANCIENT ART AND ARCHAEOLOGY

Previous topics include: Hellenistic and Roman Painting. Consult the Department concerning the topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Classics 2B03 or 2C03, and registration in Level III or IV of a programme in Classics or Art History; or permission of the Department of Classics.

Offered in alternate years.

Same as Art History 3X03.

Classics 3X03 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.

1 lect., 1 seminar (2 hrs.); one term

Prerequisite: Classics 2P06 and registration in Level III or IV of any programme; or permission of the Department of Philosophy. Not available to students with credit in Philosophy 3E03.

Offered in alternate years.

Same as Philosophy 4C03.

CLASSICS 4D06 SPECIAL TOPICS IN GREEK HISTORY

Investigations into Greek social history and its interpretation.

Seminar (2 hrs.); two terms

Prerequisite: Six units from Classics 2G06, 2U03, 3LL3, 3UU3, and registration in Level III or IV of any Honours programme in Classics or History; or permission of the Department of History.

Same as History 4D06.

Enrolment is limited.

CLASSICS 4I06 SPECIAL TOPICS IN ROMAN HISTORY

Problems in the history of the Roman Empire.

Seminar (2 hrs.); two terms

Prerequisite: Six units from Classics 2G06, 2V03, 3MM3, 3VV3, and registration in Level III or IV of any Honours programme in Classics or History; or permission of the History Department.

Same as History 4I06.

Enrolment is limited.

CLASSICS 4J03 ARISTOTLE

A systematic study of Aristotle's major doctrines.

Seminar (2-1/2 hrs.); one term

Prerequisite: Classics 2P06 and registration in Level III or IV of any programme; or permission of the Department of Philosophy. Not available to students with credit in Philosophy 3J03.

Offered in alternate years.

Same as Philosophy 4J03.

CLASSICS 4LL6 THEMES IN ANCIENT HISTORY

An examination of at least two selected themes in Ancient History, particularly the history of the Greco-Roman world, with emphasis on the use of source materials, primary and secondary, literary and non-literary.

Seminar (2 hrs.); two terms

Prerequisite: Six units from Classics 2G06, 3LL3, 3MM3, 3UU3, 3VV3 and registration in Level IV of any honours programme in Classics or History with a Cumulative Area Average of at least 9.0; or permission of the History Department.

Same as History 4LL6.

Enrolment is limited.

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.

Tuts.; two terms

Prerequisite: Registration in Level IV of any Honours programme in Classics with a Cumulative Area Average of at least 10.0, and permission of the Department. Not available to students with credit in Classical Civilization 4X03, 4XX6, 4Y03, 4YY6, 4Z03, or 4ZZ6.

GREEK**Notes:**

1. 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 Course

Greek 2A03

Advanced Level Language Courses

Greek 2R03, 3R03, 4R03

2. Students with OAC Ancient Greek should normally register in Greek 2A03, but, with special permission, may register in Greek 1Z06.

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.

5 hrs. (lects. and tuts.); 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 INTRODUCTION TO READING GREEK AUTHORS

A study of selected passages from Greek authors designed to develop a student's proficiency in reading Greek.

3 lects.; one term

Prerequisite: OAC Ancient Greek or Greek 1Z06; or permission of the Department. Students using this course as a Humanities I requirement will also register for an additional 3 units of Level II Greek to be taken in Term II.

GREEK 2F03 EURIPIDES

Selected readings from the tragedies.

3 lects.; one term

Prerequisite: Greek 2A03; or permission of the Department.

Alternates with Greek 2G03.

GREEK 2G03 PLATO

Selected readings from the dialogues.

3 lects.; one term

Prerequisite: Greek 2A03; or permission of the Department.

Alternates with Greek 2F03.

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.

2 lects.; two terms

Prerequisite: Greek 1Z06 with a grade of at least B- or Greek 2A03; or permission of the Department.

GREEK 3BB3 TOPICS IN GREEK LITERATURE

Previous topics include: Homer, Aristophanes, Greek Tragedians. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Six units of Level II Greek including Greek 2A03; or permission of the Department.

Greek 3BB3 may be repeated, if on a different topic, to a total of six units.

GREEK 3R03 ADVANCED GREEK LANGUAGE STUDY I

A study of Greek grammar and style, and practice in Greek composition.

1 lect., 1 tut.; two terms

Prerequisite: Nine units of Level II Greek including Greek 2R03; or permission of the Department.

Alternates with Greek 4R03.

GREEK 4BB3 TOPICS IN GREEK LITERATURE II

Consult the Department for the topic to be offered.

3 lects.; one term

Prerequisite: Six units of Level II Greek, including 2A03; or permission of the Department.

Greek 4BB3 may be repeated, if on a different topic, to a total of six units.

Alternates with Greek 3BB3.

GREEK 4K03 GUIDED READING IN GREEK AUTHORS

Selected readings from Greek authors supervised by a member of the Department. Tuts.; one term

Prerequisite: Six units of Level II Greek including Greek 2A03 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.

GREEK 4R03 ADVANCED GREEK LANGUAGE STUDY II

A study of Greek grammar and style, and practice in Greek composition.

1 lect., 1 tut.; two terms

Prerequisite: Nine units of Level II Greek including Greek 2R03; or permission of the Department.

Alternates with Greek 3R03.

LATIN**Notes:**

1. 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 Course

Latin 2A03

Advanced Level Language Courses

Latin 2R03, 3R03, 4R03

2. Students with OAC Latin should normally register in Latin 2A03, but, with special permission, may register in Latin 1Z06.

LATIN 1Z06 BEGINNER'S INTENSIVE LATIN

An introduction to the grammar of Classical Latin. Practice in reading simple Latin passages followed by the study of selections from the speeches of Cicero.

5 hrs. (lects. and tuts.); 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 INTRODUCTION TO READING LATIN AUTHORS

A study of selected passages from Latin authors designed to develop a student's proficiency in reading Latin.

3 lects.; one term

Prerequisite: OAC Latin or Latin 1Z06; or permission of the Department. Students using this course as a Humanities I requirement will also register for an additional 3 units of Level II Latin to be taken in Term II.

LATIN 2F03 CATULLUS AND HORACE

Selected readings from the poems of Catullus and Horace.

3 lects.; one term

Prerequisite: Latin 2A03; or permission of the Department.

Alternates with Latin 2G03.

LATIN 2G03 VERGIL

Selected readings from the *Aeneid*.

3 lects.; one term

Prerequisite: Latin 2A03; or permission of the Department.

Alternates with Latin 2F03.

LATIN 2R03 LATIN LANGUAGE

A study of Latin grammar and style based chiefly upon reading selected passages from the works of Cicero and translation from English to Latin.

2 lects.; two terms

Prerequisite: Latin 1Z06 with a grade of at least B-, or Latin 2A03; or permission of the Department.

LATIN 3BB3 TOPICS IN LATIN LITERATURE

Previous topics include: Roman Verse Satire, Poetry of the Neronian Age, Petronius. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Six units of Level II Latin including Latin 2A03; or permission of the Department.

Latin 3BB3 may be repeated, if on a different topic, to a total of six units.

LATIN 3R03 ADVANCED LATIN LANGUAGE STUDY I

A study of Latin grammar and style, and practice in Latin composition.

1 lect., 1 tut.; two terms

Prerequisite: Nine units of Level II Latin including Latin 2R03; or permission of the Department.

Alternates with Latin 4R03.

COMMERCE

LATIN 4BB3 TOPICS IN LATIN LITERATURE II

Consult the Department for the topic to be offered.

3 lects.; one term

Prerequisite: Six units of Level II Latin, including 2A03; or permission of the Department.

Latin 4BB3 may be repeated, if on a different topic, to a total of six units.

Alternates with Latin 3BB3.

LATIN 4K03 GUIDED READING IN CLASSICAL LATIN AUTHORS

Selected readings from Classical Latin authors supervised by a member of the Department.

Tuts.; one term

Prerequisite: Six units of Level II Latin including Latin 2A03 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 4KK3 GUIDED READING IN MEDIEVAL LATIN AUTHORS

Selected readings from Medieval Latin authors supervised by a member of the Department.

Tuts.; one term

Prerequisite: Six units of Level II Latin including Latin 2A03 and registration in Level III or IV of any Honours programme in Classics and permission of the Department.

Latin 4KK3 may be repeated, if on a different topic, to a total of six units.

LATIN 4R03 ADVANCED LATIN LANGUAGE STUDY II

A study of Latin grammar and style, and practice in Latin composition.

1 lect., 1 tut.; two terms

Prerequisite: Nine units of Level II Latin including Latin 2R03; or permission of the Department.

Alternates with Latin 3R03.

For Graduate Courses see *Calendar of School of Graduate Studies*.

Commerce

Faculty as of January 15, 1992

Robert G. Cooper/Chair, Marketing Area

Trevor Chamberlain/Chair, Finance and Business Economics Area

Bernadette E. Lynn/Chair, Accounting Area

Joseph B. Rose/Chair, Human Resources and Labour Relations Area

George Steiner/Chair, Management Science and Information Systems Area

Professors Emeriti

Andrew Z. Szendrovits/M.A., Ph.D. (*Kolozsvár*)/Production and Management Science/Professor (Part-time) of 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

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

Peter M. Banting/B.A., M.B.A. (*McMaster*), Ph.D. (*Michigan State*)/Marketing

M.W. Luke Chan/B.Sc. (*Prince Edward Island*), M.A., Ph.D. (*McMaster*)/Finance and Business Economics/Associate Dean (External Relations)

Robert G. Cooper/B.Eng., M.Eng. (*McGill*), M.B.A., Ph.D. (*Western Ontario*)/Marketing/Chair, Marketing and International Business Area/Lawson Mardin Chair in Industrial Marketing and Technology Management

Haim Falk/B.Ac. (*Hebrew*), M.B.A. (*Tel-Aviv*), Ph.D. (*Hebrew*), C.P.A./Accounting/Distinguished Chair in Accounting

Harish C. Jain/B.Com. (*Delhi*), M.B.A. (*Indiana*), Ph.D. (*Wisconsin*)/Human Resources and Labour Relations

Clarence C.Y. Kwan/Ph.D. (*Ottawa*), M.B.A. (*McMaster*), Ph.D. (*Toronto*), P. Eng./Finance

Robert F. Love/B.A.Sc. (*Toronto*), M.B.A. (*Western Ontario*), Ph.D. (*Stanford*), P.Eng./Management Science

Winston H. Mahatoo/B.A. (*London*), B.Sc., M.Sc. (*McGill*), Ph.D. (*Montreal*)/Marketing

Dean C. Mountain/B.A. (*McMaster*), M.A., Ph.D., (*Western Ontario*)/Finance and Business Economics

Mahmut Parlar/B.Sc., M.Sc. (*Middle East Technical University*), Ph.D. (*Waterloo*)/Management Science/Co-ordinator, Ph.D. Program (Management Science/Systems)

Joseph B. Rose/B.B.A. (*Adelphi*), M.B.A. (*California*), Ph.D. (*State University of New York at Buffalo*)/Industrial Relations/Chair of the Human Resources and Labour Relations Area

Randolph E. Ross/B.A. (*Waterloo Lutheran*), M.B.A. (*Michigan State*), D.B.A. (*Indiana*)/Marketing

William G. Truscott/B.S.E. (*Princeton*), M.B.A. (*McMaster*), D.B.A. (*Indiana*), P.Eng./Production and Management Science/Dean of the School of Business

George O. Wesolowsky/B.A.Sc. (*Toronto*), M.B.A. (*Western Ontario*), Ph.D. (*Wisconsin*)/Management Science

Associate Professors

Prakash L. Abad/B.Tech. (*Indian Institute of Technology*), M.S., M.B.A., Ph.D. (*Cincinnati*)/Management Science

Norman P. Archer/B.Sc. (*Alberta*), Ph.D. (*McMaster*), M.S. (*New York*)/Management Science

Christopher K. Bart/B.A., M.B.A. (*York*), Ph.D. (*Western Ontario*), C.A./Business Policy

Min S. Basadur/B.A.Sc. (*Toronto*), M.B.A. (*Xavier*), Ph.D. (*Cincinnati*), P.Eng./Organizational Behaviour (Half-time)

Trevor W. Chamberlain/B.Sc. (*California, Berkeley*), M.B.A. (*McGill*), Ph.D. (*Toronto*), C.A./Finance/Chair, Finance and Business Economics Area

C.S. Sherman Cheung/B.S. (*Louisiana State*), M.S., Ph.D. (*Illinois*)/Finance and Business Economics

Kenneth R. Deal/B.S., M.B.A., Ph.D. (*State University of New York at Buffalo*)/Marketing and Management Science

James C. Gaa/B.A. (*Michigan State*), A.M., Ph.D. (*Washington, St. Louis*), Ph.D. (*Illinois*)/Accounting

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

John W. Medcof/B.A. (*New Brunswick*), M.A. (*Toronto*), Ph.D. (*Toronto*)/Organizational Behaviour/Associate Dean (Academic)

John G. Miltenburg/B.Eng. Mgt., M.B.A. (*McMaster*), M.Eng. (*Toronto*), Ph.D. (*Waterloo*), P.Eng./Production and Management Science

Ali R. Montazemi/H.N.D. (*Teesside Polytechnic, U.K.*), M.Sc. (*Southampton*), Ph.D. (*Waterloo*)/Information Systems

Thomas E. Muller/M.B.A. (*Simon Fraser*), Ph.D. (*British Columbia*)/Marketing

George Steiner/M.Sc. (*Budapest*), Ph.D. (*Waterloo*)/Production and Management Science/Chair of the Management Science and Information Systems Area

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

Y.C. Lilian Chan/B.B.A. (*Chinese University of Hong Kong*), Ph.D. (*Virginia Polytechnic Institute and State University*)/Accounting

Richard W. Deaves/B.A., M.A., Ph.D. (*Toronto*)/Finance and Business Economics

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*)/Marketing

Diwakar 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

Jason Lee/B.Sc. (*Calgary*)/Finance

Bernadette E. Lynn/B.A. (*Carlow College*), M.A. (*Pittsburgh*), Ph.D., M.B.A. (*McMaster*), C.M.A./Accounting/Chair, Accounting Area

S.M. Khalid Nainar, B.A., M.A. (*Delhi*), Ph.D. (*Florida*)/Accounting

Mohamed M. Shehata/B.Com. (*Tanta*), M.S. (*Ain-Shams*), M.B.A. (*North Texas State*), Ph.D. (*Florida*)/Accounting

D. Wayne Taylor/B.A. (*Toronto*), M.P.A., Ph.D. (*York*), P.Admin, P.Mgr./Business and Public Policy

Hugh A.L. Thomas/B.A. (*Alberta*), M.B.A. (*Hong Kong*), Ph.D. (*New York*)/Finance and Business Economics
Willi Wiesner/ B.A. (*Wilfrid Laurier*), M.A.Sc., Ph.D. (*Waterloo*)/Human Resources

Lecturers

Mattias M. Casey/B.Sc., M.B.A. (*McMaster*)/Finance
Christopher C. Costanza/B.Com., M.B.A. (*McMaster*), C.A./Accounting (Half-time)
Elizabeth A. Csordas/B.Sc. (*Windsor*), M.B.A. (*McMaster*), C.M.A./Accounting/M.B.A. Programme Advisor
David E. D'Agostino/B.Eng., M.B.A. (*McMaster*)/Marketing/Assistant to the Dean (Administrative)
Nicholas A. Mastroluisi/B.Sc. (*Western Ontario*), M.B.A. (*McMaster*), C.A./Taxation (Half-time)
Ross J. McKeown, B.Sc. (*Sir George Williams*), M.B.A. (*Queen's*)/Marketing and International Business
Barbara M.C. Pitts/B.A. (*McMaster*), B.Ed., (*Brock*), M.B.A. (*McMaster*)/Organizational Behaviour and Human Resource Management
Marvin G. Ryder/B.A., B.Sc. (*Carleton*), M.B.A. (*McMaster*)/Marketing and Business Policy/Assistant to the Dean (*Computing*)
Tiina 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*)/Accounting

Faculty Notes:

1. Commerce courses 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. Students who are not eligible for Commerce courses should refer to the Business course listings.
2. Normally, Level II and Level III Commerce courses are scheduled for 3 lects.; one term, while Level IV Commerce courses are 2 lects.; one term. Courses offered in evenings are 1 lect.; one term.
3. In most Level IV Commerce courses, section size will be restricted to a maximum of 30 students; students will be admitted on a first-come basis.

COMMERCE 2AA3 FINANCIAL ACCOUNTING I

An introduction to the basic principles and practices of financial accounting. Examination of income measurement and asset and liability valuation to provide an understanding of financial accounting information.
Prerequisite: Economics 1A06.

COMMERCE 2BA3 ORGANIZATIONAL BEHAVIOUR

An introduction to the analysis of behaviour in the administration of organized enterprises. The consequences of the organization's goals, technology, structure, environment and managerial styles are examined. Applications are made of studies of perception, problem solving, communication and group processes to the leadership, design and development of organizations.

COMMERCE 2FA3 FINANCIAL INSTRUMENTS AND INSTITUTIONS

An introduction to both micro and macro aspects of Finance. At the micro level, some of the basic concepts and elementary theories in Finance will be explored in order to provide an understanding of investment and financing decisions. At the macro level, various financial instruments and functions of financial institutions in Canada will be described.
Prerequisite: Economics 1A06 and Commerce 2AA3.

COMMERCE 2MA3 INTRODUCTION TO MARKETING

An introduction to marketing as a field of study, market structure, marketing institutions, marketing concepts and strategies. Stress is placed upon the analytical, managerial, and conceptual aspects of the subject.
Prerequisite: Economics 1A06.

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: Mathematics 1L03 or Statistics 1L03, and one of Mathematic 1M03 or 1A06, and one of Computer Science 1A03 or 1BA3.

COMMERCE 3AA3 COST AND 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 will be discussed.
Prerequisite: Commerce 2AA3.

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 3BA3 INDUSTRIAL RELATIONS

An introduction to the structure and process whereby labour, management and the public interact to produce terms and conditions of employment. Topics include the development, structure and objectives of organized labour, management philosophy and policy in industrial relations and governmental policy.
Prerequisite: Commerce 2BA3.

COMMERCE 3BB3 HUMAN RESOURCE MANAGEMENT

An introduction to all major facets of the Human Resource Management function, including planning, staffing, training and development, performance appraisal, career pathing, compensation, health and safety, and labour relations.
Prerequisite: Commerce 2BA3.

COMMERCE 3FA3 INTRODUCTION TO MANAGERIAL FINANCE

An examination of the nature and administration of the finance function. The emphasis is on the development of basic concepts pertaining to the investment problem in asset management, and the financing problem in short and long-range sources of funds, capital structure, and dividend policy.
Prerequisite: Commerce 2FA3.

COMMERCE 3FB3 SECURITIES ANALYSIS

The emphasis is on the analysis of marketable securities, especially equities. Topics include: the mechanics of the secondary markets, the investment characteristics of securities, investment strategies to improve rates of return, and the techniques of securities analysis and valuation. In addition, the course introduces portfolio considerations and the 'efficient markets' literature.
Prerequisite: Commerce 2FA3.

COMMERCE 3MA3 INTRODUCTION TO MARKETING RESEARCH

An introduction to the role and methods of marketing research. Among topics considered are measurement, sample selection, questionnaire development, data collection, and analysis and interpretation of data.
Prerequisite: Commerce 2MA3, and 2QA3 or Statistics 3Y02 or 3Y03.

COMMERCE 3MB3 CONSUMER MOTIVATION

An analysis of the motivations underlying consumer choice behaviour such as store patronage, brand loyalty, and new-product adoption. Specifically, the course will trace the role of perception, learning, attitudes, personality, reference groups, social class and culture in the consumer decision process.
Prerequisite: Commerce 2MA3.

COMMERCE 3QA3 DECISION SCIENCE FOR MANAGERS

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 3QB3 BUSINESS DATA PROCESSING

An introduction to commercial data processing technology: I/O devices; storage; processors; software; its deployment in transaction/file processing and reporting systems; and the analysis and design of such systems.
Prerequisite: Computer Science 1A03 or 1BA3, and/or registration in a Commerce or an Engineering and Management programme.

LEVEL IV COMMERCE COURSES

In most Level IV Commerce courses, section size will be restricted to a maximum of 30 students; students will be admitted on a first-come basis.

COMMERCE 4AA3 COST AND MANAGERIAL ACCOUNTING II

A consideration of more complex topics in management planning and control including cost behaviour determination, production planning, cost allocations, variance analysis, performance evaluation for responsibility centres as well as manufacturing entities.
Prerequisite: Commerce 3AA3.

COMMERCE 4AB3 FINANCIAL ACCOUNTING III

A second course in intermediate financial accounting dealing with reporting issues as they relate to liabilities and owners' equity. The concepts underlying recognition, measurement and disclosure are examined in general and as applied to items such as bonds, taxes, leases and pensions.
Prerequisite: Commerce 3AB3.

COMMERCE

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 4AB3.

COMMERCE 4AD3 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

Consideration of the principles underlying the role of accounting as an information system for planning and controlling business operations. The emphasis is on internal control in both manual and automated systems. Topics include controls over the system development process, the auditor's use and analysis of internal control, and the role of the accountant in controlling an accounting information system.

Prerequisite: Commerce 3AA3, 3AB3 and 3QB3.

COMMERCE 4AF3 SEMINAR IN ACCOUNTING THEORY

A review of accounting theory as a background for applying underlying concepts to current accounting problems. Emphasis is on current literature, with a major term paper required.

Prerequisite: Completion of, or concurrent registration in, Commerce 4AB3.

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 and Commerce 4AF3.

Available summers 1991, 1992, 1993, 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 and Commerce 4AD3

Available summers 1991, 1992, 1993, 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 and Commerce 4AD3

Available summers 1991, 1992, 1993, subject to sufficient enrolments and availability of qualified instructors..

Continuing Students refer to School of Business: Continuing Students.

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.

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 Labour Studies 2A03 or 2A06.

COMMERCE 4BD3 SETTLEMENT OF INDUSTRIAL DISPUTES

The nature and the role of industrial conflict as well as the techniques which have been developed to control the incidence of conflict in union-management situations.

Prerequisite: Commerce 3BA3, or Labour Studies 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.

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 and subject to space availability.

Same as Labour Studies 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.

Same as Labour Studies 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 and subject to space availability.

Same as Labour Studies 4D03.

COMMERCE 4FA3 MANAGERIAL FINANCE

A managerial point of view is established by the application of basic financial theory and analysis to actual case situations. Lectures are used to complement case discussions. The course is useful for students interested in general management, as well as for those wishing to attain a degree of specialization in Finance.

Prerequisite: Commerce 3FA3.

COMMERCE 4FB3 FINANCIAL THEORY

This course explores the theoretical and conceptual foundations of Finance. Topics include: utility maximization and choices involving risk; the quantification of risk and return, concepts of value; the investment, financing and dividend decisions of firms; asset pricing in perfect and imperfect markets.

Prerequisite: Commerce 3FA3.

COMMERCE 4FC3 PORTFOLIO THEORY AND MANAGEMENT

The selection and management of investment portfolios is analyzed with mathematical models. The course covers recent developments in portfolio theory, with a view to applications by individual and institutional investors.

Prerequisite: Commerce 3FA3.

COMMERCE 4MC3 PRODUCT MARKETING

This course covers concepts, methods and strategies for both new and existing products. Topics include: the new product process; launch strategies; product policy; portfolio analysis and product positioning.

Prerequisite: Commerce 3MA3

COMMERCE 4MD3 INDUSTRIAL MARKETING

To give the student an overall view of the marketing of industrial goods and services, this course utilizes techniques and concepts from introductory marketing courses and applies them to the special problems encountered in the industrial market.

Prerequisite: Commerce 3MA3

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 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.

COMMERCE 4PC3 ADVANCED CANADIAN INCOME 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.

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.

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 venture, global strategy, international personnel, and international development. Prerequisite: Not open to students who have received credit for Commerce 4MB3.

COMMERCE 4QA3 PRODUCTION/OPERATIONS

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. Not open to students registered in or with credit for Mechanical Engineering 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 4QA3, or Mechanical Engineering 4C03.

COMMERCE 4QC3 QUANTITATIVE ANALYSIS FOR 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.

Comparative Literature

Comparative Literature courses are administered within the Department of Modern Languages of the Faculty of Humanities.

Co-ordinator, 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. Courses are organized to cover six areas of comparative literary study:
 - I *Literary and Cultural History*
Comparative Literature 1A06, 2D03, 2G03, 2M03, 3I03, 4AA3
 - II *Literary Forms*
Comparative Literature 2H03, 2HH3, 3CC3, 3D03, 3DD3, 3E03
 - III *Cultural Periods*
Comparative Literature 2A03, 2AA3, 3B06, 3J03, 4AA3
 - IV *Literary Theory*
Comparative Literature 3Q03, 3QQ3, 4B03
 - V *Literature and Other Disciplines*
Comparative Literature 3L03, 4C03
 - VI *General*
Comparative Literature 4E03
3. No language other than English is required for courses listed under Comparative Literature.

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. 2 lects., 1 tut.; two terms
Prerequisite: OAC English; or the permission of the Co-ordinator.

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. 3 lects.; one term
Prerequisite: Comparative Literature 1A06; or permission of the Co-ordinator.

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. 3 lects.; one term
Prerequisite: Comparative Literature 1A06; or permission of the Co-ordinator.

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. 3 lects.; one term
Prerequisite: Open to students in Level II and above.
Same as English 2D03.
Enrolment is limited

COMP LIT 2G03 BIBLICAL LITERATURE

A survey introduction to biblical literature (Old Testament, New Testament and selected Apocrypha and Pseudepigrapha) and the history of biblical interpretation to meet the particular needs of students of Western literature. 2 lects., 1 tut.; one term
Prerequisite: Open to students in Level II and above.
Same as Religious Studies 2VV3.

COMP LIT 2H03 THE THEATRE OF GREECE AND ROME

The social history of the theatre in Greece and Rome. 3 lects.; one term
Prerequisite: Open to students in Level II and above. Not available to students with credit in Comparative Literature 2B03.
Same as Classics 2H03 and Drama 2H03.

COMP LIT 2HH3 GREEK AND ROMAN DRAMA

Reading of selected Greek and Roman tragedies and comedies. 3 lects.; one term
Prerequisite: Open to students in Level II and above. Comparative Literature 2H03 is recommended. Not available to students with credit in Comparative Literature 2B03.
Same as Classics 2HH3 and Drama 2HH3.

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. 3 lects.; one term
Prerequisite: Open to students in Level II and above.
Same as Classics 2D03.

COMP LIT 3B06 FROM ROMANTICISM TO MODERNISM

An introduction to the major intellectual and aesthetic currents in Europe from the beginning of the nineteenth century to approximately 1920. 3 lects.; two terms
Prerequisite: Registration in Level III or IV of any programme in the Faculty of Humanities.

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 (2 hrs.), plus playreadings; one term
Prerequisite: Drama 1A06, or permission of the instructor.
Alternates with Comparative Literature 3E03.
Same as Drama 3CC3.

COMP LIT 3D03 TOPICS IN LITERARY GENRES I

Previous topics include: Lyric Poetry, The Folk Tale. Consult the Department concerning topic to be offered. Seminar (2 hrs.); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme; or permission of the Co-ordinator.
Comparative Literature 3D03 may be repeated, if on a different topic, to a total of 6 units.

COMP LIT 3DD3 TOPICS IN LITERARY GENRES II

Previous topics include: The Nineteenth-Century Novel, The Renaissance Epic. Consult the Department concerning topic to be offered. Seminar (2 hrs.); one term
Prerequisite: Registration in Level III or IV of a Comparative Literature programme; or permission of the Co-ordinator.
Comparative Literature 3DD3 may be repeated, if on a different topic, to a total of 6 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 (2 hrs.), plus playreadings; one term
Prerequisite: Drama 1A06; or permission of the instructor.
Same as Drama 3C03.

COMPUTER SCIENCE AND SYSTEMS

COMP LIT 3I03 TOPICS IN GREEK AND ROMAN LITERATURE

Previous topics include: The Poet and Society, Greek and Roman Elegiac and Lyric Poetry, The Legend of the Trojan War, Satire. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Six units of Classics; or permission of the Department of Classics. Same as Classics 3I03.

Comparative Literature 3I03 may be repeated, if on a different topic, to a total of 6 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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme. Same as 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.

3 lects., plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama or Literature; or permission of the Drama Department. Drama 2X06 is recommended. Not available to students with credit in Comparative Literature 4H03. Same as English 3CC3, Art History 3CC3 and Drama 4H03.

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme. Same as English 3Q03.

COMP LIT 3Q03 MODERN CRITICAL THEORY

The theory and practice of literary criticism from Eliot to the present.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme. Same as English 3Q03.

COMP LIT 4AA3 TOPICS IN LITERARY MOVEMENTS

Previous topics include: European Romanticism. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme; or permission of the Co-ordinator.

Comparative Literature 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: Psychoanalytic Criticism, Feminist Theory. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme; or permission of the Co-ordinator.

Comparative Literature 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 Ethnography, Literature and Philosophy. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme; or permission of the Co-ordinator.

Comparative Literature 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: Utopia in European Literature. Same as English 3PP3 when the topic is Southeast Asian Literature in English. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a Comparative Literature programme; or permission of the Co-ordinator.

Offered in alternate years.

Comparative Literature 4E03 may be repeated, if on a different topic, to a total of six units.

COMP LIT 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.

Tuts.; one term

Prerequisite: Registration in Level IV of a Comparative Literature or Literary Studies programme, and permission of the Independent Study Committee.

Computer Engineering

(See Electrical and Computer Engineering)

Computer Science and Systems

Faculty as of January 15, 1992

Gerald L. Keech/Chair

Professors

Gerald L. Keech/ B.A.Sc. (Toronto), M.Sc., Ph.D. (McMaster)

Peter E. Lauer/B.A. (Alabama), M.A. (Emory), Ph.D. (Queen's, Belfast)

Patrick J. Ryan/ B.Sc. (Toronto), Ph.D. (Brown)

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

Ryszard Janicki/M.Sc. (Warsaw), Ph.D., D.Hab. (Polish Acad. Sci.)

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)

Kenneth A. Redish/B.Sc. (London), F.B.C.S./part-time

William F. Smyth/B.A. (Toronto), M.Sc. (Ottawa), Ph.D. (Curtin), C.Eng., F.B.C.S., F.I.C.A.

Nicholas Soltseff/B.Sc., Ph.D. (Sydney), C.Eng., F.B.C.S.

Jeffrey I. Zucker/B.Sc. (Witwatersrand), Ph.D. (Stanford)

Assistant Professors

Tao Jiang/B.Sc. (Univ. of Sci. and Tech. of China, Hefei), Ph.D. (Minnesota)

Barbara E. Ley/B.Sc. (Brock), M.Sc., Ph.D. (Toronto)/part-time

Sanzheng Qiao/B.S., M.S. (Shanghai Teacher's College) M.S., Ph.D. (Cornell)

Lecturers

Anthony Hurst/B.L.A. (Guelph), M.Sc. (McMaster)

David R. Walker/Mus.Bac. (Toronto)/part-time

Associate Members

Norman P. Archer/ (Business) B.Sc. (Alberta), M.S. (New York), Ph.D. (McMaster)

Hoda A. ElMaraghy/ (Mechanical Engineering) B.Sc. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.

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)

Ali R. Montazemi/ (Business) H.N.D. (Teesside Polytechnic, U.K.), M.Sc. (Southampton), Ph.D. (Waterloo)

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)

Naresh K. Sinha/ (Electrical and Computer Engineering) B.Sc. (Eng.) (Banaras), C.Eng., Ph.D. (Manchester), F.I.E.E., P.Eng.

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:

For Science-oriented students: Computer Science 1MA3, 1MB3, 2MF3 and 2SB3, 3MG3, 3SC3, 3CA3, 3SD3.

For Business-oriented students: Computer Science 1BA3, 1MB3, 2ME3, 4EC3.

Social Sciences and Humanities students: Computer Science 1ZA3 provides an introduction to computer use.

- Mathematics 1AA6, 1C06, 1N06 or Arts and Science 1D06 can serve as an equivalent prerequisite for upper level Computer Science courses in which Mathematics 1A06 is a prerequisite.

COMP SCI 1BA3 INTRODUCTION TO COMPUTING & COMPUTER USE FOR BUSINESS

Organization of microcomputers; analytical and logical problem solving skills development using structured BASIC and electronic spreadsheets; an introduction to descriptive statistics and the use of wordprocessing.

3 lects.; 1 tut.; one term

Prerequisite: Registration in the School of Business and one OAC Mathematics credit, or one of Mathematics 1K03, 1L03, 1M03, Statistics 1L03. Not open to students who are registered in, or have received credit for Computer Science 1MA3 or Engineering 1D04.

COMP SCI 1MA3 INTRODUCTION TO COMPUTER PROGRAMMING

Organization and characteristics of computers; introduction to packages; 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.

3 lects.; 1 tut.; one term

Prerequisite: OAC Calculus or Mathematics 1K03, and another OAC Mathematics or Mathematics 1L03 or Statistics 1L03, or Mathematics 1M03. Not open to students who are registered in, or have received credit for, Engineering 1D04.

COMP SCI 1MB3 INTRODUCTION TO COMPUTER SCIENCE

Programming as a discipline; recursion, structured data types, structured programming, analysis of algorithms, computational complexity, searching and sorting methods; introduction of a structured language.

3 lects.; one term

Prerequisite: One of Computer Science 1MA3, Engineering 1D04, or a grade of B- or better in Computer Science 1BA3 or a grade of A- or better in Computer Science 1ZA3, and credit for, or concurrent registration in, one of Mathematics 1A06, 1B03, or both Mathematics 1M03 and Statistics 1L03 or Mathematics 1L03. Students having credit in 2SB3 will lose that credit.

COMP SCI 1ZA3 INTRODUCTION TO COMPUTING & COMPUTER USE

Organization of microcomputers; analytical and logical problem solving skills development using structured BASIC and electronic spreadsheets; an introduction to descriptive statistics and the use of wordprocessing.

3 lects.; 1 tut.; one term

Prerequisite: One OAC Mathematics credit, or Mathematics 1K03, 1L03, 1M03, or Statistics 1L03 is recommended. Not open to students who are registered in the School of Business, or who are registered in, or have received credit for, any of Computer Science 1BA3, 1MA3, Engineering 1D04.

COMP SCI 2MC3 DATA STRUCTURES AND ALGORITHMS I

State-transition diagrams and matrices, stacks, queues and lists. Advanced testing techniques and analysis of hashing algorithms. File structures, file handling; update and retrieval.

3 lects.; one term

Prerequisite: Computer Science 1MB3, and either Mathematics 1A06 or both Mathematics 1M03 and Statistics 1L03 or Mathematics 1L03.

COMP SCI 2MD3 DATA STRUCTURES AND ALGORITHMS II

Arrays, list structures, graphs; binary search, and specialized tree structures. Efficient searching and sorting processing, symmetric/band/sparse matrices, memory management, pattern matching, indexed sequential files, flow graphs, networks. Abstract data types.

3 lects.; one term

Prerequisite: Computer Science 2MC3.

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.

3 lects.; one term

Prerequisite: Computer Science 1MB3.

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.

3 lects.; one term

Prerequisite: One of Computer Science 1MA3, Engineering 1D04, or a grade of at least B- in Computer Science 1BA3 or 1ZA3.

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.

3 lects.; one term

Prerequisite: Two OAC Mathematics credits, or one OAC Mathematics credit and one of Mathematics 1K03, 1L03, Statistics 1L03 or both Mathematics 1K03 and Statistics 1L03 or Mathematics 1L03, or Mathematics 1M03.

COMP SCI 2SB3 ADVANCED PROGRAMMING TECHNIQUES

Algorithms for the solution of common scientific problems and their efficient implementation in FORTRAN, analysis and estimation of both computational error and program efficiency.

3 lects.; one term

Prerequisite: One of Computer Science 1MA3, Engineering 1D04, or a grade of at least B- in Computer Science 1BA3 or 1ZA3 and one of Mathematics 1A06, 1M03, 1N06 and one of Mathematics 1B03, 1H05, 1L03, Statistics 1L03. Not open to students with credit in Computer Science 2MC3.

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.

2 lects.; one lab; one term

Prerequisite: Computer Science 3MG3.

Not offered 1992-93.

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.

3 lects.; one term

Prerequisite: Computer Science 2MC3.

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.

3 lects.; one term

Prerequisite: Completion of, or registration in Mathematics 3B03 and Computer Science 2MD3.

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.

3 lects.; one term

Prerequisite: Computer Science 2MD3 and 2MJ3.

COMP SCI 3MG3 COMPUTER SYSTEM ARCHITECTURE

Computer systems involving both hardware and software components; control, storage and input/output systems; assemblers, loaders, compilers; introduction to operating systems and virtual memory techniques.

3 lects.; one term

Prerequisite: Computer Science 1MB3 and 2MF3, or Computer Engineering 2HA3.

COMP SCI 3MH3 PRINCIPLES OF OPERATING SYSTEMS

The purpose, systematic design and implementation of modern operating systems; synchronization of concurrent processes, resource sharing, job scheduling, resource protection, privacy and inter-process communication.

3 lects.; one term

Prerequisite: Computer Science 2MD3, and 3MG3.

COMP SCI 3MI3 ORGANIZATION OF PROGRAMMING LANGUAGES

A comparative study of programming languages emphasizing the run-time behaviour of programs. Introduction to formal methods of language definition.

3 lects.; one term

Prerequisite: Computer Science 2MD3.

COMP SCI 3MP6 PROJECT

Supervised by faculty members, teams of 2-3 students implement, write up and defend a substantial project, which will normally not originate in the Computer Science Department.

Two terms, occasional tutorials, no lectures.

Prerequisite: Registration in Level III of the B.Sc. programme in Computer Science and Systems.

COMP SCI 3SC3 SCIENTIFIC INFORMATION PROCESSING

Techniques of data acquisition and storage. Interpretation and graphical representation of data. Production of technical documentation and scientific papers. Telecommunication as a means of acquiring and disseminating scientific knowledge.

3 lects.; one term

Prerequisite: One of Computer Science 1MB3, 2SB3.

Not offered 1992-93.

DRAMA

COMP SCI 3SD3 COMPUTER SIMULATION TECHNIQUES

Techniques for the application of computer simulation software to scientific and engineering problems, especially queueing and network problems.

3 lects.; one term

Prerequisite: One of Computer Science 1MB3, 2SB3 or Computer Engineering 2YA4.

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.

3 lects.; one term

Prerequisite: Computer Science 2MD3 and one of Mathematics 2F03, 2J06 or Computer Science 2MJ3.

COMP SCI 4CB3 ADVANCED COMPUTER SYSTEM ARCHITECTURE

A study of traditional performance enhancement techniques: pipelining, RISC, VLIW, prefetch, cache; modern high performance systems: supercomputers, array processors, clusters, networking architectures; compiler vectorization methods.

2 lects., 1 lab; one term

Prerequisite: Computer Science 3MG3 or Computer Engineering 3HB3 or registration in, or completion of, 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.

3 lects.; one term

Prerequisite: Computer Science 3MH3.

Corequisite: Computer Science 4CB3.

COMP SCI 4CD3 TOPICS IN COMPUTER COMMUNICATIONS

Communication topics include: wide area networks; local area networks; name and file servers, software; instrumentation buses; distributed real-time systems; electronic messaging.

2 lects.; 1 lab; one term

Prerequisite: Computer Science 3MG3 and 3MH3.

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.

3 lects.; one term

Prerequisite: Computer Science 2MD3 or Computer Engineering 2YA4.

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.

3 lects.; one term

Prerequisite: Computer Science 2ME3.

COMP SCI 4ED3 SOFTWARE ENGINEERING APPLICATIONS

A continuation of Computer Science 3EA3. Use of advanced software specification techniques and software tools to support program development. A large-scale team project produces high-quality production software.

3 lects.; one term

Prerequisite: Computer Science 3EA3.

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.

3 lects.; one term

Prerequisite: Completion of or registration in Mathematics 3B03, and completion of Computer Science 2MD3 or a grade of at least B- in Computer Science 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.

3 lects.; one term

Prerequisite: Computer Science 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.

3 lects.; one term

Prerequisite: Computer Science 3IA3.

COMP SCI 4ID3 ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE

Current trends in the field of artificial intelligence. Topics include knowledge representation and acquisition, language understanding, models of cognition and perception, machine learning.

3 lects.; one term

Prerequisite: Computer Science 4IB3.

Not offered 1992-93.

COMP SCI 4MP6 PROJECT FOR COMBINED PROGRAMMES

Under the supervision of a faculty member, teams of 2-3 students implement, write up and defend a substantial project, in the area of the combined programme. Two terms, occasional tutorials, no lectures.

Prerequisite: Registration in Level IV or V of any combined Honours or combined Major Computer Science programme. Not open to students who are registered in, or have received credit for any of Computer Science 3MP6, 4CP6, 4EP6, 4IP6, 4TP6, 4ZP6.

COMP SCI 4TB3 COMPILER CONSTRUCTION

Formal description of programming language syntax and semantics. Compiler concepts and techniques, compiler-compiler methods.

3 lects.; one term

Prerequisite: Computer Science 3MI3.

COMP SCI 4TC3 RECURSIVE FUNCTION THEORY AND COMPUTABILITY

Turing machines, recursive and primitive recursive functions, decidability and undecidability with applications to formal language theory, logic and algebra.

3 lects.; one term

Prerequisite: Computer Science 3TA3. Not open to students with credit for Mathematics 4S03.

COMP SCI 4TD3 ANALYSIS OF ALGORITHMS

The analysis of classes of algorithms, especially divide-and-conquer, greedy, and backtracking algorithms. An introduction to the theory of computational complexity. Description and analysis of particular algorithms of practical or theoretical importance in computer science.

3 lects.; one term

Prerequisite: Computer Science 2MJ3 and one of Mathematics 2F03, 2J06.

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.

COMP SCI 4ZP6 PROJECT

Under the supervision of a faculty member, teams of 2-3 students implement, write up and defend a substantial project in one of the areas of specialization.

Two terms, occasional tutorials, no lectures.

Prerequisite: Registration in Level IV of Honours Computer Science or Computer Science Major. Not open to students who registered in or have received credit for any of Computer Science 3MP6, 4MP6, 4CP6, 4EP6, 4IP6, 4TP6.

Drama

Faculty as of January 15, 1992

Antony Hammond/*Chair*

Professors

Antony Hammond/B.A. (*New Zealand*), M.A., Ph.D., (*Auckland*)

Daniel Lipton/part-time

Graham Petrie/M.A. (*St. Andrews*), B.Litt. (*Oxford*)

Ronald W. Vince/B.A. (*McMaster*), M.A. (*Rice*), Ph.D., (*Northwestern*)

David William/part-time

Associate Professor

Brian S. Pocknell/M.A. (*Manchester*), D. de l'U. (*Paris-Sorbonne*)
French & Drama

Assistant Professors

Doreen DelVecchio/B.A., M.A., Ph.D. (*McMaster*)/Drama & English/
part-time

Stephen B. Johnson/B.A. (*Guelph*), M.A. (*Toronto*), Ph.D. (*New York*)

Lecturer

Elizabeth M. Inman/B.A. (*London*)

Instructors

Gillian Helfield/B.A. (*Western*), M.F.A. (*York*)/part-time

Viv Moore/B.F.A. (*York*)/part-time

Lisbie Rae/B.A. (McMaster), M.A. (Guelph)/part-time
N. Terry D. Shrive/part-time

Associate Members

Laurel A. Braswell-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/Physical Education/B.Ed. (Bristol), M.A. (York)

Department Notes:

1. All courses that include a practical component - acting, producing, stage managing, or technical design and execution - have restricted enrolment. Any student wishing to take Drama 2A06, 3A06, 3D03, 3E03, or 4A06 should speak to a Department Counsellor as soon as possible.
2. Practicum Courses: Practicum courses are open only to students registered in Drama programmes. Each practicum course carries one unit of academic credit, and requires twenty-four hours of instruction over a six-week or a twelve-week period. Students registered in an Honours or a Combined Honours programme in Drama may include up to six units of practicum courses in their programmes; students registered in a three-level programme in Drama may take up to three units of practicum courses. No student may register in more than two practicum courses in a single academic session. Practicum courses will be classified as "Area" courses, but must be taken as work over and above the total number of units required for the degree programme. Details regarding the following practicum courses can be obtained from the Drama Chair.
Drama 2EE1/Mind-Body Integration (Same as PR 30)
Drama 2G01/Modern Dance I (Same as PR 21)
Drama 3G01/Mime (Same as PR 27)
Drama 3GG1/Jazz Dance I (Same as PR 25)
Drama 3H01/Dance Exercise (Same as PR 28)
Drama 3HH1/Social Dance (Same as PR 22)
Drama 3I01/Folk Dance (Same as PR 20)

DRAMA 1A06 INTRODUCTION TO DRAMA

An exploration of the theatrical medium through the study of plays from major periods of Western drama, including plays featured in the year's Drama productions.

2 lects., 1 tut.; two terms

Prerequisite: Open.

DRAMA 2A06 DRAMA IN PERFORMANCE: INTRODUCTION TO ACTING

Contemporary methods of acting. Study and presentation of scenes from modern drama. Basic skills of voice, speech and movement. Participation in campus drama by arrangement with the instructor.

2 studio practice (2 1/2 hrs.); two terms

Prerequisite: Registration in a programme in Drama or permission of the Department. Departmental permission slip required for all students.

Enrolment is limited and is by selection based on academic achievement..

DRAMA 2B06 THE DEVELOPMENT OF ENGLISH DRAMA

English drama from the medieval period to the close of the 18th century (excluding Shakespeare). 3 lects.; two terms

Prerequisite: Registration in a programme in Drama; or permission of the Department.

Same as English 2B06.

DRAMA 2DD3 TOPICS IN MEDIEVAL AND RENAISSANCE LITERATURE

Same as English 2DD3 when the topic is Medieval drama or Christopher Marlowe.

Seminar (2 hrs.); one term

Prerequisite: Open to students in Level II and above.

Enrolment is limited.

Drama 2DD3 may be repeated, if on a different topic, to a total of six units.

DRAMA 2F03 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

DRAMA 2H03 THE THEATRE OF GREECE AND ROME

The history of theatres and theatrical production in Greece and Rome.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Drama 2E03.

Same as Classics 2H03 and Comparative Literature 2H03.

DRAMA 2HH3 GREEK AND ROMAN DRAMA

Reading of selected Greek and Roman tragedies and comedies.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Drama 2H03 is recommended. Not available to students with credit in Drama 2E03.

Same as Classics 2HH3 and Comparative Literature 2HH3

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.

3 hrs.; (lects. and discussion groups); two terms

Prerequisite: Drama 1A06, or permission of the Department.

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.

2 lects. plus one weekly film screening; two terms.

Prerequisite: six units from the Faculty of Humanities and registration in Level II and above.

Same as Art History 2X06.

DRAMA 3A06 DRAMA IN PERFORMANCE: STYLES OF ACTING

Study and presentation of scenes from various historical theatres from the Greeks to the present. Extension of acting skills to include stylistic versatility. Participation in campus drama by arrangement with the instructor.

Class meets twice a week, total 5 hrs.; two terms

Prerequisite: Drama 2A06; or permission of the Department. Departmental permission slip required for all students.

Enrolment is limited.

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 Department.

DRAMA 3BB3 CONTEMPORARY QUEBEC THEATRE

Contemporary experimental theatre, and representative playwrights such as Marcel Dub   and Michel Tremblay.

3 lects.; one term

Prerequisite: French 2F03 or 2FF3; or permission of the Department of French. Note that texts and instruction are in French. Students taking this course as Drama 3BB3 must be registered in a programme in Drama, and may offer written work in English.

Same as French 3BB3.

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.

1 seminar (2 hrs.), plus playreadings; one term

Prerequisite: Drama 1A06; or permission of the Department.

Same as Comparative Literature 3E03.

DRAMA 3CC3 MODERN EUROPEAN DRAMA FROM BRECHT TO THE PRESENT

A study of representative plays by ten major dramatists, including Garc  a Lorca, Cocteau, Frisch, Sartre, Weiss, Genet, Dario Fo.

1 seminar (2 hrs), plus playreadings; one term

Prerequisite: Drama 1A06, or permission of the Department.

Same as Comparative Literature 3CC3.

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.

2 hrs. first term; 1 hr. (workshop) second term

Prerequisite: Registration in a programme in Drama and permission of the Department; Departmental permission slip required for all students.

Enrolment is limited.

DRAMA

DRAMA 3DD3 RUSSIAN DRAMA SINCE 1800

An introduction to the major works of Russian Theatre in translation.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Modern Languages 3D03.

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 two productions during the academic year, once as producer and once as stage manager.

2 hrs.; first term, 1 hr.(workshops); second term

Prerequisite: Registration in a programme in Drama and permission of the instructor. Departmental permission slip required for all students.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Drama 2F03 is recommended.

DRAMA 3FF3 STUDIES IN OPERA

Previous topics include: Giuseppe Verdi, The Gramophone and the Voice. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Open to students in Level II and above. One of Drama 2F03 or 3F03 is recommended.

Drama 3FF3 may be repeated, if on a different topic, to a total of six units.

DRAMA 3K06 SHAKESPEARE

An extensive critical reading and discussion of selected plays.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in Drama; or permission of the Department.

Same as English 3K06.

DRAMA 3M03 RENAISSANCE AND BAROQUE THEATRE

The classical revival and its influence on scene design and theatre architecture, dramatic theory and genre; the interaction of classical and medieval conventions in theatres of England and Spain.

3 lects.; one term

Prerequisite: Drama 2M06 or permission of the Department.

Alternates with Drama 3MM3.

DRAMA 3MM3 NEOCLASSICAL AND ROMANTIC THEATRE

A survey of the neoclassical theatres of England and France; the influence of neoclassical doctrine on European theatre; and the reactions to it in the Romantic theatres of Germany and France.

3 lects.; one term

Prerequisite: Drama 2M06 or permission of the Department.

Alternates with Drama 3M03.

DRAMA 3N03 PERFORMANCE AND THE IDEA OF THEATRE IN THE MIDDLE AGES

A survey of popular, courtly and religious modes of Western performance from the tenth to the sixteenth centuries.

3 lects.; one term

Prerequisite: Drama 2M06, or permission of the Department. Not available to students with credit in Drama 2C03.

DRAMA 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.

3 lects.; one term

Prerequisite: Drama 1A06, or English 1D06.

Same as English 3P03.

Enrolment is limited.

DRAMA 3P06 PLAYS IN PERFORMANCE

This course is offered in conjunction with the McMaster Stratford Seminars. In addition to regular evening classes, students are required to spend five full-time days in Stratford participating in the seminars, researching, and attending performances of the set plays.

Two 2-hour lects./seminars weekly, Term C

Prerequisite: Open to students in Level II and above.

Drama 3P06 may be repeated, if on a different topic, to a total of 12 units.

DRAMA 3Q03 SEVENTEENTH-CENTURY FRENCH DRAMA

A study of selected plays of Corneille, Molière and Racine.

3 lects.; one term

Prerequisite: Drama 1A06 and French 1A06 or 1B06; or permission of the Department of French. Note that texts and instruction are in French. Students taking this course must be registered in a programme in Drama and may offer

written work in English.

Same as French 3Q03.

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.

2 lects., plus one weekly film screening; one term

Prerequisite: Drama 2X06; or permission of the Department.

Same as Art History 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.

2 lects., plus one weekly film screening; one term

Prerequisite: Drama 2X06; or permission of the Department.

Same as Art History 3FF3.

DRAMA 3T03 TOPICS IN NATIONAL CINEMAS I

Previous topics include: Soviet and East European Cinema. Consult Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Drama 2X06, or permission of the Drama Department. Drama 3T03 may be repeated, if on a different topic, to a total of six units.

Same as Art History 3T03 and Modern Languages 3T03.

DRAMA 3TT3 TOPICS IN NATIONAL CINEMAS II

Previous topics include: Canadian Cinema and French Cinema. Consult Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Drama 2X06, or permission of the Drama Department. Drama 3TT3 may be repeated, if on a different topic, to a total of six units.

Same as Art History 3TT3.

DRAMA 3W03 TOPICS IN WOMEN AND THE ARTS I: THEATRE AND FILM

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. Consult the Women's Studies Director concerning the topic to be offered.

3 hrs.; one term

Prerequisite: Registration in Level III or IV of a programme in Drama.

Same as Women's Studies 3B03.

Drama 3W03 may be repeated, if on a different topic, to a total of 6 units.

Enrolment is limited.

DRAMA 3XX3 TOPICS IN 20TH-CENTURY DRAMA

Previous topics include: British Drama: 1950 to the Present, Modern Canadian Drama. Consult Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Drama 1A06, or English 1D06.

Drama 3XX3 may be repeated, if on a different topic, to a total of six units.

Same as English 3XX3.

Enrolment is limited.

DRAMA 3Z03 INDEPENDENT STUDY IN PRACTICAL THEATRE

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 Department.

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 5 hrs.; two terms

Prerequisite: Drama 3A06 and registration in an Honours programme in Drama; or permission of the Department. Departmental permission slip required for all students.

Enrolment is limited.

DRAMA 4B03 INDEPENDENT STUDY IN DRAMA II

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 Department.

DRAMA 4DD3 SURVEY OF SPANISH THEATRE

A study of the development of Spanish drama and stage from Lope to Lorca.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

Same as Modern Languages 4L03.

DRAMA 4E03 THEORY OF DRAMA AND THEATRE

A study of the major theoretical documents from the Greeks to the present.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Drama; or permission of the Department.

DRAMA 4F03 STUDIES IN THEATRE HISTORY

Selected topics for research, analysis and discussion, with particular attention to the theatre historian's sources and methods.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Drama; or permission of the Department.

DRAMA 4H03 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.

3 lects., plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama or Literature or Art History; or permission of the Department. Drama 2X06 is recommended. Same as Art History 3CC3, Comparative Literature 3L03, and English 3CC3.

DRAMA 4J03 PERSPECTIVES IN DANCE: DANCE IN CONTEMPORARY SOCIETY

A study of dance forms in the 20th century. Students will view films, dance performances and participate in dance workshops.

3 hrs. (lect., seminars); one term

Prerequisite: Permission of the instructor.

Same as Physical Education 4J03.

DRAMA 4M03 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.

1 seminar (2 hrs.); one term

Prerequisite: Drama 2M06 or permission of the Department.

Offered in alternate years.

DRAMA 4N03 THE HISTORY OF THEATRE IN CANADA AND THE UNITED STATES

A study of the development of theatrical performance in the United States and Canada from the colonial period to the present, with emphasis on nationalism, and on the economic and cultural relationship between the two countries.

Seminar (2 hrs.); one term

Prerequisite: Drama 2M06, or permission of the Department.

DRAMA 4S03 SPECIAL STUDIES IN FILM

Previous topics include: Genre Studies, Film Comedy. Consult the Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Drama 2X06, or permission of the Drama Department. Drama 4S03 may be repeated, if on a different topic, to a total of six units.

Same as Art History 4S03.

Economics

Faculty as of January 15, 1992

Stuart Mestelman/*Chair*

Alan J. Harrison/*Associate Chair*

Professors Emeriti

John E.L. Graham/B.A. (Toronto), M.A., B.Litt. (Oxford)

William D.G. Hunter/B.A. (Oxford), M.A. (Edinburgh)

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)

David M. Winch/ B.Sc. (Econ.), Ph.D. (London), M.A. (Cambridge), F.R.S.C.

Professors

Syed Ahmad/M.A., LL.B. (Aligarh), M.Sc. (Econ.), D.Sc. (Econ.) (London)

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/M.A. (Toronto), F.R.S.C.

David H. Feeny/B.A. (Northern Illinois), M.A., Ph.D. (Wisconsin-Madison)

Peter J. George/B.A., M.A., Ph.D. (Toronto)

Alan J. Harrison/B.A., M.A., Ph.D. (Essex)

James A. Johnson/M.A., Ph.D. (Minnesota)

Atif A. Kubursi/B.A., (American University, Beirut), M.A., Ph.D. (Purdue)

Stuart Mestelman/B.A. (Pittsburgh), M.S., Ph.D. (Purdue)

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)

James R. Williams/ 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.

Martin D. Dooley/B.A. (Indiana), M.S., Ph.D. (Wisconsin-Madison)

Stephen R.G. Jones/B.A. (Cambridge), Ph.D. (California-Berkeley)

Melvin L. Kliman/B.A. (Manitoba), M.A. (Queen's), Ph.D. (Minnesota)

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)

R. Andrew Muller/B.A. (McGill), M.A., Ph.D. (Toronto)

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)

Assistant Professors

Peter J. McCabe/A.B. (Boston College), Ph.D. (Northwestern)

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 /B.A. (McMaster), M.A., Ph.D. (Western)

Gregory L. Stoddart/ (Clinical Epidemiology and Biostatistics) B.A. (Western), Ph.D. (British Columbia)

Department Notes:

1. Not all the Economics courses listed in this Calendar are taught every year. Students are advised to consult the timetable published by the Office of the Registrar, or the Department handbook for information on current offerings.
2. Students with strong academic records, particularly those from other departments, may be permitted to enrol in courses for which they have not completed all prerequisites. Such students must have the permission of the instructor.
3. 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 no later than the last day for registration as stated in this Calendar in the section *Sessional Dates*.

ECON 1A06 INTRODUCTORY ECONOMICS

An introduction to the method and theory of economics, and their application to the analysis of contemporary economic problems.

3 hrs.; two terms

Prerequisite: Open.

ECON 2B03 ANALYSIS OF ECONOMIC DATA I

Application of statistical concepts to the analysis of economic data, with attention to Canadian sources. Regression analysis is emphasized. Topics may also include index numbers.

3 hrs.; one term

Prerequisite: Economics 1A06 with a grade of at least C-, and Mathematics 1K03 (or OAC Calculus) and Mathematics 1L03 or Statistics 1L03 or Statistics 2D03. Not open to students with credit or concurrent registration in any of Economics 3O06, Chemical Engineering 4C03, Commerce 2QA3, Geography 2L03, Political Science 2F06, Psychology 2G03 or 2R06, Sociology 2Y03 or 3H06, or any Statistics course other than Statistics 2D03. Not open to students who are required to take Commerce 2QA3.

ECONOMICS

ECON 2G03 INTERMEDIATE MICROECONOMICS I

Elements of consumer behaviour; production and cost, price and output determination under various market structures; employment of inputs.

3 hrs.; one term

Prerequisite: Economics 1A06 with a grade of at least C-, or Economics 1A06 and registration in a Commerce programme; OAC Calculus or Mathematics 1K03 or equivalent. Students without credit in Mathematics 1M03 or equivalent are strongly advised to take it concurrently with Economics 2G03. Not open to students with credit in Economics 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.

3 hrs.; one term

Prerequisite: Economics 2G03. Not open to students with credit in Economics 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.

3 hrs.; one term

Prerequisite: Economics 1A06 with a grade of at least C-, or Economics 1A06 and registration in a Commerce programme; OAC Calculus or Mathematics 1K03 or equivalent. Students without credit in Mathematics 1M03 or equivalent are strongly advised to take it concurrently with Economics 2H03. Not open to students with credit in Economics 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.

3 hrs.; one term

Prerequisite: Economics 2H03. Not open to students with credit in Economics 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.

3 hrs.; one term

Prerequisite: At least C- in Economics 1A06.

ECON 2T03 ECONOMICS OF TRADE UNIONISM AND LABOUR

Topics will 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.

Lectures and discussion; one term

Prerequisite: Economics 1A06

Same as Labour Studies 3B03.

Enrolment is limited.

ECON 3A03 ADVANCED ECONOMIC THEORY I

Mathematically oriented approaches to the analysis of the behavior of individual consumers, workers and firms.

3 hrs.; one term

Prerequisite: Mathematics 1M03 and an average of at least 7.0 in Economics 2G03, 2GG3 (or 2L06), 2H03, 2HH3 (or 2M06); or permission of the instructor. Mathematics 2L03 is recommended.

ECON 3AA3 ADVANCED ECONOMIC THEORY II

Comparative static and dynamic analysis of macroeconomic models.

3 hrs.; one term

Prerequisite: At least C- in Economics 3A03.

ECON 3B03 PUBLIC SECTOR ECONOMICS

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.

3 lects.; one term

Prerequisite: Economics 2G03 or 2L06. Not open to students receiving credit for Economics 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.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06. Not open to students receiving credit for Economics 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.

3 hrs.; one term

Prerequisite: Economics 2G03 or 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.

3 hrs.; one term

Prerequisite: Economics 3D03, and Economics 2B03 or 3O06.

ECON 3F03 METHODS OF INQUIRY IN ECONOMICS

Inquiry courses are designed to develop skills basic to 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 includes lectures and exercises on advanced methods of library research and an introduction to computers.

3 hrs.; one term

Prerequisite: Registration in Level III or Level IV of an Honours Economics or Combined Honours Economics programme; or permission of the Department.

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.

3 hrs. (lects. and seminars); one term

Prerequisite: Economics 2H03 or 2M06, and registration in any programme in Economics; or permission of the instructor.

ECON 3HH3 INTERNATIONAL TRADE

Real theory of international trade; interregional and international specialization; effect of commercial and industrial policies.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06, and registration in any programme in Economics; or permission of the instructor.

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.

3 lects.; one term

Prerequisite: Economics 2G03 or 2L06; or permission of the instructor. Economics 2H03 or 2M06 is recommended.

ECON 3J06 ECONOMIC DEVELOPMENT

Analysis of economies of less developed countries. Topics include structural change, dual economies, agriculture, population, savings, financial development, income distribution, trade and policy.

3 hrs.; two terms

Prerequisite: Economics 2G03 or 2L06, and Economics 2H03 or 2M06.

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.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06, and Economics 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.

3 lects.; one term

Prerequisite: Economics 2G03 or 2L06.

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.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06; Economics 2H03 or 2M06. Not open to students with credit in Economics 4C06.

ECON 3N03 PUBLIC POLICY TOWARD BUSINESS

The economic effects of federal competition policy and the regulation of business by all levels of government. The impact of government ownership and bail-out activity on the Canadian business environment is also analyzed.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06. Not open to students receiving credit for Economics 3N06.

ECON 3006 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.

3 lects.; two terms

Prerequisite: Economics 2G03 or 2L06, and Economics 2H03 or 2M06; one of Mathematics 1L03 or Statistics 1L03 or Statistics 2D03. Not open to students with credit or concurrent registration in Statistics 3D06.

Students with credit in any of Chemical Engineering 4C03, Commerce 2QA3, Geography 2LL3, Political Science 3G03 or 3H03, Psychology 2G03 or 2R06, Sociology 2Y03 or 3H06, or any Statistics courses other than Statistics 2D03, may receive only 3 additional units for Economics 3006.

ECON 3R03 THE INTERNATIONAL ECONOMY SINCE 1945

International finance, commercial policy, changing national and industrial structures and relations between development and the developing countries.

3 hrs.; one term

Prerequisite: At least C- in Economics 1A06.

Not offered 1992-93.

ECON 3S03 INDUSTRIAL ORGANIZATION

A study of the structure, conduct and performance of industrial markets.

3 lect.; one term

Prerequisite: Economics 2G03 or 2L06. Not open to students receiving credit for Economics 3N06.

Not offered in 1992-93.

ECON 3U03 ANALYSIS OF ECONOMIC DATA II

Elaboration of regression techniques developed in Economics 2B03. Problems of inference and interpretation in the analysis of economic data. Introduction to forecasting in economics.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06, and Economics 2H03 or 2M06, and Economics 2B03 or permission of the instructor. Not open to students with credit or concurrent registration in Economics 4G03.

ECON 3V03 APPLICATIONS OF SOCIAL COST-BENEFIT ANALYSIS

The identification of opportunity costs, measurement of shadow prices, role of time preference, and treatment of intangibles in evaluating projects are applied to alternative private and public sector expenditure decisions and tax policies.

3 hrs.; one term

Prerequisite: At least C- in Economics 2G03.

Not offered in 1992-93.

ECON 3W03 NATURAL RESOURCES

Competitive and socially optimal exhaustion of nonrenewable resources; market failure as illustrated by mineral cartels, fisheries and forestry; environmental economics.

3 hrs. (lects. and seminars); one term

Prerequisite: Economics 2G03 or 2L06, and Mathematics 1M03; or permission of the instructor.

Not offered in 1992-93.

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.

3 lects.; one term

Prerequisite: Economics 2G03 or 2L06, or Geography 2B3, 2L3, or 2L6, or permission of the instructor.

Same as Geography 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.

3 hrs.; one term

Prerequisite: Permission of the Department.

Not offered in 1992-93.

ECON 3YY3 SELECTED TOPICS II

As for Economics 3Y03.

3 hrs.; one term

Prerequisite: Permission of the Department.

Not offered in 1992-93.

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.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06. Economics 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. Students must have credit in at least 3 units of third year Economics related to the topic of the section.

3 hrs.; one term

Prerequisite: Economics 2GG3, 2HH3, 3U03 or 3O06, 3F03 and permission of the Department

ECON 4E03 TOPICS IN MICROECONOMICS

Applications of advanced microeconomic theory.

3 hrs.; one term

Prerequisite: At least C- in Economics 3A03; or permission of the Department.

Topic for 1992-93: Economic Analysis of the Law.

ECON 4F03 TOPICS IN MACROECONOMICS

Applications of advanced macroeconomic theory.

3 hrs.; one term

Prerequisite: At least C- in Economics 3AA3; or permission of the Department.

Topic for 1992-93: Economic Methodology and Capital Theory

ECON 4G03 ECONOMETRICS I

Development of regression models appropriate to economics. Illustrations from applied micro- and macroeconomics.

3 hrs.; one term

Prerequisite: Economics 2G03 or 2L06, and Economics 2H03 or 2M06, and at least C- in Economics 3O06 or Statistics 2D03 and 2M03 or 2MB3; or permission of the instructor.

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.

3 hrs.; one term

Prerequisite: Economics 4G03.

ECON 4H03 LINEAR ECONOMIC MODELS

Application and interpretation in economics of linear programming, game theory, and inter-industry analysis.

3 lects.; one term

Prerequisite: At least C- in each of Mathematics 1L03 or Statistics 1L03, Mathematics 1M03, Economics 2G03 or 2L06, and Economics 2H03 or 2M06; or permission of the instructor. Credit in Mathematics 1A06 is accepted in place of C- in Mathematics 1M03.

Not offered in 1992-93.

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 for Economics 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.

3 lect.; one term

Prerequisite: Economics 3X03, or Geography 3X03, or permission of the instructor. *Same as Geography 4X03.*

For Graduate courses, see the *Calendar of the School of Graduate Studies*.

Eighteenth-Century Studies

(See *Thematic Areas of Study*)

Electrical and Computer Engineering

Faculty as of January 15, 1992

K.M. Wong/*Chair*

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.

Colin D. diCenzo/CM, CD, M.Sc.E.E. (*New Brunswick*), D.I.C. (*Imperial College, London*), F.E.I.C., F.I.E.E.E., V.I.E. (*Australia*), P.Eng.

Arthur S. Gladwin/D.Sc. (*Glasgow*), Ph.D. (*London*)

Reuven Kitai/M.Sc., D.Sc. (*Witwatersrand*)

ELECTRICAL AND COMPUTER ENGINEERING

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.
Raymond D. Findlay/B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng.
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)
Naresh K. Sinha/B.Sc. (Eng.) (Banaras), C.Eng., Ph.D. (Manchester), F.I.E.E., P.Eng.
Barna Szabados/Dipl.Eng. (Grenoble), M.Eng., Ph.D. (McMaster), P.Eng.
Kon Max Wong/B.Sc. (Eng.), Ph.D. (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)
Mohamed A. El-Kady/B. Sc. (Eng.), M.Sc. (Eng.) (Cairo), Ph.D. (McMaster), S.M.I.E.E.E., P.Eng./part-time
James P. Reilly/B.A.Sc. (Waterloo), M.Eng., Ph.D. (McMaster), P.Eng.
Graham J. Rogers/B.Sc. (Southampton) P.Eng./part-time
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
Yongsheng Han/B.A., M.A. (Peking), Ph.D. (Washington)
Li Michael Liu/B.Sc.Eng. (China University of Science and Technology), M.Eng. Beijing University of Science and Technology), Ph.D. (McMaster)/part-time
T.Z-Q. Luo/B.Sc. (Peking), Ph.D. (M.I.T.)
Daniel C. McCrackin/B.Eng., M.Eng., Ph.D. (McMaster)
Peter M. Smith/B.Eng.Mgt., M.Eng., Ph.D. (McMaster)
Ke-Li Wu/B.Sc., M.Sc. (East China Institute of Technology), Ph.D. (Laval)
Q.T. Zhang/B.Eng. (Tsinghua), M.Eng.(S.C.T.C.), Ph.D. (McMaster)/part-time

Associate Members

Ivan Bruha/Dipl.Ing. (CVUT, Prague), RNDr (Charles, Prague), Ph.D. (CVUT, Prague)
D.T. Cassidy/B.Eng. (McMaster), M.Sc. (Queen's), Ph.D. (McMaster)
J.S. Chang/M.Eng., B. Eng., B.Edu.Eng. (Japan), Ph.D. (York)
Hubert de Bruin/M.Eng., Ph.D. (McMaster), P.Eng.
M.A. ElBestawi/B.Sc. (Alexandria), M.Eng., Ph.D. (McMaster)
Jan Dirk Huizinga/B.Sc., M.Sc., Ph.D. (Groningen)
Paul E. Jessop/B.Sc. (Waterloo), M.A., Ph.D. (Harvard)
Tao Jiang/B.Sc. (University of Science and Technology of China, Hefei), Ph.D. (Minnesota)
Adrian Kitai/B.Eng. (McMaster), Ph.D. (Cornell), P.Eng.
Ali-Reza Montazemi/(Business) H.N.D. (Teeside Polytechnic, U.K.), M.Sc. (Southampton), Ph.D. (Waterloo)
Lionel David Pengelly/B.A.Sc. (Toronto), M.Sc., Ph.D. (McGill), P.Eng.
W.F. Skipper Poehlman/B.S. (Niagara), B.Sc. (Brock), M.Sc., Ph.D. (McMaster)
Sanzheng Qiao/B.S., M.S. (Shanghai Teacher's College), M.S., Ph.D. (Cornell)
David A. Thompson/B.Sc., Ph.D. (Reading)
Patrick C. Yip/B.Sc. (Memorial), Ph.D. (McMaster)

Lecturer

Peter J. Edmonson/Dipl. T. (Mohawk), B.Eng., M.Eng. (McMaster), P.Eng./part-time

COMPUTER ENGINEERING

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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Registration in a programme in Computer or Electrical Engineering or Engineering Physics or Physics.

COMP ENG 2KA3 COMPUTATIONAL METHODS I

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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Engineering 1D04, Mathematics 1H05, 1N06, and registration or credit in Electrical Engineering 2BA3.

COMP ENG 2YA3 DATA STRUCTURES AND COMPUTER ALGORITHMS

Data structures; lists, stacks, trees, file management; sorting algorithms; semi-numeric algorithms; graph algorithms.

2 lects, 1 lab. or tut. (3); first term

Prerequisite: Engineering 1D04, and registration in a Computer Engineering programme.

COMP ENG 3HB3 DIGITAL COMPUTER PRINCIPLES

Elements of digital computers; register transfer logic; memory; operation, organization and control of central processor unit.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Computer Engineering 2HA3.

COMP ENG 3KB3 COMPUTATIONAL METHODS II

Large-scale network analysis; formulation of equations and their solution; introduction to optimization.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Computer Engineering 2KA3 and Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Computer Engineering 2YA4 and registration in a Computer Engineering programme.

COMP ENG 3WA3 OPERATING SYSTEM DESIGN

Systematic design and implementation of operating systems: synchronization of concurrent processes, resource sharing and protection, file systems, memory management and virtual memory.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Computer Engineering 2YA4 and registration in a Computer Engineering programme.

COMP ENG 4HC3 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Computer Engineering 3HB3.

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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Computer Engineering 3HB3.

COMP ENG 4HE3 ADVANCED REAL TIME COMPUTING SYSTEMS

Real time systems, jobs and tasks; disk management; real time implementation; multiprocessor systems.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Computer Engineering 3HB3.

COMP ENG 4JA4 THESIS PROJECT

An experimental investigation or design project to be carried out by the student, to test initiative, grasp of the subject and capacity for independent work.

2 labs. (3); both terms

Prerequisite: Registration in Level IV of Computer Engineering or Level V of Computer Engineering and Management.

COMP ENG 4KC3 SIMULATION AND OPTIMIZATION

Analog IC and system simulation; advanced optimization techniques; design centering, tolerancing and tuning; use of professional CAD software; VLSI and MMIC applications.

2 lects., 1 lab or tut. (3); first term

Prerequisite: Computer Engineering 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 3AA3.

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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Mathematics 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Mathematics 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Registration or credit in Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Registration or credit in Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Electrical Engineering 2DA3 and registration or credit in Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 2DA3 and Computer Engineering 2KA3.

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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 2DA3 and 2FA3, and registration or credit in Electrical Engineering 3CA3.

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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Registration or credit in Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Registration or credit in Electrical Engineering 3NA3.

ELEC ENG 4AB3 COMMUNICATION SYSTEMS II

Communication systems in noisy and imperfect channels; random processes; Shannon-Hartley channel capacity law; noise in CW modulation systems including AM, DSBSC and SSB; digital systems, line codes, multiplexing; technology issues.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 3AA3, 3BB3 and Statistics 3X03.

ELEC ENG 4AC3 DIGITAL COMMUNICATIONS

Fundamental limits on performance; detection and estimation; digital modulation techniques; error control coding.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Electrical Engineering 3AA3 and Mathematics 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 feed back; asymptotic observers; design of digital control systems; nonlinear systems analysis.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Electrical Engineering 3FC3.

ELEC ENG 4JA4 THESIS PROJECT

An experimental investigation or design project to be carried out by the student, to test initiative, grasp of the subject, and capacity for independent work.

2 labs. (3); 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Electrical Engineering 3BB3 and 3NA3.

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.

1 lect., 1 seminar; 1 tut. (3); first term

Prerequisite: Registration in Level IV of Computer Engineering or Electrical Engineering, and registration in Computer Engineering 4JA4 or Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 3BB3.

ELEC ENG 4SB3 POWER ELECTRONICS

Power circuits with switches; basic rectifier circuits; commutation; trijunctions; inverters; choppers; inverter control.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Electrical Engineering 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.

2 lects., 1 lab. or tut. (3); second term

Prerequisite: Electrical Engineering 3FB3 or Engineering 3N03 or Physics 3B06.

For Graduate courses, see the *Calendar of the School of Graduate Studies*.

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.

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.

2 lects., 1 graphics lab. (3), 1 design lab. (2); 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.

3 lects., 1 tut. (2); second term

Prerequisite: Registration in an Engineering programme.

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.

2 lects., 1 lab. or tut.; second term

Prerequisite: Physics 1E03, and registration in Mathematics 2M06, or Mathematics 2P04 and 2Q04.

ENGINEER 2M04 ELECTRICAL SCIENCE

An introduction to electricity and magnetism covering electrostatics, electric currents, magnetism and electromagnetism, with applications in circuits and elementary devices.

3 lects., 1 lab. or tut.; first and second terms

Prerequisite: Physics 1E03, and registration in Mathematics 2M06, or Mathematics 2P04 and 2Q04.

ENGINEER 2O03 STRUCTURE AND PROPERTIES OF ENGINEERING MATERIALS

The relationships between the structure of solids and their properties are developed by study of specific mechanical, electrical, magnetic and chemical properties, along with the various levels of structural complexity exhibited by solid materials. Student independent study is aided by audio-visual materials and regular tutorial assistance.

Self-paced study; first term

Prerequisite: Completion of at least 12 units of Level I Chemistry, Mathematics or Physics. Not open to students who have credit or are registered in Materials 1A03 and/or 1B03. No credit for students admitted after 1990 into programmes administered by the Department of Materials Science and Engineering.

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.

3 lects., 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.

3 lects., plus one unit comprising tutorials or lectures devoted to applications, at the discretion of the instructor; first and second terms

Prerequisite: Credit or registration in Engineering 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.

3 lects.; 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.

2 lects.; both terms

Prerequisite: Chemistry 1A06 or 1E03 and credit or registration in Mathematics 2M06, or Mathematics 2P04 and 2Q04.

ENGINEER 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.

3 lects., 1 tut.; second term

Prerequisite: Chemistry 1A06 or 1E03 and credit or registration in Mathematics 2M06, or Mathematics 2P04 and 2Q04.

ENGINEER 3M03 ELECTRICAL CIRCUITS AND POWER

Fundamentals of electromechanical energy conversion. Motors and generators, transformers, single and polyphase power circuits, synchronous and induction machines, power measurements.

2 lects. and 1 lab. or tut.; first term

Prerequisite: Engineering 2M04.

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.

2 lects., 1 tut. (2) or 1 lab. (3); second term

Prerequisite: Engineering 2M04.

ENGINEER 3P03 MECHANICAL BEHAVIOUR OF MATERIALS

Phenomenological treatment of elastic and plastic deformation, creep, fatigue and fracture; mechanics of engineering materials. Physical processes in metals, ceramics, polymers, concrete, wood and composite materials. Application to mechanical design of structures, welded components and materials selection decisions. Test methods, including non-destructive inspection.

3 lects.; first term

Prerequisite: Mathematics 2M06, or Mathematics 2P04 and 2Q04, and Engineering 2P04. Not open to students registered in a programme administered by the Department of Materials Science and Engineering.

ENGINEER 3Q03 ELECTRONIC PROPERTIES OF SOLIDS

A conceptual and quantitative study of how electronic properties of solids are based upon microscopic theory. Basic quantum mechanics used as a tool to explain electronic, magnetic and dielectric behaviour of metals, insulators and semiconductors.

3 lects.; first term

Prerequisite: Physics 1E03 and Mathematics 2M06 or equivalent.

ENGINEER 3R03 PROPERTIES AND SELECTION OF ENGINEERING MATERIALS

The materials selection process in engineering design. Mechanical properties; fracture mechanics principles. Durability of materials in service; corrosion and wear. Case studies in materials selection.

3 lects.; first term

Prerequisite: Engineering 2O03. Not open to students registered in a programme administered by the Department of Materials Science and Engineering.

ENGINEER 4A03 TECHNOLOGY AND SOCIETY

Models of the technology-society relationship and the culture of technology. The control of technology with special emphasis on the role of the engineering profession.

1 lect., 1 tut., 1 seminar; second term

Prerequisite: Registration in Level III or above in any programme in the Faculty of Engineering or registration in the Applied Studies minor in the Faculty of Humanities.

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.

2 lects., 1 tut.; second term

Prerequisite: Registration in final level of an Engineering programme. Not open to students registered in, or having credit for, Chemical Engineering 4N04. Not open to 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.

2 lects., 1 lab. (3); first term

Prerequisite: Registration in Level IV of Manufacturing Engineering or Level V of Civil Engineering and Computer Systems. Not open to students with credit or registration in any of Computer Engineering 3HB3, Electrical Engineering 3H03, 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.

2 lects., 1 tut. (2); second term

Prerequisite: Registration in Level III, IV, or V of any Engineering programme or registration in the Applied Studies minor in the Faculty of Humanities.

ENGINEER 4J03 METAL FORMING

Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. Engineering plasticity applied to rolling, forging, extrusion, wire drawing and sheet metal forming. The role of processing on the optimization of mechanical properties and the design of metal forming processes are discussed together with future developments in the fabrication of both metallic and nonmetallic materials.

3 lects.; second term

Prerequisite: Engineering 2O03, and Mechanical Engineering 3A03 or Engineering 3P03 or Materials 3P03.

ENGINEER 4U03 UNIT OPERATIONS AND PROCESSES IN ENVIRONMENTAL ENGINEERING

Offered jointly by the Departments of Chemical Engineering and Civil Engineering and Engineering Mechanics. 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.

2 lects., 1 tut. (2); first term.

Prerequisite: Chemical Engineering 2O04 or 3O04, or Civil Engineering 3Q03 or 3Q04, or Mechanical Engineering 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.

3 lects.; 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.

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.

Faculty on the Operating Committee, as of July 1, 1991:

R.D. Findlay/*Programme Director*

J. Medcof (Associate Dean, Academic Programmes - Business)

R.T.H. Alden (Electrical and Computer Engineering)

M. Basadur (School of Business)

J.L. Brash (Chemical Engineering)

M.A. Dokainish (Associate Dean, Academic Programmes - Engineering)

A.C. Heidebrecht (Provost and Vice-President (Academic))

D. Gupta (School of Business)

G. Kenney-Wallace (President and Vice Chancellor)

B. Latto (Mechanical Engineering)

R.J. McKeown (School of Business)

D.C. Mountain (School of Business)

K. Nainar (School of Business)

A. Oakie (Executive in Residence, School of Business)

A. Petric (Materials Science and Engineering)

W. Petryschuk (Director, Management of Technology and Innovation Institute)

J.S. Preston (Engineering Physics)

G.R. Purdy (Dean of Engineering)

W.G. Truscott (Dean of Business)

W.K. Tso (Civil Engineering and Engineering Mechanics)

Industrial Advisory Council Members 1991:

M. Anyas-Weiss (Ontario Hydro)

H. Jaeger (Acres International Limited)

R.G. Keen (Stelco Technical Services Ltd.)

D. Ledingham (Shell Canada Products Ltd.)

R. Lopinski (Bell Northern Research Ltd.)

T. Magyarody (Commercial Union Assurance Company of Canada)

L. Phillips (Canadian Pacific)

R.L. Reycraft (Procter & Gamble)

A. Skov (Union Gas)

H. Sonnenberg (Xerox Research Centre of Canada)/Chair

J. Vice (Northern Telecom Canada Ltd.)

P. Vilks (Spar Aerospace)

ENGN MGT 2A01 ENGINEERING AND MANAGEMENT SEMINAR I

Discussion and lectures on issues important to the Engineering and Management programmes, such as communication skills and self assessment.

1 seminar, alternate weeks; both terms

Prerequisite: Registration in Level II of any Engineering and Management programme.

ENGN MGT 3A01 ENGINEERING AND MANAGEMENT SEMINAR II

Discussion and lectures on issues important to the Engineering and Management programmes, such as communication skills, interpersonal skills and group skills.

1 seminar, alternate weeks; both terms

Prerequisite: Engineering and Management 2A01.

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.

1 seminar, alternate weeks; two terms

Prerequisite: Registration in Level IV of an Engineering and Management programme.

ENGN MGT 4G01 PROBLEM SOLVING, DECISION MAKING AND INTERPERSONAL SKILLS

An intensive workshop, involving such topics as: awareness of the thinking process, strategies, creativity, decision-making, criteria selection, self-performance evaluation, group skills, listening. Grade of 'complete' for satisfactory performance.

Intensive residential course offered each May; 5 days, 8 hours per day.

Prerequisite: Completion of Level III of an Engineering and Management programme, including Commerce 2BA3.

ENGN MGT 5A01 ENGINEERING AND MANAGEMENT REPORT

Report on a topic related to career development is required of each student in an Engineering and Management programme; guidelines and evaluation procedures must be obtained from the Programme Director before the end of Level IV.

Prerequisite: Registration in Level V 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.

1 lect., 2 tuts. (2); first or second term

Prerequisite: Registration in Level V of an Engineering and Management programme.

ENGN MGT 5G01 TRAINING AND PROBLEM SOLVING

An intensive workshop, involving such topics as: supervision and the principle of training; practicum. Students supervise workshops in the course, Engineering and Management 4G01. Self- and peer-assessment. Grade of 'complete' for satisfactory performance.

Intensive residential course offered each May; 5 days, 8 hours per day.

Prerequisite: Completion of Level IV 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.Soc. degree. An Advisory Council participates in the education process and is composed of university faculty members, industry executives, union leaders, local and provincial government representatives, and others.

Faculty on the Operating Committee, as of July 1, 1991:

H.M. Jenkins/*Programme Director*

M.A. Dokainish (Associate Dean, Academic Programmes, Engineering)

B. Baetz (Civil Engineering and Engineering Mechanics)

J.D. Embury (Materials Science and Engineering)

A.A. Harms (Engineering Physics)

R.C. Hudspeth (Mechanical Engineering)

H. Jones (Classics)

R.M. Korol (Civil Engineering and Engineering Mechanics)

T.E. Marlin (Chemical Engineering)

D.L. Parnas (Electrical and Computer Engineering)

R. Pocklington (student)

J.P. Reilly (Electrical and Computer Engineering)

A. Vetter (student)

ENGINEERING PHYSICS

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 definitive stage, where the importance of formulating questions, researching underlying issues, and analyzing opposing arguments is essential. The first seminar will involve teaching the students how to use the university and community resources in their research, how to write a research paper, and how to express their ideas orally.

1 lect., 1 tut., 1 sem.; one term

Prerequisite: Registration in an Engineering and Society programme.

First time offered in 1992-93.

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.

2 lect., 1 tut.; one term

Prerequisite: Registration in an Engineering and Society programme.

First time offered in 1992-93.

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.

1 lect., 1 sem. (2); one term

Prerequisite: Engineering and Society 2X03.

First time offered in 1993-94.

ENGSOCTY 3Y03 THE CULTURE OF TECHNOLOGY

Current engineering practices and approaches are studied as a cultural activity with its own beliefs, values, social structures, and institutions.

1 lect., 1 tut., 1 sem.; one term

Prerequisite: Engineering and Society 2Y03.

First time offered in 1993-94.

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.

2 lect., 1 tut.; one term

Prerequisite: Registration in Level III of an Engineering and Society Programme.

First time offered in 1993-94.

ENGSOCTY 4X03 INQUIRY IN AN ENGINEERING CONTEXT III

Builds on Inquiry in the Engineering Context II. Topics such as automation and employment, technology and the quality of life, or the information society, provide the broad focus with groups or individual student's inquiry taking a more specific but related focus.

1 lect., 1 sem. (2); one term

Prerequisite: Engineering and Society 3X03.

First time offered in 1994-95.

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.

1 lect., 1 tut., 1 sem.; one term

Prerequisite: Engineering and Society 3Z03.

First time offered in 1994-95.

Engineering Physics

Faculty as of January 15, 1992

W.J. Garland/Chair

Professors Emeriti

John A. Davies/B.A., M.A., Ph.D. (Toronto), F.R.S.C., F.D.R.S.

John S. Kirkaldy/B.A.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.

H. Douglas Barber/B.Sc., M.Sc. (Saskatchewan), Ph.D. (London), P.Eng./part-time

Jen-Shih Chang/ B.Edu.Eng., B.Eng., M.Eng. (Musashi Int. of Tech.), Ph.D. (York)

Archie A. Harms/B.Sc. (British Columbia), M.Sc.Eng., Ph.D. (Washington), P.Eng.

Derek C. Houghton, B.Sc. (Birmingham), Ph.D. (Cambridge)/part-time
Thomas E. Jackman/B.Sc., M.Sc., Ph.D. (Guelph), Adjunct Professor/part-time

David P. Jackson/B.Sc., M.A., M.A.Sc., Ph.D. (Toronto)/part-time

Terence J. Kennett/B.Sc., M.Sc., Ph.D. (McMaster)

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. (London), BNR/NSERC Chair in Microelectronic and Optoelectronic Materials and Devices

Anthony J. SpringThorpe/B.Sc., Ph.D. (Sheffield)/part-time

David A. Thompson/B.Sc., Ph.D. (Reading)

Oleh A. Trojan/B.A.Sc., M.A., Ph.D. (Toronto), P.Eng./part-time

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.

William J. Garland/B.Eng., M.Eng., Ph.D. (McMaster), P.Eng.

Harold K. Haugen, B.Sc. (Acadia), M.Eng. (McMaster), Ph.D. (Aarhus)

Paul E. Jessop/B.Sc. (Waterloo), M.A., Ph.D. (Harvard)

L. David Pengelly/B.A.Sc. (Toronto), M.Sc., Ph.D. (McGill), P.Eng.

Walter T. Shmayda/B.A.Sc. (Queen's), M.A.Sc., Ph.D. (Toronto)/part-time

Assistant Professors

J.D. Huizinga/B.Sc., M.Sc., Ph.D. (Groningen, The Netherlands)/part-time

Adrian Kitai/B.Eng. (McMaster), Ph.D. (Cornell), P.Eng.

Peter Mascher/M.Eng., Ph.D. (Technical University of Graz)

John S. Preston/B.Eng. (McMaster), M.Sc., Ph.D. (Toronto)

ENG PHYS 2A03 ELECTRICAL SCIENCE I

An introduction to electricity and magnetism for Engineering Physics students.

2 lects., 1 lab. or tut. (3); first term

Prerequisite: Physics 1E03, and credit or registration in Mathematics 2P04.

ENG PHYS 2E04 ELECTRICAL SCIENCE II

Analysis of ac circuits and ac power. Maxwell's equations and electromagnetic theory. Introductory modern physics.

3 lects., 1 lab. or tut. (3); second term

Prerequisite: Credit or registration in Engineering Physics 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.

3 lects. (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.

2 lects., 1 tut. or lab. (3); first term

Prerequisite: Engineering Physics 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.

2 lects., 1 lab or tut. (3); second term

Prerequisite: Engineering Physics 2A03 and 2E04.

ENG PHYS 3O03 INTRODUCTION TO FLUID MECHANICS AND HEAT TRANSFER

Fluid properties and statics are introduced. Basic equations of continuity, energy and momentum for internal and external flows are discussed. Similitude, dimensional analysis, measuring devices, fluid machinery and electromagnetic flow. Conduction and convection heat transfer.

2 lects., 1 lab or tut. (3); second term

Prerequisite: Mathematics 2M06, or Mathematics 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, modeling and simulation is undertaken.

2 lects.; both terms

Prerequisite: Credit or registration in Mathematics 3C06 or 3C03 and 3D03 or permission of the Department.

ENG PHYS 3X03 HUMAN PHYSIOLOGY

Basic introduction and working knowledge of the human body. Includes study of the cellular level of organization.

3 lects.; second term

Prerequisite: Completion of a minimum of 30 units beyond Level I in any Engineering or Science Programme. Not open to students who are registered in or have completed Biology 3U03, 3UU3, 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.

2 labs. (3); both terms

Prerequisite: Completion of Level III or permission of the Department.

ENG PHYS 4C02 SPECIAL TOPICS IN ENGINEERING PHYSICS

Selected methodological topics in engineering physics (analysis, design, simulation, synthesis, optimization...). Oral presentations by students on current topics in engineering.

1 lect.; first term and second term

Prerequisite: Registration in Level IV or V of any Engineering programme.

ENG PHYS 4D03 NUCLEAR REACTOR ANALYSIS

Introduction to nuclear energy; nuclear physics and chain reactions; reactor statics and kinetics; multigroup analysis, core thermalhydraulics; reactor design.

3 lects. (including field trip); first term

Prerequisite: Engineering Physics 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.

2 lects. 1 tut.; first term

Prerequisite: Engineering Physics 3F03 or Engineering 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.

2 lects., 1 tut.; second term

Prerequisite: Credit or registration in Engineering Physics 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.

2 lects., 1 tut.; first term

Prerequisite: Physics 3N03, or Engineering Physics 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.

2 tuts., 1 lab. (3); both terms

Prerequisite: Permission of the Department.

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.

2 lects., 1 tut.; second term

Prerequisite: Registration in Level IV or V of any programme in Engineering or Physics.

ENG PHYS 4L03 NUCLEAR REACTOR THERMALHYDRAULICS

Introduction to two phase flow and nuclear reactor thermalhydraulics 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.

2 lects., 1 lab.; second term

Prerequisite: Chemical Engineering 2O04 or 3O04 or Engineering Physics 3O03 or Mechanical Engineering 3O04.

ENG PHYS 4N03 PRINCIPLES OF FUSION ENERGY

Fusion phenomena and the plasma state; reaction analysis; Coulomb scattering; field effect trajectories; magnetic field configurations; particle transport; energy viability; burn cycles; inertial confinement; muon catalyzed fusion.

3 lects.; first term

Prerequisite: Engineering Physics 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.

2 lects.; both terms

Prerequisite: Physics 3N03, or Engineering Physics 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.

2 labs. (3); 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.

2 lects., 1 tut. (2); second term

Prerequisite: Credit or registration in Engineering Physics 4E03; or permission of the department.

PHYSICS 3B06 ELECTRONICS

Network theory and filters, semiconductor devices, amplifier circuits, D.C. power supplies, integrated circuits, operational amplifiers and digital circuits.

2 lects.; both terms; 1 lab. (2); both terms

Prerequisite: Engineering Physics 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.

2 lects., 1 lab. (3); both terms

Prerequisite: Engineering Physics 2A03 and 2E04, or Physics 2B06, and Computer Engineering 2HA3.

For Graduate courses, see the *Calendar of the School of Graduate Studies*.

English

Faculty as of January 15, 1992

Brian John/Chair

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*)

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*)

Laurel A. Braswell-Means/B.A., M.A. (*Arkansas*), M.A., 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*)

H. John Ferns/B.A., M.A. (*Oxford*), Ph.D. (*Western*)

Antony Hammond/B.A. (*New Zealand*), M.A., Ph.D. (*Auckland*)/Drama & English

Brian John/B.A., M.A., Dipl.Ed., Ph.D. (*Wales*)

James King/B.A. (*Toronto*), M.A., Ph.D. (*Princeton*)

Alvin A. Lee/B.A., M.Div., M.A., Ph.D., D.Litt.S. (*Toronto*)

Richard E. Morton/B.A. (*Wales*), B.Litt. (*Oxford*)

Graham Petrie/M.A. (*St. Andrews*), B.Litt. (*Oxford*)/Drama & English

W. Graham Roebuck/B.A. (*Durham*), M.A. (*McMaster*), Ph.D. (*London*)

Ronald W. Vince/B.A. (*McMaster*), M.A. (*Rice*), Ph.D. (*Northwestern*)/Drama & English

Chauncey D. Wood/A.B. (*Union College*), M.A., Ph.D. (*Princeton*)

Associate Professors

James D. Brasch/B.S. (*State University of New York*), M.A. (*Colgate*), Ph.D. (*Wisconsin*)

James Dale/B.A., M.A., Ph.D. (*Cambridge*)

Donald C. Goellnicht/B.A. (*Queen's*), M.A., Ph.D. (*McMaster*)

Mary E. O'Connor/B.A. (*McGill*), M.A., Ph.D. (*Toronto*)

ENGLISH

Norman Rosenblood/B.A. (*Western*), M.A. (*McMaster*), Ph.D. (*Pittsburgh*)
 Michael L. Ross/B.A. (*Harvard College*), M.A., Ph.D. (*Harvard*)
 Joseph T. Sigman/B.A. (*King's College, Wilkes-Barre*), M.A., Ph.D. (*Pennsylvania*)
 Lorraine M. York/B.A., M.A., Ph.D. (*McMaster*)

Assistant Professors

Joseph Adamson/B.A. (*Trent*), M.A., Ph.D. (*Toronto*)/English & Modern Languages
 Sylvia Bowerbank/B.A. (*McMaster*), B.Educ. (*Toronto*), M.A. (*Simon Fraser*), Ph.D. (*McMaster*)/English & Arts and Science
 David L. Clark/B.A., M.A., Ph.D. (*Western*)
 Doreen DeVecchio/B.A., M.A., Ph.D. (*McMaster*)/Drama & English/part-time
 Jeffery Donaldson/B.A., M.A., Ph.D. (*Toronto*)
 Ronald Granofsky/B.A. (*Trent*), M.A. (*Canterbury*), Ph.D. (*Queen's*)
 Roger L. Hyman/B.A. (*York*), M.A., Ph.D. (*Toronto*)
 Helen M. Ostovich/B.A., M.A., Ph.D. (*Toronto*)
 Anne Savage/B.A. (*Calgary*), Ph.D. (*London*)
 Lisa Schnell/B.A. (*Alberta*), M.A. (*Western*), Ph.D. (*Princeton*)
 Mary Silcox/B.A. (*Western*), M.A., Ph.D. (*Queen's*)
 Peter Walmsley/B.A., M.A. (*Toronto*), Ph.D. (*Cambridge*)

Instructors

Karen Bamford/B.A. (*Queen's*), M.A. (*St. Michael's College*)/part-time
 Irene Gammel/Staatsexamen (*Saarlandes*), M.A. (*McMaster*)/part-time
 Michael Peterson/B.A. (*Victoria*), M.A. (*McMaster*)/part-time
 Sheila Russell/B.A., M.A. (*McMaster*)/part-time
 Yu Zhang/B.A. (*Beijing*), M.A. (*Toronto*), Ph.D. (*McMaster*)/part-time
Associate Member
 John R. Roy/M.B., Ch.B., F.R.C.P. (*Glasgow and Edinburgh*), M.R.C.P. (*Psychiatry*), F.R.C.P. (C), Director, Geriatric Psychiatry, Chedoke-McMaster Hospital

Department Notes:

- The following are courses open as electives to qualified students registered in any university programme; however, enrolment in these courses is limited.

English 2C03	Contemporary Canadian Fiction
English 2D03	Biblical Traditions in Literature
English 2DD3	Topics in Medieval and Renaissance Literature
English 2F03	Studies in American Literature
English 2M03	Practical Criticism
English 2R03	Topics in Restoration and 18th-Century 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 3FF3	Techniques of Creative Writing
English 3GG3	Topics in 19th-Century Literature
English 3HH3	Topics in Poetry
English 3II3	Topics in Fiction I
English 3JJ3	Topics in Fiction II
English 3KK3	Topics in Critical Approaches
English 3P03	Modern Drama in English
English 3PP3	Topics in World Literature in English
English 3X03	Topics in 20th-Century Literature I
English 3XX3	Topics in 20th-Century Literature II
English 3Z03	Contemporary Canadian Poetry

- 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. Students are advised to pre-register in March; a list of seminars to be offered will be available prior to pre-registration.

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.

2 lects., 1 tut.; two terms

Prerequisite: OAC English 1; or permission of the Department.

ENGLISH 2A06 BRITISH LITERATURE

A chronological survey of British Literature. One Shakespeare play will be included.

3 lects.; two terms

Prerequisite: Registration in a programme in English. Open only to students registered in a programme in English as of September 1990.

ENGLISH 2B06 THE DEVELOPMENT OF ENGLISH DRAMA

English drama from the medieval period to the close of the 18th century (excluding Shakespeare).

3 lects.; two terms

Prerequisite: Registration in a programme in English.

Same as Drama 2B06.

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.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Comparative Literature 2D03.

Enrolment is limited.

ENGLISH 2DD3 TOPICS IN MEDIEVAL AND RENAISSANCE LITERATURE

Previous topics include: Christopher Marlowe, George Herbert. Same as Drama 2DD3 when the topic is Medieval Drama or Christopher Marlowe. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in English 4D03.

English 2DD3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department. Not available to students with credit in, or registration in, English 2H06.

Enrolment is limited.

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.

3 lects.; two terms

Prerequisite: Registration in a programme in English.

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.

3 lects.; two terms

Prerequisite: Registration in a programme in English.

ENGLISH 2M03 PRACTICAL CRITICISM

The course gives the student the opportunity to write a piece of criticism once a week. This work is evaluated by members of the course and the instructor.

2 lects., first term; 1 lect.; second term

Prerequisite: Permission of the Department; departmental permission slip required.

Enrolment is limited.

ENGLISH 2R03 TOPICS IN RESTORATION AND 18TH-CENTURY LITERATURE

Previous topics include: William Blake, Jane Austen. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 2R03 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.)

2 hrs. (lect.), 1 hr. (tut.); one term

Prerequisite: Open to students 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.

3 lects.; one term

Prerequisite: Open to students in Level III and above.

Same as Sociology 2X03.

Enrolment is limited.

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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students entering a programme in English as of September 1990. Not available to students with credit in 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.

3 lects., plus one weekly film screening; one term

Prerequisite: Registration in Level III or IV of a programme in Drama or Literature or Art History; or permission of the Drama Department. It is recommended that students should already have taken Drama 2X06. Not available to students with credit in English 4H03.

Same as Art History 3CC3, Drama 4H03, and Comparative Literature 3L03.

ENGLISH 3D03 THE EARLIEST ENGLISH LITERATURE

An introduction to Old English alliterative poetry through close reading of representative modes, such as heroic, lyric, elegiac and gnomic, supplemented by related prose texts.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English.

ENGLISH 3DD3 BEOWULF

An exploration of the Old English epic *Beowulf*, supplemented by related poetic and prose texts.

3 lects.; one term

Prerequisite: English 3D03.

ENGLISH 3E03 SHAKESPEARE: SELECTED PLAYS

A study of a representative selection of plays.

3 lects.; one term

Prerequisite: English 1D06 or Drama 1A06. Not open to students receiving credit for English/Drama 3K06.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Open to students in Level III and above. Not available to students with credit in English 2FF3.

Same as Sociology 3S03.

Enrolment is limited.

ENGLISH 3FF3 TECHNIQUES OF CREATIVE WRITING

This course will require the composition of verse and prose. Experiments with a variety of forms will be attempted in order to increase the student's mastery of verse and prose techniques.

2 lects. (first term); 1 lect. (second term)

Prerequisite: A grade of at least B- in six units of English; and permission of the Department.

Enrolment is limited.

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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only

to students entering a programme in English as of September 1990. Not available to students with credit in English 4B06.

ENGLISH 3GG3 TOPICS IN 19TH-CENTURY LITERATURE

Previous topics include: The Brontës, Henry James. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3GG3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects., two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students entering a programme in English as of September 1990. Not available to students with credit in 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.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3HH3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English.

Same as Comparative Literature 3J03.

ENGLISH 3I13 TOPICS IN FICTION I

Previous topics include: William Faulkner, James Joyce. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3I13 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students entering a programme in English as of September 1990. Not available to students with credit in English 2V06/2VV6.

ENGLISH 3JJ3 TOPICS IN FICTION II

Previous topics include: Contemporary Fiction, Children's Literature. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3JJ3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

ENGLISH 3K06 SHAKESPEARE

An extensive critical reading and discussion of selected plays.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English.

Same as Drama 3K06.

ENGLISH 3KK3 TOPICS IN CRITICAL APPROACHES

Previous topics include: The Bloomsbury Group, Fiction by Women. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3KK3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students entering a programme in English as of September 1990. Not available to students with credit in English 4L03.

ENGLISH

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students entering a programme in English as of September 1990. Not available to students with credit in English 4M03.

ENGLISH 3N06 THE BRITISH NOVEL

This course, in assessing and analysing 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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students entering a programme in English as of September 1990. Not available to students with credit in 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.

3 lects.; one term

Prerequisite: English 1D06 or Drama 1A06.

Same as Drama 3P03.

Enrolment is limited.

ENGLISH 3PP3 TOPICS IN WORLD LITERATURE IN ENGLISH

Previous topics include: The Modern Indian Novel, West Indian Literature. Same as Comparative Literature 4E03 when the topic is Southeast Asian Literature in English. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3PP3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English.

Same as Comparative Literature 3Q03.

ENGLISH 3QQ3 MODERN CRITICAL THEORY

The theory and practice of literary criticism from Eliot to the present.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English.

Same as Comparative Literature 3QQ3.

ENGLISH 3T03 SPENSER

The main work of the course will be close study of *The Faerie Queene*, but *The Shepheardes Calendar*, *Epithalamion* and *Prothalamion* will also be read.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English.

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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English.

ENGLISH 3X03 TOPICS IN 20TH-CENTURY LITERATURE I

Previous topics include: Evelyn Waugh, Forms in Fiction. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

English 3X03 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

ENGLISH 3XX3 TOPICS IN 20TH-CENTURY LITERATURE II

Previous topics include: British Drama: 1950 to the Present, Modern Canadian Drama. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: English 1D06; or Drama 1A06.

Same as Drama 3XX3.

English 3XX3 may be repeated, if on a different topic, to a total of six units.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: English 1D06; or permission of the Department.

Enrolment is limited.

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. Students are advised to pre-register in March; a list of seminars to be offered will be available prior to pre-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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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, Orton and Stoppard.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENGLISH 4CN3 BEYOND CANADIAN NATIONALISM

Critical readings of selected major works that reflect the international outlook of some Canadian writers.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited. A Departmental permission slip is 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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENGLISH 4ES3 EIGHTEENTH-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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENGLISH 4MR3 THE MIDDLE ENGLISH ROMANCE

A study of some fourteenth- and fifteenth-century Middle English romances in their original language with attention given to generic development and contemporary expressions in modern literature.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENGLISH 4QP3 NINETEENTH- AND TWENTIETH-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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENGLISH 4TP3 THOMAS PYNCHON AND "GRAVITY'S RAINBOW"

An introduction to Pynchon in general and *Gravity's Rainbow* in particular, beginning with the early stories and *The Crying of Lot 49*.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited. A 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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENVIRONMENTAL SCIENCE

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 (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

ENGLISH 4WW3 WOMEN WRITERS OF THE EIGHTEENTH CENTURY

An exploration of poetry and fiction written by women in the eighteenth century, with particular attention to the social and philosophical concerns of these writers.

Seminar (2 hrs.); one term

Prerequisite: Registration in Level IV of an Honours programme in English.

Enrolment is limited.

NOTE: The following courses are open only to students who entered an English programme prior to September 1990.

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.

3 lects.; two terms

Prerequisite: Registration in a programme in English. Open only to students registered in a programme in English before September 1990.

Same as English 3H06.

ENGLISH 2V06/2VV6 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.

3 lects.; two terms

Prerequisite: Open only to students registered in a programme in English before September 1990. *Students who wish to take English 2V06 in fulfilment of the language requirement in the Combined Honours English and Another Subject or the B.A. English programmes must register in the course as English 2VV6 in which case it may not be used to fulfill the English area requirements.*

Same as English 3J06.

ENGLISH 4B06 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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students registered in a programme in English before September 1990.

Same as English 3G06.

ENGLISH 4E06 CHAUCER AND HIS CONTEMPORARIES

A critical, mainly literary, course in the poetry of late 14th-century England. It will study the writings of Chaucer in some depth, before taking up examples of medieval romance, allegory and drama.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students registered in a programme in English before September 1990.

Same as English 3C06.

ENGLISH 4L03 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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students registered in a programme in English before September 1990.

Same as English 3M03.

ENGLISH 4M03 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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students registered in a programme in English before September 1990.

Same as English 3MM3.

ENGLISH 4N06 THE BRITISH NOVEL

This course, in assessing and analysing 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.

3 lects.; two terms

Prerequisite: Registration in Level III or IV of a programme in English. Open only to students registered in a programme in English before September 1990.

Same as English 3N06.

For Graduate Courses see *Calendar of School of Graduate Studies.*

Environmental Science

This course is administered within the Faculty of Science jointly by the Departments of Biology, Chemistry, Geography, and Geology. Information may be obtained from the Faculty of Science Studies Office, General Sciences Building, Room 116.

ENV SCI 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 Sciences I, and those students in Social Sciences I who are planning on entering the B.A. Geography-Environmental Studies Programme.

3 lects., or 2 lects., 1 tut. (3); two terms

Prerequisite: Open to students registered in Level I. An average of at least 75% in two Science, Mathematics, Geography or Environmental Science OAC's is strongly recommended.

French

Faculty as of January 15, 1992

Elaine Nardocchio/Chair

Professors Emeriti

Pierre-Marie Conlon/B.A., M.A. (Auckland), D. de l'U. (Paris), F.R.S.C.

Arthur W. Patrick/M.A. (Manitoba), D. de l'U. (Paris-Sorbonne)

Marie L. Stock/B.A. (Queen's), M.A. (McGill), Ph.D. (Columbia)

G. Derek West/B.A. (Oxford), Ph.D. (London)

Professors

Owen R. Morgan/B.A., M.A. (Nottingham)

Cesar 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)

Caroline Bayard/L. ès L., M. ès L. (Toulouse), M.A., Ph.D. (Toronto)

William F. Hanley/B.A. (Toronto), M. ès L. (Paris-Sorbonne), D.Phil. (Oxford)

Madeleine Jeay/L. ès L. (Bordeaux), M.A., Ph.D. (Montréal)

Charles E. Jose/B.A. (Western), M.A. (Toronto)

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)/French & Drama

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)

Christine Portelance/B.A., M.A., Ph.D. (Montréal)

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)

Instructor

Pauline Pocknell/B.A. (Manchester), B.Ed. (O.T.E.C.), M.A. (McMaster)/part-time

Senior Language Preceptor

Hélène Gallier-Morgan/D.U.E.L., Lic. ès Lettres, Maitrise ès Lettres, D.E.A. (Sorbonne)

Department Notes:

1. 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.

2. 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 2A03, 2C03, 2G03, 3C03, 3CC3, 3F03, 4A04, 4BB3

3. Students with some elementary or secondary school French not exceeding Ontario Grade 11 French or equivalent should enrol in French 1Z06. The sequel to French 1Z06 is French 1NN6 which, in turn, leads into French 2M06.
4. Students who begin their studies with French 1Z06 or French 1N06 and intend to register in a French programme will normally require more time to complete degree requirements than those students who are eligible to begin with French 1A06.
5. Students with at least OAC French should register in French 1A06 or 1N06. Consult the prerequisite statements below for required minimum grades. The sequel to French 1A06 is French 2A03. The sequel for French 1N06 is French 2M06.
6. All students intending to register in French 1A06 or 1N06 must take the French Language Placement Test during their first class in September.
7. For language practice courses, francophone students with native fluency must select from French 2G03, 3CC3, 4BB3. Francophone students with native fluency are not permitted to enrol in either French 2C03 or French 3F03.
8. Students must complete French 4A03 in order to graduate with an Honours or Combined Honours degree in French.
9. Students whose standing in French 3C03 is below B- will not be admitted to French 4A03. Students may repeat French 3C03 to improve their grade.

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.

4 tuts.; two terms

Prerequisite: OAC French with a grade of at least 80%. Students may take only one Level I French course. 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 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.

2 tuts., 3 computer labs.; two terms

Prerequisite: OAC French with a grade of less than 80%. Students may take only one Level I French course. 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.

2 tuts., 3 computer labs.; two terms

Prerequisite: French 1Z06. Not available to students with credit in 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.

5 hrs. (including lab. practice); two terms

Prerequisite: Open, except to graduates of Grade 12 French or 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 2A03 FRENCH LANGUAGE PRACTICE: WRITTEN

Grammar and composition.

2 tuts., term one; 1 tut., term two.

Prerequisite: French 1A06, 1B06 or 2M06.

FRENCH 2C03 FRENCH LANGUAGE PRACTICE: ORAL

Development of conversational skills.

2 tuts.; two terms

Prerequisite: French 1A06 or 2M06 and registration in a programme in French; or permission of the Department. Departmental permission slip required. 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.

3 lects.; one term

Prerequisite: French 1A06 or 2M06; or permission of the Department.

FRENCH 2E03 LITERATURE OF QUEBEC

Selected novels, plays, and poems representative of the main currents of twentieth-century Quebec Literature.

3 lects.; one term

Prerequisite: French 1A06 or 2M06; or permission of the Department.

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.

3 tuts.; one term

Prerequisite: A grade of at least B- in French 1A06 or 2M06 or a grade of at least B in French 1B06, and registration in a French programme. Departmental permission slip required.

Enrolment is limited.

FRENCH 2H03 INTRODUCTION TO FRENCH LINGUISTICS

An introduction to the descriptive analysis of language (phonology, morphology, syntax, semantics) with special reference to French.

3 tuts.; one term

Prerequisite: French 1A06, 1B06 or 2M06.

FRENCH 2J03 NINETEENTH-CENTURY FRENCH LITERATURE I

Selected novels, plays and poems representative of the main currents of 19th-century French literature.

3 lects.; one term

Prerequisite: French 1A06, 1B06 or 2M06.

FRENCH 2JJ3 NINETEENTH-CENTURY FRENCH LITERATURE II

Selected themes appearing in the works of the major French writers of the 19th century.

3 lects.; one term

Prerequisite: French 1A06, 1B06 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.

4 tuts.; two terms

Prerequisite: French 1N06 or 2NN6. Not available to students with credit in French 1A06.

FRENCH 2N03 INTRODUCTION TO THE CIVILIZATION OF FRANCE

The study of contemporary France through a selection of texts and audiovisual materials.

3 lects.; one term

Prerequisite: French 1A06 or 2M06; or permission of the Department.

FRENCH 2W03 TWENTIETH-CENTURY FRENCH LITERATURE I

Aspects of the development of 20th-century literature to the end of the Second World War.

3 lects.; one term

Prerequisite: French 1A06, 1B06 or 2M06.

FRENCH 2WW3 TWENTIETH-CENTURY FRENCH LITERATURE II

Aspects of the development of 20th-century literature since the Second World War.

3 lects.; one term

Prerequisite: French 1A06, 1B06 or 2M06.

FRENCH 3AA3 THE MODERN FRENCH-CANADIAN NOVEL

Representative novels by contemporary authors with emphasis upon the relationship between technique and meaning.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level.

FRENCH 3B03 FRENCH SEMANTICS

An introduction to various theories of meaning, treating issues such as reference, synonymy, paraphrase, cultural overlap, distinctive features and lexicography.

3 lects.; one term

Prerequisite: French 2H03 and 2A03; or permission of the Department.

Alternates with French 4C03.

FRENCH

FRENCH 3BB3 CONTEMPORARY QUEBEC THEATRE

Contemporary experimental theatre, and representative playwrights such as Marcel Dub   and Michel Tremblay.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level.

Same as Drama 3BB3.

FRENCH 3C03 FRENCH LANGUAGE PRACTICE: WRITTEN

Advanced grammar and composition; introduction to stylistics.

2 tuts.; two terms

Prerequisite: French 2A03 with a grade of at least C- and 9 additional units of French beyond French 1A06 or 2M06; or permission of the Department. Students whose standing in French 3C03 is below B- will not be admitted to French 4A03. Students may repeat French 3C03 to improve their grade.

FRENCH 3CC3 FRENCH LANGUAGE PRACTICE: INTERMEDIATE TRANSLATION

A course designed for the systematic comparison of French and English, including comparative stylistics, with special reference to problems in the translation of texts of a general nature.

3 tuts.; one term

Prerequisite: French 2A03 and 2G03. Departmental permission slip required.

Enrolment is limited.

FRENCH 3E03 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.

3 lects.; one term

Prerequisite: French 2H03 and registration in Level III or IV of a programme in French; or permission of the Department.

Alternates with French 3I03.

FRENCH 3F03 FRENCH LANGUAGE PRACTICE: FRENCH CIVILIZATION AND CULTURE

An introduction to contemporary French society through oral discussions and presentations.

2 tuts.; two terms

Prerequisite: French 2C03 and registration in a programme in French; or permission of the Department. Departmental permission slip required. Not available to Francophone students with native fluency.

Enrolment is limited.

FRENCH 3G03 GENERAL AND COMPARATIVE PHONETICS

Elementary questions of phonetic theory including physiological basis, speech sounds in isolation and in sequence, the syllable, the phoneme, prosodic features, graphemics and practical applications (transcriptions and pronunciation exercises).

3 lects.; one term

Prerequisite: French 1A06, 1B06 or 2M06; or permission of the Department.

FRENCH 3I03 FRENCH SOCIOLINGUISTICS

The study of linguistic variations within French-speaking communities with special reference to the Canadian situation.

3 lects.; one term

Prerequisite: French 2H03 and registration in Level III or IV of a programme in French; or permission of the Department.

Alternates with French 3E03.

FRENCH 3K03 EIGHTEENTH-CENTURY FRENCH LITERATURE I

The early 18th century with emphasis on Montesquieu, Marivaux and Pr  aevost, and on the early writings of Voltaire.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French.

FRENCH 3KK3 EIGHTEENTH-CENTURY FRENCH LITERATURE II

Texts representing the main aspects of Enlightenment thought and literature from the publication of the preliminary discourse of the *Encyclopedie* to the Revolution.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French.

FRENCH 3Q03 SEVENTEENTH-CENTURY FRENCH LITERATURE I

A study of selected plays by Corneille, Moli  re and Racine.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French.

Same as Drama 3Q03.

FRENCH 3QQ3 SEVENTEENTH-CENTURY FRENCH LITERATURE II

A consideration of selected themes as they appear in the works of major French writers of the 17th century.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French.

FRENCH 3S03 STUDIES IN MEDIEVAL FRENCH LITERATURE

A survey of medieval French literature: songs and poetry of the troubadours and trouveres; selections from the *Chanson de Roland*, Chretien de Troyes' romances and other narrative works (*lais*, *Roman de la Rose*, *Roman de Renart*, *fabliaux*), and from secular theatre. Modernized French versions will be used. Selected texts in Old French will be analyzed.

Seminar (3 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French. Not available to students with credit in French 4R03.

FRENCH 3Z03 AFRICAN AND CARIBBEAN FRENCH LITERATURE

An introduction to French African and Caribbean literature from the origins of the Negritude movement to the present.

3 lects.; one term

Prerequisite: French 1A06 or 1B06 or 2M06.

FRENCH 4A03 FRENCH LANGUAGE PRACTICE

Advanced stylistics and composition.

2 tuts., term one; 1 tut., term two

Prerequisite: A grade of at least B- in French 3C03 and registration in an Honours programme in French; or permission of the Department. Students whose standing in French 3C03 is below B- will not be admitted to French 4A03. Students must complete French 4A03 in order 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).

3 tuts.; one term

Prerequisite: French 3CC3. Departmental permission slip required.

Enrolment is limited.

FRENCH 4C03 FRENCH MORPHOLOGY AND SYNTAX

A study of articles treating various morphological and syntactic problems. Both functional and generative approaches will be examined.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level including French 2H03 and registration in a programme in French.

Alternates with French 3B03.

FRENCH 4F03 TOPICS IN EIGHTEENTH-CENTURY FRENCH LITERATURE

Previous topics include: Voltaire. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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 (3 hrs.); one term

Prerequisite: French 2H03 and registration in Level III or IV of a programme in French; or permission of the Department.

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 (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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.

Seminar (3 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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 LITERATURE

Previous topics include: Contemporary Writers. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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 EIGHTEENTH-CENTURY FRENCH NOVEL

A study of the genesis and themes of representative 18th-century novels.

Seminar (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French. Not available for students with credit in French 3MM3.

FRENCH 4N03 TOPICS IN THE FRENCH NOVEL

Previous topics include: Emile Zola. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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 TWENTIETH-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.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French.

FRENCH 4Q03 TOPICS IN SEVENTEENTH-CENTURY FRENCH LITERATURE

Previous topics include: Corneille, Racine, Molière. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: French 3Q03, and registration in a programme in French; or permission of the Department.

French 4Q03 may be repeated, if on a different topic, to a total of six units.

FRENCH 4S03 MEDIEVAL FRENCH LANGUAGE AND LITERATURE

An introduction to the Old French language and a study of selected medieval texts.

3 lects.; one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French. Not available to students with credit in French 3R03.

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 (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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 6 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 (2 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 2M06 and 12 additional units of French beyond the introductory level and registration in a programme in French.

FRENCH 4Y03 TOPICS IN TWENTIETH-CENTURY FRENCH LITERATURE

Previous topics include: Women's Writing, The essay. Consult the Department concerning topic to be offered.

Seminar (3 hrs.); one term

Prerequisite: One of French 1A06, 1B06, 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.

The following course of interest to students of French is offered by the Department of Drama:

DRAMA 3TT3 TOPICS IN NATIONAL CINEMAS II

(French Cinema will be a frequent topic of this course.)

For Graduate courses, see the *Calendar of School of Graduate Studies*.

G.M. MacDonald/Associate Chair

Professors Emeriti

Andrew F. Burghardt/A.B. (Harvard), M.A., Ph.D. (Wisconsin)

R. Louis Gentilcore/B.A. (Toronto), Ph.D. (Maryland)

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

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)

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)

Richard S. Harris/B.A. (Cambridge), M.A. (Ohio), Ph.D. (Queen's)

G.M. MacDonald/B.A. (Berkeley), M.Sc. (Calgary), Ph.D. (Toronto)

Assistant Professors

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)

Steven Reader/B.Sc., Ph.D. (Bristol)

Associate Member

Vivienne Walters/B.A., M.A. (Sheffield), Ph.D. (McGill)

John C. Weaver/B.A. (Queen's), M.A., Ph.D. (Duke)

Norman F. White/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:

- * Indicates a Science course.
- Students are advised that not all courses will be offered in every year and should consult the *Handbook for Undergraduate Geographers*.

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.

2 lects., 1 lab. (2) alternate weeks, 1 tut. (1) alternate weeks; two terms

Prerequisite: Open.

GEOG 1C03* INTRODUCTORY CLIMATOLOGY

An introduction to the global pattern of weather, climate, and surface waters and climate change.

2 lects., 1 lab.; one term

Prerequisite: Open. Not open to students with credit in Geography 1A06.

GEOG 1G03* INTRODUCTORY 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.

2 lects., 1 lab.; one term

Prerequisite: Open. Not open to students with credit in Geography 1A06.

GEOG 2A03 LOCATIONAL ANALYSIS

Spatial location theory and spatial analysis methods as related to the siting of final consumption facilities such as retail stores, schools and hospitals.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 1B06.

Geography

Faculty as of January 15, 1992

S.M. Taylor/Chair

GEOGRAPHY

GEOG 2B03 URBAN GEOGRAPHY

Concepts and methods of economic geographical analysis applied to problems at the inter- and intra-urban levels. Topics include urbanization, city systems and structure and such issues as pollution, congestion and ghettos.

3 lects.; one term

Prerequisite: Geography 1B06, or permission of the instructor.

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.

3 lects.; one term

Prerequisite: Open.

Not offered in 1992-93.

GEOG 2D03 THE GEOGRAPHY OF SETTLEMENT

The geography of urban development, with reference to old world origins and focussing on North America since 1850.

2 lects., 1 lab. (2); one term

Prerequisite: Open.

GEOG 2E03 CANADA

The geography of Canada emphasizing the economic and social geography of regions and current development issues.

3 lects.; one term

Prerequisite: Open.

GEOG 2F03* EARTH'S SURFACE CLIMATES

The surface heat and water balance of natural and man-modified landscapes.

2 lects., 1 lab. (2); one term

Prerequisite: One of Geography 1A06, 1C03 or Environmental Science 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.

3 lects.; one term

Prerequisite: One of Geography 1A06, 1C03, 1G03 or a Level I Science course.

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.

GEOG 2NN3* FUNDAMENTAL PRINCIPLES OF GEOGRAPHICAL INFORMATION SYSTEMS

An introduction to the design of geographic information systems focusing on the relationship to spatial data analysis and spatial statistics.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 2LL3.

GEOG 2P03 THE UNITED STATES OF AMERICA

The physical and economic geography of the United States.

3 lects.; one term

Prerequisite: Open.

GEOG 2R03 BEHAVIOURAL GEOGRAPHY

Introduction to environmental cognition and human spatial behaviour.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 1B06.

GEOG 2T03* FLUVIAL GEOMORPHOLOGY

The effects of moving water on the earth's surface: principles of sediment entrainment, fluvial flow, stream transport, and analysis of resulting landforms, such as terraces and deltas.

2 lects., 1 lab. (2); one term

Prerequisite: One of Geography 1A06, 1C03, 1G03, Environmental Science 1A06, Geology 1A03, 1C03.

GEOG 2U03* ENVIRONMENTAL SCIENCE I

An examination of the interrelationships of the physical, biological, economic and institutional dimensions of environmental problems.

2 lects., 1 lab. (2); one term

Prerequisite: One of Geography 1A06, 1B06, 1C03, 1G03 or a Level I Science course.

GEOG 2W03* HYDROLOGY IN CANADA

A discussion of fresh water resources, including both surface and groundwater.

3 lects.; one term

Prerequisite: One of Geography 1A06, 1C03, 1G03, Environmental Science 1A06, Geology 1A03, 1C03.

GEOG 2Y03 URBAN AND REGIONAL DEVELOPMENT

Recent trends in urban and regional development, emphasizing issues of change in the spatial structure of central cities, suburbs and regions.

2 lects.; 1 tut. (1); one term

Prerequisite: Geography 1B06, or permission of instructor.

Not offered in 1992-93.

GEOG 3C03* ENVIRONMENTAL HAZARDS

Geological and man-induced hazards affecting settlements and the natural environment will be discussed.

2 lects., 1 lab.; one term

Prerequisite: Geography 2LL3 and 2U03.

GEOG 3E03* FIELD STUDY IN PHYSICAL GEOGRAPHY

Field study experiments and survey design, data collection methods and data processing. Offered in the summer following Level II. Details are announced in January.

Prerequisite: Geography 2LL3 and permission of the Department.

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.

Prerequisite: Geography 2NN3 and permission of the Department.

GEOG 3F03* PHYSICAL CLIMATOLOGY

The physical basis of large scale climate and mechanisms of climatic change.

2 lects., 1 lab. (2); one term

Prerequisite: Geography 2F03; either Geography 2LL3 (or Computer Science 1MA3), or registration in a programme in the Faculty of Science.

GEOG 3G03 POPULATION GROWTH AND DISTRIBUTION

Facts, theories, and major issues about the growth and distribution of human population.

3 lects.; one term

Prerequisite: Geography 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.

3 lects.; one term

Prerequisite: One of Geography 1A06, 1C03, 1G03, Environmental Science 1A06, Geology 1A03, 1C03 and completion of at least 12 units of Level II (or higher) Science courses.

Same as 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.

2 lects., 1 lab.; one term

Prerequisite: Geography 2NN3, 2U03; one of Mathematics 1A06, 1C06, 1M03.

GEOG 3JJ3 GEOGRAPHY OF JAPAN

Human and physical geography of Japan with emphasis on population characteristics and demographic processes.

3 lects.; one term

Prerequisite: Geography 1B06 or registration in Japanese Studies Programme.

Same as Japanese Studies 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.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 2K03.

GEOG 3L03* MULTIVARIATE ANALYSIS IN GEOGRAPHY

Applications of SAS to the management and analysis of geographical data, including cross tabulation and multiple regression. Real-world data from both human and physical geography are used.

2 lects., 1 lab. (2); one term

Prerequisite: One of Geography 2LL3, Economics 2B03, Mathematics 1L03, Sociology 2Y04, Statistics 1L03, 2D03, 2M03, 2R06.

GEOG 3M03* GLACIAL AND PERIGLACIAL GEOMORPHOLOGY

The nature and development of glaciers, glacial land form systems and periglacial processes.

2 lects., 1 lab. (2); one term

Prerequisite: Geography 2T03.

GEOG 3NN3* TECHNICAL ISSUES IN GEOGRAPHIC INFORMATION SYSTEMS

Data structures, advanced methods of spatial data analysis/manipulation and the nature of spatial data error in geographical information systems.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 2NN3.

GEOG 3O03* EXPLANATION IN GEOGRAPHY

The history of modes of explanation in geography, focussing on the application of the scientific model, and with an emphasis on the formulation of a research proposal.

2 lects., 1 sem. (2); one term

Prerequisite: Geography 2NN3.

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.

3 lects.; one term.

Prerequisite: One of Geography 1A06, 1C03, 1G03, Environmental Science 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.

2 lects.; 1 lab.; one term.

Prerequisite: Geography 1B06 or Economics 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.

3 lects.; one term.

Prerequisite: Geography 1A06 or 1B06 or two of 2C03, 2E03 and 2P03.

Prerequisite: (*Beginning in 1993-94*) One of Geography 1A06, 1B06, 1C03, 1G03. *Geography 3R03 may be repeated, if on a different topic, with permission of the Department.*

GEOG 3T03 GEOGRAPHY OF PLANNING

A systematic approach to the study of the planning process, with emphasis on analysis of the social, economic, and political bases of planning.

2 lects.; 1 lab. (2); one term

Prerequisite: One of Geography 2A03, 2B03, 2R03, 2Y03.

GEOG 3U03* ENVIRONMENTAL SCIENCE II: THE CANADIAN CONTEXT

The application of ecological principles and methods to the analysis of problems in the natural and built environments of Canada.

2 lects.; 1 lab.; one term

Prerequisite: Geography 2NN3 and 2U03.

GEOG 3V03* REMOTE SENSING

The physical principles of remote sensing, with emphasis on aerial photographs and satellite imagery. Visual and digital interpretation procedures and their application in geography.

2 lects.; 1 lab. (2); one term

Prerequisite: One of Geography 1A06, 1B06, 1C03, 1G03, Geology 1A03, 1C03. *Not offered in 1992-93.*

GEOG 3W03* HYDROLOGY

Principles of hydrology and their applications in physical geography.

2 lects.; 1 lab. (2); one term

Prerequisite: Enrolment in Level III (or higher) of a Science programme or Geography 2LL3 and one of Geography 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.

3 lects.; one term

Prerequisite: Geography 2B03, Economics 2G03 or 2L06.

Same as Economics 3X03.

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.

3 lects.; one term

Prerequisite: Geography 2T03.

GEOG 4C06 RESEARCH PAPER

The student will select a study in geography and have it approved by a Faculty Supervisor, normally prior to May 1. The final report of the project is due by April 1 of the following year.

1 seminar (2) alternate weeks; two terms

Prerequisite: Geography 3O03, and registration in Level IV of an Honours programme in Geography.

GEOG 4D03 COASTAL GEOMORPHOLOGY

The dynamics and morphologies of the shore zone.

2 lects.; 1 lab.; one term

Prerequisite: Geography 3M03.

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.

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.

3 lects.; one term.

Prerequisite: Geography 2Y03, or permission of the instructor.

GEOG 4H03* LAND USE AND TRANSPORTATION

Quantitative models to predict transportation flows and land use patterns in urban areas, including gravity type models, the Lowry model and discrete choice models.

3 lects.; one term

Prerequisite: Geography 2NN3.

Same as Civil Engineering 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.

3 lects.; one term

Prerequisite: Geography 2K03 or 3K03.

GEOG 4NN3* GEOGRAPHIC INFORMATION SYSTEMS MANAGEMENT AND APPLICATIONS

Analytical, operational, institutional and legal issues faced by the implementation of large scale geographic information systems.

2 lects.; 1 lab (2) one term

Prerequisite: Geography 3NN3.

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.

2 lects.; 1 lab. (2); one term.

Prerequisite: Geography 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.

3 lects.; one term

Prerequisite: Geography 2F03.

GEOG 4R03* MODELS IN CLIMATOLOGY

Discussion of global climatic models and their application.

3 lects.; one term

Prerequisite: Geography 3F03 and one of Mathematics 1A06 or 1M03.

Not offered in 1992-93

GEOG 4S03 GEOGRAPHY OF HEALTH CARE

The environmental determinants of health and the spatial dimensions of health care delivery.

2 seminars; one term

Prerequisite: Registration in Level IV of an Honours programme.

GEOG 4T03 REGIONAL ANALYSIS AND PLANNING

The use of analytical methods in assessing the environmental and socio-economic impacts of regional planning policies.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 3J03.

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.

2 seminars (2); one term

Prerequisite: Geography 3T03.

GEOG 4V06* ADVANCED STUDIES IN ENVIRONMENTAL SCIENCE

Selected issues and problems in environmental science will be researched and discussed.

1 seminar (2); two terms

Prerequisite: Geography 3U03

GEOG 4W03* HYDROLOGIC MODELLING

A survey of deterministic and stochastic models in hydrology.

2 lects.; 1 lab. (2); one term

Prerequisite: Geography 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.

3 lects.; one term

Prerequisite: Geography 3X03.

Same as Economics 4X03.

GEOG 4Z03 THE URBAN LANDSCAPE

The geography of class, ethnicity and gender in North American cities in the twentieth century. Topics include: the nature of the home; segregation; suburbanization; gentrification.

2 seminars (2); one term

Prerequisite: Geography 2D03 and registration in Level IV of any Honours programme.

For Graduate Courses see *Calendar of School of Graduate Studies*

Geology

Faculty as of January 15, 1992

P.M. Clifford/Chair

Professors Emeriti

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

Brian J. Burley/B.Sc. (London), M.Sc. (British Columbia), Ph.D. (McGill)

Paul M. Clifford/B.Sc. (Southampton), Ph.D. (London)

James H. Crocket/B.Sc. (New Brunswick, Oxford), Ph.D. (M.I.T.)

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.)

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

Alan P. Dickin/M.A. (Cambridge), D. Phil. (Oxford)

William A. Morris/B.Sc. (Leeds), Ph.D. (Open University)

Associate Members

W. Brian Clarke/B.A. (Dublin), Ph.D. (McMaster)

Derek C. Ford/M.A., D.Phil. (Oxford), F.R.S.C.

Carolyn H. Eyles/B.Sc. (East Anglia), M.Sc., Ph.D. (Toronto)

S. Brian McCann/B.Sc. (Wales), Ph.D. (Cambridge)

Glen M. MacDonald/B.A. (Berkeley), M.Sc. (Calgary), Ph.D. (Toronto)

Senior Demonstrator

Kenneth B. MacDonald/B.A., B.Ed. (Mount Allison)

Department Note:

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.

GEOLOGY 1C03 EARTH PROCESSES

An introduction to geology through study of dynamic geological processes, particularly global plate tectonics.

2 lects., 1 lab (3); 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.

2 lects., 1 lab. (2); in parts of both terms

Prerequisite: Open only to students registered in Ceramic Engineering; or permission of instructor.

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.

2 lects., 1 lab. (2); two terms

Prerequisite: Registration in a Geology 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.

2 lects., 1 lab. (3); one term

Prerequisite: Geology 1A03 or 1C03 or Environmental Science 1A06; or permission of the instructor.

GEOLOGY 2D03 INTRODUCTION TO STRUCTURAL GEOLOGY

A survey of the geometry of fractures and folds, their associated small-scale features, and their simple kinematic and dynamic analysis.

2 lects., 1 lab. (3); one term

Prerequisite: Geology 1A03 or 1C03 or Environmental Science 1A06. Not open to students who are registered in or have credit in Geology 2D06 or 2DD3.

GEOLOGY 2E01 HAND SPECIMEN PETROGRAPHY

An introduction to the study of rock suites in hand specimen with emphasis on field associations.

1 lab. (2); one term

Prerequisite: Geology 1A03 or 1C03 or Environmental Science 1A06.

GEOLOGY 2I03 INTRODUCTION TO GEOPHYSICS

Introduction to the quantitative study of the earth. Origin of the earth, solar system, gravitation, geomagnetic field, terrestrial heat flow and elements of seismology.

3 lects.; one term

Prerequisite: One of Physics 1A06, 1B06, or 1C06 and registration in a Geology programme; or permission of the instructor.

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.

2 lects., 1 lab. (3); one term

Prerequisite: Geology 1A03 or 1C03 or Environmental Science 1A06; or permission of the instructor. Geology 2J03 is equivalent to the first term of Geology 3D06. Not open to students who have credit in Geology 3D06.

GEOLOGY 3A03 APPLIED GEOPHYSICS A

Principles and uses of electrical, magnetic, electromagnetic and radioactivity-based techniques in exploration geophysics; borehole logging methods.

2 lects., 1 lab. (2); one term

Prerequisite: Geology 2I03; or permission of the instructor.

Alternates with Geology 3B03.

Offered in 1993-94.

GEOLOGY 3B03 APPLIED GEOPHYSICS B

Gravitational and seismic principles and methods and their use in exploration geophysics.

2 lects., one lab. (2); one term

Prerequisite: Geology 2I03; or permission of the instructor.

Alternates with Geology 3A03.

Offered in 1992-93.

GEOLOGY 3CC6 IGNEOUS AND METAMORPHIC PETROGRAPHY

A sequel to Geology 2B06. An introductory course in the petrography of igneous and metamorphic rocks including some discussion of their origin. Laboratory studies on rock suites.

2 lects., 1 lab (2); two terms

Prerequisite: Geology 2B06.

GEOLOGY 3E02 FIELD CAMP

A field camp of about two weeks duration held immediately after the April-May Examinations. Normally taken immediately following Level II by students in all Geology and combined programmes.

Prerequisite: Geology 2E01 or permission of the Chair.

GEOLOGY 3F03 SEDIMENTARY FACIES AND ENVIRONMENTS

A course in the field aspects of sedimentary rocks and the depositional environments of clastic and carbonate systems.

3 lects., 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; laboratory studies in physical and chemical properties of minerals.

2 lects., 1 lab. (3); one term

Prerequisite: Geology 2B06.

GEOLOGY 3H03 GEOLOGICAL DATA PROCESSING

Nature of geological data; techniques of graphical presentation and data analysis, including use of microcomputers.

3 lects.; one term

Prerequisite: Registration in a Geology programme; or permission of the instructor. Not open to students with credit in Geology 2H03.

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.

3 lects.; one term

Prerequisite: Geography 1A06, or one of Geology 1A03 or 1C03 or Environmental Science 1A06, and completion of at least 12 units of Level II (or higher) Science courses.

Same as Geography 3I03.

Not offered in 1992-93.

GEOLOGY 3J03 PALEONTOLOGY

Marine habitats and possible changes through geologic time. Groups of fossils important in stratigraphy including microfossils; economic paleontology.

2 lects., 1 lab. (3); one term

Prerequisite: Geology 2J03; or permission of the instructor. Not open to students with credit in Geology 3D06.

GEOLOGY 3Q03 INTRODUCTORY GEOCHEMISTRY

An introduction to the chemistry of the earth including cosmochemistry, global cycles, ocean chemistry, radiogenic and stable isotope systematics, geochronology, analytical techniques.

3 lects.; one term

Prerequisite: Chemistry 2P06; or permission of the instructor.

GEOLOGY 3S03 SEDIMENTARY PETROLOGY

An introductory course in the petrology of sediments and sedimentary rocks. Laboratory includes textural analysis of sediments and examination of sedimentary rocks suites in hand specimen and thin section.

2 lects., 1 lab. (2); one term

Prerequisite: Geology 2B06

GEOLOGY 4B03 IGNEOUS PETROLOGY

Advanced theory of igneous rocks.

3 lects., one term

Prerequisite: Geology 3CC6; or permission of the instructor.

GEOLOGY 4BB3 METAMORPHIC PETROLOGY

Advanced theory and practice on metamorphic rocks.

2 lects., one lab (3); one term

Prerequisite: Geology 3CC6, Chemistry 2P06; or permission of the instructor.

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.

2 lects., 1 seminar; one term

Prerequisite: Geology 3D06 or Geology 2J03 and 3J03 or completion of at least 12 units of Level III Biology, or permission of the instructor.

Not offered in 1992-93.

GEOLOGY 4E03 METALLIC MINERAL DEPOSITS

Geology, geochemistry and genesis of ore deposits; environmental and economic aspects.

3 lects.; one term

Prerequisite: Registration in a Level IV Geology programme; or permission of the instructor.

GEOLOGY 4EE3 ORE MICROSCOPY

Reflected and transmitted light study of ore mineral assemblages.

1 lab.(3); two terms

Prerequisite: Geology 2B06; or permission of the instructor.

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.

3 lects.; one term

Prerequisite: Geology 2I03; or permission of the instructor.

GEOLOGY 4K06 GEOLOGY THESIS

Prerequisite: Open to students in Level IV of a Geology programme subject to the approval of the Chair of the Department.

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.

3 lects.; one term

Prerequisite: Geology 3F03; or permission of the instructor.

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.

3 lects.; one term

Prerequisite: Geology 2C03, and Chemistry 2P06 or 2T06; or permission of the instructor.

Alternates with Geology 4S03.

GEOLOGY 4N03 ADVANCED STRUCTURAL GEOLOGY

Advanced strain analysis in geology; kinematics and propagation of fracture in rocks; elementary petrofabrics.

3 lects.; one term

Prerequisite: Geology 2D03 or 2D06 or both 2DD3 and 3DD3 and completion of, or registration in, Geology 3CC6.

Alternates with Geology 4V03.

Not offered in 1992-93.

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.

3 lects.; one term

Prerequisite: Geology 3Q03, or permission of the instructor.

Available in Levels III and IV.

GEOLOGY 4S03 PHYSICAL OCEANOGRAPHY

Energy budget of the ocean; optical oceanography, ocean dynamics. Examples for the Great Lakes.

3 lects.; one term

Prerequisite: Completion of or registration in, at least 15 units of Level III Science courses; or permission of the instructor.

Available in Levels III and IV.

Alternates with Geology 4MM3.

Not offered in 1992-93.

GEOLOGY 4T03 PLATE TECTONICS

Principles of plate tectonics, with application to regional and historical geology.

3 lects.; one term

Prerequisite: Geology 2C03; completion of, or registration in, Geology 3CC6.

GEOLOGY 4V03 PHYSICAL VOLCANOLOGY

Physical modes of eruption of volcanoes and the products of such eruptions. Interpretation of ancient rocks in the light of modern volcanic rocks.

2 lects.; one term

Prerequisite: Completion of, or registration in, Geology 3CC6.

Alternates with Geology 4N03.

Offered in 1992-93.

GEOLOGY 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.

3 lects.; one term

Prerequisite: Registration in Level III or IV Science or Engineering or Arts and Science, or permission of the instructor.

For Graduate Courses see *Calendar of School of Graduate Studies.*

German

Courses and programmes in *German* are administered within the Department of Modern Languages of the Faculty of Humanities.

Department Notes:

1. Students should note that the Department has classified its German language courses under the following categories:

Introductory Level Language Course

German 1Z06

Intermediate Level Language Courses

German 1A03, 1AA3, 2AA3, 2Z06

Advanced Level Language Courses

German 2E03, 2G03, 3Z03, 3ZZ3, 4CC3

2. German programme students with native fluency are not permitted to enrol in German 2G03.
3. Non-programme students who complete German 1Z06, 2Z06, 3Z03 and 3ZZ3 or German 1A03 or 2Z06, 2E03, 2G03, 3Z03 and 3ZZ3, with a weighted average of at least 10.0 (A-), will receive a transcript notation indicating that the student has acquired a good working knowledge of spoken and written German.

GERMAN 1A03 INTERMEDIATE GERMAN LANGUAGE

A review of German grammar and idioms, including lab practice.

3 hrs. (2 hrs. first term; 1 hr. second term)

Prerequisite: OAC German; or Grade 12 German (with a grade of at least 80%) and permission of the department. Not available to students with credit in German 1A06 or 2Y06.

GERMAN 1AA3 INTRODUCTION TO GERMAN LITERATURE

Lectures outline the development of German literature against its cultural background and readings of literary texts.

3 hrs. (1 hr. first term; 2 hrs. second term)

Prerequisite: OAC German; or Grade 12 German (with a grade of at least 80%) and permission of the Department. Not available to students with credit in German 1A06 or 2Y06 or registered in German 2AA3.

GERONTOLOGY

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.

5 hrs. (including lab practice); two terms

Prerequisite: Open, except to graduates of Grade 12 or OAC German. 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.

3 lects.; one term

Prerequisite: German 1A06 or 1AA3 or 2AA3 or 2Y06; 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.

3 hrs. (1 hr. first term; 2 hrs. second term)

Prerequisite: German 1Z06; or OAC German; or Grade 12 German (with a grade of at least 80%) and permission of the Department. Not available to students with credit in German 1AA3 or 1A06 or 2Y06 or registered in German 1AA3.

GERMAN 2E03 GERMAN GRAMMAR

A systematic review, including translation and oral practice.

3 hrs.; one term

Prerequisite: One of German 1A06 or 1A03 or 2Z06; or permission of the Department.

GERMAN 2G03 GERMAN LANGUAGE PRACTICE

A course designed to cover both the spoken and written language.

3 hrs.; one term

Prerequisite: Registration in Combined Honours in German, Alternative B; or permission of the Department. Departmental permission slip is required. *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.

4 hrs. (including lab. practice); two terms

Prerequisite: Grade 12 German (with a grade less than 80%) or German 1Z06 (with a grade of at least C-); or permission of the Department. Not available to students with credit in German 1A03 or 1AA3.

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.

3 lects.; one term

Prerequisite: 12 units of German beyond Level I; or permission of the Department.

GERMAN 3B03 THE AGE OF GOETHE I

From *Sturm und Drang* to Weimar Classicism.

3 lects.; one term

Prerequisite: 12 units of German beyond Level I; or permission of the Department. *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.

3 lects.; one term

Prerequisite: One of German 2Z06 (with a grade of at least B-), 2E03, 2G03; or permission of the Department.

GERMAN 3ZZ3 ADVANCED ORAL AND WRITTEN LANGUAGE PRACTICE II

A continuation of the approach used in German 3Z03.

3 lects.; one term

Prerequisite: German 3Z03 (with a grade of at least B-) or permission of the Department.

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.

3 hrs.; one term

Prerequisite: German 3Z03 or 3ZZ3 (with a grade of at least B-); or permission of the Department.

GERMAN 4G03 THE AGE OF GOETHE II

Romanticism from Novalis to Heine.

3 lects.; one term

Prerequisite: 12 units of German beyond Level I; or permission of the Department. *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.

3 lects.; one term

Prerequisite: 18 units of German beyond Level I or permission of the Department. *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: Registration in Level IV of a German programme, and permission of the departmental Independent Study Committee.

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.

3 lects.; one term

Prerequisite: 18 units of German or permission of the Department. Not available to students with credit for these topics taken under German 4X03.

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 (2 hrs.); one term

Prerequisite: 18 units of German beyond Level I; or permission of the Department.

GERMAN 4Z03 PRINCIPLES OF TEACHING AND LEARNING A SECOND LANGUAGE

An examination of various aspects of second language acquisition as applied to the teaching of German.

Seminar (2 hrs.); weekly in first term, bi-weekly in second term

Prerequisite: Registration in Level IV of a German programme and permission of the Department.

For Graduate Courses see *Calendar of School of Graduate Studies*.

Gerontology

Faculty as of January 15, 1992

Professors

Ellen B. Ryan (Psychiatry)/B.A., M.A. (Brown), Ph.D. (Michigan)

Michael J. Maclean/B.A. (St. Thomas), M.A. (Sussex), Ph.D. (London)

Associate Professor

Kalervo I. Kinanen (Social Work)/dip S.W. (Helsinki), B.A. (McMaster)

M.S.W. (British Columbia)

Assistant Professors

Margaret Denton/B.A., M.A., Ph.D. (McMaster)

Andrea M. Mann (Physical Education)/B.A., B.P.E. (McMaster), M.Sc. (Dalhousie), Ph.D. (Ohio State)

Lecturers

Tamara L. Horton/B.A. (Spring Arbor), M.S.W. (Michigan)

Anju Joshi/B.A., M.A. (Dalhousie)

Sheree D. Meredith (Social Work)/B.A. (Trent), M.S.W. (Wilfred Laurier)

Associate Members

Gurmit Singh/B.Sc., Ph.D. (Dalhousie)

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:

K. Kinanen (Social Work)/*Chair*
 J. Aronson (Social Work)
 A. Beckingham (Nursing)
 A.E. Combs (Religious Studies)
 D. Counts (Anthropology)
 M. Denton (Geron/Sociology)
 J. Johnson (Dean) Ex-officio
 A. Mann (Physical Education)
 M. MacLean (Gerontology/Social Work)
 E. Ryan (Psychiatry)
 B. Spencer (Economics)
 J. Syngé (Sociology)
 J. Thomas (Philosophy)

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.

3 hrs. (lects. and tutorials and 15 hours experiential learning component); two terms

Prerequisite: Open.

GERONTOL 2A03 MULTIDISCIPLINARY ISSUES IN GERONTOLOGY

This course will examine the multidisciplinary nature of contemporary issues in the field of gerontology. Special attention will be given to the contributions of the cognate disciplines and the integration of gerontological knowledge.

3 hrs. (lects. and discussions); one term

Prerequisite: Gerontology 1A06 or Social Science 2G06, and registration in a Gerontology programme.

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.

3 hrs. (lects.); one term

Prerequisite: Gerontology 1A06 or Social Science 2G06.

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.

3 hrs. (lects and discussions); one term

Prerequisite: Gerontology 1A06 or Social Science 2G06 and enrolment in any programme in Gerontology, Social Work or Health Sciences.

Note: This course will be offered every second year alternating with Gerontology 3H03. The course will be offered in 1993-94.

GERONTOL 3B03 GERONTOLOGY FIELD EXPERIENCE

Directed practicum of 36 hours in an approved gerontology field experience and a weekly seminar focusing on integration of theoretical knowledge and practicum experience.

3 hrs. field experience per week, and 2 hrs. weekly seminar; one term

Prerequisite: Registration in Level III or IV of any Gerontology programme.

GERONTOL 3C03 RESEARCH METHODS IN SOCIAL GERONTOLOGY I

An introduction to research methods and statistics in social gerontology. Special attention will be given to gerontologically oriented survey research.

3 hrs. (lects. and practice); one term

Prerequisite: Registration in 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.

3 hrs. (lects. and discussion); one term

Prerequisite: Gerontology 1A06 or Social Science 2G06, and Psychology 1A06. Same as Psychology 3DD3.

Students in a Psychology Programme (except those in Gerontology & Psychology) must register for this course as Psychology 3DD3.

GERONTOL 3E03 INDEPENDENT STUDY IN GERONTOLOGY

The student will select a topic in gerontology for an in-depth investigation under the supervision of a faculty member and write a paper.

Prerequisite: Registration in Level III or IV of any Gerontology programme. The study will normally extend over two terms.

Gerontology 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 fulfillment of course requirements.

One term

Prerequisite: Registration in Level III or IV of a Gerontology programme and completion of Gerontology 3B03

GERONTOL 3G03 RESEARCH METHODS IN SOCIAL GERONTOLOGY II

The focus of this course will be on basic research methods in needs assessment and evaluations. The course will cover data analysis in social gerontology.

3 hrs. (lects. and labs.); one term

Prerequisite: Registration in Level III or IV of any Gerontology programme and completion of Gerontology 3C03.

GERONTOL 3H03 ETHNIC AND RACIAL ISSUES IN GERONTOLOGY

This course will examine issues in gerontology related to the ethnic and racial diversity of contemporary western societies. Social and health care policy, practice and research will be addressed.

3 hrs. (lects.); one term

Prerequisite: Completion of Gerontology 1A06 or Social Science 2G06 and enrolment in any Programme in Gerontology, Social Work or Health Sciences.

Note: This course will be offered every second year alternating with Gerontology 3A03.

This course will be offered in 1992-93.

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.

3 hrs. (lects. and discussions); one term

Prerequisite: Enrolment in 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.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 1A03 and 3 other units of Social/Cultural Anthropology, or registration in any programme in Gerontology.

Same as Anthropology 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 or Gerontology Area course work in place of Gerontology 4A06.

Prerequisite: Registration in Level IV of the Combined Honours Programme in Gerontology and Another Subject and completion of Gerontology 3C03 and 3G03.

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.

One term

Prerequisite: Gerontology 3B03, registration in 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.

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.

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.

3 hrs. (lects.); one term

Prerequisite: Registration in Level III or IV of any Gerontology programme.

Same as Physical Education 4I03.

GERONTOL 4S03 SOCIAL POLICY AND THE AGING POPULATION

An examination of social problems arising from the aging of the population, and an analysis of the existing social policies designed to deal with the problems.

Prerequisite: Registration in Level IV of The Combined Honours Programme in Gerontology and Another Subject.

HEALTH SCIENCES

OTHER DESIGNATED GERONTOLOGY AREA COURSES

Students should check the prerequisites for these courses in the *Course Listings* by Department section of the Calendar.

Anthropology 3Z03	Medical Anthropology: The Biomedical Approach
Economics 3D03	Labour Economics
Economics 3Z03	Health Economics
Geography 4S03	Geography of Health Care
Health Sciences 3B04	Science, Health and Society
Health Sciences 4C03	Special Topics I
Health Sciences 4D03	Special Topics II
History 3EE3	History of Medicine in Canada
Philosophy 3C03	Advanced Bioethics
Religious Studies 2M03	Death and Dying: Comparative Views
Religious Studies 2N03	Death and Dying: Western Experience
Religious Studies 2WW3	Health, Healing and Religion
Social Work 3C03	Social Aspects of Health and Disease
Sociology 3CC3	Special Family Topics in Sociology of the Family and the Life Cycle
Sociology 3G03	Sociology of Health Care
Sociology 3HH3	Sociology of Health
Sociology 3X03	Sociology of Aging
Sociology 4P03	Issues in the Sociology of Aging

Other courses may qualify as Gerontology Area courses. Students wishing to designate a course not on the list as an Area course 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 and B Stream) 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. Obesity, diabetes, heart disease, running and starvation are used as examples to illustrate the metabolism of energy production. 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. The metabolic processes are discussed against a backdrop of metabolic illness, drug metabolism and cancer. A final section deals with nutritional patterns for each stage of life, male and female.

3 hrs. (lects./problem-based tutorial); two terms

Prerequisite: Completion of or registration in Health Sciences 1B07; Registration in Level I of the B.Sc.N. (A) Stream programme, or Level III of the B.Sc.N. (B) Stream programme; or permission of the instructor.

HTH SCI 1B07 HUMAN BIOLOGICAL SCIENCE I

Term I is an overview of human structure and function, including the metabolic and synthetic processes of cells and the role of chemical mediators on cell function; basic tissues and their developmental origins; the organization of the body; and the structure and function of the musculo-skeletal system.

Term II examines homeostasis. Structural and functional aspects of the cardiovascular, respiratory, renal and digestive systems are integrated around the major themes of haemodynamics, fluid compartments, metabolism and nutrition.

3 hrs. (lect./problem-based tutorial); 3 hr. lab; two terms

Prerequisite: Completion of or registration in Health Sciences 1A06; Registration in Level I of the B.Sc.N. (A) Stream programme, or Level III of the B.Sc.N. (B) Stream programme; or permission of the instructor.

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: 2 hrs. lecture equivalent/4hrs. lab. equivalent; one term
Prerequisite: Registration in the B.Sc.N. Programme and permission of the instructor.

HTH SCI 2B08 HUMAN BIOLOGICAL SCIENCE II

The term begins with a study of reproductive anatomy and physiology, with particular emphasis on intrinsic control mechanisms and extrinsic methods of regulation of reproduction. Selected aspects of human growth and aging are presented through the remainder of the course in a tutorial setting.

The second half of the term focuses on a study of the central and peripheral nervous system, including the special senses and neuroendocrine relationships. Medical microbiology and principles of pathology are considered in the first half of the second term, including structure and function of infectious agents, control measures and host defenses. Introductory skills in neurological assessment and drug actions on the nervous system are also considered.

The latter half of the second term is devoted to an examination of pharmacological principles.

3 hrs. (lect./problem-based tutorial); 3 hr. lab; two terms

Prerequisite: Health Sciences 1A06 and 1B07, and registration in Level II of the B.Sc.N. (A) Stream programme, or the Level IV of the B.Sc.N. (B) Stream programme or permission of the instructor.

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. Selected aspects of human growth and aging are considered.

2 hr. lect., 2 hr. tutorial per week for six weeks, 3 hr. lab every two weeks for six weeks; Term I

Prerequisite: Health Science 1B07; registration in or completion of Health Science 1A06; registration in Level II of the B.Sc.N. (A) Stream or Level IV of the B.Sc.N. (B) Stream and permission of the instructor and of the Co-ordinator of Studies (Nursing). *Not available to students who are registered in or have completed Health Science 2B08.*

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.

2 hr. lect., 2 hrs. tutorial per week for six weeks, 3 hr. lab every two weeks for six weeks; Term I

Prerequisite: Health Science 1B07; registration in or completion of Health Science 1A06; registration in Level II of the B.Sc.N. (A) Stream or Level IV of the B.Sc.N. (B) Stream and permission of the instructor and of the Co-ordinator of Studies (Nursing). *Not available to students who are registered in or have completed Health Science 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.

2 hr. lect., 2 hr. tutorial per week for six weeks, 3 hr. lab every two weeks for six weeks; Term II

Prerequisite: Health Science 1B07; registration in or completion of Health Science 1A06; registration in Level II of the B.Sc.N. (A) Stream or Level IV of the B.Sc.N. (B) Stream and permission of the instructor and of the Co-ordinator of Studies (Nursing). *Not available to students who are registered in or have completed Health Science 2B08.*

HTH SCI 2DD2 TOPICS IN HUMAN BIOLOGICAL SCIENCES IV

Principles of pharmacology and mechanisms of drug action are considered.

2 hrs. lect.; 2 hrs. tutorial per week for six weeks; Term II

3 hrs. lab every two weeks for six weeks; Term II

Prerequisites: Health Science 1B07; Registration in or completion of Health Science 1A06; Registration in Level II of the B.Sc.N. (A) Stream or Level IV of the B.Sc.N. (B) Stream and permission of the Instructor and of the Co-ordinator of Studies (Nursing). *Not available to students who are registered in or have completed Health Science 2B08.*

HTH SCI 3A04 CRITICAL APPRAISAL OF RESEARCH LITERATURE

Introduction to 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. A problem based approach will be taken.

3 hrs. (lects./problem-based tut.) and 2 hrs. (guided self-study); one term

Prerequisite: Registration in Level III of the B.Sc.N. (A) or (B) Stream programme; or permission of instructor.

HTH SCI 3B04 HEALTH, SCIENCE AND SOCIETY

This course is concerned with the biological, environmental, behavioural, social and economic factors that determine health needs of the population. There are three major components of the course: measuring health status, the determinants of health, and the provision of health care services.

3 hrs. (lect./problem-based tuts.), and 2 hrs. (guided self-study); one term.

Prerequisite: Registration in Level III of the B.Sc.N. (A) Stream programme, or Level IV of the B.Sc.N. (B) Stream programme; or permission of instructor.

HTH SCI 3Q06 BIOTECHNOLOGY

An examination of the impact of biotechnology on industry, medicine, agriculture, and the environment. Students will discuss the central issues raised by our new knowledge of fundamental biological processes, including the influences on our lifestyles, health, and morality.

2 lect., 1 tut.; two terms

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.

3 hrs. lecture or equivalent; one term

Prerequisite: Registration in Level II or above of the B.Sc.N. programme and permission of the instructor and permission of the Co-ordinator 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 4L04 PRINCIPLES AND METHODS OF RESEARCH

Advanced critical analysis of nursing and related literature. Principles of research methodology and statistics are used to examine systematically the literature in relation to selected topics. Students participate in an ongoing research study.

2 hrs. (lects., problem-based tut.) one term, and 4 hrs. (guided self-study) second term; two terms

Prerequisite: Health Sciences 3A04 and registration in Level IV of the B.Sc.N. (A) or (B) Stream programme; or permission of the instructor.

Health and Society

(See *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 Notes:

- Students should note that the Department has classified its Hispanic language courses under the following categories:

Introductory Level Language Course

Hispanic 1A06

Intermediate Level Language Courses

Hispanic 1A06, 2Z06

Advanced Level Language Courses

Hispanic 2A03, 3D03, 3DD3

- Non-programme students who complete Hispanic Studies 1A06 (or 2Z06), 2A03, 3D03 and 3DD3, with a weighted average of at least 10.0 (A-), will receive a transcript notation indicating that the student has acquired a good working knowledge of spoken and written Spanish.

HISPANIC ST 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.

3 hrs.; two terms

Prerequisite: Grade 12 or OAC Spanish; or permission of the Department. Not available to students with credit in or registered in Hispanic Studies 2Z06. Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

HISPANIC ST 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.

5 hrs. (including lab. practice); two terms

Prerequisite: Open, except to students with credit in Grade 12 or OAC Spanish or equivalent.

Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

HISPANIC ST 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.

3 hrs.; one term

Prerequisite: Hispanic Studies 1A06; or credit in or concurrent registration in Hispanic Studies 2Z06; or permission of the Department.

HISPANIC ST 2B03 INTRODUCTION TO THE CULTURE OF SPAIN

A course which surveys the development of Spanish art, literature, and politics from the earliest times.

3 lects.; one term

Prerequisite: Hispanic Studies 1A06 or 1Z06; or permission of the Department.

HISPANIC ST 2C03 INTRODUCTION TO THE CULTURE OF SPANISH AMERICA

A survey of the development of Spanish America from pre-Columbian times to the present day.

3 lects.; one term

Prerequisite: Hispanic Studies 1A06 or 1Z06; or permission of the Department.

HISPANIC ST 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.

3 hrs.; 2 terms

Prerequisite: Hispanic Studies 1Z06. Not available to students with credit in or registered in Hispanic Studies 1A06.

HISPANIC ST 3D03 LANGUAGE PRACTICE II

A course with two main objectives: to teach the rudiments of translation into and out of Spanish, and to train the student to read a text in Spanish, to assimilate it, to isolate the essential ideas and to reproduce them concisely in his or her own words.

3 lects.; one term

Prerequisite: Hispanic Studies 2A03, or permission of the Department. Not available to students with credit in Hispanic Studies 3AA3.

HISPANIC ST 3DD3 ADVANCED LANGUAGE PRACTICE

A continuation of Hispanic Studies 3D03. The emphasis is on the precis and on translation into and out of Spanish. A variety of texts of increasing difficulty will be used for both purposes.

3 hrs.; one term

Prerequisite: Hispanic Studies 3D03, or permission of the Department. Not available to students with credit in Hispanic Studies 4AA3.

HISPANIC ST 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.

3 hrs.; one term

Prerequisite: Hispanic Studies 3DD3, or permission of the Department. Not available to students with credit in Hispanic Studies 3A03.

HISPANIC ST 4II3 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.

Tuts.; one term

Prerequisite: Registration in Level IV of a Hispanic Studies programme, and permission of the Independent Study Committee for Hispanic Studies.

HISPANIC ST 4LL3 SPANISH AMERICAN NOVEL

A study of the novel of the Twentieth Century with emphasis on the *Boom* generation.

3 lects.; one term

Prerequisite: Hispanic Studies 2C03 or 2E03; or permission of the Department. *Offered in alternate years.*

HISPANIC ST 4M03 THE SPANISH NOVEL OF THE 20TH CENTURY

Representative Spanish novels of the post-civil war period.

3 lects.; one term

Prerequisite: Hispanic Studies 2B03 or 2E03; or permission of the Department. *Offered in alternate years.*

HISPANIC ST 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.

3 lects.; one term

Prerequisite: Hispanic Studies 2B03 or 2E03; or permission of the Department. *Offered in alternate years.*

HISPANIC ST 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.

3 lects.; one term

Prerequisite: Hispanic Studies 2B03 or 2E03; or permission of the Department. *Offered in alternate years.*

HISTORY

HISPANIC ST 4PP3 MEDIEVAL SPANISH LITERATURE

A survey of the major themes in writings of the period 1100 to 1500. Early love poetry, the *Poema de Mio Cid*, the *Libro de buen amor*, the *Celestina* and the *Coplas* of Jorge Manrique will be among the works studied.

Seminar (3 hrs); one term

Prerequisite: Hispanic Studies 2B03 or 2E03; or permission of the Department.
Offered in alternate years.

HISPANIC ST 4SS3 THE SPANISH-AMERICAN SHORT STORY

A study of the evolution of the Spanish-American short story from Quiroga to Garcia Marquez.

3 lects.; one term

Prerequisite: Hispanic Studies 2C03 or 2E03; or permission of the Department.
Offered in alternate years.

HISPANIC ST 4T03 TOPICS IN HISPANIC LITERATURE

Previous topics include: The Enlightenment in Spain, The Spanish American Essay. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Hispanic Studies 2B03 and 2C03 or 2E03.

Hispanic Studies 4T03 may be repeated, if on a different topic, to a total of 6 units.

History

Faculty as of January 15, 1992

John C. Weaver/Chair

Professors Emeriti

Ezio Cappadocia/B.A., M.A. (Toronto), Ph.D. (Chicago)

Charles M. Johnston/B.A. (McMaster), M.A., Ph.D. (Pennsylvania)

John H. Trueman/B.A., M.A. (Toronto), Ph.D. (Cornell)

Professors

Alan Cassels/M.A. (Oxford), Ph.D. (Michigan), F.R.H.S.

Paul S. Fritz/B.A. (Queen's), M.A. (Wisconsin), Ph.D. (Cambridge), F.R.H.S.

David P. Gagan/B.A., M.A. (Western), Ph.D. (Duke)

Daniel J. Geagan/A.B. (Boston), Ph.D. (Johns Hopkins)/History & Classics

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

James D. Alsop/B.A. (Winnipeg), M.A. (Western), Ph.D. (Cambridge), F.R.H.S.

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)

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)

Harry E. Turner/B.A. (McMaster), M.A. (Toronto)

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)

Ruth Frager/B.A. (Rochester), M.A., Ph.D. (York)

J. Michael Gauvreau/B.A. (Laurentian), M.A., Ph.D. (Toronto)

Evan Haley/A.B. (Dartmouth), Ph.D. (Columbia)/Classics & History

Jose do Nascimento Raposo/B.A. (Toronto), M.A., Ph.D. (York)

Liana Vardi/B.A. (McGill), M.A. (Concordia), Ph.D. (McGill)

Instructors

Paul Doerr/B.A., M.A. (Waterloo)/part-time

Kathy Garay/B.A. (East Anglia), M.A. (McMaster), Ph.D. (Toronto)/part-time

Beryl Haslam/B.A., Cert.Ed. (Bristol), M.A., Ph.D. (McMaster)/part-time

George Sheppard/B.A., M.A. (Laurentian), Ph.D. (McMaster)/part-time

Stanley Vittoz/B.A. (Wayne State), M.A. (SUNY Buffalo), Ph.D. (York)/part-time

Canada Research Fellow

Thomas M. Prymak/B.A., M.A. (Manitoba), Ph.D. (Toronto)/part-time

Associate Members

Peter J. George/Economics/M.A., Ph.D. (Toronto)

George Paul/Classics/M.A. (Oxford), Ph.D. (London)

Charles G. Roland/Family Medicine/B.Sc. (Med.), M.D. (Manitoba)

Department Notes:

1. The Department of History offers three 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 1D06 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 any of these courses. Students may take only one of these courses.
2. Enrolment in any Level IV History course will be limited to twelve students. Students must be registered in an Honours History programme or have a History C.A.A. of 7.0 in another 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; Others. Within each category, preference will be determined by the student's C.A.A. Students are expected to preregister in March for seminars; late placement will be made according to availability of seminars.
3. Students interested in Ancient History are advised to examine the courses in Classics offered by the Department of Classics.

HISTORY 1C06 THE MODERN WORLD: THE ERA OF EUROPEAN PRIMACY

A study of the background and development, from the French Revolutionary Era to the present, of the principal political, intellectual, and economic factors that have shaped the 20th-century world.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open. Students may take only one Level I History course.

HISTORY 1D06 THE CIVILIZATION OF THE WEST

A study of the principal themes and issues in European history from the Fall of the Roman Empire to the twentieth century.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open. Students may take only one Level I History course.

HISTORY 1L06 HISTORY OF ARCHAEOLOGY OF THE ANCIENT WORLD

The history of the Ancient Near East, Greece, and Rome based on documentary sources and archaeological evidence.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open. Students may take only one Level I History course.

Same as 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.

3 lects.; two terms

Prerequisite: Open to students 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.

3 lects.; two terms

Prerequisite: Open to students in Level II and above.

HISTORY 2E06 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.

3 lects.; two terms

Prerequisite: Open to students in Level II and above.

Same as Religious Studies 2O06.

HISTORY 2H06 UNITED STATES HISTORY

The history of the United States from the Colonial Era to the Second World War.

3 lects.; two terms

Prerequisite: Open to students 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'. 3 lects.; two terms

Prerequisite: Open to students 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.

3 lects.; two terms

Prerequisite: Open to students 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).

3 lects.; two terms

Prerequisite: Open to students in Level II and above.

Same as Classics 2G06.

HISTORY 2M06 EUROPEAN SOCIETY FROM ABSOLUTISM TO DEMOCRACY

An analysis of the main political, social, and cultural forces shaping European Society from 1740 to 1918. The course will focus on the formation of modern political institutions, social classes and ideologies.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open to students in Level II and above.

HISTORY 2N06 BRITISH HISTORY 1500 TO THE PRESENT

Emphasis will be placed on the main political, religious, economic and social developments.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open to students in Level II and above.

HISTORY 3A03 IMPERIAL ISLAM: THE OTTOMANS, THE SAFAVIDS, AND THE MOGULS

A survey of the three great civilizations of the middle period of Islam (1500-1800) which will examine the similarity of the Islamic institutions in each and the differences stemming from the distinct cultural traditions: Turkish, Persian and Indian.

3 hrs. (lects. and discussion); one term

Prerequisite: Open to students in Level II and above.

Alternates with History 3AA3.

HISTORY 3AA3 ISLAM AND THE WEST: HISTORICAL PERCEPTIONS OF THE OTHER

This course will explore the historical origins of the East-West conflict, from the rise of Islam until the present day, concentrating on conceptions of Muhammad and Islam in the Middle Ages; the crusades; the historiography of the Middle East in Europe and the discovery and reactions of Muslims to the West from the 9th century forward.

3 hrs. (lects. and discussion); one term

Prerequisite: Open to students in Level II and above.

Alternates with History 3A03.

HISTORY 3B03 MODERN JAPAN

A survey of 19th and 20th century Japan, with emphasis on political developments, social change, and Japan's relations with East Asia and the West.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

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.

3 lects.; one term

Prerequisite: Six units of History or permission of the Department.

HISTORY 3D03 THE FRENCH REVOLUTION

A study of the origins, nature and impact of the French Revolution, and of the legacy of the Revolutionary-Napoleonic period.

3 hrs. (lects. and discussion); one term

Prerequisites: One of History 1D06, 2A06, 2M06; or permission of the Department.

Alternates with History 3W03.

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), as well as the United States' relations with the Communist and Third Worlds.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: History 2H06; or permission of the Department.

HISTORY 3EE3 HISTORY OF MEDICINE IN CANADA

An examination of the development of medical and health services in Canadian

history. Emphasis will be on the interaction between society and medicine, rather than the technical aspects of medicine.

3 hrs. (lects. and discussion); one term

Prerequisite: Open to students in Level II and above.

HISTORY 3F03 MEDIEVAL SOCIETY

An examination of the aristocratic, monastic, urban and rural communities of the Middle Ages. Attention will be given to patterns of social organization as well as to such specific themes as gender, popular piety, justice and warfare.

3 hrs. (lects. and discussion group); one term

Prerequisite: One of History 1D06, 2I06; or permission of the Department.

HISTORY 3H06 THE HISTORY OF MODERN RUSSIA

A survey of the history of Russia with major emphasis on the 19th and 20th centuries.

3 lects.; two terms

Prerequisite: Registration in any programme in History; or permission of the Department.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Alternates with History 3I03.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Alternates with History 3HH3.

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.

3 lects.; two terms

Prerequisite: Six units of History; or permission of the Department.

HISTORY 3J06 GERMANY AND AUSTRIA FROM THE HABSBURGS TO HITLER

An analysis of major political, social, and cultural developments in the German states and Austria from the Reformation to 1955.

3 hrs. (lects. and discussion groups); two terms

Prerequisite: Open to students in Level II and above.

HISTORY 3JJ3 CRIME, CRIMINAL JUSTICE AND PUNISHMENT IN MODERN HISTORY

A study of the changing face of the institutions of criminal justice, and of criminal behaviour, as revealed in statistical and conventional historical works. The focus will be on North America, Great Britain and France.

3 lects.; one term

Prerequisite: Open to students in Level II and above, with a minimum of 6 units of History.

Alternates with History 3O03.

Enrolment is limited.

HISTORY 3K03 THE SOCIAL HISTORY OF ANGLOPHONE CANADA, 1784-1890

A survey of the development of anglophone society in Canada from the beginnings of agricultural settlement to the industrialization of Ontario and the opening of the West.

3 lects.; one term

Prerequisite: History 2J06; or permission of the Department.

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.

3 lects.; one term

Prerequisite: History 2J06; or permission of the Department. Not available to students with credit in History 3KK6.

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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

Same as Classics 3LL3.

HISTORY

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.

3 lects.; one term

Prerequisite: History 2J06; or permission of the Department. Not available to students with credit in History 3KK6.

Alternates with History 3L03.

HISTORY 3MM3 THE ROMAN EMPIRE

Rome, Italy and the provinces from the creation of an autocracy by Augustus until the end of the 2nd century A.D.: developments in government, society, defence and economy; the Romanization of the provinces. Archaeological evidence and new approaches to problems will be considered.

3 hrs. (lects. and discussion groups); one term

Prerequisite: History 1L06 or 2L06, or 6 units of Classics; or permission of the Department.

Offered in alternate years.

Same as Classics 3MM3.

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.

3 lects.; one term

Prerequisite: History 2J06, or registration in a Labour Studies programme; or permission of the Department.

Offered in alternate years.

HISTORY 3O03 THE CITY IN NORTH ATLANTIC DEVELOPMENT

This course examines the material culture of the North American city, including town planning, housing, commercial and industrial architecture and transportation with select comparison made between the European and North American city.

3 lects.; one term

Prerequisite: History 2J06 or 2H06; or permission of the Department.

Alternates with History 3J13.

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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: Open to students 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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: History 2N06, or permission of the Department.

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.

3 lects.; one term

Prerequisite: Open to students 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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: Open to students in Level II and above.

HISTORY 3S03 THE CRAFT OF THE HISTORIAN

An exploration of some basic issues involved in the study and writing of history. Themes will include topics such as the varieties of history, theories of causation, the uses of the past, and the place of history in popular culture.

3 lects.; one term

Prerequisite: Registration in any programme in History; or permission of the Department.

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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: Open to students in Level II and above.

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.

3 hrs. (lects. and discussion groups); one term

Prerequisite: History 2N06; or permission of the Department.

HISTORY 3U03 ASPECTS OF FRENCH CANADIAN HISTORY

Emphasis will be placed on Quebec from the 18th to mid-20th Century.

3 hrs. (lects. and discussion groups); one term

Prerequisite: History 2J06; or permission of the Department.

Offered in alternate years.

HISTORY 3UU3 GREEK SOCIETY IN THE AGE OF PERICLES

A description and analysis of selected aspects of the social life of Athens in the second half of the 5th century B.C., based upon contemporary literature, documents and artifacts. Lectures will deal in greater depth with topics introduced in Classics 2U03, as well as others peculiar to Periclean Athens: work and leisure, education, religion, marriage and family life, the roles of women, war and peace, social structure, and social mobility.

3 lects.; one term

Prerequisite: History 1L06 or 2L06, or six units of Classics courses, including 2U03; or Classics 2G06.

Alternates with History 3VV3.

Same as Classics 3UU3.

HISTORY 3VV3 ROMAN SOCIETY IN THE AGE OF AUGUSTUS

A description and analysis of selected aspects of social life of Rome at the end of the 1st century B.C. based upon contemporary literature, documents, and artifacts. Lectures will deal in greater depth with topics introduced in Classics 2V03, as well as others peculiar to Augustan Rome: work and leisure, education, religion, marriage and family life, the roles of women, war and peace, social structure, and social mobility.

3 lects.; one term

Prerequisite: History 1L06 or 2L06, or Classics 2V03 and 3 additional units of Classics; or Classics 2G06.

Alternates with History 3UU3.

Same as Classics 3VV3.

HISTORY 3W03 THE SOCIALIST TRADITION IN MODERN EUROPE

An examination of major developments in socialist ideology in Modern Europe: early socialism, Marxism, anarchism, syndicalism, revisionism, Leninism; the conflict between libertarian socialism, communism and democratic socialism in the twentieth century.

3 hrs. (lects. and discussion); one term

Prerequisite: Open to students in Level II and above.

Alternates with History 3D03.

HISTORY 3WW3 TOPICS IN GREEK AND ROMAN SOCIETY

Previous topics include: Women in Society, Slavery in Greek and Roman Antiquity. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: History 2L06, or six units of Classics including 2U03 or 2V03.

Offered in alternate years.

Same as Classics 3WW3.

History 3WW3 may be repeated, if on a different topic, to a total of 6 units.

HISTORY 3X03 CANADIAN AND AMERICAN WOMEN'S HISTORY

An examination of the history of Canadian and American women in the nineteenth and twentieth centuries. This includes investigation of paid and unpaid labour, sexuality, child-rearing, formal education and religion.

3 lects.; one term

Prerequisite: History 2H06 or 2J06, or Women's Studies 2A06; or permission of the Department.

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.

3 lects.; one term

Prerequisite: Open to students 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Alternates with History 3XX3.

HISTORY 4A06 SPECIAL TOPICS IN BRITISH HISTORY (1688-1830)

Seminar (2 hrs.); two terms

Prerequisite: History 2N06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: One of History 2N06, 3QQ3, 3SS3, or 3TT3, and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: History 2J06 or 3KK6 or 3L03 and 3M03, and registration in Level III or IV or any Honours programme in History; or permission of the Department. *Students may take only two of History 4B06, 4CC6, 4H06, 4N06, and 4W06.*

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: History 3B03 and registration in Level III or IV of any Honours programme in History or Japanese Studies; or permission of the Department. *Alternates with History 4G06.*

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: History 2J06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Students may take only two of History 4B06, 4CC6, 4H06, 4N06, and 4W06.

Enrolment is limited.

HISTORY 4D06 SPECIAL TOPICS IN GREEK HISTORY

Investigations into Greek social history and its interpretation.

Seminar (2 hrs.); two terms

Prerequisite: Six units from History 2L06, 3LL3, 3UU3, Classics 2U03, and registration in Level III or IV of any Honours programme in History, Classics; or permission of the Department.

Same as Classics 4D06.

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: History 2N06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4EE6 SOCIETY, SCIENCE AND THE MEDICAL PROFESSION IN 19TH- AND 20TH- CENTURY NORTH AMERICA

Selected topics in the history of professional medicine in Canada and the U.S.A., and its roots in western Europe: topics will include theory and practice (particularly the relationship between bacteria and disease), medical education, and the growth of institutions such as hospitals and departments of public health.

Seminar (2 hrs.); two terms

Prerequisite: One of History 2H06, 2J06, 3E06, 3EE3, 3KK6 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: History 2B06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Alternates with History 4BB6.

Enrolment is limited.

HISTORY 4GG6 THE MODERN MIDDLE EAST

Selected issues in the modern history of the Islamic world: the decline of the Ottoman Empire, nationalism, the Palestinian question.

Seminar (2 hrs.); two terms

Prerequisite: History 2E06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

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 (2 hrs.); two terms

Prerequisite: History 2J06 or 3X03 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Students may take only two of History 4B06, 4CC6, 4H06, 4N06, and 4W06.

Enrolment is limited.

HISTORY 4I06 SPECIAL TOPICS IN ROMAN HISTORY

Problems in the history of the Roman Empire.

Seminar (2 hrs.); two terms

Prerequisite: Six units from History 2L06, 3MM3, 3VV3, Classics 2V03, and registration in Level III or IV of any Honours programme in History or Classics; or permission of the Department.

Same as Classics 4I06.

Enrolment is limited.

HISTORY 4J06 SPECIAL TOPICS IN THE HISTORY OF THE UNITED STATES IN THE 20TH CENTURY

Seminar (2 hrs.); two terms

Prerequisite: One of History 2H06 or 3E06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4JJ6 INTERPRETING MODERN GERMANY

Studies in the history of modern Germany (1866-1945), exploring the formation of Germany's political culture from the foundation period through Weimar and the Third Reich. Special attention will be given to the range of interpretations found in recent German historiography.

Seminar (2 hrs.); two terms

Prerequisite: One of History 2M06 or 3J06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4K06 LABOUR AND THE LEFT IN MODERN EUROPE

An examination of the workers' movement in Europe since 1889. Topics include national variations in ideology and in the organization and practice of trade unions and political parties, as well as problems and strategies of international action.

Seminar (2 hrs.); two terms

Prerequisite: One of History 2M06, 2N06, 3H06, 3J06, and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4L06 SPECIAL TOPICS IN THE HISTORY OF THE UNITED STATES BEFORE 1865

Seminar (2 hrs.); two terms

Prerequisite: History 2H06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4LL6 THEMES IN ANCIENT HISTORY

An examination of at least two selected themes in Ancient History, particularly the history of the Greco-Roman world, with emphasis on the use of source materials, primary and secondary, literary and non-literary.

Seminar (2 hrs.); two terms

Prerequisite: Six units from History 2L06, 3LL3, 3MM3, 3UU3, 3VV3, and registration in Level III or IV of any Honours programme in History or Classics; or permission of the Department.

Same as Classics 4LL6.

Enrolment is limited.

HISTORY 4M06 SPECIAL TOPICS IN THE HISTORY OF THE RENAISSANCE AND THE REFORMATION

Seminar (2 hrs.); two terms

Prerequisite: One of History 2A06 or 3R03, and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4N06 CANADIAN HISTORIOGRAPHY

A study of the ideas of the major historians of Canada.

Seminar (2 hrs.); two terms

Prerequisite: History 2J06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Students may take only two of History 4B06, 4CC6, 4H06, 4N06, and 4W06.

Enrolment is limited.

HUMANITIES

HISTORY 4O06 RUSSIA AND REVOLUTION

The impact of modernization upon the Soviet state and society.

Seminar (2 hrs.); two terms

Prerequisite: History 3H06 and registration in Level III or IV of any honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4P06 CONTEMPORARY EUROPE

Topics in the history of Europe during the 20th century.

Seminar (2 hrs.); two terms

Prerequisite: Six units from History 2M06, 3A03, 3FF3, 3J06, 3K03, and registration in Level III or IV of any honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4Q06 SPECIAL TOPICS IN THE HISTORY OF MEDIEVAL EUROPE AND BYZANTIUM

Topics will include the consequences of the Barbarian invasions, diplomatic communications between West and East, relations between the Roman and Orthodox Churches, the impact of the Crusades, and the significance of the fall of Constantinople.

Seminar (2 hrs.); two terms

Prerequisite: History 2I06 and registration in Level III or IV of any honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4S06 ENGLISH MEDIEVAL HISTORY

Selected themes in the history of Medieval England.

Seminar (2 hrs.); two terms

Prerequisite: History 2I06 and registration in Level III or IV of any honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4U06 INDEPENDENT RESEARCH

A reading and/or research programme under the supervision of at least two members of the Department. A major paper is required, as well as a formal oral examination.

Prerequisite: Open to students in Level IV of any Honours programme in History with a History Average of at least 10.0 and permission of the Department.

Enrolment is limited.

HISTORY 4V06 PEASANTS IN EARLY MODERN EUROPE

An examination of the nature of European rural society between 1500 and 1800.

Topics include the economy, division of labour, the village, and popular culture.

Seminar (2 hrs.); two terms

Prerequisite: One of History 2A06, 2M06, and registration in Level III or IV of an honours programme in History; or permission of the Department.

Enrolment is limited.

HISTORY 4W06 THE CANADIAN CITY

An examination of the Canadian city, including the study of traditional local histories, as well as urban social history. The course will examine change in urban society, questions of health, housing, economic activity, planning, and politics.

Seminar (2 hrs.); two terms

Prerequisite: History 2J06 and registration in Level III or IV of any Honours programme in History; or permission of the Department.

Students may take only two of History 4B06, 4CC6, 4H06, 4N06 and 4W06.

Enrolment is limited.

HISTORY 4ZZ6 QUANTITATIVE METHODOLOGIES IN HISTORICAL RESEARCH

An introduction to the use of computers and quantitative methodologies in historical research.

Seminar (2 hrs.); two terms

Prerequisite: Registration in Level IV of any Honours programme in History with a History Cumulative Area Average of at least 9.0; or permission of the Department.

Offered in alternate years.

Enrolment is limited.

The following courses in the field of History are offered by the Department of Classics:

Classics 2U03 Greek Society

Classics 2V03 Roman Society

For Graduate Courses see *Calendar of School of Graduate Studies*.

Humanities (General)

HUMANITIES 2B06 THE THEMES OF WESTERN CIVILIZATION

A study of the ideas and issues that define the Western cultural tradition. The course views the concerns of modern artists and thinkers as a response to the two

ancient sources of Western civilization, the Greek and the Biblical. It concentrates on four figures in four crucial periods: Socrates in the context of Greek philosophy and drama; St Paul and the Judaeo-Christian tradition; Shakespeare and the birth of a secular age; Wagner and Romantic decadence.

2 lects., 1 tut.; two terms

Prerequisite: Open. Not available to students with credit in Humanities 1B06.

HUMANITIES 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.

2 lects.; 1 tut.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in, or registered in, Arts and Science 1B06, Humanities 1C03 or Philosophy 2R03.

Indigenous Peoples

(See *Thematic Areas of Study*)

Italian

Courses and programmes in *Italian* are administered within the Department of Modern Languages of the Faculty of Humanities.

Department Notes:

1. Students should note that the Department has classified its 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

2. Non-programme students who complete Italian 1Z06 or 1ZZ6, 2Z06, 2A03 and 2D03 or the completion of Italian 1A06, 2A03, 2D03, 3D03, and 3DD3, with a weighted average of at least 10.0 (A-), will receive a transcript notation indicating that the student has acquired a good working knowledge of spoken and written Italian.

ITALIAN 1A06 INTERMEDIATE ITALIAN

An intensive review of the grammatical structures of Italian and an introduction to composition, together with oral practice.

4 hrs.; two terms

Prerequisite: OAC Italian; or permission of the Department. Not available to students with credit in or registered in 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 practice the spoken language. This course is enhanced by a CALL (Computer-Aided Language Learning) module.

5 hrs. (including lab. practice); two terms

Prerequisite: Open, except to graduates of OAC Italian, or students with credit in or registered in Italian 1ZZ6. 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 practice the spoken language.

This course is enhanced by a CALL (Computer-Aided Language Learning) module.

5 hrs. (including lab. practice); two terms

Prerequisite: Open, except to graduates of OAC Italian, or students receiving credit for, or registered in, Italian 1Z06.

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.

2 hrs.; two terms

Prerequisite: Italian 1A06 or 2Z06, and registration in a programme in Italian; or permission of the Department. Departmental permission slip required.

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.

2 hrs.; two terms

Prerequisite: Italian 1A06 or 2Z06 with a grade of at least B-; or permission of the Department.

ITALIAN 2F03 ITALIAN NOVEL, NINETEENTH CENTURY AND TWENTIETH CENTURIES

This course will study Italian fiction in the 19th and 20th centuries, focussing on major authors such as Manzoni, Verga, Fogazzaro, Svevo, Pirandello and Italian neorealist authors, while also exploring the intellectual, cultural and psychological contexts of fiction.

3 lects.; one term

Prerequisite: Italian 1A06 or credit in or concurrent registration in Italian 2Z06. Not available to students with credit in Italian 3A03 and 3M03.

ITALIAN 2Z06 ITALIAN GRAMMAR PRACTICE

An intensive review of the grammatical structures of Italian and an introduction to composition, together with oral practice.

4 hrs.; two terms

Prerequisite: Italian 1Z06 or Italian 1ZZ6; or permission of the Department. Not available to students registered in or with credit in 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.

2 hrs.; two terms

Prerequisite: Italian 2A03 and 2D03, with a grade of at least B- or permission of the Department.

ITALIAN 3DD3 INTENSIVE LANGUAGE PRACTICE

An intensive oral language practice course, designed for the systematic comparison and interpretation of Italian and English discourse strategies.

2 hrs.; two terms

Prerequisite: Italian 2A03, and registration in a programme in Italian; or permission of the Department.

Enrolment is limited.

ITALIAN 3N03 NOVECENTO

This course will study Italian poetry and fiction in the 20th century, with emphasis on the Hermetic school of poetry and the neorealist school of fiction.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department. Not available to students with credit in Italian 3M03 and 4J03.

Offered in alternate years.

ITALIAN 3NN3 DRAMA

A study of Italian plays from the Renaissance to modern times from the literary as well as the theatrical perspective.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department. Not available to students with credit in Italian 3P03 and 3Q03.

Offered in alternate years.

ITALIAN 3R03 DANTE

A critical, mainly literary, course in the works of Dante. It will study some minor writings of Dante in some depth, before studying the *Divina Commedia*.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department. Not available to students with credit in Italian 4P03.

ITALIAN 3RR3 BOCCACCIO AND PETRARCH

A study of Petrarch's *Canzoniere* and Boccaccio's *Decameron*.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department.

ITALIAN 4G03 ROMANTICISM

This course will study Italian poetry and fiction of the Romantic Era with special emphasis on the works of Foscolo, Manzoni, Leopardi and their contribution to the Italian Risorgimento.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department.

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.

Tuts.; one term

Prerequisite: Registration in Level IV of a programme in Italian, and permission of the Independent Study Committee for Italian.

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.

2 tuts.; two terms

Prerequisite: A grade of at least B- in Italian 3D03, and registration in Level IV of an Italian programme; or permission of the Department.

ITALIAN 4R03 RENAISSANCE

A study of the literature of the Renaissance.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department.

ITALIAN 4T03 TOPICS IN ITALIAN LITERATURE

Previous topics include: Italian Criticism, Utopian Genres, Italian Theatre. Consult the Department concerning topic to be offered.

3 lects.; one term

Prerequisite: Registration in Level III or IV of a programme in Italian; or permission of the Department.

Offered in alternate years.

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

Koichi Shinohara (Religious Studies)/*Director*

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)

Y. Nogami (Physics)

Elizabeth Sharf (Art History; Religious Studies)

Robert Sharf (Religious Studies)

Richard Stubbs (Political Science)

Noriko Yokokura (Modern Languages)

Department Note:

Non-programme students who complete Japanese 1Z06, 2Z06 and 3ZZ6, with a weighted average of at least 10.0 (A-), will receive a transcript notation indicating that the student has acquired a good working knowledge of spoken and written Japanese.

JAPANESE

JAPANESE 1Z06 BEGINNER'S INTENSIVE JAPANESE

This course is designed to give students basic conversational skills in Japanese, while reading and writing exercises help to reinforce their understanding of the language.

5 hrs.(including lab. practice); two terms

Prerequisite: Open. 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 speaking, listening, reading and writing practice. Emphasis is on a more refined knowledge of Japanese grammar and expansion of vocabulary.

4 hrs.; two terms

Prerequisite: Japanese 1Z06, with a grade of at least B-; or permission of the Department of Modern Languages.

JAPANESE 3ZZ6 ADVANCED INTENSIVE JAPANESE

This course continues the study of written and spoken Japanese begun in Japanese 1Z06 and 2Z06. Particular attention will be focused on the development of the following language skills: conversational practice based on situational drills; study of advanced grammar structures; development of reading skills based on selected literary materials; writing short essays; continued study of kanji.

4 hrs.; two terms

Prerequisite: Japanese 2Z06 or permission of the instructor.

LABOUR STUDIES

JAPANESE 4Z03 ADVANCED PRACTICE IN JAPANESE

Advanced studies in written and spoken Japanese.

4 hrs.; one term

Prerequisite: Japanese 3ZZ6, or permission of the instructor.

JAPANESE STUDIES

JAPANESE ST 2P06 JAPANESE CIVILIZATION

Introduction to Japanese history, society, and culture through a study of religious traditions, literature, and art of Japan.

2 lects., 1 tut.; two terms

Prerequisite: Open to students in Level II and above.

Same as Religious Studies 2P06.

JAPANESE 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as History 3B03.

JAPANESE 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.

2 lects., 1 tut.; one term

Prerequisite: Open to students in Level II and above.

One of Religious Studies 1B06 or 2MM6 or Japanese Studies 2P06 is recommended.

Same as Religious Studies 3E03.

JAPANESE ST 3J03 JAPANESE ART

An introduction and discussion of major aspects of the visual arts of Japan.

3 lects.; one term

Prerequisite: Art History 1A06; or permission of the instructor.

Same as Art History 3J03.

JAPANESE ST 3JJ3 GEOGRAPHY OF JAPAN

Human and physical geography of Japan with emphasis on population characteristics and demographic processes.

3 lects.; one term

Prerequisite: Geography 1B06 or registration in a Japanese Studies programme.

Same as Geography 3JJ3.

JAPANESE ST 3UU3 THE BUDDHIST TRADITION IN EAST ASIA

The development of Buddhism as it moves from India through East Asia, and interacts with the indigenous cultural traditions of China and Japan. Topics include Pure Land, Zen, and Japanese "New Religions".

2 lects., 1 tut.; one term

Prerequisite: One of Religious Studies 1B06, 2J06, 2MM6; or permission of the instructor. Not available to students with credit in Religious Studies 3Q06.

Same as Religious Studies 3UU3.

A.L. Robb (Economics)

R. Adams (Business)

B. Basadur (Business)

J. Johnson (Dean) ex officio

W. Lewchuk (Economics/Labour Studies)

S. Palmer (Social Work)

J. Rose (Business)

R. Storey (Labour Studies/Sociology)

P. Sugiman (Sociology)

D. Wells (Labour Studies/Political Science)

C. Yates (Labour Studies/Political Science)

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

Prerequisite: Open.

LABR ST 1AA3 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

Prerequisite: Open.

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. Not available to students with credit in Labour Studies 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.

Same as Term I of Social Work 2B06. (Students not in a Social Work programme must register for this course as Labour Studies 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: Labour Studies 2B03 and registration in a Labour Studies Programme.

Must be taken in the same academic session as Labour Studies 2B03. Same as Term II of Social 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. Not available to students with credit in Labour Studies 1B03.

LABR ST 3A03 ECONOMIC ISSUES FOR LABOUR STUDIES

This course analyzes economic issues of importance to Labour Studies. 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: Economics 1A06 and registration in a Labour Studies programme.

LABR ST 3AA3 CURRENT LABOUR ISSUES

Content may vary. In 1991-92 the course focussed on 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: Registration in a Labour Studies programme. Labour Studies 2A06 is recommended.

LABR ST 3B03 ECONOMICS OF TRADE UNIONISM AND LABOUR

Topics will 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.

Lectures and discussion; one term

Prerequisite: Economics 1A06, and registration in a Labour Studies programme.

Same as Economics 2T03.

Labour Studies

Faculty as of January 15, 1992

A.L. Robb/Director

V. Walters/Director (As of July 1, 1992)

Professors

A.L. Robb/M.A. (British Columbia), Ph.D. (Essex)

Associate Professors

W. Lewchuk/M.A. (Toronto), Ph.D. (Cambridge)

Assistant Professors

R. Storey/B.A. (Toronto), M.A. (Dalhousie), Ph.D. (Toronto)

D. Wells/B.A. (Western), M.A. (British Columbia), Ph.D. (Toronto)

C. Yates/B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)

Lecturer (part-time)

O. Rafferty/M.A. (McMaster)

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. Enrolment in Labour Studies courses beyond Level I is open only to Labour Studies students.

The Honours B.A. Programme and the B.A. Programme in Labour Studies are supervised and co-ordinated by an interdisciplinary Committee of Instruction:

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: Labour Studies 2A06 or permission of the instructor and registration in a Labour Studies programme.

Same as Commerce 4BF3.

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.

Generally offered in alternate years.

Not offered in 1992-93.

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.

Generally offered in alternate years.

Not offered in 1992-93.

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: Sociology 1A06, and registration in a Labour Studies programme.

Same as Sociology 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 with a Minor in Another Subject.

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.

Same as 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.

Same as Commerce 4BH3.

Linguistics

LINGUIST 1A06 THE STUDY OF LANGUAGE

A far-reaching 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.

3 lects.; two terms

Prerequisite: Open.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

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.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Linguistics 3B03.

Same as Anthropology 2AA3.

LINGUIST 2L03 PHONETICS

A study of the sounds of language and the articulatory capabilities of man.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Anthropology 2L03.

LINGUIST 2LL3 LANGUAGES OF THE WORLD

A sociolinguistic survey of the world's languages under topics such as official and vernacular languages, multilingualism, language loss and spread, and language conflict.

3 hrs. (lects. and discussion); one term

Prerequisite: Open to students in Level II and above.

Same as Anthropology 2LL3.

LINGUIST 2M03 PHONOLOGY

A study of the patterns of distinctive sounds in the world's languages.

3 lects.; one term

Prerequisite: Anthropology 2L03 or Linguistics 2L03; or permission of the instructor.

Same as Anthropology 2M03.

LINGUIST 2Q03 LINGUISTICS AND THE STUDY OF CULTURE

A study of the rise of analytical thinking as a distinct mode of thought, the use of such thinking in structural linguistics, and its extension to structuralism as practiced in anthropology and other disciplines. The work of Levi-Strauss will be examined.

3 hrs. (lects. and discussion); one term

Prerequisite: Open to students in Level II and above.

Same as Anthropology 2Q03.

LINGUIST 3A06 THE SOCIAL SITUATION OF THE MODERN EUROPEAN LANGUAGES

A survey of the social functions, changes in status and attendant linguistic problems of the languages of Europe. Among the topics covered are the growth of standard languages, modernization, dialects and dialect levelling, language planning, language attitudes, the impact of nationalism and internationalism, and the spread of European languages throughout the world.

3 lects.; two terms

Prerequisite: Open to students in Level II and above.

LINGUIST 3I03 SYNTAX

A study of the human capacity to form words into sentences. The emphasis will be upon generative transformational grammar.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as Anthropology 3I03.

LINGUIST 3M03 MORPHOLOGY AND SEMANTICS

The study of word formation and patterns of meaning in language.

3 lects.; one term

Prerequisite: Anthropology 3I03 or Linguistics 3I03; or permission of the instructor.

Same as Anthropology 3M03.

Latin

(See *Classics, Latin*)

MATERIALS SCIENCE AND ENGINEERING

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: Open to students in Level III or IV of the Modern Language and Linguistics programme or Honours French: Programme B; or permission of the Programme Co-ordinator (TSH-626).

Offered in alternate years.

LINGUIST 3Y03 HISTORICAL LINGUISTICS

An advanced course covering the techniques for reconstructing ancestral languages. Language families, cognate sets, sound laws, internal and comparative reconstruction, and mechanisms of change will be treated.

3 hrs. (lects. and discussion); one term

Prerequisite: Anthropology 1L03 or Linguistics 1A06.

Same as Anthropology 3Y03.

LINGUIST 4B03 APPLIED LINGUISTICS: SECOND LANGUAGE TEACHING METHODOLOGY

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.

3 lects.; one term

Prerequisite: Registration in Level III or IV of the Modern Languages and Linguistics programme; or permission of the Programme Co-ordinator. Not available to students with credit in Linguistics 4A06.

LINGUIST 4C03 COMPUTATIONAL LINGUISTICS

The course studies the applications of computer technology in general, and natural language processing in particular including parsers and machine translation.

2 lects., 1 lab.; one term

Prerequisite: Registration in Level III or IV of any programme; or permission of the Co-ordinator. Not available to students with credit in, or registration in, Linguistics 4A06.

LINGUIST 4I03 INDEPENDENT STUDY

The student will prepare, under the supervision of a faculty member, a research paper involving independent study in an area where the student has already demonstrated competence.

Tuts.; one term

Prerequisite: Registration in Level IV of Honours Modern Languages and Linguistics and permission of the Independent Study Committee for Linguistics.

LINGUIST 4K03 ADVANCED TOPICS IN LINGUISTICS

An advanced course covering many areas of linguistic theory through the intensive examination of a language or set of languages.

3 hrs. (lects.); one term

Prerequisite: 12 units of Linguistics above Level I; or permission of the instructor.

Same as Anthropology 4K03.

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 beyond Level I.

Same as Anthropology 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 (3 hrs.); one term

Prerequisite: One of Linguistics 2L03, 2Q03, or 3I03. Not available to students with credit in Linguistics 2T03.

Same as Anthropology 4T03.

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

Z.S. Basinski/B.Sc., D.Phil., D.Sc. (*Oxford*), O.C., F.R.S., F.R.S.C./Research Professor.

J. David Embury/B.Sc. (*Manchester*), Ph.D. (*Cambridge*), P.Eng., F.R.S.C.

Gordon A. Irons/B.A.Sc. (*Toronto*), Ph.D. (*McGill*), P.Eng.

M. Brian Ives/B.Sc., Ph.D. (*Bristol*), F.A.S.M., P.Eng.

Gyan P. Johari/B.Sc., M.Sc., Ph.D. (*Gorakhpur*)/Chair of Glass Science and Technology

D. Alan R. Kay/B.Sc., Ph.D. (*Glasgow*)

Wei-Kao Lu/B.S. (*Chen-Kung*), Ph.D. (*Minnesota*)

Patrick S. Nicholson/B.Sc. (*Leeds*), M.Sc., Ph.D. (*California, Berkeley*), P.Eng.

Gary R. Purdy/M.Sc. (*Alberta*), Ph.D. (*McMaster*), P.Eng., F.R.S.C.

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*), P.Eng.

David S. Wilkinson/B.A.Sc. (*Toronto*), Ph.D. (*Cambridge*), P.Eng.

Associate Professors

Prasad A. Apte/Ph.D. (*McMaster*)/part-time

Dennis McCutcheon/B.Sc., M.B.A. (*McMaster*)/part-time

Assistant Professors

Adrian Kitai/B.Sc. (*McMaster*), Ph.D. (*Cornell*), P.Eng.

Anthony Petric/B.A.Sc. (*Toronto*), Ph.D. (*Ecole Polytechnique*), P.Eng.

Gu Xu/M.Sc., Ph.D. (*Pittsburgh*), D.E.S. (*Columbia*)

CERAMICS

CERAMICS 3A04 CERAMIC AND GLASS TECHNOLOGY

Ceramics: powder synthesis and characterization; surface electrochemistry; shaping and sintering. Glasses: melting, forming and quality control; annealing and tempering; ceramic and metallic glazes.

2 lects.; both terms

Prerequisites: Chemistry 2P06; Materials 2C04.

CERAMICS 3G03 MICROSTRUCTURE OF CERAMICS AND GLASS

A laboratory course in modular form, complemented by lectures. Microstructures of refractories, ceramics and glass and their correlation with synthesis techniques, phase equilibria and transformation kinetics.

1 lect.(1), 2 labs.(3); second term

Prerequisite: Materials 2G04. Not open to students with credit in Materials 3B04, 3G03 or Metallurgy 3G03.

CERAMICS 4R03 CERAMIC SCIENCE

Microstructural development and properties of traditional ceramics. Acidic, basic, neutral and nonoxidizing refractories; ferro-electric, piezo-electric and ferromagnetic ceramics; super-ionic and structural ceramics.

3 lects., second term.

Prerequisite: Materials 3D06, 3E06 or registration in both Materials 3E06 and in Level IV of the Ceramic Engineering and Management Programme.

CERAMICS 4S03 GLASS SCIENCE

Theoretical and experimental aspects of silicates, metallic glasses and glass-ceramics. Modern concepts and application of non-crystalline solids.

3 lects., first term.

Prerequisite: Materials 3D06, 3E06.

MATERIALS

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.

2 lects., 1 tut.; first term

Prerequisite: Registration in or completion of Natural Sciences I. Not open to students who are registered in the Faculty of Engineering, or who are registered in or have completed Engineering 2003.

MATLS 1B03 INTRODUCTION TO PROPERTIES OF MATERIALS

The structure of materials, its control and effect on properties; crystallography, microstructural development, stiffness and strength, plastic flow and fracture.

2 lects., 1 tut.; second term

Prerequisite: Credit or registration in Materials 1A03; or permission of the instructor. Not open to students who are registered in the Faculty of Engineering or who are registered in or have completed Engineering 2003.

Manufacturing Engineering

(See *Mechanical Engineering, Manufacturing Engineering*)

Materials Science and Engineering

Faculty as of January 15, 1992

G.A. Irons/*Chair*

Professors Emeriti

John S. Kirkaldy/M.A.Sc. (*British Columbia*), Ph.D. (*McGill*), F.R.S.C., F.A.S.M., P.Eng.

MATLS 2C04 INTRODUCTION TO MATERIALS PROCESSING

The application of chemical principles to materials processing, including metals, ceramics, polymers and electronic materials. Thermochemistry of oxides, sulphides and halides; electrochemistry; kinetics of heterogeneous reactions; interfacial phenomena.

3 lects., 1 tut. or lect.; second term

Prerequisite: Chemistry 2P06 which may be taken concurrently.

MATLS 2G04 STRUCTURE OF ENGINEERING MATERIALS

Atomic and molecular structure of engineering materials, including crystalline and amorphous solids; structural defects; methods of structure determination.

3 lects., 1 lab.(3); first term

Prerequisite: Chemistry 1A06 or 1E03 and registration in a programme administered by the Department of Materials Science and Engineering.

MATLS 2H02 EXPERIMENTAL METHODS AND COMMUNICATION

Methods of technical communication, involving oral and written practice; basic experimental methods of acquiring, analyzing and presenting data.

2 labs.(3); second term

Prerequisite: Computer Science 1MA3 or Engineering 1D04, and Chemistry 1A06 or 1E03, and registration in a programme administered by the Department of Materials Science and Engineering.

MATLS 3D06 THERMODYNAMICS OF MATERIALS

Foundations of thermodynamics from classical, statistical, quantum mechanical and quasichemical points of view.

3 lects.; both terms

Prerequisite: Materials 2C04 and one of Chemistry 2P06, Engineering 2W04, Physics 2H03, Chemical Engineering 2D04 and 2F04.

MATLS 3D03 THERMODYNAMICS OF MATERIALS I

The first half of Materials 3D06, with emphasis on 'classical' topics such as equilibrium, solid solutions and phase diagrams.

3 lects.; first term

Prerequisite: One of Chemistry 2P06, Engineering 2W04, Physics 2H03, Chemical Engineering 2D04 and 2F04.

MATLS 3E06 TRANSPORT PROCESSES

Solution of problems involving diffusion in solids and their application to phase transformations. Mechanisms of diffusion. Heat transfer by conduction, convection and radiation, with application to materials processing. Emphasis on the setting up of kinetic relationships using conceptual models.

2 lects., 2 tut.; both terms

Prerequisite: Chemistry 2P06 and one of Mathematics 2M06, or 2P04 and 2Q04, or 2G03 and 2O03.

MATLS 3F02 MATERIALS LABORATORY

Experimental techniques in materials preparation, characterization and properties.

2 labs.(3); first term

Prerequisite: Materials 2G04, 2H02.

MATLS 3G03 MICROSTRUCTURE OF MATERIALS

A laboratory course in modular form, complemented by lectures. Microstructure of metallic and non-metallic materials including composites and their correlation with phase equilibria and transformation kinetics.

1 lect.(1), 2 labs.(3); second term

Prerequisite: Materials 2G04. Not open to students with credit in Ceramics 3G03, Materials 3B04 or Metallurgy 3G03.

MATLS 3H03 THERMODYNAMICS OF MATERIALS II

The second half of Materials 3D06, with emphasis on 'atomistic' topics such as statistical mechanics, ordering, interfaces and defects.

3 lects.; second term

Prerequisite: One of Chemistry 2P06, Engineering 2W04, Physics 2H03, or Chemical Engineering 2D04 and 2F04.

MATLS 3P03 MECHANICAL BEHAVIOUR OF MATERIALS

Elastic and plastic deformation, creep, fatigue and fracture of engineering materials. Application to mechanical design. Microstructural descriptions of flow and fracture in crystalline and amorphous materials. Basic concepts of fracture mechanics.

3 lects.; first term

Prerequisite: Engineering 2O03 or Materials 1A03 and 1B03, Engineering 2P04 or 2R04, and registration in a programme administered by the Department of Materials Science and Engineering.

Not open to students who have credit in or are registered in Engineering 3P03.

MATLS 4A01 INDUSTRIAL PROJECTS

The preparation of a report based on summer experience and/or industrial visits. The report will be defended orally. The Chair should be consulted for detailed requirements, in the Spring of Level III.

Prerequisite: Registration in Level IV Ceramic, Materials or Metallurgical Engineering, Honours Materials Science or Materials Science Major.

MATLS 4D03 CORROSION

The oxidation of metals and alloys; electrochemical principles and methods applied to aqueous corrosion and its control.

3 lects.; second term

Prerequisite: One of Chemistry 2P06, Chemical Engineering 2F04.

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.

3 lects.; first term

Prerequisite: Materials 3D03 or 3D06, and 3E06.

MATLS 4K04 SENIOR THESIS

Each student will have an individual experimental research problem. 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: Registration in the final level of a programme administered by the Department of Material Science and Engineering.

MATLS 4L04 SENIOR LABORATORY & PLANT VISITS

A series of experiments, comprising six afternoons, that draw upon a broad spectrum of materials and techniques; includes industrial plant visits and student oral and written reports.

2 labs (3); both terms

Prerequisite: Materials 3D06 and Materials 3B04, or Ceramics 3G03 or Materials 3G03 or Metallurgy 3G03. Not open to students with credit in Ceramics 4L04 or Metallurgy 4L04.

MATLS 4M03 DISLOCATION THEORY

The behaviour of dislocations in solids. Crystallographic and elastic properties of dislocations, quantitative treatments of the yield stress, work hardening rate and strengthening mechanisms in metallic and non-metallic materials.

3 lects.; first term

Prerequisite: Engineering 2P04, Materials 3B04 or 2G04 and 3G03.

MATLS 4P03 PROPERTIES OF POLYMERIC MATERIALS

Structure of amorphous and crystalline polymeric materials; mechanical, electrical and optical properties, and their modification through processing.

3 lects.; first term

Prerequisite: Chemical Engineering 3Q03 and either Engineering 2O03 or registration in a programme administered by the Department of Materials Science and Engineering.

Offered for the first time in 1992-93

MATLS 4Q03 CASE STUDIES

Analysis of current industrial problems, involving background science, cost analysis and process design.

2 lects., 1 tut.; second term

Prerequisite: Registration in Level IV or V of a programme administered by the Department of Materials Science and Engineering.

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.

2 lects., 1 tut.; second term

Prerequisite: Materials 3E06.

METALLURGY

METALL 3C03 CHEMICAL METALLURGY I

The application of chemical principles to extractive metallurgy. Mineral processing, hydrometallurgy, electrometallurgy, roasting and smelting of sulphide ores, electrowinning of aluminum and magnesium. Heat and mass balance calculations.

2 lects., 1 lab. (3); first term

Prerequisite: One of Chemistry 2P06, Engineering 2W04.

METALL 3G03 MICROSTRUCTURE OF METALS AND ALLOYS

A laboratory course in modular form, complemented by lectures. Microstructure of metals and alloys and their correlation with phase equilibria and transformation of kinetics.

1 lect.(1), 2 labs.(3); second term

Prerequisite: Materials 2G04. Not open to students with credit in Ceramics 3G03, Materials 3B04 or 3G03.

METALL 4C04 CHEMICAL METALLURGY II

Theory and practice of ironmaking. Heat and material balances, ironmaking reactors, raw materials, direct reduction and new processes. Thermodynamics and kinetics of steelmaking. Hot metal treatment; static and dynamic process control; deoxidation; casting; specialty steelmaking; inclusion engineering.

2 lects.; both terms

Prerequisite: Materials 2C04

MATHEMATICS AND STATISTICS

METALL 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.

3 lects.; first term

Prerequisite: Materials 3E06, which may be taken concurrently with the permission of the instructor.

RELEVANT ENGINEERING COURSES

See *Engineering (General)* for course descriptions.

Engineer 2O03	Structure and Properties of Engineering Materials
Engineer 3Q03	Electronic Properties of Solids
Engineer 3R03	Properties and Selection of Engineering Materials
Engineer 4J03	Metal Forming

For Graduate courses, see the *Calendar of the School of Graduate Studies*.

Mathematics and Statistics

Faculty as of January 15, 1992

Ian Hambleton/Chair

Fred M. Hoppe/Associate Chair

Professors Emeriti

Bernhard Banaschewski/Dipl. Math., Dr.rer.nat. (Hamburg), F.R.S.C., McKay Professor of Mathematics

Minaketan Behara/B.Sc., M.Sc. (Utkal), Ph.D. (Saarbrücken)

Ernest A. Behrens/D.Phil.nat (Hamburg)

Charles W. Dunnnett/M.B.E., B.A. (McMaster), M.A. (Toronto), D.Sc. (Aberdeen)

Gerard Field/B.Sc., Ph.D. (London)

Ernst O. Gadamer/Diplom Physiker (Frankfurt), M.A., Ph.D. (Toronto)

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)

Professors

Claude E. Billigheimer/B.A., B.Sc., M.A. (Melbourne), Ph.D. (Toronto)

Gunter W. A. Bruns/Dr.rer.nat. (Berlin)

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)

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)

Taqdir Husain/B.A., M.A. (Aligarh), Ph.D. (Syracuse)

Manfred Kolster/Dipl. (Hamburg), Dr. rer. nat. (Saarbrücken), Habil. (Münster)/Graduate Advisor, Mathematics

Peter D. M. Macdonald/B.Sc., M.Sc. (Toronto), D.Phil. (Oxford)/Graduate Advisor, Statistics

Maung Min-Oo/B.Sc. (Rangoon), Dipl. Math., Dr.rer.nat., Habil. (Bonn)/Undergraduate Advisor

S. Gopal Mohanty/B.A. (Utkal), M.A. (Panjab), Ph.D. (Alberta)

Bruno J. W. Mueller/B.Sc. (Göttingen), M.Sc., Ph.D. (Mainz)

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)

Victor P. Snaith/B.A., M.A., Sc.D. (Cambridge), M.Sc., Ph.D. (Warwick), F.R.S.C., Britton Professor of Mathematics

Donald W. L. Sprung/B.A. (Toronto), Ph.D., D.Sc. (Birmingham), Professor of Physics

James D. Stewart/B.Sc., (Toronto), M.S. (Stanford), Ph.D. (Toronto)

Moti L. Tiku/B.A. (Kashmir), M.A. (Punjab), M.Sc. (Patna), Ph.D., D.Sc. (Aberdeen)

Patrick C. Yip/B.Sc. (Memorial), Ph.D. (McMaster)

Associate Professors

N. Balakrishnan/B.Sc., M.Sc. (Madras), Ph.D. (I.I.T., Kanpur)

Pulak C. Chakravarti/B.Sc. (Calcutta), M.Sc., Ph.D. (London)

Ihor Z. Chorneyko/B.A., M.A. (Saskatchewan), Ph.D. (Alberta)

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.

Gregory H. Moore/B.A. (Berkeley), M.A., M.Sc., Ph.D. (Toronto)

Andrew J. Nicas/B.Sc. (McGill), M.A., Ph.D. (Princeton)

Gordon Slade/B.A.Sc., M.Sc. (Toronto), Ph.D. (British Columbia)

McKenzie Y.-K. Wang/A.B. (Princeton), Ph.D. (Stanford)

Gail S. K. Wolkowicz/B.Sc., M.Sc. (McGill), Ph.D. (Alberta)

Assistant Professors

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)

Anton M. Jopko/B.Sc., M.Sc., Ph.D. (McMaster), Dipl. Educ. (Althouse)/part-time

Mary L. Lesperance/B.A. (Windsor), B.Sc. (Victoria), M. Math., Ph.D. (Waterloo)

Alice Metzlar/B.Math. (Waterloo), B.Educ., M.Educ. (Western), Ph.D. (Waterloo)/part-time

Anthony Peirce/B.Sc., B.Sc. (Hons.) (Orange Free State), M.Sc. (Witwatersrand), M.A., Ph.D. (Princeton)

I-Hsun Tsai/B.S. (National Taiwan Univ.), M.A., M.Phil., Ph.D. (Columbia)

Matthew A. Valeriotte/B.Math. (Waterloo), Ph.D. (Berkeley)

Roman Viveros-Aguilera, B.A. (Veracruzana, Mexico), M.A. (National Polytechnic Inst., Mexico), Ph.D. (Waterloo)

Associate Members

Frantisek Franek/(Computer Science and Systems) M.Sc., RNDr (Charles University, Prague), Ph.D. (Toronto)

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.

Department Notes:

- *Course is not necessarily offered every session; consult the Chair of the Department or an Associate Dean of Science (Studies).
- Students registered in an Arts and Science Programme should note that Arts and Science 1D06 Calculus serves as an equivalent prerequisite for all upper level Mathematics and Statistics courses, for which Mathematics 1A06 is a prerequisite.

MATH 1A06 CALCULUS I

This is a course in differential and integral calculus with emphasis on the fundamental processes and applications.

3 lects., 1 tut.; two terms

Prerequisite: OAC Calculus.

MATH 1AA6 CALCULUS

This is an enriched course in differential and integral calculus with emphasis on fundamental processes, intended primarily for students proceeding in the mathematical sciences.

3 lect., 1 tut.; 2 terms

Prerequisite: OAC Calculus.

MATH 1B03 LINEAR ALGEBRA I

Vectors, matrices, determinants, vector spaces, complex numbers.

3 lects., 1 tut.; one term

Prerequisite: OAC Mathematics Course.

MATH 1C06 CALCULUS FOR LIFE SCIENCES

This is a course in differential and integral calculus with emphasis on fundamental processes. Applications to the life sciences will be stressed.

3 lects., 1 tut.; two terms

Prerequisite: OAC Calculus. Not open to students who are registered in, or have credit in Mathematics 1A06, 1AA6, 1M03, 1N06.

MATH 1H05 ENGINEERING MATHEMATICS I

Matrices and determinants, vectors and vector spaces, linear transformations, complex numbers, eigenvalues and eigenvectors, with applications

2 lects., 1 tut.; first term;

3 lects., 1 tut.; second term

Prerequisite: Registration in Engineering I.

MATH 1K03 INTRODUCTORY CALCULUS FOR BUSINESS, HUMANITIES AND THE SOCIAL SCIENCES

An introduction to differential and integral calculus.

3 lects., 1 tut.; one term

Prerequisite: Grade 12 Mathematics. Not open to students who are registered in, or have credit in, any of Mathematics 1A06, 1AA6, 1C06, 1M03, 1N06. Normally not open to students who have completed OAC Calculus.

MATH 1M03 CALCULUS FOR BUSINESS, HUMANITIES AND THE SOCIAL SCIENCES

Differential and integral calculus.

3 lects., 1 tut.; one term

Prerequisite: Mathematics 1K03, or OAC Calculus. Not open to students who are registered in or have credit in, one of Mathematics 1A06, 1AA6, 1C06, 1N06.

MATH 1N06 CALCULUS FOR ENGINEERING

Differential and integral calculus, differential equations, sequences and series, differential calculus of several variables, with applications.

3 lects., 1 tut.; two terms

Prerequisite: Registration in Engineering I.

MATH 2A06 CALCULUS II

Partial differentiation and differentiability of functions of several variables, extremal problems with constraints, implicit function theorem, multiple integrals, line and surface integrals, Green's, Gauss', Stokes' Theorems and systems of differential equations.

3 lects.; two terms

Prerequisite: Mathematics 1A06, 1AA6 or 1C06, and Mathematics 1B03. Not open to students who are registered in, or have credit in, Mathematics 2G03.

MATH 2B06 LINEAR ALGEBRA II

Vector spaces, linear transformations, polynomials, determinants, canonical forms, Jordan forms, inner product spaces, bilinear forms, introduction to groups of linear transformations.

3 lects.; two terms

Prerequisite: Mathematics 1A06, 1AA6 or 1C06 and one of Mathematics 1B03, 1B04, 1G04. Not open to students who are registered or have credit in, Mathematics 2J06.

MATH 2C03 DIFFERENTIAL EQUATIONS

Ordinary differential equations, first-order differential equations. Laplace transforms, series solutions; introduction to partial differential equations, separation of variables.

3 lects.; one term

Prerequisite: Mathematics 1A06, 1AA6 or 1C06 or 1N06, and one of Mathematics 1B03, 1H05. Not open to students who are registered in, or have credit in, Mathematics 2O03.

MATH 2E03 INTRODUCTION TO MODELLING

General features of modelling. Examples from chemistry, physics, biology and economics are treated by a variety of elementary methods. Computer packages are used when appropriate.

3 lects.; one term

Prerequisite: Mathematics 1A06, 1AA6 or 1C06.

Enrolment is limited. Preference will be given to students registered in the Honours Biology and Mathematics programme.

MATH 2F03 SETS AND NUMBERS

Elementary operations on sets, relations, functions, equivalence relations and partitions, partially ordered sets, equipotence of sets and its basic properties, the real number system.

3 lects.; one term

Prerequisite: Registration in an Honours programme in Mathematics or Computer Science; or permission of the instructor. Not open to students who are registered in, or have credit in, Mathematics 2J06.

MATH 2G03 INTERMEDIATE CALCULUS

Differential calculus of several variables, multiple integrals, line and surface integrals.

3 lects.; one term

Prerequisite: Mathematics 1A06, 1AA6 or 1C06. Registration in or completion of one of Mathematics 1B03, 1H05. Not open to students who are registered in, or have credit in, Mathematics 2A06.

MATH 2J06 LINEAR ALGEBRA II

The LU and QR decompositions. Least squares. Eigensystems. Schur, diagonal and Jordan form. Normal matrices and SVD. Markov processes. Quadratic forms. Sets and relations. Number systems.

3 lects.; two terms

Prerequisite: Mathematics 1A06, 1AA6 or 1C06, and one of Mathematics 1B03. Not open to students who are registered in, or have credit in, Mathematics 2B04, 2B06, or 2F03.

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.

3 lects.; one term

Prerequisite: One of Mathematics 1A06, 1AA6, 1C06, 1M03; or permission of the instructor.

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.

3 lects.; one term

Prerequisite: One of Mathematics 1A06, 1AA6, 1C06 or 1M03, and one of Mathematics 1L03, 1B03, Statistics 1L03. Not open to students who are registered in, or have credit in, any of Mathematics 2A06, 2C03, 2G03, 2O03, 2N03. Not open to students in Science or Engineering programmes.

MATH 2M06 ENGINEERING MATHEMATICS II

Ordinary differential equations, Laplace transforms, Fourier series, vector calculus, orthogonal curvilinear coordinates, integral theorems, with engineering applications.

3 lects.; two terms

Prerequisite: Mathematics 1N06 and 1H05.

MATH 2N03 INTERMEDIATE MATHEMATICS FOR CHEMISTRY

Three dimensional analytic geometry and vectors, partial derivatives, multiple integrals, first order differential equations, linear differential equations.

3 lects.; one term

Prerequisite: Mathematics 1A06, 1AA6 or 1C06, and registration in or completion of Mathematics 1B03 and registration in a Chemistry Programme. Not open to student who are registered in, or have credit for, Mathematics 2A06, 2C03, 2G03, 2L03, 2O03.

MATH 2O03 DIFFERENTIAL EQUATIONS

Ordinary differential equations with constant coefficients, series solutions, special methods; Laplace transforms, Fourier series; introduction to partial differential equations.

3 lects.; one term

Prerequisite: Mathematics 1A06, 1AA6, 1C06 or 1N06, and one of Mathematics 1B03, 1H05. Not open to students who are registered in, or have credit in, Mathematics 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.

4 lects. or 3 lects. and 1 tut., every other week; one term

Prerequisite: Mathematics 1N06 and 1H05.

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.

4 lects. or 3 lects. and 1 tut., every other week; one term

Prerequisite: Mathematics 1N06 and 1H05.

MATH 3A06 REAL ANALYSIS

Development of the real number system, infinite series, differentiable functions of several variables. Stieltjes integral, uniform convergence, improper integrals and their applications.

3 lects.; two terms

Prerequisite: Mathematics 2A06 and 2B06; or a weighted average of at least 10.0 in Mathematics 2G03, 2J06, and 2O03.

MATH 3B03 FOUNDATIONS OF GEOMETRY

Topics chosen from affine, projective, spherical or hyperbolic geometry, curves and surfaces in 3-space.

3 lects.; one term

Prerequisite: Mathematics 2B06 or Mathematics 2J06.

MATH 3C03 MATHEMATICAL PHYSICS I

Linear algebra and eigenvalue problems; partial differential equations, orthogonal functions, Fourier series, Legendre functions, spherical harmonics.

3 lects.; one term

Prerequisite: Mathematics 2A06 and 2C03, or 2G03 and 2O03, or 2P04 and 2Q04, and Physics 2C05, 2D03 or 2G03. Not open to students who are registered in, or have credit for, Mathematics 3J04, 3K03, 3V06.

MATH 3D03 MATHEMATICAL PHYSICS II

Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.

3 lects.; one term

Prerequisite: Mathematics 3C03. Not open to students who have credit in or are registered in Mathematics 3J04, 3K03, 3V06. Not open to students in Honours Mathematics and Physics.

MATHEMATICS AND STATISTICS

MATH 3E03 ALGEBRA I

An introduction to groups including Sylow theorems and structure of finitely generated Abelian groups.

3 lectures; one term

Prerequisite: One of Mathematics 2B06, 2J06. Not open to students with credit in Mathematics 3E06.

MATH 3EE3 ALGEBRA II

Modules over principal ideal domains, field extensions, integral closure.

3 lectures; one term

Prerequisite: Mathematics 3E03. Not open to students with credit in Mathematics 3E06.

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.

3 lectures, one term

Prerequisite: Mathematics 2A06, 2B06, and 2C03 or Mathematics 2G03, 2J06 and 2O03. Not open to students with credit in Mathematics 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.

3 lectures, one term

Prerequisite: Mathematics 3F03. Not open to students with credit in Mathematics 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.

3 lects.; one term

Prerequisite: Completion of at least 12 units of Level II Mathematics or Statistics, and the permission of the instructor.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Completion of 12 units of Level II Mathematics or Statistics.

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.

4 hrs.; one term

Prerequisite: Mathematics 2M06.

MATH 3K03 ENGINEERING MATHEMATICS III

Complex variable theory with applications to electrical and computing engineering.

3 lects.; one term

Prerequisite: Mathematics 2P04 and 2Q04.

MATH 3L06* MATHEMATICAL LOGIC AND BOOLEAN ALGEBRA

The Axiom of Choice and its equivalents, ordinal numbers, cardinal numbers and the basics of transfinite arithmetic, Boolean algebras, Heyting algebras and possibly other algebras relevant for logic, classical and nonclassical propositional logics with emphasis on completeness, compactness and decidability.

3 lects.; two terms

Prerequisite: Mathematics 2F03, or a grade of at least B- in Mathematics 2J06.

MATH 3O06 REAL ANALYSIS

Sequences and series of functions; pointwise, uniform and mean convergence; Fourier series. Integration and Fourier integrals.

3 lects.; two terms

Prerequisite: One of Mathematics 2A06, 2G03.

MATH 3P03 GENERAL TOPOLOGY

Introduction to basic notions of general topology, various modes of defining topological spaces, continuity, convergence, separation axioms, compactness, connectedness.

3 lects.; one term

Prerequisite: Mathematics 2B06 or a grade of at least B in Mathematics 2J06.

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 equation.

3 lects.; one term

Prerequisite: Mathematics 2A06 and 2C03, or 2G03 and 2O03, or 2M06 or 2P04 and 2Q04, and one of Computer Science 1MA3, 1ZA3, or Engineering 1D03.

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.

3 lects.; one term

Prerequisite: Mathematics 1B03.

MATH 3T03 COMPLEX ANALYSIS

Analytic functions, power series, Cauchy's Theorem, residue calculus, conformal mapping, analytic continuation.

3 lects.; one term

Prerequisite: One of Mathematics 2A06, 2G03.

MATH 3V06 ENGINEERING MATHEMATICS III

Topics in mathematics of interest for mechanical, metallurgical and ceramic engineering, including probability and statistics, partial differential equations, numerical analysis.

2 hrs., first term; 4 hrs., second term

Prerequisite: Mathematics 2M06 or 2P04 and 2Q04.

MATH 3X03* ACTUARIAL MATHEMATICS I

Survival distributions, life tables, life insurance, life annuities, net premiums and reserves.

3 lects.; one term

Prerequisite: Statistics 2D03 and Mathematics 2K03; or permission of the instructor.

Offered in 1992-93 and alternate years.

MATH 3Y03* ACTUARIAL MATHEMATICS II

Multiple life functions, multiple decrement models, valuation theory for pension plans.

3 lects.; one term

Prerequisite: Mathematics 3X03.

Offered in 1992-93 and alternate years.

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.

3 lects.; one term

Prerequisite: At least two Level II Mathematics or Statistics courses other than Mathematics 2G03, 2H03, 2H06, 2K03, 2L03.

MATH 4A06 FUNCTIONS OF A COMPLEX VARIABLE

Study of analytic functions, their various representations, and their properties.

3 lects.; two terms

Prerequisite: Mathematics 3A06. Not open to students who are registered or have credit in Mathematics 3T03 or 4O03.

MATH 4B03* CALCULUS ON MANIFOLDS

Review of calculus in $\mathbb{R}^n$, differential forms, integration on chains, Stokes' theorem. Introduction to differentiable manifolds, Sard's theorem.

3 lects.; first term

Prerequisite: Mathematics 2A06 and 2B06 or a weighted average of at least 7.0 in Mathematics 2G03, 2J06 and 2O03, or Mathematics 3C03. Not open to students with credit in Mathematics 4B06.

MATH 4BB3* TOPICS IN DIFFERENTIAL TOPOLOGY AND GEOMETRY

Differentiable manifolds. Transversality. Riemannian geometry.

3 lects.; second term

Prerequisite: Mathematics 4B03. Not open to students with credit in Mathematics 4B06.

MATH 4C03* COMBINATORICS

Inversion formulae, systems of distinct representatives, block designs and other configurations; and other topics.

3 lects.; one term

Prerequisite: One of Mathematics 2A05, 2A06, 2G03, and one of Mathematics 2B04, 2B06, 2J06; or permission of the instructor.

MATH 4E03 ALGEBRA III

Polynomial rings, ideal theory, Galois Theory.

3 lects.; one term

Prerequisite: One of Mathematics 3EE3, 3E06.

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.

3 lects.; one term

Prerequisite: Mathematics 4K03; or permission of the instructor.

MATH 4J03 GRAPH THEORY

Graphs, trees, bipartite graphs, connectivity, graph colouring, matrix representations, applications.

3 lects.; one term

Prerequisite: One of Mathematics 2A06, 2G03, and one of Mathematics 2B06, 2J06.

MATH 4K03 MEASURE THEORY AND PROBABILITY

Introduction to the theory of measure and integration with applications to probability theory.

3 lects.; one term

Prerequisite: Mathematics 3A06, or a grade of at least A- in Mathematics 3O06.

MATH 4Q03 NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS

Method 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.

3 lects.; second term

Prerequisite: Mathematics 3FF3 and 4Q03, 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.

3 lects.; first term

Prerequisite: Mathematics 3Q03 or permission of the instructor.

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.

3 lectures; one term

Prerequisite: One of Mathematics 2A06, 2G03, 2N03, and Mathematics 3R03.

MATH 4S03* FINITE AUTOMATA AND COMPUTABILITY

Finite automata, deterministic automata, regular languages, Turing machines, recursive functions, primitive recursive functions, decidability and undecidability with applications to formal language theory.

3 lects.; one term

Prerequisite: One of Mathematics 2F03, 2J06.

MATH 4V03 APPLIED MATHEMATICAL ANALYSIS

Lebesgue integration, distribution theory, Fourier Analysis, partial differential equations, integral equations, calculus of variations; additional topics.

3 lects.; one term

Prerequisite: One of Mathematics 3D03, 3FF3, 3F06. Not open to students with credit in Mathematics 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.

For Graduate Courses see *Calendar of School of Graduate Studies*.

STATISTICS

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.

3 lects., 1 tut.; one term

Prerequisite: Grade 12 Mathematics. Not open to students in the Faculty of Science or students who have completed any of Commerce 2QA3, Economics 2B03, Psychology 2R06, 2R03, 2RR3, Statistics 2R06, 2D03, 2M03, 2MA3, 2MB3.

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.

3 lects., 1 tut.; 1 term

Prerequisite: Grade 12 Mathematics. Not open to students who have completed OAC Finite Mathematics. Not open to students who are registered in or who have credit in Mathematics 1B03 or 1L03. Not open to students in Science or Engineering programmes. Students transferring to the Faculty of Science do not retain credit for this course.

STATS 2A03 ADVANCE STATISTICAL REASONING

Statistical inference procedures and methods for describing the relationships between variables are explained through a variety of examples from different fields.

3 lects.; one term

Prerequisite: Statistics 1A03.

STATS 2D03 PROBABILITY THEORY

Combinatorics, independence, conditioning; Poisson-process; discrete and continuous distributions with statistical applications; expectation, transformations, order statistics. Distribution of χ^2 and t^2 , moment-generating functions, central limit theorem.

3 lects.; one term

Prerequisite: One of Mathematics 1A06, 1C06 or 1M03, and one of Mathematics 1B03, 1B04, 1G04. Students with credit in Mathematics 1L03 or Statistics 1L03 may not retain this credit if Statistics 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.

3 lects.; one term

Prerequisite: One of Mathematics 1A06, 1AA6, or 1C06. Not open to students who have completed any of Commerce 2QA3, Economics 2B03, Psychology 2R06, Statistics 2R06, 2D03, 2M03, 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.

3 lects.; one term

Prerequisite: Statistics 2D03. Not open to students who have completed Statistics 2M03 or 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.

3 lects.; two terms

Prerequisite: Grade 13 or OAC Calculus or Mathematics 1A06, 1AA6 or 1C06 or 1K03 or 1M03. Not open to students who have completed any of Commerce 2QA3, Statistics 2MA3, 2M03, Psychology 2R03, 2RR3, 2R06, Economics 2B03.

STATS 3D06 MATHEMATICAL STATISTICS

The multivariate normal distribution, point and interval estimation, sampling distributions, tests of hypotheses, elementary linear regression, and other topics.

3 lects.; two terms

Prerequisite: Statistics 2D03, and one of Mathematics 2A06, 2G03, 2L03.

STATS 3N03 STATISTICAL METHODS FOR ENGINEERING

Introduction to statistical methods and applications: data analysis and statistical methods.

3 lects.; one term

Prerequisite: Registration in, or completion of, Levels III, IV or V Engineering.

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.

3 lects.; one term

Prerequisite: Statistics 2D03 and 2M03 or 3M03; or permission of the instructor.

STATS 3U03 STOCHASTIC PROCESSES

Random walk, Markov chains, discrete and continuous parameter Markov processes, branching processes, birth and death processes, queuing processes.

3 lects.; one term

Prerequisite: Statistics 2D03 and one of Mathematics 2A06, 2G03.

STATS 3X03 ENGINEERING MATHEMATICS IV

Further topics of interest for electrical engineering, emphasizing probability theory.

3 lects.; one term

Prerequisite: Mathematics 2P04 and 2Q04.

STATS 3Y03 STATISTICAL ANALYSIS FOR ENGINEERING AND MANAGEMENT

Introduction to probability, statistical inference, regression, correlation and decision making.

3 lects.; one term

Prerequisite: Registration in an Engineering and Management program and completion of either Mathematics 2M06 or Mathematics 2P04 and Mathematics 2Q04; or permission of the instructor.

STATS 4H03* OPERATIONS RESEARCH

Network models and algorithms, dynamic models, queuing models and other topics.

3 lects.; one term

Prerequisite: Mathematics 3R03, registration or credit in Statistics 3D06, or permission of the instructor.

STATS 4K03* STATISTICAL DECISION THEORY

Decision theory and applications; Bayes, admissible and minimax rules; multiple decision problems.

3 lects.; one term

Prerequisite: Statistics 3D06 or registration in Statistics 3D06 and permission of the instructor.

STATS 4M03 MULTIVARIATE ANALYSIS

Multivariate distributions: Normal, Wishart, T^2 and others; regression, correlation, factor analysis, general linear hypothesis.

3 lects.; first term

Prerequisite: Statistics 3D06, and one of Mathematics 2B04, 2B06, 2J06.

MECHANICAL ENGINEERING

STATS 4003* ORDER STATISTICS

Basic theory, moments, recurrence relations and identities. Approximations, linear estimation. Applications to life-testing problems.

3 lects., 1 term

Prerequisite: Statistics 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.

3 lects., second term

Prerequisite: Statistics 3D06 and 4M03. Registration in or completion of Statistics 4T03 and 4Z03.

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.

3 lects.; one term

Prerequisite: Statistics 3D06. Not open to students who are registered in or have credit in Statistics 3Y03.

STATS 4T03 DESIGN OF EXPERIMENTS

Analysis of variance and covariance; linear models; randomised block designs; Latin squares; factorial experiments. Emphasis on applications.

3 lects.; one term

Prerequisite: Statistics 3D06; or permission of the instructor.

STATS 4U03* NONPARAMETRIC METHODS IN STATISTICS

Rank tests and non-parametric methods; rank correlation; comparisons with parametric methods.

3 lects.; one term

Prerequisite: Credit or registration in Statistics 3D06 and permission of the instructor.

STATS 4Z03* INDUSTRIAL STATISTICS

Topics selected from sequential methods, quality control, reliability theory.

3 lects.; one term

Prerequisite: Credit or registration in Statistics 3D06 and permission of the instructor.

For Graduate Courses see the Calendar of the School of Graduate Studies.

Mechanical Engineering

Faculty as of January 15, 1992

M. Shoukri/Chair

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.

John H.T. Wade/M.A.Sc., Ph.D. (Toronto), P.Eng.

Professors

Mohammed A. Dokainish/B.Sc. (Cairo), M.A.Sc., Ph.D. (Toronto), P.Eng.

Hoda A. ElMaraghy/B.Sc. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.

Ross L. Judd/B.E.Sc. (Western), M.Eng. (McMaster), Ph.D. (Michigan), P.Eng.

Brian Latta/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

Mohammed Elbestawi/B.Sc. (Alexandria), M.Eng., Ph.D. (McMaster), P.Eng.

Mateusz P. Sklad/M.Sc., Ph.D. (Warsaw).

Assistant Professors

S. Eren Semercigil/B.Sc. (Ankara), M.Sc., Ph.D. (Manitoba)

Vincent M. Sowa/B.Sc. (Illinois), M.A. (Purdue), Ph.D. (Waterloo)/Part-time

Ozden F. Turan, B.Sc. (Middle E. Tech. Univ.), M.Sc. (Case Western Reserve), Ph.D. (Manitoba)

W. Roy Underhill/B.Sc. (Trent), M.A.Sc. (Toronto)

Lecturer

Robert C. Hudspith/B.Eng., M.Eng. (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

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.

2 lects., 1 lab. (3) alternating weeks and 1 lab. (3) every week; second term

Prerequisite: Engineering 1C04 and 1D04, and credit or registration in Engineering 2P04.

MANUFACT 3M02 MANUFACTURING LABORATORY I

Laboratory exercises in metalworking practices, measurements and solid mechanics.

2 labs. (3); 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.

2 lects., 1 lab (3); second term

Prerequisite: Registration in Level III or Level IV of either Mechanical or Manufacturing Engineering or permission of the Department.

MANUFACT 4M04 PROJECT

A major project in the area of manufacturing engineering. It may be of a design or experimental nature.

1 lab. (3), first term, 3 labs. (3); second terms

Prerequisite: Registration in Level IV of Manufacturing Engineering.

MANUFACT 4P02 MANUFACTURING LABORATORY II

Laboratory exercises in metalworking practices, solid mechanics and controls.

1 lab. (3); both terms

Prerequisite: Manufacturing Engineering 3M02

MECHANICAL ENGINEERING

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.

2 lects., 1 lab. (3); first term

Prerequisite: Mathematics 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.

1 lect., 1 lab. (3), first term, 1 lab. (3); second term

Prerequisite: Mathematics 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.

2 lects., 1 lab. (3) alternating weeks and 1 lab. (3) every week; second term

Prerequisite: Engineering 1C04 and 1D04, and credit or registration in Engineering 2P04.

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.

3 lects.; first term

Prerequisite: Engineering 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.

3 lects.; first term

Prerequisite: Registration in a programme in Manufacturing Engineering or Mechanical Engineering.

MECH ENG 3D03 MECHANICAL ENGINEERING THERMODYNAMICS

The thermodynamic laws, as developed in Engineering 2W04, are re-examined. Applied thermodynamics including advanced engineering thermodynamic processes, psychrometry, and an introduction to combustion, compressible flow and environmental problems are considered.

3 lects.; second term

Prerequisite: Engineering 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.

3 lects., 1 lab. (3); second term

Prerequisite: Engineering 2P04 and 2Q04, and credit or registration in Mechanical Engineering 3A03.

MECH ENG 3M02 COMPOSITE LABORATORY

Laboratory exercises in fluid mechanics, thermodynamics and solid mechanics. 1 lab. (3); both terms

Prerequisite: Registration in Mechanical Engineering or Mechanical Engineering and Management or Mechanical Engineering and Society.

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.

3 lects., 1 tut. (2); first term

Prerequisite: Mathematics 2M06, or Mathematics 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.

3 lects.; second term

Prerequisite: Mathematics 2M06, Engineering 2W04, and credit or registration in Mechanical Engineering 3O04.

MECH ENG 4A03 ADVANCED STRENGTH OF MATERIALS

Advanced analysis of three-dimensional elastic-plastic deformation and structural failure based on continuum mechanics. Stress and strain tensors. Failure theories. Numerical techniques.

2 lects., 1 tut.; second term

Prerequisite: Mechanical Engineering 3A03.

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.

3 lects.; first term

Prerequisite: Mathematics 3V06.

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.

3 lects.; second term

Prerequisite: Mechanical Engineering 3C03.

MECH ENG 4F03 ENGINEERING ACOUSTICS

Propagation of sound: 'near' and 'far' fields, the diffuse field, reverberation time and transmission loss. Generation of noise by fluid flow, vehicular traffic and industrial machinery. Muffler and barrier design. Measurement techniques and noise analysis. Laboratory demonstrations.

3 lects.; first term

Prerequisite: Mechanical Engineering 3D03, 3E04 and 3O04.

MECH ENG 4G03 MECHANICAL ENGINEERING DESIGN III

Capstone course in mechanical design, design optimization, design for manufacturability, computer-aided design, reliability and failure analysis, major design project.

2 lects., 1 tut. (2)/week; first term

Prerequisite: Mechanical Engineering 3E04.

MECH ENG 4K03 INTRODUCTION TO ROBOTIC MECHANICS

Spatial descriptions and transformations, manipulator kinematics, inverse kinematics, Jacobians, dynamics.

3 lects.; second term

Prerequisite: Mechanical Engineering 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.

3 lects.; second term

Prerequisite: Mechanical Engineering 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.

1 lab. (3), first term; 3 labs. (3); 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.

1 lab. (3); both terms

Prerequisite: Mechanical Engineering 3M02, and registration in Mechanical Engineering or Mechanical Engineering and Management or Mechanical Engineering and Society.

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.

2 lects., 1 tut. (2); first term

Prerequisite: Mathematics 2M06, 3V06, Engineering 2Q04, Mechanical Engineering 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.

3 lects.; first term

Prerequisite: Mathematics 3V06.

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.

2 lects., 1 lect./tut.; first term

Prerequisite: Mechanical Engineering 3O04.

MECH ENG 4T03 FINITE ELEMENT APPLICATIONS

The finite element method and its application to mechanical systems including static and dynamic analysis.

3 lects.; second term

Prerequisite: Credit or registration in Mechanical Engineering 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.

3 lects.; second term

Prerequisite: Mechanical Engineering 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.

3 lects.; second term

Prerequisite: Mechanical Engineering 3R03, 3D03, and credit or registration in Mechanical Engineering 4S03.

MECH ENG 4W03 TRIBOLOGY-LUBRICATION AND WEAR

This course covers introductory material on friction, lubrication and wear as related to many disciplines. The emphasis is on basic lubrication, dry friction, surface properties and lubricants.

3 lects.; second term

Prerequisite: Completion of Level III Mechanical Engineering or permission of the Department.

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.

3 lects.; second term

Prerequisite: Mechanical Engineering 3A03.

MECH ENG 4Y03 ADVANCED KINEMATICS OF MACHINES

Additional topics in the analysis of mechanisms. Major emphasis on the design and methods of synthesis of mechanisms to perform specific motion tasks.

3 lects.; second term

Prerequisite: Engineering 2Q04, Mechanical Engineering 2A03.

MODERN LANGUAGES

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.

2 lects., 1 lab. (3); first term

Prerequisite: Registration in Level IV Manufacturing Engineering or Mechanical Engineering or permission of the department.

ENGINEER 4J03 METAL FORMING

Offered jointly by the Departments of Mechanical Engineering and Materials Science and Engineering. See *Engineering (General)* for course description.

For Graduate courses, see the *Calendar of the School of Graduate Studies*.

Metallurgy

(See *Materials Science and Engineering, Metallurgy*)

Modern Languages

Faculty as of January 15, 1992

George Thomas/Chair

Professor Emeritus

Karl Denner/M.A. (*Kentucky*), Ph.D. (*Johns Hopkins*), (German)

Professors

Antonio G. Alessio/D.Litt. (*Genoa*) (Italian)

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)

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

Maria 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)

Nina Kolesnikoff/M.A. (*Moscow State*), Ph.D. (*Alberta*) (Russian)

James B. Lawson/B.A. (*New York State College for Teachers, Albany*), M.A. (*Johns Hopkins*) (German)

Pilar Martinez/Lincenciatura, Chem. (*Madrid*), M.A. (*Middlebury*), Doct. En Fil. y Letras (*Madrid*) (Hispanic Studies)

Florigio Minelli/B.A., M.A. (*Western*), Ph.D. (*Brown*) (Hispanic Studies)

Hans H. Schulte/Assessor (*Munich*), Dr. phil. (*Augsburg*) (German)

Robert Van Dusen/B.A. (*Harvard*), M.A., Ph.D. (*Texas*) (part-time)

Fritz T. Widmaier/B.A. (*Waterloo*), A.M., Ph.D. (*Southern California*) (German)

Assistant Professors

Joseph Adamson/B.A. (*Trent*), M.A., Ph.D. (*Toronto*) (English & Modern Languages (Comparative Literature))

Vittorina Cecchetto/B.A., M.A., Ph.D. (*Toronto*) (Italian)

L. Diane Dyer/B.A., M.A., B.L.S., Phil.M. (*Toronto*) (Italian)/part-time

Maria M. Strojinska/M.A. (*Warsaw*), Ph.D. (*Edinburgh*) (German and Linguistics)

Canada Research Fellow

M. Jean Wilson/B.A. (*McMaster*), B.Ed., M.A., Ph.D. (*Toronto*) (German and Comparative Literature)/part-time

Senior Language Preceptors

Virginia Ariga/M.A. (*Toronto*), M.A. (*Texas*) (Japanese)

Huainian Ju/Equivalent to Canadian B.A., M.A. (*Beijing Foreign Language Institute*) (Chinese)

Noriko Yokokura/M.F.A. (*York*), B.A. (*Wisconsin*) (Japanese)/part-time

Instructors

Inga Dolinina/M.A., Ph.D. (*Leningrad*) (Russian)/part-time

Clara G. Donini-Drysdale/B.A. (*McMaster*), M.A. (*Toronto*) (Italian)/part-time

Ida Erasmi/B.A. (*Albertus Magnus College*) (Italian)/part-time

Lavorka Fabek-Fischer/B.A., M.A. (*McMaster*) (German)/part-time

Marcela Leighton Krautter/B.A., Cert.Ed. (*Chile*), M.A., Ph.D. (*Queen's*) (Hispanic Studies)/part-time

Milica Krneta/B.A. (*McMaster*), M.A. (*Toronto*) (Russian)/part-time

Ping-Mei Law/B.A., M.A. (*Toronto*) (Hispanic Studies)/part-time

Brigitte Martin-Mendonca/Staatsexamen (*Bielefeld*), M.A. (*McMaster*) (German)/part-time

Ryta-Anna Monaco/B.A. (*Warsaw*), B.A. (*McMaster*) (Polish)/part-time

Geni Pontrelli/B.A. (*McMaster*), M.A. (*Carleton*) (Hispanic Studies)/part-time

Rosemarie Widmaier/B.A. (*Western*), M.A. (*Johns Hopkins*) (German)/part-time

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*)

MODERN 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, focussing on the inter-disciplinary and cultural aspects of literature.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

MODERN 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Italian 2E03 and 2EE3.

MODERN 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in German 2B03.

Offered in alternate years.

MODERN LANG 2R03 NINETEENTH-CENTURY RUSSIAN LITERATURE I (in English)

A study of the major prose of Gogol and Turgenev.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Russian 2A06 or 2A03.

MODERN LANG 2RR3 NINETEENTH-CENTURY RUSSIAN LITERATURE II (in English)

A study of the major novels by Dostoevsky and Tolstoy.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Russian 2A06 or 2AA3.

MODERN LANG 3B03 TRECENTO (in English)

This course will study the literature of 14th-century Italy.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Italian 3R03 and 3RR3.

Offered in alternate years.

MODERN LANG 3D03 RUSSIAN DRAMA since 1800 (in English)

An introduction to the major works of Russian theatre, in translation.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

Same as Drama 3DD3.

MODERN LANG 3G03 GERMAN DRAMA (in English)

A study of representative plays by major dramatists of the German-speaking world, from the eighteenth century to the present.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

MODERN LANG 3I03 ITALIAN THEATRE (in English)

A study of Italian plays from the Renaissance to modern times including Machiavelli, Commedia dell'arte, Goldoni, Pirandello, Betti. The plays will be analyzed in their literary as well as their theatrical aspects. Students will be encouraged to participate in the creative process.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Italian 3P03 or 3Q03.

Offered in alternate years.

MODERN LANG 3J03 THE METAMORPHOSES OF DON JUAN (in English)

The development of the myth of Don Juan from its origins to the present.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

MODERN 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit for this topic taken under Comparative Literature 3D03.

Offered in alternate years.

MODERN LANG 3K03 TWENTIETH-CENTURY RUSSIAN LITERATURE (in English)

A study of Russian literature of the 1920's and 1930's with special attention to Akhmatova, Bulgakov and Sholokhov.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Russian 3K03, 3KK3 or 3K06.

Offered in alternate years.

MODERN LANG 3KK3 CONTEMPORARY RUSSIAN LITERATURE (in English)

A study of contemporary Russian literature since 1955, with special attention to Pasternak, Solzhenitsyn and Yevtushenko.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Russian 3K03, 3KK3 or 3K06.

Offered in alternate years.

MODERN 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.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

MODERN LANG 3SS3 THE RENAISSANCE EPIC (in English)

Ariosto's *Orlando Furioso* and Tasso's *Jerusalem Delivered*.

3 lects.; one term

Prerequisite: Open to students in Level II and above. Not available to students with credit in Italian 4R03.

Offered in alternate years.

MODERN LANG 3T03 TOPICS IN NATIONAL CINEMAS I (in English)

Previous topics include: Soviet and East European Cinema. Consult Department concerning topic to be offered.

2 lects., plus one weekly film screening; one term

Prerequisite: Drama 2X06, or permission of the Drama Department.

Modern Languages 3T03 may be repeated, if on a different topic, to a total of six units.

Same as Art History 3T03 and Drama 3T03.

MODERN LANG 3W03 GERMAN WOMEN WRITERS (in English)

A study of selected works by German women writers from the eighteenth century to the present.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

MODERN LANG 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.

Tuts.; one term

Prerequisite: Registration in Level IV Honours Modern Languages and permission of the Independent Study Committee for Modern Languages.

MODERN LANG 4L03 SURVEY OF SPANISH THEATRE (in English)

A study of the development of Spanish drama and stage from Lope to Lorca.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Offered in alternate years.

Same as Drama 4DD3.

Molecular Biology and Biotechnology

The Molecular Biology and Biotechnology courses are administered within the Faculty of Science, jointly by the Departments of Biochemistry and Biology through a Committee of Instruction, and also draw on the Department of Pathology and the McMaster Institute for Molecular Biology and Biotechnology. Information and counselling may be obtained from the Departments of Biology or Biochemistry or from the Programme Co-ordinator.

MOL BIO 4F03 MOLECULAR ASPECTS OF DEVELOPMENT

Topics include genetic and non-genetic determinants of early embryonic development, cell determination and differentiation.

3 lects.; one term

Prerequisite: One of Biochemistry 3A06, 3A03, 3AA3, 3C03, 3G06, and Biology 3N06 or 3NN3.

MOL BIO 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.

2 lects.; 1 tut.; one term

Prerequisite: Biology 3H03 or 3HH3, or permission of instructor.

RELATED COURSES

Biochemistry	2A06	Principles of Biochemistry I
	3A03	Principles of Biochemistry II
	3AA3	Specialized Topics
	3L03	Biochemistry Laboratory
	4B06	Senior Thesis
	4D03	Biotechnology and Genetic Engineering
	4E03	Genetic Engineering
	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	Introductory Microbiology
	3EE3	Microbial Physiology and Regulation
	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
	3Y03	Plant Development
	4B03	Plant Metabolism and Molecular Biology
	4C09	Senior Thesis
	4F06	Senior Project
	4I03	Immunology
	4II3	Advanced Topics in Immunology
Chemistry	4M03	Molecular Aspects of Eukaryotic Chromosomes
	4R03	Human Genetics
	4V03	Virology
	2N03	Analytical Chemistry
	2O06	Organic Chemistry
	2R03	General Physical Chemistry
	3D03	Organic Chemistry
	3F03	Bio-Organic Chemistry

Music

Faculty as of January 15, 1992

Alan Walker/Chair

Professor Emeritus

William Wallace/B.Mus., Ph.D. (Utah)

Professors

Marta Hidy/Dipl. Perf. (Budapest), F.R.H.C.M. (Hon.)

Alan Walker/B.Mus., D.Mus. (Durham), A.R.C.M., L.G.S.M., F.G.S.M. (Hon.), F.R.S.C.

Associate Professors

Frederick A. Hall/Assoc. Dipl., B.Mus. (McGill), M.A., Ph.D. (Toronto)

Hugh Hartwell/Assoc. Dipl., B.Mus. (McGill), A.M., Ph.D. (Pennsylvania)

Paul Rapoport/A.B. (Michigan), M.Mus., Ph.D. (Illinois)

Valerie Tryon/L.R.A.M., F.R.A.M., A.R.C.M., Artist-in-Residence/part-time

Assistant Professors

James Deaville/B.M., M.M., Ph.D. (Northwestern)

William Renwick/B.Mus., M.Mus. (British Columbia), Ph.D. (CUNY), A.A.G.O., F.R.C.C.O.

Lecturer

Keith W. Kinder/Dip.F.A. (Calgary), B.Mus. (Western), M.Mus. (Northwestern)

Part-time Faculty

Terry Basom/B.Mus.Ed. (Kansas), M.Mus.Ed. (North Texas)

Roger Flock

Paul Grimwood/B.Mus. (Western)

Sharyn Hall/A.Mus., B.A., M.A., Ph.D. (Toronto)

Zdenek Konicek/Dipl.Music, M.A. (Prague)

John Packer

Instructors (part-time)

Elise Bedard/voice

Cecile Berard-Dunn/B.Mus. (College Marie de l'Incarnation), M.M. (Montreal)/piano

Lita Classen/B.Mus. (Ottawa), M.Mus. (Vincent d'Indy Montreal). Dipl. Perf. (Vienna)/voice

Marc Donatelle/B.M. (Northwestern), M.M. (Southern California)/trombone

Paula Elliott/B.Mus. (Oberlin), M.M. (New England Conservatory)/flute

Bob Erlandson/jazz piano

Roger Flock/percussion

Paul Grimwood/B.Mus. (Western)/harpsichord/organ

Rudolf Kalup/violin

Mary Kenedi/Lic.Dip., Mus.Bac., Mus.M. (Toronto)/piano

Zdenek Konicek/Dipl.Music, M.A. (Prague)/cello

Jeffrey McFadden/guitar

Willem Moolenbeck/saxophone

Stephen Pierre/clarinet

Jeff Reynolds/B.A. (York), B.Mus. (Calgary), M.Mus. (Victoria)/trumpet

Philip Sarabura/choir

Suzanne Shulman/flute

Robert Somerville/jazz band

Valerie Tryon/L.R.A.M., F.R.A.M., A.R.C.M./piano

Alla Zaccarelli/piano

Department Notes:

1. All Music courses except 1A06, 1B06, 2A06, 2B06, 2BB3, 3T03, 3U03, and 4X03 have limited enrolments. Priority is given to students for whom the limited enrolment courses are Area courses.
2. The following courses may be taken by undergraduates not in a Music programme, subject to the stated prerequisites: Music 1A06, 1B06, 1CC3, 1D03, 2A06, 2B06, 2BB3, 2C03, 2CC3, 2D03, 2H03, 3A03, 3AA3, 3B03, 3BB3, 3T03, 3U03, 4B03, 4BB3, 4I03, 4X03.

3. Music 1CC3, 1D03 and 2C03 may be taken by undergraduates not in a Music programme upon successful completion of qualifying tests administered by the Department. Because of the enrolment limitations, students are urged to complete the qualifying tests as early as possible.

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.

3 lects.; two terms

Prerequisite: Open. Not available to students registered in Honours Music.

MUSIC 1B06 HISTORY OF MUSIC (CA. 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.

3 lects.; two terms

Prerequisite: Registration in a Music programme; or Music 1A06 and permission of the Department.

MUSIC 1CC3 HARMONY

The analysis and writing of functional harmony. Includes study of music by J.S. Bach and others.

2 lects.; two terms

Prerequisite: Registration in a Music programme; or permission of the Department. Not available to students with credit in Music 1CC2.

MUSIC 1D03 GENERAL MUSICIANSHIP

Sight-singing, dictation, and keyboard harmony.

2 lects. 1 lab.; two terms

Prerequisite: Registration in a Music programme; or permission of the Department. Not available to students with credit in Music 1D02 or 1DD2.

MUSIC 1E03 SOLO PERFORMANCE

The technique and repertoire of any orchestral instrument, the piano, organ, harpsichord, voice, recorder, saxophone, or guitar.

1 half-hour lesson weekly; two terms

Prerequisite: Registration in a Music programme. Not available to students with credit in or registration in Music 1E04 or 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.

1 hour lesson weekly; two terms

Prerequisite: Registration in Music I, and permission of the Department. Not available to students with credit in, or registration in, Music 1E04.

MUSIC 1G03 ENSEMBLE PERFORMANCE

McMaster Symphony Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the Department. Prerequisite: Permission of the Department. Successful audition required. Academic credit available only to students registered in a Music programme.

MUSIC 2A06 HISTORY OF MUSIC (CA. 1750 TO THE PRESENT)
A detailed study of musical developments of the Classical, Romantic and Modern periods. Topics include: evolution of the symphony, emergence of comic opera, and piano literature.

3 lects.; two terms

Prerequisite: Music 1A06; or permission of the Department. Not available to students registered in a Music programme or with credit in, or registration in, Music 2B03, 2BB3 or 2B06.

MUSIC 2B06 HISTORY OF MUSIC (CA. 1750-1914)

A survey of classical, romantic, and postromantic music.

3 lects.; two terms

Prerequisite: Music 1B06, and registration in a Music programme; or permission of the Department. Not available to students with credit in, or registration in, Music 2A06 or 2B03.

MUSIC 2BB3 HISTORY OF MUSIC (CA. 1914 TO THE PRESENT)

A survey of 20th-century music.

3 lects.; one term

Prerequisite: Music 2B03 or 2B06, and registration in a Music programme; or permission of the Department. Not available to students with credit in, or registration in, 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.

2 lects., term one; 1 lect., term two; two terms

Prerequisite: Registration in a Music programme; or permission of the Department. Not available to students with credit in Music 1C02 or 2C02.

MUSIC 2CC3 HARMONY

A continuation of Music 1CC2. Chromatic harmony and the completed major-minor system.

1 lect., term one; 2 lects., term two

Prerequisite: Music 1CC2, and registration in a Music programme; or permission of the Department. Not available to students with credit in Music 2CC2.

MUSIC 2D03 GENERAL MUSICIANSHIP

A continuation of Music 1D03.

2 lects., 1 lab.; two terms

Prerequisite: Music 1D02, and registration in a Music programme; or permission of the Department. Not available to students with credit in Music 2D02 or 2DD2.

MUSIC 2E03 SOLO PERFORMANCE

A continuation of Music 1E03.

1 half-hour lesson weekly; two terms

Prerequisite: One of Music 1E03, 1E04, 1E06 and completion of Music I (or permission of the Department), and registration in a Music programme. Not available to students with credit in or registration in Music 2E04 or 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.

1 hour lesson weekly; two terms

Prerequisite: A grade of at least A- in Music 1E06, completion of Music I, registration in a B.Mus. programme, and permission of the Department. Not available to students with credit in, or registration in, Music 2E03 or 2E04. Under exceptional circumstances, students may use Music 1E03 or 1E04 in place of 1E06 as a prerequisite. Students interested in this option should consult the Department Counsellor before March Preregistration.

MUSIC 2G03 ENSEMBLE PERFORMANCE

McMaster Symphony Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the Department.

Prerequisite: Permission of the Department. Successful audition required. 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.

3 lects.; one term

Prerequisite: Music 1CC2 or 1CC3, and registration in a Music programme; or permission of the Department. Not available to students with credit in Music 2H04.

MUSIC 3A03 MUSIC EDUCATION I

A survey of choral techniques and music appreciation, and of the rudiments of music for classroom use.

3 lects.; one term

Prerequisite: Music 1A06 or 2A06; or permission of the Department. Not available to students registered in Honours Music.

MUSIC 3AA3 MUSIC EDUCATION II

A survey of the Kodaly and Orff methods of music education.

3 lects.; one term

Prerequisite: Music 3A03, or registration in a Music programme; or permission of the Department.

MUSIC 3B03 TOPICS IN MUSIC HISTORY: EARLY MUSIC (MIDDLEVAL TO BAROQUE)

Previous topics include: Scarlatti's Keyboard Sonatas, Choral Music of Bach and Handel, The Renaissance Madrigal. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Music 2B03, and registration in a Music programme, or permission of the Department.

Alternates with Music 3BB3.

Music 3B03 may be repeated, if on a different topic, to a total of 6 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 Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Music 2B03, and registration in a Music programme; or permission of the Department.

Alternates with Music 3B03.

Music 3BB3 may be repeated, if on a different topic, to a total of 6 units.

MUSIC 3C03 TONAL COUNTERPOINT

Studies in baroque music, leading to analysis and writing of inventions.

3 lects.; one term

Prerequisite: Music 2C03 and 2CC2 or 2CC3, and registration in a Music programme. Not available to students with credit in Music 3C04.

MUSIC 3CC3 TONAL COUNTERPOINT

A continuation of Music 3C03, emphasizing analysis and writing of fugues.

3 lects.; one term

Prerequisite: Music 3C03, and registration in a Music programme. Not available to students with credit in Music 3C04.

MUSIC 3E03 SOLO PERFORMANCE

A continuation of Music 2E03.

1 half-hour lesson weekly; two terms

Prerequisite: Music 2E03 or 2E04, and registration in Level III of a Music programme. Not available to students with credit in or registration in Music 3E04 or 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.

1 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. Not available to students with credit in, or registration in, Music 3E03 or 3E04.

MUSIC 3G03 ENSEMBLE PERFORMANCE

McMaster Symphony Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the Department.

Prerequisite: Permission of the Department. Successful audition required. 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 (2 hrs.); one term

Prerequisite: Music 2BB3, 2H04, and either 2CC2 or 2CC3, and registration in a Music programme. Not available to students with credit in Music 3H04.

Offered in alternate years.

MUSIC 3J03 ORCHESTRATION

A study of the orchestral instruments; scoring of music for various ensembles.

2 lects.; two terms

Prerequisite: Music 2DD2, and either 2CC2 or 2CC3, and registration in a Music programme. Not available to students with credit in Music 3J04.

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.

1 lect., 1 lab.; two terms

Prerequisite: Registration in a Music programme.

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.

1 lect., 1 lab.; two terms

Prerequisite: Registration in a Music programme.

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. Each student will concentrate on one instrument and gain a working knowledge of the others.

2 lects.; two terms

Prerequisite: Registration in a Music programme. Not available to students with credit in Music 3M04.

MUSIC 3N03 VOCAL METHODS

A study of the basic techniques of singing. The organization, conducting, and rehearsing of a choir. Choral literature for various educational levels. No previous study of voice required.

1 lect.; two terms

Prerequisite: Registration in a Music programme.

MUSIC 3O03 CONDUCTING

Fundamental conducting techniques applied to works selected from the standard repertoire.

2 lects., term one; 1 lect., term two

Prerequisite: Music 1CC2, and registration in a Music programme.

MUSIC 3R03 RESEARCH METHODS AND BIBLIOGRAPHY

An examination of the major reference and bibliographic sources. Historical, analytical, and critical methods of research.

2 lects.; one term

Prerequisite: Music 2BB3, and registration in a Music programme.

Offered in alternate years.

MUSIC 3T03 CANADIAN MUSIC

An historical survey of music in Canada, in the context of social and political developments, from ca. 1600 to the present.

2 lects., 1 tut.; one term

Prerequisite: Music 1A06 or completion of 18 units of Music including Music 1B06; or permission of the Department.

Offered in alternate years.

NURSING

MUSIC 3U03 JAZZ

An historical survey of jazz, focusing on selected performers and arrangers.

2 lects., 1 tut.; one term

Prerequisite: Music 1A06 or completion of 18 units of Music including Music 1CC2; or permission of the Department.

Offered in alternate years.

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 (2 hrs.); one term

Prerequisite: Registration in Level III of a Music programme.

Offered in alternate years.

MUSIC 4B03 TOPICS IN MUSIC HISTORY: MUSIC OF THE CLASSICAL ERA

Previous topics include: Beethoven's Piano Sonatas, Mozart and Opera. Consult the Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Music 2B03, and registration in a Music programme; or permission of the Department.

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 Department concerning topic to be offered.

Seminar (2 hrs.); one term

Prerequisite: Music 2BB3, and registration in a Music programme; or permission of the Department.

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. Variations, sonata, and character pieces.

3 lects.; one term

Prerequisite: Music 3C03 or 3C04, and registration in a Music programme. Not available to students with credit in Music 4C04.

Offered in alternate years.

MUSIC 4E03 SOLO PERFORMANCE

A continuation of Music 3E03.

1 half-hour lesson weekly; two terms

Prerequisite: Music 3E03 or 3E04, and registration in Level IV of a Music programme. Not available to students with credit in or registration in Music 4E04 or 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.

1 hour lesson weekly; two terms

Prerequisite: A grade of at least A- in Music 3E06, and registration in Level IV of a music programme. Not available to students with credit in, or registration in, Music 4E03 or 4E04.

MUSIC 4G03 ENSEMBLE PERFORMANCE

McMaster Symphony Orchestra, McMaster University Choir, McMaster Concert Band, McMaster Jazz Band, or any other ensemble approved by the Department.

Prerequisite: Permission of the Department. Successful audition required. Academic credit available only to students registered in a Music programme.

MUSIC 4H03 ANALYSIS

Advanced studies in analysis.

Seminar (2 hrs.); one term

Prerequisite: Music 2B03 or 2B06, 2CC3, 2H03 or 2H04, and registration in a Music programme.

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 (2 hrs.); one term

Prerequisite: Music 2A06 or 2BB3, and registration in a Music programme; or permission of the Department.

Offered in alternate years.

MUSIC 4K03 BRASS METHODS

A continuation of Music 3K03.

1 lect., 1 lab.; two terms

Prerequisite: Music 3K03, and registration in a Music programme.

MUSIC 4L03 WOODWIND METHODS

A continuation of Music 3L03.

1 lect., 1 lab.; two terms

Prerequisite: Music 3L03, and registration in a Music programme.

MUSIC 4M03 STRING METHODS

A continuation of Music 3M03.

2 lects.; two terms

Prerequisite: Music 3M03 or 3M04, and registration in a Music programme. Not available to students with credit in Music 4M04.

MUSIC 4N03 VOCAL METHODS

A continuation of Music 3N03.

1 lect.; two terms

Prerequisite: Music 3N03, and registration in a Music programme.

MUSIC 4O03 CONDUCTING

A continuation of Music 3O03.

2 lects., term one; 1 lect., term two

Prerequisite: Music 3O03, and registration in a Music programme.

MUSIC 4P03 PERCUSSION METHODS

A study of the basic techniques of playing percussion instruments. Percussion literature for various educational levels. No previous study of percussion required.

2 lects.; one term

Prerequisite: Registration in a Music programme.

MUSIC 4Q03 PIANO LITERATURE AND PEDAGOGY

Study of piano repertoire and teaching methods for various age groups.

3 lects.; one term

Prerequisite: Registration as a piano major in Level IV of a Music programme.

MUSIC 4S03 SPECIAL STUDIES

Advanced supervised study in any area offered and approved by the Department.

Times to be arranged between the student and instructor; one term

Prerequisite: Permission of the Department, and registration in an Honours Music programme.

MUSIC 4U03 JAZZ IMPROVISATION

Study and performance of jazz improvisations in various styles.

2 hrs.; 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.

3 lects.; one term

Prerequisite: Music 1A06, or 18 units of Music including Music 1B06; or permission of the Department.

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 a 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 a Music programme, and permission of the instructor.

Native Studies

(See *Thematic Areas of Study, Indigenous Peoples*)

Nursing

Regular Faculty as of January 15, 1992

Andrea Baumann, Associate Dean of Health Sciences (Nursing) and Director of the School of Nursing.

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).

Professors

Andrea Baumann/B.Sc.N. (*Windsor*), M.Sc.N. (*Western*), Ph.D. (*Toronto*), RN

Ann Beckingham/B.Sc.N., M.A. (*Columbia*), Ph.D. (*The Fielding Institute*), RN

Regina M. Browne/B.Sc.N. (*Catherine Spaulding College*), M.S. (*Boston*), M.Ed., Ph.D. (*Toronto*), RN

Joan M. Crook/BS (*Niagara*), M.A. (*Dalhousie*), M.Sc. (*McMaster*), RN
Jo-Ann E.T. Fox-Threlkeld/BN (*New Brunswick*), M.Sc., Ph.D. (*Queen's*), RN

Susan E. French/BN (*McGill*), M.S. (*Boston*), Ph.D. (*Toronto*), RN

Associate Professors

Heather Arthur/B.Sc.N. (*McMaster*), M.Sc.N. (*Toronto*), RN

Margaret Black/B.Sc.N. (*McGill*), M.Sc.N. (*Case Western Reserve*), RN

Barbara E. Brown/BA, B.Sc.N. (*Windsor*), M.Sc.N. (*Toronto*), RN

Carolyn M. Byrne/M.H.Sc. (*McMaster*), RN

Patricia A. Caulfield/B.Sc.N. (*Western*), M.Sc. (*McMaster*), RN

Donna K. Ciliska/B.Sc.N., M.Sc.N. (*Western*), Ph.D. (*Toronto*), RN

Patricia J. Ellis/B.Sc.N. (*Wagner*), M.Sc. (*Maryland*), RN

J. Mary Fawcett/B.Sc.N., M.H.Sc. (*McMaster*), CNN(C) (*CNA*), RN

Jocelyn A. Hezekiah/BN (*McGill*), M.Ed. (*Toronto*), Ph.D. (*Alberta*), RN

Mabel Hunsberger/BS (*Goshen*), M.Sc.N. (*Pennsylvania*), RN

Karyn J.S. Kaufman/BSN (*Michigan*), M.S. (*New York*), Ph.D. (*North Carolina*), RN

Basanti Majumdar/B.Sc.N., M.Sc.N. (*Delhi*), M.Ed. (*Columbia*), RN

Janet A.P. McKnight/BA (*Toronto*), M.H.Sc. (*McMaster*), RN

Alba Mitchell/B.Sc.N., M.Sc. (*McMaster*), RN

E. Ann Mohide/B.Sc.N. (*Toronto*), M.H.Sc., M.Sc. (*McMaster*), RN

Ruth M. Pallister/BSN (*British Columbia*), M.N. (*Washington*), RN

Janet Pinelli/BS (*Boston*), M.Sc.N. (*Toronto*), RN

Elizabeth Rideout/BN (*New Brunswick*), M.H.Sc. (*McMaster*), M.Sc. (*Toronto*), RN

Jacqueline Roberts/B.Sc.N., M.Sc. (*McMaster*), RN

Olga Roman/BN (*McGill*), M.Sc. (*Boston*), Ph.D. (*Toronto*), RN

Joan A. Royle/B.Sc.N. (*McMaster*), M.Sc.N. (*Toronto*), RN

Susan E. Smith/BN (*Calgary*), M.Sc. (*Hawaii*), RN

B. Helen Thomas/B.N.Sc. (*Queen's*), M.Sc. (*Waterloo*), RN

Catherine Tompkins/B.Sc.N. (*Western*), M.Ed. (*Toronto*), RN

Robin E. Weir/B.Sc.N. (*Western*), M.Sc. (*Boston*), M.Ed., Ph.D. (*Toronto*), RN

Assistant Professors

Barbara Carpio/B.Sc.N. (*Alberta*), M.Sc.N. (*Toronto*), RN

Dauna L. Crooks/B.Sc.N. (*Toronto*), M.Sc.N. (*Western*), RN

Janet Landeen/B.Sc.N. (*Connecticut*), M.Ed. (*Victoria*), RN

Marilyn Lee/BA, B.Sc.N. (*St. Louis*), M.N. (*South Carolina*), RN

Donna Sergeant/B.Sc.N., M.H.Sc. (*McMaster*), RN

Bonita J. Stevens/B.Sc.N. (*McMaster*), M.Sc.N. (*Toronto*), RN

School Notes:

1. This course listing is divided into 3 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.

2. Normally, registration in all courses beyond 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 section *Faculty of Health Sciences, School of Nursing, Academic Regulations* in this Calendar.)
3. Normally, Level II, III, and IV courses are available to Level II, III, and IV B.Sc.N. (A) and (B) Stream students respectively.

BASIC (A) STREAM

NURSING 1F04 INTRODUCTION TO NURSING AND HEALTH I

An introduction to concepts significant to definitions of nursing and health. The emphasis is on the relevance of context in determining healthy 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.

2 1/2 hrs. (lect./problem-based tut.); 4 hrs. (clin. lab.); one term

Prerequisite: Registration in Level I of the B.Sc.N. Programme (A) Stream.

NURSING 1G04 INTRODUCTION TO NURSING AND HEALTH II

Study of concepts and beginning skills significant to nursing and health empha-

sizing the relevance of context and caring. A continuation of Nursing 1F04.

2 1/2 hrs. (lect./problem-based tut.); 4 hrs. (clin. 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 institutional and community settings. This course is evaluated on a "Pass/Fail" basis.

8 hrs. (clin. lab. including 1 hr. tut.); one term

Prerequisite: Nursing 1F04, 1G04. Normally taken concurrently with Nursing 2M03.

NURSING 2M03 NURSING CONCEPTS IN HEALTH AND ILLNESS I

Integration of biological, psychological and social sciences and nursing theory is developed through work in problem-based tutorials, in which students apply concepts related to nursing, teaching-learning and communication processes through application to a variety of patient situations. Through independent study, students apply theoretical knowledge to a chosen clinical topic.

2 1/2 hrs. (lect./problem-based tut.); 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 biological, psychological, social sciences and nursing theory in problem-based tutorials. A continuation of Nursing 2M03.

3 hrs. (lect./problem-based tut.); one term

Prerequisite: Nursing 2M03. Normally taken concurrently with Nursing 2P03.

NURSING 2P03 GUIDED NURSING PRACTICE II

Planned and guided clinical practice in institutional and community settings. A continuation of Nursing 2L03. This course is evaluated on a "Pass/Fail" basis.

8 hrs. (clin. lab., including 1 hr. tut.); one term

Prerequisite: Nursing 2L03. Normally taken concurrently with Nursing 2N03.

NURSING 3X07 GUIDED NURSING PRACTICE III

Planned and guided practice experiences are provided in a variety of settings (e.g. psychiatric, pediatric and medical-surgical units, physicians offices and community health agencies). Major emphasis is given to the assessment, problem-solving, interpersonal, technical and teaching skills necessary to implement and evaluate nursing care in institutional and ambulatory community settings. Nursing of individuals and families throughout the life-cycle and along the health-illness continuum is stressed. This course is evaluated on a "Pass/Fail" basis.

21 hrs. (clin. lab. including tuts.); 13 weeks

Prerequisite: Nursing 2H04. Normally taken concurrently with Nursing 3S04.

NURSING 3Y07 GUIDED NURSING PRACTICE IV

A continuation of Nursing 3X07. This course is evaluated on a "Pass/Fail" basis.

21 hrs. (clin. lab. including tuts.); 13 weeks

Prerequisite: Nursing 3X07. Normally taken concurrently with Nursing 3S04.

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.

24 hrs. (clin. lab./including tut.); 12 weeks

Prerequisite: Nursing 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 R.N. (B) STREAM

NURSING 3L05 GUIDED NURSING PRACTICE I

Planned and guided practice experiences in primary health care settings. Major emphasis is given to the assessment, problem-solving, interpersonal, ministering and teaching behaviour necessary to implement and evaluate nursing care in ambulatory community settings. Nursing of individuals and families throughout the life cycle and along the health-illness continuum is stressed. This course is evaluated on a "Pass/Fail" basis.

15 hrs. (clin. lab., including tut.); 13 weeks

Prerequisite: Normally to be taken concurrently with Nursing 3S04.

NURSING 3M05 GUIDED NURSING PRACTICE II

A continuation of Nursing 3L05. This course is evaluated on a "Pass/Fail" basis.

15 hrs. (clin. lab., including tut.); 13 weeks

Prerequisite: Normally to be taken concurrently with Nursing 3T04.

NURSING 3N08 GUIDED NURSING PRACTICE III

Concentrated planned experience in one setting (normally community health nursing) with a major emphasis on the development of expanded role skills in a reality situation which allows for the development and demonstration of independent decision-making. This course is evaluated on a "Pass/Fail" basis.

24 hrs. (clin. lab.), 4 hrs. (independent study), 3 hrs. (tut.); 6 weeks (normally offered in May - June.)

Prerequisite: Nursing 3L05, 3M05, 3S04 and 3T04.

OCCUPATIONAL THERAPY AND PHYSIOTHERAPY

NURSING 4S06 GUIDED NURSING PRACTICE IV ^{II}

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. 12 hrs. (clin. lab.); 2 hrs. (tut.); 13 weeks

Prerequisite: Nursing 3N08. Normally to be taken concurrently with Nursing 4E03.

NURSING 4T06 GUIDED NURSING PRACTICE V ^{III}

A continuation of Nursing 4S06. This course is evaluated on a "Pass/Fail" basis. 12 hrs. (clin. lab.); 2 hrs. (tut.); 13 weeks

Prerequisite: Nursing 4S06. Normally to be taken concurrently with Nursing 4E03.

(A) and (B) STREAM

NURSING 3S04 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. The problems identified help the student to relate concepts and theories to assist individuals, families, and communities with health promotion and maintenance, illness prevention, and recovery from disease.

4 hrs. (lect./problem-based tut.); one term

Prerequisite: Normally Nursing 2N03 and 2P03 for (A) Stream students or registration in Level III or the B.Sc.N. Programme for (B) Stream students. Normally to be taken concurrently with Nursing 3X07 (for (A) Stream students) or Nursing 3L05 (for (B) Stream students).

NURSING 3T04 NURSING CONCEPTS IN HEALTH AND ILLNESS ^{II 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 3S04.

4 hrs. (lect./problem-based tut.); one term

Prerequisite: Nursing 3S04. Normally to be taken concurrently with Nursing 3Y07 (for (A) Stream students) or Nursing 3M05 (for (B) Stream students).

NURSING 4A02 CURRENT TRENDS AND ISSUES IN NURSING

Issues facing the profession, and their implications of current changes in the health field for future nursing practice.

2 lects. every week; one term

Prerequisite: Registration in Level IV of the B.Sc.N. Programme 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, leadership and management or education of clients/patients, students, and staff. Student participation includes selecting appropriate situations and related theories for study, and identifying interventions and evaluation strategies.

3 hrs. (lect./problem-based tut.); one term

Prerequisite: Normally Nursing 3T04 (for (A) and (B) Streams) and Nursing 3Y07 (for (A) Stream) and Nursing 3N08 (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.

3 hrs. (lect./problem-based tut.); one term

Prerequisite: Nursing 4E03. Normally taken concurrently with Nursing 4K07 (for (A) Stream) or Nursing 4T06 (for (B) Stream).

Occupational Therapy and Physiotherapy

Faculty as of January 15, 1992

B. Cooper/Associate Dean (OT/PT)

P. Salvatori/Chair, Bachelor of Health Sciences (OT) Programme

H. Saarinien/Chair, Bachelor of Health Sciences (PT) Programme

Associate Professors

Barbara A. Cooper/Dip. P&OT (Toronto), B.A. Honours, M.H.Sc. (McMaster)

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)

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)

Judith A. Chapman/Dip. PT (England), M.H.Sc. (McMaster)

Beverley M. Clarke/Dip. PT (Manitoba), B.A., M.Sc. (McMaster)

Linda G. Clements/B.Sc. OT (Western), M.Sc. (Toronto)

John A. Hay/B.A. (Queen's), M.A. (Alberta), Ph.D. (McMaster)

Allison L. McKinnon/Dip. OT (Manitoba), B. OT, M.Ed., Ph.D. (Alberta)

Janice M. Perkins/Dip. PT (England), B.Sc., M.Sc. (Nova Scotia)

Helen K. Saarinien/Dip. P&OT (Toronto), B.Sc. (Western), M.H.Sc. (McMaster)

Penny S. Salvatori/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

Patricia E. Solomon/Dip. PT (Manitoba), M.H.Sc. (McMaster)

Paul Stratford/Dip. PT, M.Sc. (McMaster)

Maureen E. Ward/B.Sc. OT (Queen's), M.Sc. (McMaster)

Muriel G. Westmorland/Dip. OT (England), M.H.Sc. (McMaster)

Renee M. Williams/Dip. P&OT (Toronto), M.H.Sc. (McMaster)

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 Occupational Therapy and Physiotherapy.

If further information is requested, please contact the School of Occupational Therapy and Physiotherapy at (416) 525-9140, extension 2867.

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

Block I - Basic Skills

OCCTHER 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, social and behavioural determinants of health. The role of Occupational Therapy in case management is also explored.

5 hrs. (tutorial); 14 weeks

OCCTHER 1L17 CLINICAL SKILLS LAB I

Students develop basic interviewing, assessment and activity analysis skills.

7 hrs. (lab); 14 weeks

OCCTHER 1S13 INQUIRY SEMINAR I

Students in both the Occupational Therapy and Physiotherapy Programmes will study together issues of importance to both professions. Themes for exploration include a definition of health, the history, development and future directions for the professions of OT and PT.

3 hrs. (lecture/seminar); 14 weeks

Block II - Child Health

OCCTHER 1T23 PROBLEM-BASED TUTORIAL II

Students explore various clinical problems encountered in the practice of pediatric occupational therapy.

5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

OCCTHER 1L24 CLINICAL SKILLS LAB II

Students develop assessment and treatment skills for pediatric populations.

7 hrs. (lab); 8 weeks

OCCTHER 1S23 INQUIRY SEMINAR II

Students investigate various conceptual issues related to child health during infancy, childhood and adolescence.

5 hrs. (lecture/seminar); 8 weeks

OCCTHER 1C26 CLINICAL EDUCATION I

Students integrate knowledge and skills into clinical practice in a pediatric setting under supervision of a qualified therapist.

35-40 hrs. (fieldwork); 6 weeks

Block III - Adult Physical Health

OCCTHER 1T33 PROBLEM-BASED TUTORIAL III

Students explore various clinical problems encountered in the field of adult rehabilitation.

5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

OCCTHER 1L34 CLINICAL SKILLS LAB III

Students develop assessment and treatment skills for physically disabled adult populations.

7 hrs. (lab); 8 weeks

OCCTHER 1S33 INQUIRY SEMINAR III

Students investigate various conceptual issues related to adult physical health. 5 hrs. (lecture/seminar); 8 weeks

OCCTHER 1C36 CLINICAL EDUCATION II

Students integrate knowledge and skills into clinical practice in an adult rehabilitation setting under the supervision of a qualified therapist. 35-40 hrs. (fieldwork); 6 weeks

Block IV - Adult Mental Health

OCCTHER 2T43 PROBLEM-BASED TUTORIAL IV

Student explore various clinical problems encountered in the practice of adult mental health. 5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

OCCTHER 2L44 CLINICAL SKILLS LAB IV

Students develop assessment and treatment skills for mentally ill populations. 7 hrs. (lab); 8 weeks

OCCTHER 2S43 INQUIRY SEMINAR IV

Students investigate various conceptual issues related to adult mental health. 5 hrs. (lecture/seminar); 8 weeks

OCCTHER 2C46 CLINICAL EDUCATION III

Students integrate knowledge and skills into clinical practice in a mental health setting under the supervision of a qualified therapist. 35-40 hrs. (fieldwork); 6 weeks

Block V - Aging and Health

OCCTHER 2T53 PROBLEM-BASED TUTORIAL V

Students explore various clinical problems encountered in the practice area of aging and health. 5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

OCCTHER 2L54 CLINICAL SKILLS LAB V

Students develop assessment and treatment skills for geriatric populations. 7 hrs. (lab); 8 weeks

OCCTHER 2S53 INQUIRY SEMINAR V

Students explore various conceptual issues in the area of aging and health. 5 hrs. (lecture/seminar); 8 weeks

OCCTHER 2C56 CLINICAL EDUCATION IV

Students integrate knowledge and skills into clinical practice in a geriatric setting under the supervision of a qualified therapist. 35-40 hrs. (fieldwork); 6 weeks

Block VI - Integration

Occupational Therapy and Physiotherapy students study together in all Block VI courses.

OCCTHER 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. 4 hrs. (tutorial); 14 weeks

OCCTHER 2L63 CLINICAL SKILLS LAB VI

Within the broad framework of the Management Sciences, students study management theory and organizational behaviour, and develop basic organizational and management skills. 3 hrs. (lab); 14 weeks

OCCTHER 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. 5 hrs.; 14 weeks

OCCTHER 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. 3 hrs. (lecture/seminar); 14 weeks

Block VII

OCCTHER 2C76 CLINICAL 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 Clinical Education Coordinator. 35-40 hrs. (fieldwork); 6 weeks

PHYSIOTHERAPY

Block I

PHYSTHER 1T15 MUSCULOSKELETAL I

The problem-based tutorials in Block 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. 5 hrs. (tutorial); 14 weeks

PHYSTHER 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 on therapeutic heat and cold and ultrasound. 7 hrs. (lab); 14 weeks

PHYSTHER 1S13 INQUIRY SEMINAR I

Students in both the Occupational Therapy and Physiotherapy Programmes will study together issues of importance to both professions. Themes for exploration include a definition of health, the history, development and future directions for the professions of OT and PT. 3 hrs. (lecture/seminar); 14 weeks

Block II

PHYSTHER 1T23 MUSCULOSKELETAL II

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. 5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

PHYSTHER 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. 7 hrs. (lab); 8 weeks

PHYSTHER 1S23 INQUIRY SEMINAR II

Seminars focus on the concept of pain. Students will explore pain from the biological, psychological, behavioural and treatment aspects. 5 hrs. (lecture/seminar); 8 weeks

PHYSTHER 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 hrs. (fieldwork); 6 weeks

Block III

PHYSTHER 1T33 MUSCULOSKELETAL III

Students continue the study of the more complex and/or chronic injuries and diseases of the musculoskeletal system in all age groups, including the arthritides, and chronic pain. This block also provides an opportunity for the students to explore the natural history of a condition. 5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

PHYSTHER 1L34 CLINICAL SKILLS LAB III

Students acquire the advanced manual assessment and treatment skills which are required to manage clients of all ages with complex and chronic musculoskeletal problems. 7 hrs. (lab); 8 weeks

PHYSTHER 1S33 INQUIRY SEMINAR III

Seminars focus on issues related to determinants of health and chronicity. Themes to be explored include cultural, ethnic and racial factors in health, biopsychosocial aspects of chronic illness and its management. 5 hrs. (lecture/seminar); 8 weeks

PHYSTHER 1C36 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 hrs. (fieldwork); 6 weeks

Block IV

PHYSTHER 2T43 CARDIOPULMONARY

Students study the pathology, etiology, assessment and physiotherapeutic management of cardiac and pulmonary conditions. Criteria for establishing causation are also addressed. 5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

PHARMACOLOGY

PHYSTHER 2L44 CLINICAL SKILLS LAB IV

Students acquire the assessment and treatment skills which are required for the physiotherapeutic management of clients with cardiac and/or pulmonary conditions.

7 hrs. (lab); 8 weeks

PHYSTHER 2S43 INQUIRY SEMINAR IV

Seminars focus on issues important to the practice of physiotherapy with cardiopulmonary patients. Themes include exercise physiology, stress and health, locus of control, balance of life, nutrition, and pharmacology.

5 hrs. (lecture/seminar); 8 weeks

PHYSTHER 2C46 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 hrs. (fieldwork); 6 weeks

Block V

PHYSTHER 2T53 NEUROLOGY

Students study the pathology, etiology, assessment and physiotherapeutic treatment of clients of all ages with neurological problems.

5 hrs. (tutorial); 8 weeks

2 hrs. (tutorial); 6 weeks

PHYSTHER 2L54 CLINICAL SKILLS LAB V

Students acquire basic level skills to assess and treat clients with neurological conditions.

7 hrs. (lab); 8 weeks

PHYSTHER 2S53 INQUIRY SEMINAR V

Seminars focus on issues important to the practice of physiotherapy with clients who manifest neurological problems. Themes include the behavioral sciences, brain function, thinking skills, human function, dependency, decision making including prognosticating, and the disability/impairment paradigm.

5 hrs. (lecture/seminar); 8 weeks

PHYSTHER 2C56 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 hrs. (fieldwork); 6 weeks

Block VI

Occupational Therapy and Physiotherapy students study together in all Block VI courses.

PHYSTHER 2T64 INTEGRATION

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.

4 hrs. (tutorial); 14 weeks

PHYSTHER 2L63 CLINICAL SKILLS LAB VI

Within the broad framework of the Management Sciences, students study management theory and organizational behaviour, and develop basic organizational and management skills.

3 hrs. (lab); 14 weeks

PHYSTHER 2I65 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.

5 hrs.; 14 weeks

PHYSTHER 2S63 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.

3 hrs. (lecture/seminar); 14 weeks

Block VII

PHYSTHER 2C76 CLINICAL 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 Clinical Education Coordinator.

35-40 hrs. (fieldwork); 6 weeks

Peace Studies

(See Thematic Areas of Study)

Pharmacology

With the exception of Pharmacology 4B03, these courses are available only to those students registered in Honours Biology and Pharmacology.

Department Note:

Pharmacology 3A06, 3B06, 4A03, 4AA3, 4C03, 4D03 and 4E03 will be based on self-directed problem based learning.

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.

1 tut. (1), 1 tut. (2); 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.

1 lab (9); two terms

Prerequisite: Completion of or registration in Pharmacology 3A06.

PHARMAC 4A03 DRUG AND SIGNAL TRANSMISSION I

Introduction to the effects of drugs on communication by chemical signals in biological systems.

1 tut. (1), 1 tut. (2); one term

Prerequisite: Pharmacology 3A06.

PHARMAC 4AA3 DRUG AND SIGNAL TRANSMISSION II

The continuation of Pharmacology 4A03.

1 tut. (1), 1 tut. (2); one term

Prerequisite: Pharmacology 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.

3 lects. or 2 lects. and 1 tut.; one term

Prerequisite: Pharmacology 3A06 or Biology 3AA3.

PHARMAC 4C03 PRINCIPLES OF TOXICOLOGY

General principles of toxicology, adverse effects of selected agents on man and other organisms.

1 tut. (1), 1 tut. (2); one term

Prerequisite: Pharmacology 3A06.

PHARMAC 4D03 DRUG DESIGN

Principles of drug design based on drug transport, metabolism and selectivity of action at the target sites with emphasis on quantitative structure-activity relationships.

1 tut. (1), 1 tut. (2); one term.

Prerequisite: Pharmacology 3A06.

PHARMAC 4E03 EPIDEMIOLOGY OF EFFECTS OF DRUGS AND TOXICANTS

Methods for collection of data and its analysis regarding action of drugs, toxicants and environmental chemicals in animal and human populations.

1 tut. (1), 1 tut. (2); one term.

Prerequisite: Pharmacology 3A06.

PHARMAC 4F09 SENIOR THESIS

A thesis based upon a research project carried out under the direction of a member of the Faculty.

Prerequisite: Pharmacology 3A06.

Philosophy

Faculty as of January 15, 1992

David L. Hitchcock/Chair

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)

Albert Shalom/B.A., M.A. (Cape Town), D. de l'U., D. ès L. (Paris)

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)
 Catherine Beattie/B.A. (McMaster), M.A. (Guelph), Ph.D. (London)
 Constantine Georgiadis/M.A. (Warsaw), 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

Barry G. Allen/B.A., (Lethbridge), M.A., Ph.D. (Princeton)
 Elisabeth Boetzkes/B.A., M.A. (Alberta), Ph.D. (Calgary), MTh. (Newman Theological College, Edmonton)
 John R.M. Bristol/B.A., M.A., Ph.D. (Toronto)/part-time
 Donald Dedrick/B.A., M.A. (Carleton)/part-time
 Michael Hartney/B.A., BTh., MTh. (Ottawa), M.A. (Western), D.Phil. (Oxford)/part-time

Lecturer

Jill LeBlanc/B.A. (McMaster), M.A. (Toronto)
 Marina Vitkin/B.A. (Manitoba), M.A. (Toronto)

Instructors

Martha Husain/B.A., M.A. (Syracuse), Ph.D. (Waterloo)/part-time
 Paul Viminitz/B.A. (Regina), M.A. (Dalhousie)/part-time

Associate Members

Kenneth M. Blackwell (Russell Archivist, Mills Library), B.A. (Victoria), M.L.S. (Western), M.A. (McMaster), Ph.D. (Guelph)
 James C. Gaa (School of Business), B.A. (Michigan State), A.M., Ph.D. (Washington, St. Louis), Ph.D. (Illinois)

Department Notes:

1. The Department of Philosophy offers two Level I courses, Philosophy 1B06 and Philosophy 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.

PHILOS 1B06 PHILOSOPHY AND SOCIETY

An introduction to philosophy, through the social-political thought of two or more of Plato, Hobbes, Mill and Marx, focusing on rival views of human nature and the state, social conflict, inequality and justice.

2 lects., 1 tut.; two terms

Prerequisite: Open, except to students who have credit in, or are registered in, Philosophy 1D06.

PHILOS 1D06 PROBLEMS IN PHILOSOPHY

A critical investigation of philosophical arguments concerning God, politics, morality, human nature, knowledge and art.

2 lects., 1 tut.; two terms

Prerequisite: Open, except to students who have credit in, or are registered in, Philosophy 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.

3 lects.; two terms

Prerequisite: Open to students in Level II and above.

Same as Classics 2P06.

PHILOS 2B03 INTRODUCTORY LOGIC

Sentential and quantification logics are introduced and applied to arguments in English.

3 lects.; one term

Prerequisite: Open to students 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.

3 lects.; two terms

Prerequisite: Open to students 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 in cooperation with members from the Faculty of Health Sciences.

2 lects., 1 tut.; one term

Prerequisite: Open to students in Level II and above.

Same as Religious Studies 2C03.

Enrolment is limited.

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?

3 lects.; one term

Prerequisite: Open to students 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.

2 lects., 1 tut.; one term

Prerequisite: Open to students 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.

3 lects.; one term

Prerequisite: One previous course in Philosophy; or permission of the Department.

Same as Art History 2H03.

PHILOS 2M03 SCIENTIFIC METHOD

Theory structure and justification in the sciences compared to reasoning in pseudosciences (e.g. theories of paranormal or 'psi' phenomena).

3 lects.; one term

Prerequisite: Open to students in Level II and above.

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.

2 lects., one tut.; one term

Prerequisite: Open to students 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.

3 lects.; one term

Prerequisite: Registration in a programme in Philosophy. Not available to students with credit for, or registration in, Humanities 1C03, 2C03 or Arts and Science 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.

1 lect. (2 1/2 hrs.); two terms

Prerequisite: Philosophy 2C06 and registration in Level III or IV of any programme; or permission of the Department.

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.

1 lect. (2 1/2 hrs.); one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

PHILOS 3C03 ADVANCED BIOETHICS

An advanced study of the application of ethical theory to selected problems in health care relating to the problem of the sanctity versus the quality of life.

3 lects.; one term

Prerequisite: Philosophy 2D03 or Religious Studies 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; or permission of the Department.

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.

3 lects.; one term

Prerequisite: Six units of Philosophy and registration in Level III or IV of any programme; or permission of the Department.

Offered in alternate years.

PHILOSOPHY

PHILOS 3F03 INTERMEDIATE LOGIC

A study of formal languages and their interpretations, including soundness and completeness proofs, and some major results such as Gödel's theorems.

3 lects.; one term

Prerequisite: Philosophy 2B03; or permission of the Department.

– Offered in alternate years.

PHILOS 3G03 ETHICS

An introduction to the major types of ethical theory and the problem of their justification.

3 lects.; one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

PHILOS 3H03 PHILOSOPHY OF RELIGION

An analysis of the concept of religion in light of the philosophical claims of religious experience, practice, and belief.

3 lects.; one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

PHILOS 3I03 PHILOSOPHY AND FEMINISM

A study of philosophical issues in feminist thought.

3 lects.; one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

PHILOS 3K03 PHILOSOPHY OF EDUCATION

A systematic account of education through a critical analysis of the concepts of teaching, learning, and subject matter.

2 lects., 1 tut.; one term

Prerequisite: At least six units of Philosophy, or permission of the Department.

PHILOS 3M03 PHILOSOPHY OF BIOLOGY

Introduction to philosophical problems arising from Biology: the nature of biological laws and explanations, the presuppositions of taxonomy, the status of sociobiology and evolutionary theory.

2 lects., 1 tut.; one term

Prerequisite: One course in Biology or Philosophy 2M03; or permission of the instructor.

PHILOS 3N06 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.

3 lects.; two terms

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

PHILOS 3O03 THEORY OF KNOWLEDGE

A study of skepticism and certainty, knowledge and belief, perception, memory, and truth.

3 lects.; one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

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.

3 lects.; one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

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.

3 lects.; one term

Prerequisite: At least six units of Philosophy and registration in Level III or IV of any programme; or permission of the Department.

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. Times and topics are arranged between the students and the instructor.

Prerequisite: Registration in Level III or IV of a programme in Philosophy, with a Cumulative Area Average of at least 7.0 in Philosophy, agreement of the instructor, and permission of the Department. A formal proposal must be submitted to the Philosophy Undergraduate Advisor prior to registration.

PHILOS 3WW3 SUPERVISED STUDY IN PHILOSOPHY AND BIOLOGY (I)

Students regularly meet with instructors from the Departments of Philosophy and Biology to discuss a list of readings.

Tuts.; one term

Prerequisite: Six units of Philosophy and six units of Biology.

PHILOS 4A03 CARTESIANISM

A study of Cartesianism (including the views of Leibniz) as a response to 16th-Century mechanism.

Seminar (2 1/2 hrs.); one term

Prerequisite: Philosophy 2C06 or 2F03 and registration in Level III or IV of any programme; or permission of the Department.

Offered in alternate years.

PHILOS 4B03 THEORY OF VALUE

A study of human practices of evaluation in morality, politics, art, religion, and economics.

Seminar (2 1/2 hrs.); one term

Prerequisite: Registration in Level III or IV of a programme in Philosophy; or permission of the Department.

Offered in alternate years.

PHILOS 4C03 PLATO

A critical examination of Plato's writings with reference to selected central philosophical issues.

1 lect., 1 seminar (2 hrs.); one term

Prerequisite: Philosophy 2A06 and registration in Level III or IV of any programme; or permission of the Department. Not available to students with credit in Philosophy 3E03.

Offered in alternate years.

Same as Classics 4C03.

PHILOS 4D03 TWENTIETH-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 (2 1/2 hrs.); one term

Prerequisite: Registration in Level III or IV of a programme in Philosophy; or permission of the Department.

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 (2 1/2 hrs.); one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department.

PHILOS 4F03 RECENT EUROPEAN PHILOSOPHY

Contemporary trends in European Philosophy as represented by such writers as Derrida, Foucault and Habermas.

Seminar (2 1/2 hrs.); one term

Prerequisite: Registration in Level III or IV of a programme in Philosophy; or permission of the Department.

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.

1 lect. (2 hrs.), 1 seminar (1 hr.); one term

Prerequisite: At least six units of Philosophy, and registration in Level III or IV of any programme; or permission of the Department. Philosophy 2B03 is recommended. Not available to students with credit in Philosophy 3R03.

Offered in alternate years.

PHILOS 4H03 METAPHYSICS

An investigation of metaphysical concepts, such as substance, individuation, identity, essence, quality, process, mind, time and causality. Some contemporary criticisms of metaphysics will be discussed.

Seminar (2 1/2 hrs); one term

Prerequisite: Registration in Level III or IV of a programme in Philosophy; or permission of the Department.

PHILOS 4I03 MEDIEVAL PHILOSOPHY

A discussion of the philosophical doctrines of Augustine, Thomas Aquinas, and William of Occam.

Seminar (2 1/2 hrs.); one term

Prerequisite: Philosophy 2A06 or 3E03 or 3J03 and registration in Level III or IV of any programme; or permission of the Department.

Offered in alternate years.

PHILOS 4J03 ARISTOTLE

A systematic study of Aristotle's major doctrines.

Seminar (2 1/2 hrs.); one term

Prerequisite: Philosophy 2A06 and registration in Level III or IV of any programme; or permission of the Department. Not available to students with credit in Philosophy 3J03.

Offered in alternate years.

Same as Classics 4J03.

PHILOS 4L03 LOGICAL THEORY

The course deals with applications of logic within philosophy and philosophical issues within logic. Topics which may be included are modal logics, deontic logics, formal semantics, free logics, many-valued logics, and such concepts as truth, reference, logical form, and bivalence.

Seminar (2 1/2 hrs.); one term

Prerequisite: Philosophy 2B03; or permission of the Department.

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.

Prerequisite: Registration in Level IV of an Honours programme in Philosophy, agreement of the instructor, and permission of the Department. A formal proposal must be submitted to the Philosophy Undergraduate Advisor prior to registration. (This requirement does not apply to students in a programme combining Philosophy and Biology.) Not available to students with credit in Philosophy 4Z06.

PHILOS 4WW3 SUPERVISED STUDY IN PHILOSOPHY AND BIOLOGY (II)
Students regularly meet with instructors from the Departments of Philosophy and Biology to discuss a list of readings.

Tuts.; one term

Prerequisite: Six units of Philosophy and six units of Biology.

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 oral examination.

Prerequisite: Registration in Level IV of any Honours programme in Philosophy, with a Cumulative Area Average of at least 9.0 in Philosophy, and permission of the Department. A formal proposal must be submitted to the Undergraduate Advisor prior to registration. Not available to students with credit in Philosophy 4W03.

Physical Education

Faculty as of January 15, 1992

D. Sale/Chair

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)

Professor

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)

Associate Professors

Cameron J. Blimkie/B.A., B.P.E. (McMaster), M.A., Ph.D. (Western)

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)

William H. Fowler/B.A. (Western), M.P.E. (Springfield)

Raymond B. Johnson/B.A. (Western), M.Ed. (SUNY, Buffalo), Ph.D. (Temple)

Mary E. Keyes/B.A., M.A. (Western), Ph.D. (Ohio State)

Timothy D. Lee/B.H.K., M.A. (Windsor), Ph.D. (Louisiana State)

Neil McCartney/B.Ed. (Exeter), Ph.D. (McMaster)

Frederick A. Moyes/Dip.P.E. (Jordanhill), M.Ed. (Leicester)/part-time

Janet L. Starks/B.A. (Western), M.Sc., Ph.D. (Waterloo)

Assistant Professors

Nicholas Cipriano/B.P.H.E., M.Sc. (Lakehead)

James J. Dowling/B.H.K., M.H.K. (Windsor), Ph.D. (Waterloo)

Robert J. Henderson/B.P.E. (McMaster) M.A. (Alberta)

Audrey Hicks/B.P.E., M.Sc., Ph.D. (McMaster)

Susan E. Inglis/B.P.E., M.A. (Alberta), Ph.D. (Ohio State)

Andrea M. Mann/B.A., B.P.E. (McMaster), M.Sc. (Dalhousie), Ph.D. (Ohio State)

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)

Lecturers

Michael Cain/B.A. (York), M.S.S. (U.S.S.A.)

Thérèse A. Quigley/B.A. B.Ed. (Western), M.A. (Alberta)

David C. Wilson/B.Ed. (Bristol), M.A. (York)

Instructors

Stephen E. Bruno/B.Sc. (Weber State)

Deborah E. Marinoff/B.Sc. (York)

Barry M. Phillips/B.Sc., B.Ed. (Acadia), M.S.S. (United States Sports Academy)

Gaye Stratten/B.P.H.E. (Toronto)

Patricia M. Winik/B.Sc. (Michigan State), B.Ed. (Toronto)

Part-time Instructors

Brian Maraj/B.P.E. (McMaster), M.A. (Western)

Associate Members

Oded Bar-Or/Pediatrics/M.D. (Hebrew Un., Jerusalem)

Scott Garner/Medicine/B.Sc. (Med.) (Manitoba), M.D. (Manitoba)

John Hay/B.A., B.P.H.E. (Queen's), M.Sc. (Alberta), Ph.D. (McMaster)

N.L. Jones/M.B., B.S., M.D. (London), F.R.C.P.(L) S

A.J. McComas/B.Sc., M.B., B.S. (Durham), F.R.C.P.(C)

Robert S. McKelvie/B.Sc., M.Sc., M.D. (Western)

Department Notes:

1. Not all Physical Education courses listed in this Calendar are taught every year. Students are advised to consult the time-table which is published annually by the Registrar's Office to determine whether a course is offered.
2. With the permission of the instructor, the following courses **may be taken** as elective credit by undergraduates **not** in Physical Education: 3J03, 3P03, 3Q03, 4E03, 4J03, 4L03, 4M03, 4Q03. All other Physical Education courses are **open only** to students registered in the Bachelor of Physical Education programme.
3. **Required Area theory** courses are: Physical Education 1A06, 1B03, 1E03, 1F03, 2A03, 2B03, 2C06, 2D03, 2F03, and Biology 1J03.

Required Area practicum courses are: 1S00 (McMaster Swimming Test), 1CA0 (CPR/First Aid), PRO2 (Gymnastics), PRO3 (Track), PRO4 (Games), PRO5 (Dance), PRO6 (Fitness).

Area Electives: All other Physical Education courses listed or offered.

Enrolment in some Level III and IV elective courses may be limited and may require a prerequisite or permission of the instructor. 4.

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*.

PHYS ED 1A06 HUMAN ANATOMY

Macroscopic and microscopic anatomy, with particular reference to the locomotor, nervous, cardiovascular, respiratory, digestive, endocrine, and urogenital systems.

3 hrs. (lects., labs.); two terms

PHYS ED 1B03 SOCIOLOGY OF SPORT

Critical examination of contemporary issues and problems of sport in Canadian society.

3 hrs. (lects. and discussion); one term

PHYS ED 1E03 MOTOR DEVELOPMENT

Physical growth patterns and the development of perceptual-motor abilities. Age-appropriate motor behaviour, from infancy to old age, is investigated.

3 hrs. (lects., labs.); one term

PHYS ED 1F03 KINESIOLOGY I

An introduction to basic mechanical principles and concepts as applied to physical activity.

3 hrs. (lects., labs.); one term

PHYS ED 2A03 KINESIOLOGY II

Study of the kinematics and kinetics of human movement, including electromyography, fluid and tissue mechanics.

3 hrs. (2 lects., 1 lab.); one term

PHYS ED 2B03 PSYCHOMOTOR BEHAVIOUR

Motor learning principles and performance determinants are investigated, together with other relevant psychological determinants of gross motor behaviour. 2 lects., 1 lab.; one term

PHYSICAL EDUCATION

PHYS ED 2C06 PHYSIOLOGY OF EXERCISE

The effects of exercise on the physiological systems, and the application of physiological principles to human exercise performance.
2 lects., 1 lab. (2); two terms

PHYS ED 2D03 PHILOSOPHY OF PHYSICAL EDUCATION AND SPORT

Critical examination of the concepts, theories, and assumptions associated with physical education and sport.
3 hrs. (lects. and discussion); one term

PHYS ED 2F03 HISTORY OF PHYSICAL EDUCATION AND SPORT IN CANADA

The origins and development of modern physical education and sport in Canada, including individual leaders and contributing cultural factors.
3 hrs. (lects. and seminars); one term

PHYS ED 3B03 ADAPTED PHYSICAL ACTIVITY

Physical activity and movement designed to meet the needs, interests, and abilities of individuals referable to special physical activity programmes.
3 lects.; one term

Co-requisite: Registration in PR89

PHYS ED 3C03 MEASUREMENT AND EVALUATION

Introduction to research design and scientific method; elementary statistics.
3 hrs. (lect.); one term

PHYS ED 3F03 SPORT AND PHYSICAL EDUCATION ADMINISTRATION I

A macro perspective of sport organizations, including administrative functions such as planning, organizing, marketing, meeting management, scheduling, and legal liability.
3 hrs. (lects., seminars); one term

PHYS ED 3G03 BEHAVIOURAL ASPECTS OF PLAY AND GAME INVOLVEMENT

Behavioural and developmental patterns of play from infancy through adulthood are examined in light of selected theories and contemporary practices in physical education and recreation.
3 hrs. (lects.); one term

PHYS ED 3H03 HISTORICAL INTERPRETATIONS OF SPORT AND PHYSICAL ACTIVITY

Inquiry into the development of physical activity and sport from ancient to modern civilizations in the perspective of cultural change.
2 lects., 1 seminar, one term

Enrolment is limited.

PHYS ED 3J03 AESTHETICS OF SPORT AND DANCE

An inquiry into involvement in sport and dance and the search for meaning and reality in these non-verbal forms of expression and communication.
3 hrs. (lects., seminars); one term

With permission of the instructor this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

PHYS ED 3K03 SPORTS INJURIES

Methods of dealing with injuries under following headings: prevention; preliminary assessment and response; first aid; basic CPR; and post-medical care.
1 lect., 1 tut., 1 lab.; one term

Enrolment is limited. Priority will be given to Level IV Physical Education students.

PHYS ED 3L03 SPORT AND PHYSICAL EDUCATION ADMINISTRATION II (BEHAVIOURAL CONCEPTS)

Behavioural concepts and principles.

Topic areas include the study of organizations, and individual, group and organizational processes.
3 hrs. (lects., seminars); one term

Prerequisite: Physical Education 3F03.

Enrolment is limited.

PHYS ED 3M03 FOUNDATIONS OF ATHLETIC COACHING

An examination of the principles governing athletic coaching with emphasis placed on the theoretical and behavioural aspects.
3 hrs.; one term

Not open to students with credit in Physical Education 3M06.

PHYS ED 3P03 SPORT AND SOCIAL DEVELOPMENT

Macro-analysis of sport and culture, considering the place of sport and leisure in cultural transmission and cultural change.
3 hrs. (lects. 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 Physical Education.

Same as Sociology 3DD3.

PHYS ED 3Q03 SPORT AND SMALL GROUP DYNAMICS

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 subcultures.

3 hrs. (lects. 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 Physical Education.

Same as Sociology 3EE3.

PHYS ED 3SS3 BODY, MIND, SPIRIT

An exploration of the relationship between body, mind and spirit from the standpoint of eastern and western religious thought with special reference to current perspectives.

Course work includes experiential workshops.

3 hr. seminar; one term

Prerequisite: Open

Same as Religious Studies 3SS3.

Enrolment is limited.

PHYS ED 4A06 BIOMECHANICS OF HUMAN MOVEMENT

In-depth study of the mechanics of human movement with application to specific position and movement problems; relationship of the mechanics to selected neurophysiological mechanisms.

3 hrs. (lects., labs.); two terms

Prerequisite: Permission of the instructor.

Enrolment is limited.

PHYS ED 4B03 PHYSICAL ACTIVITY AND CORONARY HEART DISEASE

An examination of the role of physical activity in the prevention and rehabilitation of coronary heart disease.

3 lects.; one term

PHYS ED 4C06 HUMAN PERFORMANCE PHYSIOLOGY

Factors affecting human physical performance, with emphasis upon procedures for maximizing sport performance.

2 lects., 1 lab.; two terms

Prerequisite: Open to Level IV students.

Enrolment is limited.

PHYS ED 4D06 FOUNDATIONS IN OUTDOOR EDUCATION

An examination of Outdoor Education programmes and their historical, philosophical and sociological foundations.

3 hrs. (lects., seminars); two terms

Prerequisite: Open to Level IV students.

Enrolment is limited.

PHYS ED 4E03 MOTOR CONTROL

Neuromuscular control mechanisms underlying motor skill performance. Topics include basic neuroanatomy, mechanisms of sensation and regulation of voluntary movement.

2 lects., 1 lab.; one term

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

Enrolment is limited.

PHYS ED 4F03 SELECTED TOPICS IN PHYSICAL EDUCATION

Topics of contemporary interest with emphasis upon current theory and research. Students should consult the undergraduate department concerning the topics to be examined.

3 hrs. (lects., seminars); one term

Not open to students with credit in Physical Education 4O03 in 1989-90.

PHYS ED 4H03 FITNESS-AND WELLNESS-CONCEPTS AND APPRAISAL TECHNIQUES

The concepts and principles of fitness and wellness will be studied with an examination and application of fitness and wellness appraisal techniques.

3 hrs. (lects., labs, presentations); one term

PHYS ED 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.

3 hrs. (lects.); one term

Prerequisite: Registration in Level III or IV Physical Education or Gerontology programme.

Same as Gerontology 4I03.

Not open to students with credit in Physical Education 4F03 in 1987/88 or 1988/89.

PHYS ED 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.

3 hrs. (lects., seminars); one term

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

Same as Drama 4J03.

PHYS ED 4K03 PERCEPTUAL-MOTOR BEHAVIOUR: AN INTEGRATIVE ANALYSIS

An advanced examination of current topics regarding perceptual-motor behaviour with particular reference to everyday experiences.

3 hrs. (lects., labs.); one term

Enrolment is limited.

PHYS ED 4L03 COMPARATIVE PHYSICAL EDUCATION AND SPORT (SELECTED TOPICS)

Contemporary physical education in selected countries, with special attention given to international sports competition.

2 lects., 1 seminar; one term

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

Enrolment is limited.

PHYS ED 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.

2 lects., 1 lab.; one term

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

Enrolment is limited.

PHYS ED 4N03 ATHLETIC COACHING: PRACTICAL AND APPLIED SCIENTIFIC ASPECTS

Analysis of bio-physical components of athletic coaching emphasizing planning and implementation of a yearly training programme. Feedback on field experience will be the central focus.

3 hrs.; one term

Prerequisite Physical Education 3M03. Students registered in 4N03 must also register for PR88 (Coaching Placement Experience).

Not open to students with credit in Physical Education 3M06.

Enrolment is limited.

PHYS ED 4O03 HEALTH SCIENCE: PHYSICAL AND ENVIRONMENTAL

Selected transactions between the individual, the environs and disease agents are explored as these transactions influence human diseases.

3 hrs. (lects., seminars); one term

Open to students with credit in Physical Education 4O03 in 1989-90.

PHYS ED 4P03 HEALTH SCIENCE: BEHAVIOURAL

Development of an understanding of those health topics based primarily on the behavioural sciences. Specifically included are mental health, psychoactive drugs, and human sexuality.

3 hrs. (lects., seminars); one term

PHYS ED 4Q03 PEDIATRIC EXERCISE PHYSIOLOGY

Physiologic aspects of physical activity in children and adolescents in health and disease.

2 lects., 1 lab.; one term

Prerequisite: Permission of the instructor; grade in Physical Education 2C06 is considered in selection of students.

With permission of the instructor this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

Enrolment is limited.

PHYS ED 4R03 INDIVIDUAL STUDY PROJECT**

Investigation of a selected theoretical or applied problem mutually acceptable to instructor and student.

Prerequisite: Permission of the Chair and supervising instructor. Open to Level IV B.P.E. students.

PHYS ED 4S03 ADAPTED PHYSICAL EDUCATION: SELECTED TOPICS

Focus on current issues in adaptives, including sections on aging, health impairments, and educational integration.

3 hrs. (2 lects., 1 seminar); one term

Prerequisite: Physical Education 3B03, PR89.

Enrolment is limited.

PHYS ED 4T03 GENDER, SPORT AND LEISURE

The influence of sport and leisure on the social construction of masculinity and femininity.

3 hrs. (seminars); one term

Prerequisite: Registration in Level III or IV Physical Education, or a Sociology programme or permission of the instructor.

Enrolment is limited.

PHYS ED 4V03 HUMAN FACTORS

The abilities and limitations of human performance are examined with respect to how we interact with objects in our environment.

3 hrs. (lects., labs.); one term

Enrolment is limited.

PHYS ED 4Z03 SELECTED TOPICS IN ADMINISTRATIVE STUDIES

An examination of selected topics related to administrative theory and its application to sport, fitness and recreation programmes.

3 hrs. (seminars and presentations); one term

Prerequisite: Physical Education 3F03 and 3L03.

Enrolment is limited.

PRACTICUM COURSES

In the four levels of the B.P.E. programme, each student must complete a minimum of 13 units of practicum.

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 6 week period of 4 hours per week.

Selection and Required Achievement in Practicum Classes

For students currently in course all practicum courses, in all Levels, must be completed with a *minimum grade of D-* in each.

Beginning in 1992-93 students entering Level I must complete all practicum courses with a minimum grade of B in each.

Level I: 1 unit

Level I students take 1SOO McMaster Swimming Test, 1CAO CPR/First Aid and PRO2 Basic Gymnastics.

Level II: 4 units

Level II students take PRO3 Track and Field, PRO4 Games, PRO5 Dance and PRO6 Fitness.

Levels III and IV: 6 units

Level III and IV students take three 3 units per Level.

General Regulations

1. Students requiring direct entry into an Advanced course without meeting the requirements of the appropriate preceding basic course (s), must satisfy the instructor, both practically and theoretically, that they are qualified. The prerequisite standard for Advanced level courses *does not* give credit for, nor does it count as, one of the 13 units required by the Department.
2. A student wishing to take more than three courses per Level, or more than one course per session, must obtain permission from the Undergraduate Coordinator of the Department.

Outdoor Activity Courses

Courses in outdoor activities, e.g., canoe tripping, cross-country, winter camping, etc. may be offered outside the regular time-tabled programme and in off-campus settings.

It is not compulsory to take a course from the outdoor activity area, but interested students will receive comparable recognition for satisfactory completion of such courses, that is: one unit credit for each 24-hour course completed with at least a D- grade. A course fee is normally required in these offerings.

Field Work Practicum

Practicum courses may also be offered in the form of field work or leadership experiences, e.g., Cardiac Rehabilitation, Outdoor Education, Administration, Adapted Physical Activity.

The Field Work practicum occurs outside the normal time-tabled schedule, and requires permission from the supervising instructor.

Physics and Astronomy

Faculty as of January 15, 1992

D.W.L. Sprung/Chair

R.E. Pudritz/Associate Chair

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.

Martin W. Johns/M.A. (McMaster), Ph.D. (Toronto), D.Sc. (Brandon), F.R.S.C.

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)

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)

Professors

Edward A. Ballik/B.Sc. (Queen's), D.Phil. (Oxford)

A. John Berlinsky/B.Sc. (Fordham), M.Sc., Ph.D. (Pennsylvania)

PHYSICS AND ASTRONOMY

Rajat K. Bhaduri/M.Sc. (*Calcutta*), Ph.D. (*McMaster*)
I. David Brown/B.Sc., Ph.D. (*London*)
Dennis G. Burke/B.E., M.Sc. (*Saskatchewan*), Ph.D. (*McMaster*)
John A. Cameron/B.A. (*Toronto*), Ph.D. (*McMaster*)
Jules P. Carbotte/B.Sc. (*Manitoba*), M.Sc., Ph.D. (*McGill*), F.R.S.C.
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*)
Terence J. Kennett/M.Sc., Ph.D. (*McMaster*)
Geraldine A. Kenney-Wallace/L.R.I.C., A.R.I.C. (*London*), M.Sc., Ph.D. (*British Columbia*), F.R.S.C.
Yukihisa Nogami/B.Sc., D.Sc. (*Kyoto*)
William V. Prestwich/B.Sc., Ph.D. (*McMaster*)
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.Sc., Ph.D. (*Illinois*)
David W. Taylor/B.A., D.Phil. (*Oxford*)
Thomas Timusk/B.A. (*Toronto*), Ph.D. (*Cornell*)
James W. Waddington/B.Sc. (*Queen's*), Ph.D. (*McMaster*)
Derek Walton/B.Sc. (*Toronto*), Ph.D. (*Harvard*)

Associate Professor

David R. Chettle/B.Sc., M.Sc., Ph.D. (*Birmingham*)
Catherine Kallin/B.Sc. (*British Columbia*), A.M., Ph.D. (*Harvard*)
Ralph E. Pudritz/B.Sc. (*British Columbia*), M.Sc. (*Toronto*), Ph.D. (*British Columbia*)

Assistant Professors

Bruce D. Gaulin/B.Sc. (*McGill*), Ph.D. (*McMaster*)
Neil McKay/B.Sc. (*Queen's*), M.Sc., Ph.D. (*McMaster*)/part-time
David E. Venus/B.Sc. (*Queen's*), Ph.D. (*Toronto*)
Douglas L. Welch/B.Sc., Ph.D. (*Toronto*)

Associate Members

Claude Nahmias/B.Sc. (*American University of Cairo*), Ph.D. (*Surrey*) (Radiology)
Michael S. Patterson/B.Sc. (*Queen's*), M.Sc. (*McMaster*), Ph.D. (*Toronto*) (Radiology)
Andrew J. Rainbow/B.Sc. (*Manchester*), M.Sc. (*London*), Ph.D. (*McMaster*) (Radiology)
David A. Thompson/B.Sc., Ph.D. (*Reading*) (Engineering Physics)
Colin E. Webber/B.Sc. (*Birmingham*), M.Phil., Ph.D. (*Surrey*) (Radiology)
Brian C. Wilson/B.Sc., Ph.D. (*Glasgow*) (Radiology)

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 offerings of the Department of Biology and the Department of Engineering Physics.

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.

3 lects., 1 lab. (3) every other week; two terms

Prerequisite: At least 70% in OAC Physics, and registration in Mathematics 1A06, 1AA6 or Arts and Science 1D06, and Mathematics 1B03.

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.

3 lects., 1 lab. (3) every other week; two terms

Prerequisite: At least 60% in OAC Physics, and registration in one of Mathematics 1A06, 1AA6, 1C06 or Arts and Science 1D06.

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.

3 lects., 1 tut., 1 lab. (3) every other week; two terms

Prerequisite: Registration in one of Mathematics 1A06, 1C06, Arts and Science 1D06.

PHYSICS 1D03 INTRODUCTORY MECHANICS

A course for engineering students. Statics, kinematics, Newtonian dynamics, energy.

3 lects.; 1 lab. (3) 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, magnetic induction.

3 lects., 1 lab. (3) 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.

3 lects.; one term

Prerequisite: One of Physics 1A06, 1B06, 1C06, and one of Mathematics 1A06, 1C06, Arts and Science 1D06. Not open to students in Honours Chemistry and Physics, Honours Physics, Honours Applied Physics, Physics Major, B.Sc. in Physics.

PHYSICS 2B06 ELECTRICITY AND MAGNETISM

Electrostatics, D.C. and A.C. circuits, the magnetic field; Faraday's law of induction; Maxwell's equations.

3 lects., first term; 2 lects., second term; 1 lab. (3) every other week; two terms

Prerequisite: One of Physics 1A06, 1B06, 1C06 and concurrent registration in Mathematics 2G03 and 2O03 or in 2A06 and 2C03.

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.

3 lects., first term

Prerequisite: Registration in an Honours or Major programme in Physics or a programme in Engineering Physics or Honours Mathematics. Not open to students who have credit in Physics 2C05.

PHYSICS 2D03 MECHANICS

Dynamics of a particle, central field problem, many-particle systems, the mechanics of rigid bodies, Lagrange's equations.

3 lects., second term

Prerequisite: Registration in an Honours or Major programme in Physics or a programme in Engineering Physics or Honours Mathematics. Not open to students who are registered in, or have credit in, Physics 2G03 or have credit in Physics 2C05.

PHYSICS 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.

3 lects.; one term

Prerequisite: One of Physics 1A06, 1B06, 1C06 and one of Mathematics 1A06, 1C06 or Arts and Science 1D06.

Offered in 1993-94, alternating with Physics 2F03.

PHYSICS 2F03 A SURVEY OF STELLAR AND GALACTIC ASTRONOMY

The physical properties of stars and stellar evolution. The interstellar medium. Galactic structure. Normal and peculiar galaxies. Cosmology and the large-scale distribution of matter in space.

3 lects.; one term

Prerequisite: One of Physics 1A06, 1B06, 1C06 and one of Mathematics 1A06, 1C06, Arts and Science 1D06.

Offered in 1992-93, alternating with Physics 2E03.

PHYSICS 2G03 MECHANICS OF A PARTICLE

Vectorial treatment of the mechanics of a particle in three dimensions. Special Relativity.

2 lects., 1 tut.; one term

Prerequisite: One of Physics 1A06, 1B06, 1C06, and Mathematics 1B03 or registration in Mathematics 2G03. Not open to students who are registered in, or have credit in, Physics 2C05 or 2D03.

PHYSICS 2H03 THERMAL PHYSICS

Introduction to heat and the kinetic theory of gases.

3 lects., 1 lab. (3); one term

Prerequisite: One of Physics 1A06, 1B06, 1C06 and Mathematics 1A06, Arts and Science 1D06. Not open to students who are registered or have credit in, Chemistry 2P06.

PHYSICS 2J03 PHYSICS OF MUSICAL SOUND

Sound waves, production of sound by musical instruments; properties of the ear, musical scales and intervals; auditorium acoustics.

3 lects. 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.

3 lects., 1 tut.; one term

Prerequisite: Registration in Level II, III or IV of a Physical Education programme. Knowledge of Grade 12 Mathematics is required.

PHYSICS 3A03 RELATIVITY

An introduction to general relativity.

3 lects.; one term

Prerequisite: Physics 2C03 or 2C05, and registration in any Honours programme in Science or in the Faculty of Engineering; or permission of the instructor.

Offered in 1992-93 and in alternate years.

PHYSICS 3B06 ELECTRONICS

Network theory and filters, semiconductor devices, amplifier circuits, D.C. power supplies, integrated circuits, operational amplifiers and digital circuits.

2 lects., both terms; 1 lab. (2); two terms

Prerequisite: Physics 2B06 or both Engineering Physics 2A03 and 2E04.

PHYSICS 3C03 ANALYTICAL MECHANICS

Variational principles, Lagrange's equations, small oscillations, Hamilton's equations, canonical transformations, Hamilton-Jacobi theory, canonical perturbation theory, continuous systems and fields.

3 lects.; one term

Prerequisite: Completion of, or registration in, Mathematics 3C03 and registration in any Honours Science programme or any programme in the Faculty of Engineering; or registration in Honours Mathematics and Physics; or permission of the instructor.

Offered in 1993-94 and in alternate years.

PHYSICS 3G03 SEISMOLOGY

Methods of seismic exploration; earthquakes; studies of the earth's interior.

3 lects.; one term

Prerequisite: Physics 2C05, 2D03 or 2G03 and Mathematics 2G03 and 2O03 or 2A06 and 2C03.

Offered in 1992-93 and in alternate years.

PHYSICS 3H04 INTERMEDIATE LABORATORY

Experiments in atomic and neutron physics, optics and spectroscopy, mechanics.

1 lect., one term; 1 lab. (3) two terms

Prerequisite: Physics 2B06 and credit in, or registration in Physics 3M03 or 3O03.

PHYSICS 3K04 THERMODYNAMICS AND STATISTICAL MECHANICS

The laws of thermodynamics, with emphasis on the mathematical structure of the theory; classical and quantum statistical mechanics.

2 lects.; two terms

Prerequisite: Physics 2H03 and Mathematics 2G03 and 2O03 or 2A06 and 2C03. Not open to students with credit in Chemistry 4Y03.

PHYSICS 3M03 QUANTUM MECHANICS AND ITS APPLICATIONS I

An introductory course in quantum mechanics with applications to natural phenomena.

3 lects.; one term

Prerequisite: Physics 2B06 or Engineering Physics 2A03 and 2E04 or Engineering 2M04, and Mathematics 3C03; or registration in Honours Mathematics and Physics. Mathematics 3C03 may be taken concurrently.

PHYSICS 3MM3 QUANTUM MECHANICS AND ITS APPLICATIONS II

A continuation of Physics 3M03.

3 lects.; 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.

3 lects.; one term

Prerequisite: Physics 2B06 or Engineering Physics 2A03 and 2E04, and Mathematics 2G03 and 2O03 or 2A06 and 2C03 or 2P04 and 2Q04.

PHYSICS 3O03 MODERN PHYSICS

Selected topics in photon physics, atomic physics, and quantum physics.

3 lects.; one term

Prerequisite: Physics 2A03 or 2B06. Not open to students with credit in or registration in, Physics 3M03.

PHYSICS 3Q03 INTRODUCTION TO QUANTUM MECHANICS

Operator algebra. The Schrödinger equation. The square well, harmonic oscillator, barriers, perturbations, transition matrix elements, and selected three dimensional problems.

3 lects.; one term

Prerequisite: Physics 3O03 and Mathematics 3C03 or 3C06. Not open to students with credit in, or registration in Physics 3MM3.

PHYSICS 3S03 PHYSICS OF THE EARTH

Special topics in physics applied to earth sciences. Structure of the earth's interior, geomagnetism, global tectonics, nuclear techniques in geophysics.

3 lects.; one term

Prerequisite: Physics 2B06 or Engineering Physics 2A03 and 2E04, and Mathematics 2G03 and 2O03 or 2A06 and 2C03; or permission of the instructor. Not open to students with credit in Physics 4S03.

Offered in 1993-94 and alternate years.

PHYSICS 3T03 INTERACTION OF RADIATION WITH MATTER

The interactions of nuclear radiations with matter: detectors, dosimetry, tracer methods, the production and use of X-rays.

3 lects.; one term

Prerequisite: Registration in or credit in Physics 3M03 or 3O03.

PHYSICS 3X03 STARS AND STELLAR SYSTEMS

Observational properties of stars. Distance measurement in space. Galactic structure; properties of Galaxies, and cosmology.

3 lects. and occasional lab. periods; one term

Prerequisite: Physics 2C05, 2D03 or 2G03, Physics 2B06 and 2H03, Computer Science 1MA3; or permission of the instructor.

Offered in 1993-94, alternating with Physics 3Y03.

PHYSICS 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.

3 lects.; one term

Prerequisite: Physics 2C05, 2D03 or 2G03, Physics 2B06 and 2H03, Computer Science 1MA3; or permission of the instructor.

Offered in 1992-93, alternating with Physics 3X03.

MATH 3C03 MATHEMATICAL PHYSICS I

Linear algebra and eigenvalue problems, partial differential equations, orthogonal functions, Fourier series, Legendre functions, spherical harmonics.

3 lects.; one term

Prerequisite: Mathematics 2A06 and 2C03, or 2G03 and 2O03, or 2P04 and 2Q04, and Physics 2C05, 2D03 or 2G03. Not open to students who have credit for, or are registered in, Mathematics 3J04, 3K03 or 3V06.

MATH 3D03 MATHEMATICAL PHYSICS II

Functions of a complex variable, probability and statistics, boundary value problems, Bessel functions.

3 lects.; one term

Prerequisite: Mathematics 3C03. Not open to students who have credit in, or are registered in, Mathematics 3J04, 3K03, 3V06.

PHYSICS 4A03 SPECIAL TOPICS

Independent study of the scientific literature, including the preparation of seminars and reports on assigned topics.

2 lects. or seminars; two terms

Prerequisite: Registration in a programme in which Physics 4A03 is required or is a specified option.

PHYSICS 4B04 ELECTROMAGNETIC THEORY

Development of Maxwell's equations; multipoles, series solutions, special relativity and radiation from dipoles.

2 lects.; two terms

Prerequisite: Physics 2B06 or Engineering Physics 2A03 and 2E04, and Mathematics 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.

2 lects., 1 lab. (3); two terms

Prerequisite: Physics 2B06, or Engineering Physics 2A03 and 2E04, and Computer Engineering 2HA3. Not open to students with credit or registration in any of Computer Engineering 3HB3, Electrical Engineering 2H03, 3H03.

PHYSICS 4E03 NUCLEAR PHYSICS

Nuclear masses and stability; radioactivity and nuclear reactions; elementary nuclear models.

3 lects.; one term

Prerequisite: Physics 3MM3, or a grade of at least B- in Physics 3Q03 or registration in Level IV Physics Major (Medical and Health Option).

POLITICAL SCIENCE

PHYSICS 4F03 QUANTUM MECHANICS

A sequel to Physics 3MM3, including general structure of quantum mechanics, matrix mechanics, perturbation theory, and the variational method.

3 lects.; one term

Prerequisite: Physics 3MM3, and Mathematics 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.

1 lab. (3); one term

Prerequisite: Physics 3MM3; Computer Science 1MA3, or permission of the instructor.

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.

1 lab. (3); two terms

Prerequisite: Registration in a programme in which Physics 4J04 is required or is a specified option; or permission of Chair of Department.

PHYSICS 4K03 SOLID STATE PHYSICS

Crystal structure and binding; lattice vibrations; electron energy bands; metals and semiconductors; magnetism.

3 lects.; one term

Prerequisite: Physics 3MM3 or a grade of at least B- in 3O03 and 3Q03.

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. (6); two terms

Prerequisite: Registration in Level IV Honours or Major Medical and Health Physics programme; or registration in Level IV of any Physics programme, a C.A.A. of at least 10.0, and permission of the Chair of the Department.

PHYSICS 4R03 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.

1 lect., 1 lab. (3) every other week; two terms

Prerequisite: Physics 2B06 or Engineering Physics 2A03 and 2E04, and registration in Honours or Major programme in Medical and Health Physics; or permission of the instructor.

PHYSICS 4T03 INTRODUCTION TO MEDICAL PHYSICS

Basic concepts in radiology, nuclear medicine, radiotherapy, physiological measurements and laser applications.

3 lects.; one term

Prerequisite: Physics 3T03 or Engineering Physics 3D03, and Mathematics 2G03 and 2O03 or 2A06 and 2C03.

PHYSICS 4U03 PARTICLE PHYSICS

Mesons and baryons; the quark model; local gauge invariance; symmetries; the electromagnetic, weak and strong interactions.

3 lects.; one term

Prerequisite: Physics 4F03; or permission of the instructor.

For Graduate Courses see *Calendar of School of Graduate Studies*.

Henry J. Jacek/B.S.S. (Fairfield), M.A., Ph.D. (Georgetown)

Thomas J. Lewis/B.A. (Carleton), M.A., Ph.D. (SUNY, Buffalo)

Gordon P. Means/B.A. (Reed College), M.A., Ph.D. (Washington)

Kim Richard Nossal/B.A., M.A., Ph.D. (Toronto)

Peter J. Potichnyj/B.A. (Temple), M.A., Ph.D. (Columbia)

Mark Sproule-Jones/B.Sc. (London), M.A., Ph.D. (Indiana)/V.K. Coppes

Chair in Urban Studies

Michael B. Stein/B.A. (McGill), M.A., Ph.D. (Princeton)

Associate Professors

Howard Aster/B.A. (McGill), M.A. (Yale), Ph.D. (London)

George B. Breckenridge/M.A. (Glasgow and Duke), Ph.D. (Duke)

Roman R. March/B.A. (Manitoba), M.A. (Carleton), Ph.D. (Indiana)

Stefania S. Miller/M.A. (McMaster), Ph.D. (Toronto)

John W. Seaman/B.A. (Mount Allison), M.A. (Dalhousie), Ph.D. (Toronto)

Richard W. Stubbs/B.Sc. (Wales), M.A. (Lancaster), Ph.D. (Alberta)

Assistant Professors

Barbara A. Carroll/B.A. (Manitoba), M.A. (Carleton), Ph.D. (American)

Geoffrey R.D. Underhill/B.A. (Queen's), D. Phil. (Oxon)

Donald M. Wells/B.A. (Western), M.A. (British Columbia), Ph.D. (Toronto)

Charlotte A. B. Yates/B.A. (Winnipeg), M.A. (Queen's), Ph.D. (Carleton)

Associate Members

Roy Adams/B.A. (Pennsylvania State), M.A., Ph.D. (Wisconsin)/Business

Rhoda E. Howard/ (Sociology), B.A., M.A., Ph.D. (McGill)

James J. Rice/B.A. (Sir George Williams), B.S.W., M.S.W. (Calgary), Ph.D. (Exeter)/Social Work

Department Notes:

1. **Level I Courses** Political Science 1B03 and Political Science 1C03 are divided into several sections taught by different instructors. Course descriptions for the different sections of Level I courses 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: Political Science 2G06, 3DD6, 3EE3, 3FF3, 3GG3, 3HH3, 3II3, 3JJ3, 3NN6, 3Z06, 4CC3, 4K06, 4O06, 4P03, 4S06, 4W06.
Comparative Politics: Political Science 2B06, 2K06, 2M06, 2P06, 3B06, 3D03, 3GG3, 3M06, 3P06, 3PP3, 3QQ3, 3RR3, 3V03, 3VV3, 3W03, 3Y06, 4AA6, 4F06, 4G06, 4J06, 4P03, 4Q06.
Political Theory: Political Science 2O06, 3A06, 3I06, 3KK6, 3O06, 3R03, 4BB6, 4DD6, 4E06, 4S06, 4U06.
International Politics: Political Science 2E06, 3AA3, 3BB3, 3EE3, 3E03, 3FF3, 4F06, 4M06, 4MM6.
The remaining courses are grouped as follows:
Research Methods: Political Science 2F06, 3G03, 3H03
Other: Political Science 1A06, 1B03, 1C03, 3UU3, 4Z06
3. **Courses Offered** 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. **Advice on Programme of Study** 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 Adviser to ensure that it meets Departmental requirements.
5. **Prerequisites** 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. **Required Courses** Political Science 2F06 and 2O06 are required for students enrolled in Honours Political Science programmes, and recommended for students in B.A. programmes. However, if students take both these required courses at Level III, they may experience

Physiotherapy

(See *Occupational Therapy and Physiotherapy*)

Political Science

Faculty as of January 15, 1992

Michael M. Atkinson/Chair

Professors Emeriti

Adam Bromke/M.A. (St. Andrews), Ph.D. (Montreal and McGill)

Derry Novak/B.A. (Toronto)

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)

Marshall N. Goldstein/B.A. (Florida), Ph.D. (North Carolina)

difficulties acquiring the necessary prerequisites for courses at Levels III and IV. Therefore the Department strongly encourages students to take one of these courses at Level II and the other at Level III. Because Political Science 2O06 is a prerequisite for Level III and IV courses in political theory, the order in which Political Science 2O06 and 2F06 will depend on the particular course of study chosen; further advice on this may be sought from an Undergraduate Adviser.

If either Political Science 2F06 or Political Science 2O06 is taken at Level III, it will be considered as a Level III course and will be included in the Graduation Average.

7. **Limited Enrolment Courses** Level III courses identified as "enrolment 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 fourteen undergraduate students; in all others, the limit is eighteen.

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 Political Science; Level IV Honours with Political Science as a Minor and Continuing Students who are in Level IV; Level III Honours Political Science programmes; Level III Honours with Political Science as a Minor; 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 1st regarding balloting for the following academic year. Permission slips from the Department will be required to complete registration in Level IV limited-enrolment courses.

POL SCI 1B03 INTRODUCTION TO POLITICAL SCIENCE: CONCEPTS AND IDEAS

An introduction to key concepts and ideas about the state, society, and the citizen that underlie the study and the practice of politics.

3 hrs. (lect. and tuts.); one term

Prerequisite: Open, except to students with credit in Political Science 1A06. See Department Note 1.

POL SCI 1C03 INTRODUCTION TO POLITICAL SCIENCE: INSTITUTIONS AND ISSUES

An introductory examination of selected political institutions and political issues.

3 hrs. (lect. and tuts.); one term

Prerequisite: Open, except to students with credit in Political Science 1A06. 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.

3 hrs. (lects.); two terms

Prerequisite: Open.

POL SCI 2E06 INTERNATIONAL POLITICS

A study of the institutions and processes of the international political system.

3 hrs. (lects. and tuts.); two terms

Prerequisite: Open.

POL SCI 2F06 THE SYSTEMATIC STUDY OF POLITICS

An introduction to the study of concept and theory formation, and an overview of the scope, research methods, and statistical techniques of political science.

3 hrs. (lects. and tuts.); two terms

Prerequisite: Open, except to students with credit or registration in Economics 2B03, Chemical Engineering 4C03, Commerce 2QA3, Geography 2L03, Psychology 2G03, 2R06, or any Statistics course other than Statistics 2D03. See Department Note #6.

POL SCI 2G06 POLITICS IN CANADA

A study of the development, nature and functioning of the political system of Canada.

3 hrs. (lects. and tuts.); two terms

Prerequisite: Open.

POL SCI 2K06 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 Transcauc.

3 hrs.; two terms

Prerequisite: Open.

POL SCI 2O06 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.

3 hrs. (lects.); two terms

Prerequisite: Open. See Department Note #6.

POL SCI 2P06 POLITICS IN WESTERN EUROPE

An introduction to comparative political analysis with an emphasis on the politics of France, West Germany, Italy and Great Britain.

3 hrs. (lects.); two terms

Prerequisite: Open.

POL SCI 3A06 HISTORY OF POLITICAL IDEAS

A study of the political ideas of some eminent thinkers from classical times to the 19th century.

3 hrs.; two terms

Prerequisite: Political Science 2O06; 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.

3 hrs. (lects. and seminars); one term

Prerequisite: Political Science 2E06.

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.

3 hrs. (lects and seminars); two terms

Prerequisite: Political Science 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.

3 hrs.; one term

Prerequisite: Political Science 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.

3 hours (lectures and seminars); one term

Prerequisite: Political Science 2E06

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.

3 hrs. (lects. and seminars); one term

Prerequisite: A Political Science course beyond Level I.

Enrolment is limited: Priority is given to students in a Political Science programme.

POL SCI 3G03 STATISTICAL ANALYSIS

An outline of levels of measurement and descriptive statistics, and a study of the logic of statistical inference and its applications.

3 hrs. (lects. and labs.); one term

Prerequisite: Political Science 2F06. Not open to students with credit or registration in Economics 3O06 or Statistic 3D06.

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.

3 hrs. (lects. and seminars); one term

Prerequisite: A course in Political Science beyond Level I.

Enrolment is limited: Priority is given to students in a Political Science programme.

POL SCI 3II3 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.

3 hrs. (lects. and seminars); one term

Prerequisite: Political Science 2G06.

Enrolment is limited: Priority is given to students in a Political Science programme.

POLITICAL SCIENCE

POL SCI 3JJ3 PROVINCIAL POLITICS IN CANADA

A study of the development, nature and functioning of the political systems of the Canadian provinces.

3 hrs. (lects. and seminars); one term

Prerequisite: Political Science 2G06.

Enrolment is limited: Priority is given to students in a Political Science programme.

POL SCI 3KK6 MARX'S THOUGHT

A study of Marx through a reading of his writings from various stages in his development.

3 hrs. (lects. and seminars); two terms

Prerequisite: A course in Political Theory or Philosophy.

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 and the Czech and Slovak Republic.

3 hrs. (lects. and seminars); two terms

Prerequisite: A course in Political Science beyond Level I.

Enrolment is limited: Priority is given to students in a Political Science programme.

POL SCI 3NN6 PUBLIC LAW

A study of the nature and function of public law, with special reference to constitutional law and judicial behaviour.

3 hrs. (lects. and seminars); two terms

Prerequisite: Political Science 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.

3 lects.; two terms

Prerequisite: Political Science 2O06 or Philosophy 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.

3 hrs. (lects. and seminars); one term

Prerequisite: A course in Political Science beyond Level I.

Enrolment is limited: Priority is given to students in a Political Science programme.

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.

3 hrs. (lects. and seminars); one term

Prerequisite: A course in Political Science beyond 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.

3 hrs. (lects. and seminars); one term

Prerequisite: A course in Political Science beyond 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.

3 hrs. (lects. and discussion); one term

Prerequisite: Political Science 2G06.

Enrolment is limited: Priority is given to students in a Political Science programme.

POL SCI 3U03 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.

3 hrs. (lects. and seminars); one term

Prerequisite: A course in Political Science beyond Level I or History 2N06.

Offered in alternate years.

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.

3 hrs. (lects. and seminars); two terms

Prerequisite: Political Science 2G06, and one other Political Science course beyond 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.

3 hrs. (seminars); two terms

Prerequisite: Political Science 2B06. A permission slip from the Department is required for registration in this course. Open only to Level IV Students.

Offered in alternate years.

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.

3 hrs. (seminars); two terms

Prerequisite: Registration in Level IV of any programme, and a course in Political Theory. A permission slip from the Department is required for registration in this course.

Enrolment is limited.

POL SCI 4DD6 CRITIQUES OF MARX'S THOUGHT

Specific topics in Marx's thought, such as class struggle, imperialism, crisis theory, the role of the state and others, will be evaluated in the light of contemporary criticism.

2 hrs. (seminar); two terms

Prerequisite: Political Science 3KK6; or permission of the instructor. A permission slip from the Department is required for registration in this course.

Enrolment is limited.

POL SCI 4E06 LIBERAL-DEMOCRATIC THEORY AND MARKET SOCIETY

This course seeks to trace the emergence and to assess the adequacy of the contemporary liberal-democratic theory of the welfare and regulatory state.

2-3 hrs. (seminars); two terms

Prerequisite: Registration in Level IV of any programme, and a course in Political Theory. A permission slip from the Department is required for registration in this course.

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.

3 hrs. (seminar); two terms

Prerequisite: 6 units of International Relations, and 6 units of Comparative Politics. A permission slip from the Department is required for registration in this course.

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.

3 hrs. (seminar); two terms

Prerequisite: 6 units of Comparative Politics. A permission slip from the Department is required for registration in this course.

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.

Seminar; two terms

Prerequisite: 6 units of Comparative Politics. A permission slip from the Department is required for registration in this course.

Enrolment is limited.

Offered in alternate years.

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.

3 hrs. (seminar); two terms

Prerequisite: Political Science 3Z06; open only to Level IV students. A permission slip from the Department is required for registration in this course.

Enrolment is limited.

POL SCI 4M06 ISSUES IN INTERNATIONAL POLITICS

An examination of selected topics in international politics and foreign policy.

2 hrs. (seminars); two terms

Prerequisite: Registration in Level IV of any programme, and a course in International Relations. A permission slip from the Department is required for registration in this course.

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. 3 hours (seminars); two terms
Prerequisite: Registration in Level IV of any programme, and a course in International Relations. A permission slip from the Department is required for registration in this course.
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.
Seminar (3); two terms
Prerequisite: Political Science 2G06. Open only to Level IV students.
A permission slip from the Department is required for registration in this course.
Enrolment is limited.

POL SCI 4Q06 POLITICAL SYSTEMS OF DEVELOPING AREAS
An examination of the social movements and political systems of the non-Western less-developed areas of the world. Consideration is given to techniques of analysis and to theories of modernization and development as applied to 'Third World' countries.
3 hrs.; two terms
Prerequisite: 6 units of Comparative Politics. A permission slip from the Department is required for registration in this course.
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.
3 hrs. (seminar); two terms
Prerequisite: Two courses from Political Theory, Canadian Politics, or Philosophy; or permission of the instructor. A permission slip from the Department is required for registration in this course.
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, focussing upon one of the central problems of political philosophy.
2 hrs. (seminars); two terms
Prerequisite: A course in Political Theory. A permission slip from the Department is required for registration in this course.
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.
3 hrs. (seminar); two terms
Prerequisite: Political Science 2G06. A permission slip from the Department is required for registration in this course.
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.
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.

For Graduate Courses, see *Calendar of School of Graduate Studies*.

Psychology

Faculty as of January 15, 1992

H.P. Weingarten/*Chair*

Professors Emeriti

Bernard R.W. Heron/M.A., Ph.D. (*McGill*)
Herbert M. Jenkins/A.B. (*Oberlin*), Ph.D. (*Harvard*)
Alfred B. Kristofferson/B.S., M.A., Ph.D. (*Michigan*)
P. Lynn Newbigging/B.A. (*Saskatchewan*), M.A. (*Toronto*), Ph.D. (*London*)

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*)

D. William Carment/B.A. (*Saskatchewan*), M.A., Ph.D. (*Toronto*)
Martin Daly/B.A. (*Toronto*), M.A. (*McGill*), Ph.D. (*Toronto*)
Bennett G. Galef/A.B. (*Princeton*), M.A., Ph.D. (*Pennsylvania*)
Larry L. Jacoby/B.A. (*Washburn*), M.A., Ph.D. (*Southern Illinois*)
Betty A. Levy/B.A. (*Dalhousie*), M.A., Ph.D. (*Toronto*)
Stephen W. Link/B.A. (*Colorado*), Ph.D. (*Stanford*)
Daphne M. Maurer/B.A. (*Swarthmore*), M.A. (*Pennsylvania*), Ph.D. (*Minnesota*)
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*)

Associate Professors

Richard B. Day/B.A. (*Massachusetts*), M.A. (*Iowa*), Ph.D. (*McMaster*)
Denys deCatanzaro/B.A., M.A. (*Carleton*), Ph.D. (*British Columbia*)
Stephen P. Tipper/B.Sc. (*Huddersfield*), M.Sc. (*Sussex*), D.Phil. (*Oxford*)

Assistant Professors

James R. Blackburn/B.Sc. (*McGill*), M.A., Ph.D. (*British Columbia*)
Paula J. Durlach/B.A. (*Swarthmore*), M.S., Ph.D. (*Yale*)
David W. Jamieson/B.Sc. (*Toronto*), M.A., Ph.D. (*Waterloo*)

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 Rollo/ (Biology), B.Sc., M.Sc. (*Guelph*), Ph.D. (*British Columbia*)
Henry Szechtman/(Biomedical Sciences) B.Sc., Ph.D. (*Pittsburgh*)

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 ** listed as selected topics, independent research, individual readings and honours essays requires written permission of the Department. Registration with appropriate permission must be completed no later than the last day for registration as stated in the Calendar under *Sessional Dates*.

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.
3 hrs. (lects. and tuts.); two terms
Prerequisite: Open.

PSYCH 2A03 THEORIES OF HUMAN DEVELOPMENT

A general survey of human development with an emphasis on the childhood years.
3 lects.; one term
Prerequisite: Psychology 1A06. Not open to students who have credit for, or are registered in, Psychology 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.
3 lects.; one term
Prerequisite: Psychology 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.
3 lects.; one term
Prerequisite: Psychology 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.
3 lects.; one term
Prerequisite: Psychology 1A06.

PSYCHOLOGY

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.

3 lects.; one term

Prerequisite: Statistics 1L03 or Mathematics 1L03 or any other 3 units of Level I Mathematics, and registration in B.A. Psychology. Not open to students who are registered in, or have received credit for, Psychology 2R06, 2R03, 2RR3, or Statistics 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.

3 lects., one term

Prerequisite: Psychology 1A06.

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.

3 lects.; one term

Prerequisite: One of Mathematics 1A06, 1C06, 1M03, 1N06 and registration in a Psychology programme. Not open to students who have completed Psychology 2R06 or Statistics 2D03, 2M03 or 2R06.

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.

3 lects.; one term

Prerequisite: Psychology 2R03 and registration in a Psychology programme; or Psychology 2G03 with permission of the instructor. Not open to students who have completed Psychology 2R06 or Statistics 2D03, 2M03 or 2R06.

PSYCH 2T03 PRINCIPLES OF CONDITIONING

An experimental survey of conditioning processes based on the study of animal behaviour.

3 lects.; one term

Prerequisite: Psychology 1A06.

PSYCH 2W06 NEUROPSYCHOLOGY

Neural organization and the relationship between human brain function and behaviour.

3 lects.; two terms

Prerequisite: Psychology 1A06.

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.

3 lects.; one term

Prerequisite: Psychology 2E03 and registration in a Psychology programme; or permission of the instructor.

PSYCH 3B03 SPECIAL POPULATIONS

Selected topics in developmental disability, perceptual or cognitive handicap, or behavioural disorder. 3 lects.; one term

Prerequisite: Registration in a Psychology programme.

Psychology 2B03 may be repeated for a maximum of 6 units credit provided each repetition is on a different population and with the permission of the instructor.

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.

2 lects., 1 lab. (3); two terms

Prerequisite: Permission of the department which must be obtained by March 1, and Psychology 2C03, and one of Psychology 2R06 or 2RR3, or Statistics 2R06; or permission of the instructor.

Enrolment is limited.

PSYCH 3D03 SELECTED TOPICS IN SOCIAL PSYCHOLOGY

Study of research on attitudes and attitude change, or social influence, or dyadic relations.

3 lects.; one term

Prerequisite: Psychology 2C03.

PSYCH 3DD3 PSYCHOLOGICAL ASPECTS OF AGING

An examination of the cognitive and social-psychological aspects of aging: sensation, perception, attention, memory, intelligence, communication, personality, attitudes and mental health.

3 hrs. (lects. and seminar); one term

Prerequisite: Psychology 1A06 and Gerontology 1A06 or Social Science 2G06.

Same as Gerontology 3D03.

Students in a Psychology programme (except those in Gerontology and Psychology) must register for this course as Psychology 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.

1 lab. (3); one term

Prerequisite: Permission of the department which must be obtained by March 1, and Psychology 3A03, and one of Psychology 2R06 or 2RR3, or Statistics 2R06; or permission of the instructor.

Enrolment is limited.

PSYCH 3F03 PHYSIOLOGICAL PSYCHOLOGY I

Relationship of brain to behaviour, including an introduction to neuroscience. Designed particularly for students in the Faculty of Science.

3 hours (lects. and seminar); first term

Prerequisite: Registration in an Honours programme in Psychology, or a B.Sc. programme in Psychology, or registration in Level III or IV of a Biology or Biochemistry programme; or permission of the instructor. Not open to students with credit in Psychology 3F06.

PSYCH 3FF3 PHYSIOLOGICAL PSYCHOLOGY II

Further study of the brain and behaviour, with emphasis on sensory and motor functions, motivation, learning, and memory.

3 hours (lects. and seminar); second term

Prerequisite: Completion of the requirements of the requirements for Level II Psychology.

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.

3 lects.; one term

Prerequisite: Completion of the requirements for Level II Psychology; or permission of the instructor. Not open to students with credit in Psychology 3M06.

PSYCH 3H03 INTELLECTUAL DEVELOPMENT AFTER INFANCY

The development of perception, memory, language and concepts after infancy.

3 lects.; 1 term

Prerequisite: Psychology 3G03, and Psychology 2G03, 2R06 or 2R03.

PSYCH 3IC3 PRACTICUM IN COGNITIVE DISORDERS

Supervised laboratory or field placements will be arranged for a maximum of 4 student each year. A 20 page final report must be submitted to the co-ordinator by April 1. Applications must be submitted to the co-ordinator by February 1 of the preceding year, with selection for placements announced by March 1.

Prerequisite: Completion of Psychology 3P03 and Psychology 2RR3, registration in Level III or IV of an Honours, or Combined Honours Psychology programme, and permission of the co-ordinator.

PSYCH 3IM3 PRACTICUM IN MEMORY AND LANGUAGE DISORDERS

Supervised laboratory or field placements will be arranged for a maximum of 4 students each year. A 20 page final report must be submitted to the co-ordinator by April 1. Applications must be submitted to the co-ordinator by February 1 of the preceding year, with selection for placements announced by March 1.

Prerequisite: Completion of Psychology 3U03 and Psychology 2RR3, registration in Level III or IV of an Honours, or Combined Honours Psychology programme, and permission of the co-ordinator.

PSYCH 3IN3 PRACTICUM IN NEUROPSYCHIATRY

Supervised laboratory or field placements will be arranged for a maximum of 4 students each year. A 20 page final report must be submitted to the co-ordinator by April 1. Applications must be submitted to the co-ordinator by February 1 of the preceding year, with selection for placements announced by March 1.

Prerequisite: Completion of Psychology 3F03 and Psychology 2RR3, registration in Level III or IV of an Honours, or Combined Honours Psychology programme, and permission of the co-ordinator.

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.

3 lects.; one term

Prerequisite: Psychology 1A06, and one of Psychology 2G03, 2R06, 2R03, Statistics 2R06; or permission of the instructor. Students with grades less than B- in Psychology 2G03 are advised not to enroll in this course.

PSYCH 3L03 LABORATORY IN ANIMAL CONDITIONING

Students undertake experimental exercises intended to demonstrate principles of simple learning. Experiments are conducted at times of the student's choosing within normal hours of operation.

Tuts., lab. by appointment; one term

Prerequisite: Psychology 2T03 and permission of the department which must be obtained by March 1. Not open to students with credit in Psychology 2U03.

Enrolment is limited.

PSYCH 3M03 MOTIVATION AND EMOTION

Theory and data concerning human and nonhuman motivation and emotion, drawing on perspectives from evolution, physiology, learning, and culture.

3 lects.; one term

Prerequisite: Psychology 2T03.

PSYCH 3N06 ABNORMAL PSYCHOLOGY

Topics basic to clinical psychology, including models of behavioural disorder, classification of abnormal behaviour, evaluation of diagnostic practice, and determinants and treatment of mental illness.

3 lects.; two terms

Prerequisite: Registration in a Psychology programme, or registration in Level III or IV of a Nursing or a Social Work programme; or permission of the instructor.

PSYCH 3P03 PSYCHOLOGICAL TOPICS IN THINKING

Areas to be covered include human inference, decision making, and creative problem solving.

3 lects.; one term

Prerequisite: Psychology 2H03.

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 co-ordinator.

Prerequisite: Permission of the course co-ordinator. Not open to students who are registered in, or who have received credit for Psychology 3Q03.

PSYCH 3Q03 INDIVIDUAL LAB STUDY I**

A laboratory project that may extend over both terms. Students intending to register must first consult a faculty member and the course coordinator.

Prerequisite: Permission of the course coordinator. Not open to students who are registered in, or who have received credit for, Psychology 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.

3 lects.; one term

Prerequisite: Registration in a Psychology programme, or in a four-level programme in Biochemistry or Biology; or permission of the instructor.

PSYCH 3S03 ANIMAL BEHAVIOUR LABORATORY

Experiments involving a wide variety of animal species, both vertebrate and invertebrate.

1 lab. (3); one term

Prerequisite: Permission of the department which must be obtained by March 1, and Psychology 3R03, and registration in a four-level programme in Psychology or Biology; or permission of the instructor.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: One of Anthropology 2D03, 2E03, Biology 2C03, 3J03, Psychology 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.

3 lects.; one term

Prerequisite: Psychology 2H03 and registration in Level III or IV of a Psychology programme; or permission of the instructor.

PSYCH 3V03 LABORATORY IN HUMAN MEMORY AND COGNITION

Experiments illustrating important issues in human memory and cognition. Problems in the design, analysis, and reporting of experiments will be emphasized. Individual projects required.

1 lab. (3 hrs.); one term

Prerequisite: Permission of the department which must be obtained by March 1, and Psychology 3U03, and Psychology 2R06 or Statistics 2R06, or credit in or registration in, Psychology 2RR3.

Enrolment is limited.

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.

3 lects.; one term

Prerequisite: Psychology 2E03 and Psychology 2R06 or 2RR3; or permission of the instructor. Not open to students who have completed Psychology 3W06.

PSYCH 3X03 SELECTED TOPICS IN BEHAVIOUR MODIFICATION

Major issues and controversies in contemporary behaviour modification. Consideration is given to rival theoretical accounts, and to experimental bases for such

techniques as systematic desensitization, aversion therapy, and punishment.

3 lects.; one term

Prerequisite: Psychology 2T03 and registration in a Psychology programme; or permission of the instructor.

PSYCH 3Y03 SELECTED TOPICS IN BEHAVIOUR THEORY

Issues of contemporary interest in animal learning and behaviour will be examined in depth.

3 lects.; one term

Prerequisite: Psychology 2T03 and registration in a Psychology programme; or permission of the instructor.

Psychology 3Y03 may be repeated, for a total of six units credit, if on a different topic and with permission of the instructor.

PSYCH 3Z03 RESEARCH METHODS IN PSYCHOLOGY

An advanced course examining the principles and techniques of research and data analysis in psychology.

3 lects.; one term

Prerequisite: Psychology 2R06 or 2RR3 and registration in Honours Psychology. Not open to students registered in, or with credit in, Biology 3T03.

PSYCH 4A03 CONTEMPORARY TOPICS IN HISTORICAL PERSPECTIVE

Discussion of the background and current status of several issues of contemporary interest.

3 hrs. (lects. and seminar); one term

Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CAA of at least 7.0 and permission of the instructor.

PSYCH 4B03 HISTORY OF PSYCHOLOGY

An historical account of the main lines of development of psychology.

3 lects.; one term

Prerequisite: Registration in Level IV Honours Psychology or Level IV Major Psychology with a CAA of at least 7.0.

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 Psychology programme with a CAA of at least 9.0, and permission of the course co-ordinator, which must be obtained by March 1. If Psychology 3Q03, 3QQ3, 4Q03, or 4QQ3 is taken concurrently with Psychology 4D06, a different faculty member must supervise each course.

PSYCH 4F03 SELECTED TOPICS IN NEUROSCIENCE

Neurobiology at an advanced level. Topics include membrane biophysics, electrophysiology and pharmacology of excitable cells, synaptic and dendritic mechanisms and neural plasticity.

3 lects.; 1 term

Prerequisite: One of Psychology 3F06, 3F03, Biology 3P03, 3U06, 3U03, and registration in Level IV Honours Psychology, Biology or Biology/Psychology; or permission of the instructor.

PSYCH 4G03 NEUROSCIENCE LABORATORY

Seminars and laboratory experience in current problems in neurobiology.

2 hrs. seminar, 3 hrs. lab.; one term

Prerequisite: Permission of the Department which must be obtained by March 1, and Psychology 4F03; or permission of the instructor.

Enrolment is limited.

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.

3 hours (seminar); one term

Prerequisite: Registration in Level IV of an Honours programme in Psychology; or Level IV of an Honours B.Sc. programme; or permission of the instructor.

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 co-ordinator.

Prerequisite: Permission of the course co-ordinator. Open only to students in Level IV of an Honours Psychology programme or Level IV Major Psychology with a CAA of at least 7.0. Not open to students who are registered in, or who have credit for, Psychology 4Q03.

PSYCH 4Q03 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 co-ordinator.

Prerequisite: Permission of the course co-ordinator. Open only to students in Level IV of an Honours Psychology programme. Not open to students who are registered in, or who have received credit for, Psychology 4Q03.

For Graduate Courses see *Calendar of School of Graduate Studies*.

Religious Studies

Faculty as of January 15, 1992

D. Kinsley/Chair

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*)

Yun-hua Jan/M.A., Ph.D. (*Visva-Bharati*)

Johannis J. Mol/B.D. (*Union Theological Seminary*), M.A., Ph.D. (*Columbia*)

Professors

A. Eugene Combs/B.A. (*Trinity, San Antonio*), M.Div. (*Union Theological Seminary*), Ph.D. (*Columbia*)

Phyllis Granoff/B.A. (*Radcliffe College*), Ph.D. (*Harvard*)

David R. Kinsley/B.A. (*Drew*), B.D. (*Union Theological Seminary*), M.A., Ph.D. (*Chicago*)

Ben F. Meyer/B.A. (*Gonzaga, Spokane*), Ph.L. (*Mount St. Michael's, Spokane*), M.A. (*Gonzaga*), M.S.T. (*Santa Clara*), S.T.L. (*Alma, Los Gatos*), S.S.L. (*Istituto Biblico*), S.T.D. (*Gregorian*)

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*)

Gerard Vallee/B.A. (*Laval*), M.A. (*Montreal*), Ph.D. (*Munster*)

Paul Younger/A.B. (*LaFayette*), M.A. (*Banaras*), B.D. (*Serampore*), Th.M., M.A., Ph.D. (*Princeton*)

Associate Professors

Louis I. Greenspan/M.A. (*Dalhousie*), Ph.D. (*Brandeis*)

Rosalind Lefebvre/Ph.D. (*Harvard*), Ph.D. (*Toronto*)/part-time

Graeme MacQueen/B.A., M.A. (*McMaster*), Ph.D. (*Harvard*)

Alan Mendelson/A.B. (*Kenyon College*), M.A. (*Brandeis*), Ph.D. (*Chicago*)

Adele Reinhartz/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 Professors

Ellen Badone/B.A., M.A. (*Toronto*), Ph.D. (*California, Berkeley*)

P. Travis Kroeker/B.A. (*Winnipeg*), M.A. (*Manitoba*), Ph.D. (*Chicago*)

Zdravko Planinc/B.A., M.A. (*York*), A.M., Ph.D. (*Harvard*)

Robert Sharf/B.A., M.A. (*Toronto*), Ph.D. (*Michigan*)

Visiting Professors

Tang Yijie/Beijing University

Yue Daiyun/Beijing University

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.

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. 2 lects., 1 tut.; two terms

Prerequisite: Open.

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. 2 lects., 1 tut.; two terms

Prerequisite: Open.

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. 2 lects., 1 tut.; two terms

Prerequisite: Open.

RELIG ST 1F06 WAR AND THE PROBLEM OF MEANING

This course uses lectures, films, and selected writings from religion, politics and literature to examine, in a comparative manner, the ways in which different

traditions have understood the meaning and end of war.

2 lects., 1 tut.; two terms

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 1I06 RELIGIOUS THEMES IN MODERN LITERATURE

An introduction to religious themes, imagery and issues through a study of selected modern literature. 2 lects., 1 tut.; two terms

Prerequisite: Open.

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. 2 lects., 1 tut.; one term

Prerequisite: Open.

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. 2 lects., 1 tut.; one term

Prerequisite: Open

RELIG ST 2BB3 IMAGES OF THE DIVINE FEMININE

An examination of goddesses and religious heroines from a variety of cultures: tribal, eastern and western. 2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

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. 2 lects., 1 tut.; one term

Prerequisite: Open to students in Level II and above.

Same as Philosophy 2D03.

RELIG ST 2D06 THE BIBLICAL WORLD: AN INTRODUCTION TO THE BACKGROUND OF THE OLD TESTAMENT

The social and political world of the Old Testament period (second millennium to 300 B.C.E.). Special attention will be given to the nature of the physical environment and to the results of archaeology. 2 lects., 1 tut.; two terms

Prerequisite: Open.

Not offered in 1992-93.

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. 2 lects., 1 tut.; one term

Prerequisite: Open. For a study of the whole Hebrew Bible, Religious Studies 2D06, 2DD3, 2EE3, 3M03 are recommended.

RELIG ST 2E06 INTRODUCTION TO THE STUDY OF THE NEW TESTAMENT

A survey of early Christian history and New Testament literature. Attention is paid to the Jewish background to Christianity and to the contemporary Jewish and Hellenistic worlds. 2 lects., 1 tut.; two terms

Prerequisite: Open. Students with credit in Religious Studies 2G06 may not take this course for credit.

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. 2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 2F03 THE SPREAD OF CHRISTIANITY

A study of the historical reasons why Christianity emerged as the religion which satisfied the quest for salvation in the early centuries of the Christian era. 2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 2FF6 HISTORY OF ANCIENT JUDAISM

A study of Judaism from the Babylonian Exile through the Rabbinic Period, with emphasis on the growth of religious movements and the political status of Jews and Judaism. 2 lects., 1 tut.; two terms

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 2G06 RELIGION AND THE CULTURE OF THE TWENTIETH CENTURY

A study of the treatment of religion and human spirituality in formative intellectual movements of the twentieth century such as modernism, positivism, neo-Marxism and conservatism.

2 lects., 1 tut.; two terms

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 2H03 ISSUES IN WAR AND PEACE

Religious thinking and practice on militarism, the restraint of war and paths to peace, including just war, nonviolence, pacifism and revolution.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 2I03 RELIGION AND SOCIAL JUSTICE

An examination of conceptions of justice in modern society and their relationship to religious understandings of human nature and society.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 2I13 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.

2 lects., 1 tut.; one term

Prerequisite: Open. Students with credit in Religious Studies 2HH6 or Religious Studies 2I13F may not take this course for credit.

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.

2 lects., 1 tut.; two terms.

Prerequisite: Open. Students with credit in Religious Studies 2O06 prior to 1992 may not take this course for credit.

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.

2 lects., 1 tut.; one term

Prerequisite: Open. Students with credit in Religious Studies 3KK3 may not take this course for credit.

RELIG ST 2K03 MYTH

Major definitions and theories of myth are discussed in conjunction with primary readings from mythological texts.

2 lects., 1 tut.; one term

Prerequisite: Open.

Same as Anthropology 2KK3.

RELIG ST 2KK3 CHRISTIANITY IN THE 16TH CENTURY

The place of the Reformation movement in the development of Christianity, its background, context and sequels. Attention given to the life and thought of Martin Luther and his impact on Western culture.

2 lects., 1 tut.; one term

Prerequisite: Open. Students with credit in Religious Studies 3QQ3 may not take this course for credit.

Not offered in 1992-93.

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.

2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 2LL3 CHRISTIANITY AFTER 1600

The development of Christianity (Protestant and Catholic) from the 17th to the 20th centuries. Attention is given to the interaction between secular and religious movements, and to Christianity's reaction to world-wide challenges.

2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 2M03 DEATH AND DYING: COMPARATIVE VIEWS

A comparative examination of death in selected religious texts, traditions and thought.

2 lects., 1 tut.; one term

Prerequisite: Open to students in Level II and above.

Students with credit in Religious Studies 2A06 may not take this course for credit.

RELIG ST 2MM6 EAST ASIA: RELIGION AND THOUGHT

An introduction to the spiritual and intellectual worlds of Confucianism, Taoism, Buddhism, Shinto, and a study of the transformation of these traditions in the modern context.

2 lects., 1 tut.; two terms

Prerequisite: Open. Students with credit in Religious Studies 2O06 prior to 1992 may not take this course for credit.

RELIG ST 2N03 DEATH AND DYING: THE WESTERN EXPERIENCE

An examination of death in religious experience as expressed through western art and literature.

2 lects., 1 tut.; one term

Prerequisite: Religious Studies 2M03, or permission of the instructor.

Students with credit in Religious Studies 2A06 may not take this course for credit.

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.

3 lects.; two terms

Prerequisite: Open to students in Level II and above.

Same as 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.

2 lects., 1 tut.; two terms

Prerequisite: Open

Same as Japanese Studies 2P06.

RELIG ST 2PP3 INDIAN PHILOSOPHY

An introduction to the basic assumptions of Indian philosophy incorporating traditional stories as illustrative of important philosophical concepts.

2 lects., 1 tut.; one term

Prerequisite: Open. Students with credit in Religious Studies 3P03 or 3P06 may not take this course for credit.

Not offered in 1992-93.

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.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 2R06 DIVINE JUSTICE

A study of the concept of the just God and the problem of evil with primary reference to the treatment of the issue in biblical, classical and modern thought.

2 lects., 1 tut.; two terms

Prerequisite: Open. Students with credit in Religious Studies 2R03 may not take this course for credit.

RELIG ST 2S06 POST HOLOCAUST JUDAISM

Contemporary Jewish reflections on the tradition, on the holocaust, on Zionism, and the Jewish condition.

2 lects., 1 tut.; two terms

Prerequisite: Open. Students with credit in Religious Studies 3M06 may not take this course for credit.

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.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 2TT3 TAOISM AND THE SEARCH FOR IMMORTALITY IN CHINA

This course is an introduction to the Taoist tradition in China. We will begin with the classics of "Philosophical Taoism", including the *Lao-tzu* and the *Chuang-tzu*. We will then turn to the scriptures of the medieval period which taught meditation, ritual and alchemy as paths to immortality.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 2VV3 BIBLICAL LITERATURE

A survey introduction to biblical literature (Old Testament, New Testament, and selected Apocrypha and Pseudepigraphica) and the history of biblical interpretation to meet the particular needs of students of Western literature.

2 lects., 1 tut.; one term

Prerequisite: Open.

Same as Comparative Literature 2G03.

RELIGIOUS STUDIES

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.

2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

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.

2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 2Z03 GREEK AND ROMAN RELIGION

A study of the role of religion in Greek and Roman public and private life.

3 lects.; one term

Prerequisite: Open to students in Level II and above.

Same as 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.

2 lects., 1 tut.; one term

Prerequisite: Open.

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.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 3B03 NATIVE AND ETHNIC RELIGIONS IN CANADA

A study of the effect of religion on native and ethnic identity, frontier religion and the new sects and cults.

2 lects., 1 tut.; one term

Prerequisite: Any course in Anthropology, Philosophy, Religious Studies, Sociology.

Same as Sociology 3Q03.

RELIG ST 3BB3 MAJOR DENOMINATIONS IN CANADA

A study of the major denominations in Canada, their history and their relation to national, regional and class identity.

2 lects., 1 tut.; one term

Prerequisite: Any Level I course in Anthropology, Philosophy, Religious Studies, Sociology.

Same as Sociology 3BB3.

RELIG ST 3D03 GOD, REASON AND EVIL

An examination of religious understandings of the nature of reason and evil, and the issues these concepts raise for those holding religious beliefs.

2 lects., 1 tut.; one term

Prerequisite: Open. Students with credit in Religious Studies 3D06 may not take this course for credit.

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.

2 lects., 1 tut.; one term

Prerequisite: Open; 1B06 or 2MM6 or 2P06 is recommended.

Same as Japanese Studies 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.

2 lects., 1 tut.; one term

Prerequisite: One course from the Eastern or Western Pool; or permission of the instructor.

RELIG ST 3G03 THE DEVIL AND HIS/HER ASSOCIATES

A study of the representations of evil as found mainly in the history of the West.

2 lects., 1 tut.; one term

Prerequisite: 12 units in Religious Studies.

Not offered in 1992-93.

RELIG ST 3H03 STORYTELLING IN EAST ASIAN RELIGIONS

An in-depth study of selected stories that illustrate the teachings of Confucianism, Taoism and Buddhism.

2 lects., 1 tut.; one term

Prerequisite: Open.

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 humor and wit in religious teaching.

2 lects., 1 tut.; one term

Prerequisite: Open.

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.

2 lects., 1 tut.; two terms

Prerequisite: Any course in Anthropology, Philosophy, Religious Studies or Sociology.

Same as Sociology 3M06.

RELIG ST 3JJ6 ANTHROPOLOGY OF RELIGION

A survey and evaluation of theoretical perspectives employed by anthropologists in the study of religion. Specific ethnographic examples will be drawn primarily, but not exclusively, from non-Western cultures.

2 lects., 1 tut.; two terms

Prerequisite: Open.

Same as Anthropology 3JJ6.

RELIG ST 3K03 INTRODUCTION TO HELLENISTIC JUDAISM

An examination of the mutual interaction of Judaism and Hellenism: the impact of Greek thought on Judaism and the contribution of Hellenistic Jewish philosophy.

2 lects., 1 tut.; one term

Prerequisite: Any of Religious Studies 2NN3, 2E06, 2FF6, 2G06, 2X03, 2Z03; or permission of the instructor.

Not offered in 1992-93.

RELIG ST 3KK3 RECENT DEVELOPMENTS IN CHRISTIAN THEOLOGY

A study of what some major Christian thinkers have been saying recently about the meaning of Christ in the modern world.

2 lects., 1 tut.; one term

Prerequisite: Open.

Not offered in 1992-93.

RELIG ST 3LL3 RELIGION AND HUMAN NATURE

What is the nature of human nature and its fulfillment? A study of recent philosophical, scientific and religious anthropology.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 3M03 SONGS OF DAVID: POETRY IN THE HEBREW BIBLE

A literary, exegetical, and theological study of poetry in the Hebrew Bible, with primary reference to the Psalms but including poems in the Pentateuch, Prophets, and Writings.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 3MM3 SCEPTICISM, ATHEISM AND RELIGIOUS FAITH

Is religious faith essential to, inimical to, or irrelevant to authentic human existence? A study of Nietzsche and Kierkegaard.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 3NN3 THE ENCOUNTER OF SCIENCE AND RELIGION

What is the meaning of modern science, and especially, modern technology for us today as individual human beings and as a society? Readings, as time permits, from Toulmin, Kuhn, Mumford, Ellul, Bell, Grant and Huxley.

2 lects., 1 tut.; one term

Prerequisite: Open. Students with credit in Religious Studies 3UU6 may not take this course for credit.

Not offered in 1992-93.

RELIG ST 3O03 THE FOURTH GOSPEL

An examination of the historical and literary backgrounds of the Gospel of John followed by a study of its context, major themes, and distinctive contribution to Christian thought.

2 lects., 1 tut.; one term

Prerequisite: One of Religious Studies 2NN3, 2E06, 2G06, 2R06; or permission of the instructor.

RELIG ST 3SS3 BODY, MIND AND SPIRIT

An exploration of the relationship of body, mind and spirit from the standpoints of eastern and western religious thought with special reference to current perspectives. Course work includes experiential workshops.

Seminar (3 hrs.); one term

Prerequisite: Open.

Same as Physical Education 3SS3.

Enrolment is limited.

RELIG ST 3T03 MODERN RESEARCH IN THE LIFE AND TEACHINGS OF JESUS

An examination of the views of representative modern scholars with an analysis of the texts on which their views rest, along with a consideration of the problem of the relationship between faith and historical events.

2 lects., 1 tut.; one term

Prerequisite: One of Religious Studies 2NN3, 2E06, 2G06, 2R06; or permission of the instructor.

RELIG ST 3U03 THE BUDDHIST TRADITION IN INDIA AND SOUTH-EAST ASIA

A study of Buddhist doctrine, ritual, and institutions. Topics include "primitive Buddhism," the rise of Mahayana, the doctrine of emptiness, and contemporary Theravada.

2 lects., 1 tut.; one term

Prerequisite: Open.

RELIG ST 3U03 THE BUDDHIST TRADITION IN EAST ASIA

An examination of Buddhist doctrine, ritual, and institutions in China and Japan. Emphasis will be on Pure Land, Ch'an, and Zen.

2 lects., 1 tut.; one term

Prerequisites: Open.

Same as Japanese Studies 3UU3.

RELIG ST 3X03 THE LETTERS OF PAUL

An examination of the principal themes in Paul's letters, with special emphasis on his Christology, anthropology, and soteriology. Modern scholarly views will be considered.

2 lects., 1 tut.; one term

Prerequisite: One of Religious Studies 2NN3, 2E06, 2G06, 2R06; or permission of the instructor.

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).

2 lects., 1 tut., two terms

Prerequisite: Religious Studies 3F03, and enrolment in Honours Religious Studies. Students with credit in both Religious Studies 4FF3 and 4GG3 may not take this course for credit.

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: Permission of the instructor.

RELIG ST 4Y03 GUIDED READING IN RELIGIOUS STUDIES

Independent study on a topic approved by the instructor.

one term

Prerequisite: Permission of the instructor.

SANSKRIT**SANSKRIT 3A06 INTRODUCTION TO SANSKRIT GRAMMAR**

Basic course in the elements of Sanskrit grammar. No previous knowledge of Sanskrit is required.

3 lects.; two terms

Prerequisite: Open.

SANSKRIT 4B06 READINGS IN SANSKRIT TEXTS

Intermediate course with readings in selected texts.

3 lects.; two terms

Prerequisite: Sanskrit 3A06.

HEBREW**HEBREW 2A06 HEBREW**

The inductive study of the Hebrew language, leading to the mastery of the general principles of grammar and syntax. Prose work throughout the year.

3 lects.; two terms

Prerequisite: Open.

HEBREW 3A06 INTERMEDIATE HEBREW

Extensive readings in Biblical prose (selections from some or all of the following: The Pentateuch, Former Prophets, Ruth and Esther), and some readings in the second term in Rabbinic literature (Mishna and Aggadah).

Two terms

Prerequisite: Hebrew 2A06.

CHINESE

See separate listing in the Calendar.

JAPANESE

See separate listing in the Calendar.

For Graduate Courses, see *Calendar of School of Graduate Studies*.

Russian

Courses and programmes in *Russian* are administered within the Department of Modern Languages of the Faculty of Humanities.

Department Notes:

- Students should note that the Department has classified its Russian language courses under the following categories:

Introductory Level Language Course

Russian 1Z06

Intermediate Level Language Course

Russian 2C06

Advanced Level Language Courses

Russian 3C06, 4C06

- Non-programme students who complete Russian 1Z06, 2C06 and 3C06, or Russian 2C06, 3C06 and 4C06, with a weighted average of at least 10.0 (A-), will receive a transcript notation indicating that the student has acquired a good working knowledge of spoken and written Russian.

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.

5 hrs., (including lab practice); two terms

Prerequisite: Open. Students with prior knowledge of the language as determined by a placement test may be required to take an appropriate alternative.

RUSSIAN 2B03 TWENTIETH-CENTURY SHORT STORY

Readings in the original language of short stories of Zoshchenko, Rasputin, Kazakov, Platonov.

3 lects.; one term

Prerequisite: Russian 1Z06; or permission of the Department.

RUSSIAN 2C06 INTERMEDIATE LANGUAGE STUDY

4 hrs.; two terms

Prerequisite: OAC Russian, or Russian 1Z06; or permission of the Department.

RUSSIAN 3C06 ADVANCED LANGUAGE STUDY

4 hrs.; two terms

Prerequisite: Russian 2C06.

RUSSIAN 4C06 CONVERSATION AND ADVANCED COMPOSITION

3 lects.; 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.

Tuts.; one term

Prerequisite: Registration in Level IV or a programme in Russian, and permission of the Independent Study Committee for Russian.

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 (2 hrs.); one term

Prerequisite: Russian 2C06; or permission of the Department. Not available to students with credit for the same topic taken under Russian 4G03.

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 (2 hrs.); one term

Prerequisite: Russian 2C06. Not available to students with credit for the same topic taken under Russian 4I03.

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

These *Science* courses are primarily designed for students in the Humanities and Social Sciences, to give an appreciation of important areas of modern science (the exception is Science 4I03). These courses 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:

Biochemistry 2E03	Introductory Biochemistry
Biology 1J03	Human Physiology
Chemistry 1C03	General Chemistry
Chemistry 2D03	Introductory Organic Chemistry
Computer Science 1ZA3	Introduction to Computing and Computer Use
Geology 1C03	Earth Processes
Physics 2J03	Physics of Musical Sound
Physics 2M03	Mechanics
Statistics 1A03	Introduction to Statistical Reasoning
Statistics 1L03	Probability and Linear Algebra

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.

3 lects.; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme. No mathematics is required.

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.

2 lects., 1 tut.; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme. Not open to students who are registered or have credit in, 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.

3 lects.; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme. Grade 12 Mathematics required.

SCIENCE 2G03 THE WORLD'S SUPPLY OF FOOD

Man's food requirements; how food is produced; alternative approaches to alleviating world hunger.

3 lects. or 2 lects., 1 tut.; one term

Prerequisite: Registration in Level II, III, or IV of any programme.

Enrolment is limited to 100.

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.

3 lects.; or 2 lects., 1 tut.; one term

Prerequisite: Registration in Level II, III, or IV of any programme. Not open to students, who are registered or have credit in Biology 1A06 or 1G06.

Offered in alternate years.

Not offered in 1992-93.

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.

3 lects. or 2 lects. and 1 tut.; one term

Prerequisite: Registration in Level II, III, or IV of any programme. Not open to students who are registered or have credit in Biology 1A06 or 1G06.

Offered in alternate years.

Offered in 1992-93.

SCIENCE 2L03 EARTH RESOURCES AND THE ENVIRONMENT

Origin and exploration of ore deposits and fossil fuels. Water resources and their pollution; radioactive waste disposal.

2 lects., 1 tut.; one term

Prerequisite: Registration in Level II, III, or IV of a non-science programme. Not open to students who are registered or have credit in, Geology 1A03, 1A06 or 1C03.

SCIENCE 4I03 INQUIRY

Inquiry seminars are designed to develop skills basic to the systematic investigation of public issues related to Science.

Prerequisite: Enrolment in a Major programme in the Faculty of Science in which Science Inquiry is required.

Enrolment is limited.

First offered in 1994-95.

Social Science

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.

3 hrs. (lects. and discussions); two terms

Prerequisite: Open

SOC SC 2C03 GENOCIDE AND ETHNOCIDE

The general sociological and political issue of genocide approached through the analysis of three types: (1) ethnocide (Armenians, Jews, Gypsies), (2) politicide (the Ukraine, Cambodia), (3) ethnocide of indigenous peoples in settler societies.

3 hrs; one term

Prerequisite: Open

SOC SC 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. Topics include structural change, dependency theory, new economic order, self-reliance, the role of multi-nationals in the third world, militarism and development, international aid and debt, world hunger, the global environment, world distribution of resources, industry and technology and finally, the theory and practice of unequal exchange.

3 hrs; one term

Prerequisite: Open.

SOC SCI 2E03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES I

An interdisciplinary examination of selected topics of current interest to social scientists. Topics will vary from year to year.

3 hrs. (lects. and seminars); one term

Prerequisite: Open. Students interested in this course should consult the Office of the Associate Dean (Studies) of the Faculty of Social Sciences concerning the topics to be examined in any year.

SOC SCI 2F03 SELECTED TOPICS IN INTERDISCIPLINARY STUDIES II

An interdisciplinary examination of selected topics of current interest to social scientists. Topics will vary from year to year. (This course should not normally be considered as an extension of Social Science 2E03.)

3 hrs. (lects. and seminars); one term

Prerequisite: Open. Students interested in this course should consult the Office of the Associate Dean (Studies) of the Faculty of Social Sciences concerning the topics to be examined in any year.

Social Work

Faculty as of January 15, 1992

M. Susan Watt/Director

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)

Professor

M. Susan Watt/B.A., M.S.W., Adv. Dip. S.W. (Toronto), D.S.W. (UCLA)

Associate Professors

Kalervo I. Kinanen/Dip. S.W. (Helsinki), B.A. (McMaster), M.S.W. (British Columbia)

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. (*South-
 ern 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

Jane Aronson/B.Sc. (*New University of Ulster*), B.S.W., M.S.W. (*McGill*),
 Ph.D. (*Toronto*)
 Ralph A. Brown/B.A., M.S.W. (*Waterloo Lutheran*), D.S.W. (*UCLA*)
 Roy Cain/B.S.W., M.S.W., Ph.D. (*McGill*)
 Patricia M. Daenzer/B.A., B.S.W., (*York*), M.S.W., Ph.D. (*Toronto*)
 James W. Gladstone/B.A. (*McGill*), M.S.W. (*British Columbia*), Ph.D.
 (*Toronto*)
 Nora Gold/B.S.W. (*McGill*), M.S.W., Ph.D. (*Toronto*)
 Sheila Sammon/B.A. (*Nazareth College, New York*), M.S.W. (*Toronto*)

Lecturer

Sheree D. Meredith/B.A. (*Trent*), M.S.W. (*Wilfrid Laurier*)

Associate Members

N.C. Agarwal/B.A., M.A. (*Delhi*), Ph.D. (*Minnesota*), (Business)
 J.A. Johnson, M.A., Ph.D. (*Minnesota*), (Economics)

Practice Instructors

Michael Balkwill/B.A., B.S.W., M.A. (*McMaster*)
 Mel Basbaum/B.A. (*Sir George Williams*), M.S.W. (*McGill*)
 Donna P. Carroll/B.A. (*Brock*), M.S.W. (*Wilfrid Laurier*)
 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. (*Fanshaw*)
 Mary Ann Covi/B.A. (*State University of New York at Buffalo*), M.S.W.
 (*Toronto*)
 Mary Forster/B.A. (*Guelph*), M.S.W. (*Wilfrid Laurier*)
 Heather M. Goulden/B.Sc. (*London*), M.S.W. (*Carleton*)
 Gordon Greenway/B.A., M.S.W. (*Carleton*)
 Paul Haalboom/B.A. (*McMaster*), M.S.W. (*Carleton*)
 David A. Jewell/B.A., B.S.W. (*Windsor*), M.S.W. (*Toronto*)
 Bob Lang/B.A., B.S.W. (*McMaster*), M.S.W. (*Wilfrid Laurier*)
 Steve McCann/B.A. (*York*), M.S.W. (*Wilfrid Laurier*)
 R. Malcolm Powell/B.A., B.S.W., M.A. (SWP) (*McMaster*)
 Tony Quick/B.A. (*St. Mary's*), M.S.W. (*Dalhousie*)
 Katrina Renshaw/B.A., B.S.W. (*McMaster*), M.S.W. (*McGill*)
 Brenda Symons-Moulton/B.A., B.S.W. (*McMaster*), M.S.W. (*Wilfrid
 Laurier*)
 Bill Vickers/B.A. (*Marietta College*), M.S. Education (*Niagara Univer-
 sity*), M.S.W. (*State University of New York at Buffalo*)
 Emmy C. Weisz/B.A., B.S.W. (*McMaster*), M.S.W. (*Toronto*)
 Margie Woods/B.A., B.S.W., M.S.W. (*Toronto*)

Department Notes:

1. Except when designated as * these courses are open **only** to students registered in the Combined B.A./B.S.W. Programme, or the B.S.W. programme for a second degree.
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. Second Degree programmes, no later than the last day for registration as stated in the Calendar under *Sessional Dates*.

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.
 Lects. and discussion; two terms
Term 1 of this course is the same as Labour Studies 2B03 and Term 2 is the same as Labour Studies 2BB3. Students in a Social Work programme must register for this course as Social 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
 Prerequisite: Not available to students with credit in Social 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. Not available to students with credit in Social 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 THE PRACTICE OF 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 Social Work 3DD6 (summer). Priority for summer block given to B.S.W. (Second Degree) students.
 Prerequisite: Social Work 2B06, 2C03, 2D03, Psychology 2A03, and registration in Social Work 3DD6. Not available to students with credit in Social Work 3D09.
Credit in this course is dependent on achieving a minimum grade of C+ in Social Work 3D06 and a 'Pass' in Social 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 Social Work 3D06 taken in the summer. Priority for summer block given to B.S.W. (Second Degree) students.
 Prerequisite: Registration in Social Work 3D06. This course is evaluated on a 'Pass'/'Fail' basis.
 Credit in this course is dependent on receiving a 'Pass' in Social Work 3DD6 and a minimum grade of C+ in Social 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 3J03 TECHNOLOGY AND SOCIAL WELFARE***
 Problems of social policy posed by the impact of technology in such areas as work and leisure, income maintenance, participation in decision-making and social planning.
 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 strategies of intervention in working with individuals and groups in social work.
 Seminars; one term.
 Prerequisite: Enrolment in, or completion of, Psychology 2A03. Not available to students with credit in Social 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

SOCIOLOGY

SOC WORK 3P03 CONCENTRATED STUDIES IN SOCIAL WORK PRACTICE**

Completion of a major project focusing on a selected social work problem or issue.

Tuts.; two terms

Prerequisite: Permission of the supervising instructor and course co-ordinator.

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 4D06 THE PRACTICE OF GENERAL SOCIAL WORK II

Seminars to deepen understanding and further develop practice skills.

Two terms

Option of equivalent block placement in combination with Social Work 4DD6.

Prerequisite: Social Work 3D06, 3DD6 and registration in Social Work 4DD6.

Not available to students with credit in Social Work 4D12.

Credit in this course is dependent on achieving a minimum grade of C+ in Social Work 4D06 and a 'Pass' in Social 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 Social Work 4D06.

Prerequisite: Registration in Social Work 4D06. This course is evaluated on a 'Pass'/'Fail' basis.

Credit in this course is dependent on receiving a 'Pass' in Social Work 4DD6 and a minimum grade of C+ in Social Work 4D06.

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.

Enrolment is limited.

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 supervising instructor and course co-ordinator.

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 Social 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 Social 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: Social Work 2B06, 2C03, 2D03 and Psychology 2A03.

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: Registration in, or credit in, Social Work 3D06 and 3DD6, or 3D09; or permission of the instructor. Not available to students with credit in Social Work 3M03.

Enrolment is limited.

SOC WORK 4Y03 METHODS OF APPLIED SOCIAL RESEARCH

Examination of the conceptual framework of scientific inquiry relating to social work research and practice. Survey of selected research from other disciplines relevant to social work.

Seminars; one term

Prerequisite: Not available to students with credit in Social 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.

For Graduate Courses see *Calendar, School of Graduate Studies.*

Sociology

Faculty as of January 15, 1992

A.A. Hunter/*Chair*

Professors Emeriti

Howard M. Brotz/B.A., M.A. (*Chicago*), Ph.D. (*London*)

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

Carl J. Cuneo/B.A., M.A., Ph.D. (*Waterloo*)

Jack W. Haas/B.S. (*SUNY, Brockport*), Ph.D. (*Syracuse*)

Rhoda E. Howard/B.A., M.A., Ph.D. (*McGill*)

Alfred Hunter/B.A. (*University of British Columbia*), M.A., Ph.D. (*Wisconsin*)

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*)

William B. Shaffir/B.A., M.A., Ph.D. (*McGill*)

Associate Professors

W. Peter Archibald/B.A. (*Mt. Allison*), M.A. (*University of British Columbia*), Ph.D. (*University of Michigan*)

Robert E. Blumstock/B.A., M.A. (*City College, N.Y.*), Ph.D. (*Oregon*)

Richard A. Brymer/B.A., M.A. (*Texas*), Ph.D. (*Michigan State*)

Franklin W. Henry/Ph.B. (*Marquette*), M.A., Ph.D. (*Catholic University of America*)

Roy W. Hornosty/B.S.P., M.A. (*University of British Columbia*), Ph.D. (*SUNY, Buffalo*)

Graham K. Knight/B.A. (*Kent*), M.A., Ph.D. (*Carleton*)

Jack Richardson/B.A., M.A., Ph.D. (*Toronto*)

Gerald Rosenblum/A.B. (*California, Berkeley*), M.S. (*Oregon*), A.M., Ph.D. (*Princeton*)

Jane Synge/M.A. (*Aberdeen*), Ph.D. (*London*)

Vivienne Walters/B.A., M.A. (*Sheffield*), Ph.D. (*McGill*)

Assistant Professors

Margaret Denton/B.A., M.A., Ph.D. (*McMaster*)
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*)
Dorothy Pawluch/B.A. (*Laurentian*), M.A., Ph.D. (*McGill*)
R.H. Storey/B.A. (*Toronto*), M.A. (*Dalhousie*), Ph.D. (*Toronto*)
Pamela Sugiman/B.A., M.A., Ph.D., (*Toronto*)

Lecturers

Gregory Brown/B.A., M.A. (*Guelph*), Ph.D. expected (*Waterloo*)

Associate Members

Roy Cain/ (Social Work) B.S.W., M.S.W., Ph.D. (*McGill*)
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*)
L. Greenspan/ (Religious Studies) M.A. (*Dalhousie*), Ph.D. (*Brandeis*)
C. Jones/ (Sociology, Toronto) B.A. (*Cambridge*), Ph.D. (*Edinburgh*)

Department Notes:

1. Students should consult the Department's *Handbook for Undergraduates, 1992-93*, which will be available prior to registration, for fuller course descriptions and any changes in the list of courses offered in 1992-93. Students should check the *Handbook* in order to find the term in which 'one term' courses are offered.
2. Sociology 1A06 and several other courses are divided into independent sections. For more information, see the Sociology Department's *Handbook for Undergraduates, 1992-93*. This booklet gives course descriptions for the various Sociology 1A06 sections.

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.

2 lects., 1 tut., two terms

Prerequisite: Open.

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.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

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.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06.

SOCIOL 2E06 RACIAL AND ETHNIC GROUP RELATIONS

The course deals with the study of racial and ethnic group relations in Canada and the United States.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 2H06 A SOCIOLOGICAL ANALYSIS OF CANADIAN SOCIETY

The application of sociological concepts to the character and social structure of Canada, with particular emphasis on its major social class, regional, and ethnic divisions.

3 hrs. (lects. and discussion); two terms

Prerequisite: Open.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

Same as Labour Studies 3I03.

SOCIOL 2J03 CURRENT PROBLEMS IN SOCIOLOGICAL ANALYSIS

Selected problems in contemporary sociology.

Topics will vary and the Department should be consulted for details for any particular year.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 2K03 CURRENT PROBLEMS IN SOCIOLOGICAL ANALYSIS

Same as Sociology 2J03.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 2M06 SOCIAL CHANGE

Taking both a historical and comparative perspective, this course focusses on macrosocial changes such as industrialization, urbanism, and the rise of individualism.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 2O06 SOCIAL STRATIFICATION

A broad comparative study of social class and social mobility.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 2P06 THE SOCIOLOGY OF EDUCATION

A comprehensive analysis of educational institutions in modern society.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

Enrolment is limited.

SOCIOL 2Q06 SOCIOLOGY OF WOMEN

An analysis of the status and objective condition of women in Canada (including theories of socialization and of stratification).

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

Enrolment is limited.

SOCIOL 2S06 INTRODUCTION TO SOCIOLOGICAL THEORY

An introduction to the foundations, rise and development of sociological theory.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor. Not open to students with credit in Sociology 2S03 or 3A06.

SOCIOL 2U06 SOCIOLOGY OF THE FAMILY

An analysis of kinship and family units in comparative, historical, and contemporary perspective.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

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.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

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. Not open to students with credit for this topic if taken as English 3KK3.

Same as English 3B03.

Enrolment is limited.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in: any programme in Sociology; or Honours Anthropology; or Labour Studies; or Social Work; or permission of the instructor. Not open to students who are registered in, or have received credit for, 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.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration in any programme in Sociology; or permission of the instructor.

Enrolment is limited.

Same as Anthropology 2Z03.

SOCIOL 3A03 EUROPEAN SOCIOLOGICAL THEORY

An advanced examination of classical and contemporary European sociological theory.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 2S06; or permission of the instructor. Not open to students with credit in Sociology 3A06.

SOCIOLOGY

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06, and registration in any Social Sciences programme; or permission of the instructor.

Enrolment is limited.

SOCIOL 3B03 SELECTED TOPICS IN THE SOCIOLOGY OF EDUCATION

An examination of selected topics in the sociology of education.

3 hrs. (lects. and discussion); one term

Prerequisite: At least 18 units of Sociology, or permission of the instructor.

Enrolment is limited.

SOCIOL 3BB3 MAJOR DENOMINATIONS IN CANADA

A study of the major denominations in Canada, their history and their relation to national, regional and class identity.

2 lects., 1 tut.; one term

Prerequisite: Any Level I course in Anthropology, Philosophy, Religious Studies, Sociology.

Same as Religious Studies 3BB3.

SOCIOL 3C06 SOCIO-ECONOMIC DEVELOPMENT

Selected topics in the sociology of underdeveloped countries, including social stratification, revolution, the place of women, and processes of social change.

3 hrs. (lects. and seminars); two terms

Prerequisite: At least 18 units of Sociology, or any Level II course in Political Science, or permission of the instructor.

Same as Political Science 3B06.

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.

3 hrs. (lect. and discussion); one term

Prerequisite: Sociology 2U06 or registration in a Combined Honours in Sociology and Gerontology.

Enrolment is limited.

Offered alternately with Sociology 3D03. Not offered in 1993-94.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

Offered alternately with 3CC3. Not offered in 1992-93.

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.

3 hrs. (lects. and discussion); one term

Same as Physical Education 3P03.

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

SOCIOL 3E03 SELECTED TOPICS IN THE SOCIOLOGY OF WOMEN

An advanced course allowing detailed study of selected topics in the sociology of women.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06 and Sociology 2Q06; or permission of the instructor.

Enrolment is limited.

SOCIOL 3EE3 SPORT AND SMALL GROUP DYNAMICS

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.

3 hrs. (lects. and discussion); one term

Same as Physical Education 3Q03.

With permission of the instructor, this course may be taken as an elective for B.A. credit by undergraduates not in Physical Education.

SOCIOL 3F06 POLITICAL SOCIOLOGY

A survey of social and state institutions, focusing on current debates in the field.

3 hrs. (lects. and discussion); two terms

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 3G03 SOCIOLOGY OF HEALTH CARE

Selected issues concerning forms of providing health care.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor. May be repeated once by students who took the course in 1986/87 or 1987/88.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 2C06.

SOCIOL 3H06 RESEARCH TECHNIQUES AND DATA ANALYSIS

A comprehensive introduction to the principles of research methods and data analysis in the social sciences.

3 hrs. (lects. and labs.); two terms

Prerequisite: Registration in any programme in Sociology; or permission of the instructor. Students in Honours Anthropology, Gerontology and Labour Studies will have second priority. Not open to students who have taken, or are currently enrolled in, any 6 units of the following: Chemical Engineering 4C03; Commerce 2QA3; Economics 2B03, 3O06; Geography 2L03, 2L06, 3L03; Gerontology 3C03; Political Science 2F06; Psychology 2G03, 2R06; Sociology 2Y03; all Statistics courses except 2D03, 3S03, 3U03, 4H03, 4K03, 4Z03.

SOCIOL 3HH3 SOCIOLOGY OF HEALTH

Sociological approaches to the study of health and illness.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor. Not open to students with credit in Sociology 3G03, 1986/87 or 1987/88.

Enrolment is limited.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 3K03 SPECIAL TOPICS IN SOCIOLOGICAL ANALYSIS II

Same as Sociology 3J03.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 3L03 SELECTED TOPICS IN OCCUPATIONAL SOCIOLOGY

An advanced course allowing detailed study of one or more topics of special interest.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

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.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

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.

3 hrs. (lect. and discussion); two terms

Prerequisite: Any course in Anthropology, Philosophy, Religious Studies or Sociology.

Same as Religious Studies 3J06.

SOCIOL 3N03 THE SOCIOLOGY OF KNOWLEDGE AND CULTURE

An analysis of the origins, development and functions of ideas, images, and other cultural representations through which knowledge about society, its institutions and practices is formed, distributed and used.

3 hrs. (lects and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 3O03 ADVANCED SOCIOLOGICAL RESEARCH

This course will provide a detailed study of selected qualitative methods in Sociology.

3 hrs. (lects. and discussion); one term

Prerequisite: Registration is restricted to Honours Sociology; or permission of the instructor.

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 or Sociology 3W03.

SOCIOL 3P03 AMERICAN SOCIOLOGICAL THEORY

An advanced examination of classical and contemporary American sociological theory.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 2S06. Not open to students with credit in Sociology 3A06.

Offered alternately with Sociology 3PP3. Not offered in 1992-93.

SOCIOL 3PP3 CANADIAN SOCIOLOGICAL THEORY

An examination of the more or less unique contributions of English Canadians to sociological theory. Emphasis is on the Toronto school, and its left-nationalist progeny and critics.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 2S06.

Offered alternately with Sociology 3P03. Not offered in 1993-94.

SOCIOL 3Q03 NATIVE AND ETHNIC RELIGIONS IN CANADA

A study of the effect of religion on native and ethnic identity, frontier religion and the new sects and cults.

2 lects., 1 tut.; one term

Prerequisite: Any course in Anthropology, Philosophy, Religious Studies, Sociology.

Same as Religious Studies 3B03.

SOCIOL 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.

3 lects.; one term

Prerequisite: Open. Not available to students with credit in this topic if taken as English 3KK3.

Same as English 3F03.

Enrolment is limited.

SOCIOL 3T03 THE SOCIOLOGY OF URBAN AREAS

Sociological analysis of urban structure and development, and the social consequences of urbanization.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06 or Geography 2B03 and 2Y03.

SOCIOL 3V03 SELECTED TOPICS IN COMPARATIVE INDUSTRIAL SOCIETIES

The similarities and differences of various modern industrial societies will be examined through discussion of various postulated determinants of the structure and processes of such societies.

3 hrs. (lects. and discussion); one term

Prerequisite: At least 18 units of Sociology including Sociology 1A06; or permission of the instructor.

SOCIOL 3W03 HISTORICAL METHODS IN SOCIOLOGY

An examination of methods for incorporating historical data and archival sources into sociological argument.

3 hrs. (seminar and discussions); one term

Prerequisite: Registration is restricted to Honours Sociology; or permission of the instructor.

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 or Sociology 3O03.

SOCIOL 3X03 SOCIOLOGY OF AGING

This course deals with changing population structure, economic support of the aged, family of later life, the sociology of retirement, widowhood, death, bereavement, and institutionalization.

3 hrs. (lects. and discussion); one term

Enrolment is limited.

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 3Y03 THE SOCIOLOGY OF ORGANIZATIONS II

An advanced course which allows detailed examination of relevant theories and research, including those to which the student was introduced in Sociology 2I03.

3 hrs. (lect. and discussion); one term

Prerequisite: Sociology 2I03 is strongly recommended.

SOCIOL 3Z03 ETHNIC RELATIONS

An analysis of political, social and economic change in selected locales.

3 hrs. (lects. and discussion); one term

Prerequisite: Sociology 1A06; or permission of the instructor.

SOCIOL 4A03 ETHNIC/RACIAL TENSIONS

The course will investigate the processes by which racial and/or ethnic tensions develop in various societies.

3 hrs (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

SOCIOL 4B06 FIELD STUDY METHODOLOGY

This course provides students an opportunity to engage in first hand sociological research using field study methods, particularly participant observation.

3 hrs. (seminar); two terms

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

SOCIOL 4C06 SELECTED PROBLEMS IN SOCIOLOGICAL RESEARCH

Students will undertake a class project which involves quantitative materials.

3 hrs. (seminar); two terms

Prerequisite: Sociology 3H06.

Enrolment is limited.

SOCIOL 4D03 CRITIQUES OF SOCIOLOGICAL THEORY

A discussion of various sociological and non-sociological critiques of sociological theory.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology and Sociology 2S06; or permission of the instructor.

Enrolment is limited.

SOCIOL 4E03 SELF AND IDENTITY

A consideration of theoretical and empirical questions relating to self and identity viewed from historical, cross-cultural and cross-disciplinary perspectives.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

SOCIOL 4F03 SPECIAL TOPICS IN COMPARATIVE SOCIOLOGICAL RESEARCH

The focus of this course will be the comparative analysis of industrialized societies. Students will have an opportunity to engage in comparative sociological research using a range of data sources.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

SOCIOL 4G03 THE SOCIAL PRODUCTION OF ILLNESS

An examination of the social bases of illness. In different years consideration may be given to topics such as gender, social class and occupational and environmental health issues.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology or permission of the instructor.

Enrolment is limited.

SOCIOL 4GG3 SPECIAL TOPICS IN THE SOCIOLOGY OF DEVIANCE

An advanced course allowing detailed study of selected topics in the Sociology of Deviance. Topics will vary from year to year.

3 hrs. (seminar); one term

Prerequisite: Sociology 2C06; Registration in Level IV Sociology; or permission of the instructor

Enrolment is limited.

SOCIOL 4H03 SELECTED TOPICS IN THE SOCIOLOGY OF ORGANIZATIONS

An advanced course allowing detailed study of aspects of organizational analysis of special interest.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology and Sociology 2I03; or permission of the instructor.

Enrolment is limited.

SOCIOL 4I03 SPECIAL TOPICS IN SOCIOLOGICAL THEORY

An advanced critical analysis of special topics/issues in sociological literature. The content of this course will vary from year to year; please consult the departmental handbook.

3 hrs. (seminar); one term

Prerequisite: Sociology 2S06, and registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

SOCIOL 4J03 SELECTED TOPICS IN SOCIOLOGY I

Topics of contemporary interest to sociologists, with emphasis upon current theory and research. Students should consult the Department concerning the topics to be examined.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

WOMEN'S STUDIES

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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: Permission of the instructor and registration in Level IV Honours Sociology; or 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: Permission of the instructor and registration in Level IV Honours Sociology; or permission of the Department.

SOCIOL 4N03 DIRECTED RESEARCH II FOR HONOURS STUDENTS**

Same as Sociology 4M03.

One term

Prerequisite: Permission of the instructor and registration in Level IV Honours Sociology; or permission of the Department.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology.

Enrolment is limited.

SOCIOL 4Q03 INDIVIDUAL AND SOCIETY I

An intensive examination of selected problems involving the relationship of individuals to social structures.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

SOCIOL 4R03 INDIVIDUAL AND SOCIETY II

An intensive examination of selected problems involving the relationship of individuals to social structures.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

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.

3 hrs. (seminar); one term

Prerequisite: Registration in Level IV Honours Sociology; or permission of the instructor.

Enrolment is limited.

For Graduate Courses see *Calendar, School of Graduate Studies.*

Spanish

(See *Hispanic Studies*)

Statistics

(See *Mathematics and Statistics*)

Women's Studies

The Honours B.A. Women's Studies and Another Subject Programme is co-ordinated by an interdisciplinary Committee of Instruction.

Faculty Advisors:

Joan Coldwell (English)/*Director of Women's Studies*

Maroussia Ahmed (French)

Jane Aronson (Social Work)

Sylvia Bowerbank (Arts & Science)

Vera Chouinard (Geography)

Sally Cole (Anthropology)

Joanne Fox (Nursing)

Ruth Frager (History)

Donald Goellnicht (English)

Elizabeth Inman (Drama)

Rhonda Lenton (Sociology)

Julia O'Connor (Sociology)

Mary O'Connor (English)

Adele Reinhartz (Religious Studies)

Lisa Schnell (English)

Kari Smedstad (Anaesthesia)

Vivienne Walters (Sociology)

Lorraine York (English)

Isik Zeytinoglu (Business)

Sessional Instructors

Nicolette DiFrancesco/ B.A. (*Carleton*), M.A. (*McMaster*)

Naim Galvin/ B.A. (*McMaster*), M.A. (*McMaster*)

Kathy Garay/ B.A. (*East Anglia*), M.A. (*McMaster*), Ph.D. (*Toronto*)

Rose Janson/ B.A. (*Waterloo Lutheran*), M.A. (*Toronto*)

Geraldine Voros/ B.A. (*Guelph*), M.A. (*McMaster*)

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.

3 hrs. (2 lects. and tut.); two terms

Prerequisite: Open.

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, women's peace movements, health collectives and ecofeminism.

3 hrs. (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.

3 hrs.; two terms

Prerequisite: Women's Studies 1A06.

Enrolment is limited. (Preference will be given to programme students.)

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.

3 hrs.; two terms

Prerequisite: Women's Studies 1A06.

Enrolment is limited. (Preference will be given to programme students.)

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.

3 hrs.; lectures, tutorials and guided reading; one term

Prerequisite: Registration in the Women's Studies Programme.

Enrolment is limited.

WOMEN ST 3A06 FEMINIST THEORY

This seminar explores one or more theoretical feminist perspectives such as the classical Marxist, liberal, radical, biological determinist and poststructuralist. Possible themes to be studied from these perspectives are psychotherapy, sexuality and language. Students will read primary theoretical texts such as those by Wollstonecraft, de Beauvoir, Woolf, Daly, Gilligan, Chodorow, and Kristeva.

3 hrs. (Seminar and discussion); two terms

Prerequisite: Registration in the Women's Studies Programme, or permission of the Director of Women's Studies.

WOMEN ST 3B03 TOPICS IN WOMEN AND THE ARTS I: THEATRE AND FILM

1992-93: Women and Film

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.

3 hrs.; one term

Prerequisite: Registration in the Women's Studies Programme or in Level III or IV of a programme in Drama.

Same as Drama 3W03.

Enrolment is limited. (Preference will be given to students in the Women's Studies programme.)

Women's Studies 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

1992-93: Women and Music

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.

3 hrs.; one term

Prerequisite: Registration in the Women's Studies Programme, or permission of the Director of Women's Studies.

Enrolment is limited.

Women's Studies 3BB3 may be repeated, if on a different topic, to a total of six units.

WOMEN ST 3C06 WOMEN AND ENVIRONMENTS

This course examines selected topics in women and environments, an interdisciplinary area of inquiry concerned with how women's lives are shaped by the environments in which they live, and how women act to change those environments. A range of important issues regarding women's experiences of environments will be raised through examining such topics such as: women's responses to industrial change, women and urban planning, women and housing problems, and women's struggles for ecologically and socially safer environments.

3 hrs.; 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 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.

3 hrs.; two terms

Prerequisite: Registration in Level III or IV of the Women's Studies Programme, or permission of the Director of Women's Studies.

Same as Anthropology 3R06.

Enrolment is limited.

WOMEN ST 4A06 INDEPENDENT RESEARCH

Students develop and execute their own research projects, in regular consultation with a faculty supervisor. In March, students present the results of their work at a one-day forum in which all students and faculty of Women's Studies are encouraged to participate. A formal written report is submitted to the supervisor shortly afterwards.

Prerequisite: Registration in Level IV of the Women's Studies Programme.

WOMEN ST 4B06 TOPICS IN WOMEN, THE ECONOMY AND THE STATE

1992-93: Women and Social Welfare

The purpose of this course is to increase understanding of the experiences of women as both recipients and providers of social welfare services and of the relationship between women and the welfare state.

3 hrs.; 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's Studies 4B06 may be repeated, if on a different topic, to a total of twelve 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 complementary to those being used in Women's Studies 4A06.

3 hrs.; 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.

Not offered in 1992-93.

Academic Services and Research Facilities

Academic Services

THE UNIVERSITY LIBRARY

G.R. Hill, B.A. (*Newcastle*), M.A. (*Lancaster*),
M.L.S. (*Western*)/University Librarian

The University Library System consists of Mills Memorial Library (Arts), the Innis Room in Kenneth Taylor Hall which contains a collection of Business materials, the H.G. Thode Library of Science and Engineering, the Lloyd Reeds Map Library/Urban Documentation Centre located in the Burke Science Building and the Health Sciences Library housed in the Health Sciences Centre. Union catalogues covering all libraries are available and stacks are open to all library users.

The collection in 1991 contained over 1,613,971 volumes, 1,251,402 microform items, 159,917 non-print items and 9,606 linear feet of archival material. Current periodical titles number about 13,657.

To help readers, service is maintained at key points, such as Reference and Periodicals, in the various libraries. Introductory library tours and subject related seminars are given and pamphlets describing the hours and services of the different areas are available.

Mills Library has several collections - Reference, Periodicals, Government Documents and Music, 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 30,000 volumes and is the major Canadian collection in the field. Library fellowships in Eighteenth-Century Studies are being offered annually. Among more modern materials are the papers of Vera Brittain, Marian Engel, Anthony Burgess, 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 U.S.W.A. Local 1005, U.S.W.A. 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.

Staff

Ball, Kathryn, B.A. (*Laurentian*), M.L.S. (*Western*)/Business Librarian

Bayley, Elizabeth Grace, B.A. (*McMaster*), M.L.S. (*Western*)/Cataloguing Librarian, Health Sciences Library

Bendig, Regina, B.A. (*Toronto*), M.L.S. (*Toronto*)/Librarian, Processing Services

Blackwell, Kenneth Milton, B.A. (*Victoria*), M.L.S. (*Western*), M.A. (*McMaster*), Ph.D. (*Guelph*)/Russell Archivist

Chan, Ruby M.C., B.S.S. (*Ottawa*), B.L.S. (*Toronto*)/Catalogue Services Co-ordinator, Processing Services

Cook, David E., B.A., M.L.S. (*Toronto*)/Documents Librarian

Drynan, Marju, B.A. (*McMaster*), M.S. (*Columbia*)/Associate University Librarian For Systems Development

Findlay, Peggy Eleanor, B.A. (*York*), M.L.S. (*Dalhousie*)/Information Services Librarian, Science & Engineering

Fitzgerald, Dorothy A., B.A. (*Mt. St. Vincent*), M.L.S. (*Dalhousie*)/Director, Health Sciences Library

Flemming, Thomas Leslie, B.A. (*St. Mary's University*), M.A., M.L.S. (*Dalhousie*)/Head of Public Services, Health Sciences

Gaskin, Nora M., B.A. (*McGill*), M.L.I.S. (*Western*)/Librarian, Processing Services

Haslett, Mark, B.A. (*Toronto*), M.L.S. (*Western*)/Acquisitions Librarian, Collections

Hayton, Elizabeth Elise, B.Sc. (*McGill*), M.L.S. (*Toronto*)
Coordinator, Circulation Services

Hill, Graham Roderick, B.A. (*Newcastle*), M.A. (*Lancaster*), M.L.S. (*Western*)/University Librarian

Lewis, Vivian M., M.L.S. (*Toronto*)

Linkert, Mary Ruth/Head of Administrative Services

Maggs, Margaret Liddell, B.A. (*McMaster*), M.A. (*Glasgow*), A.L.A./Associate University Librarian, Reader Services

Mazur, Carol Mary, B.A. (*McMaster*), B.L.S. (*Toronto*)/Librarian, Reference Services

McKeage, Anne, B.A. (*McMaster*), M.L.S. (*Western*)/Archivist and History of Medicine Librarian, Health Sciences

Michitics, Linda Rose, B.A. (*McMaster*), M.L.S. (*Western*)/Librarian, Reference Services

Millard, Donna M., B.A., M.L.S. (*Western*)/Librarian, Reference Services

Morley, Judith, B.A. (*McMaster*), B.L.S. (*Toronto*)/Librarian, Processing Services

Moulder, Cathy, B.A. (*McMaster*), M.L.S. (*Toronto*)/Documentalist, Lloyd Reeds Map Library/Urban Documentation Centre

Nunn, Victor, B.A. (*York*), M.L.S. (*Western*)/Assistant University Librarian for Collections Management and Development

Ouellette, Michael J., Library Personnel Officer

Panton, Linda W., B.A. (*Mount Allison*), M.L.S. (*Western*)/Coordinator of Hospital Libraries

Parke, Valerie Jeanette, B.A., M.L.S. (*Western*)/Librarian, Reference Services

Passi, Narendar Nath, M.A. (*Punjab*), M.L.S. (*Delhi and Toronto*)/Head of Reference Services

Pepper, Sheila Letitia, B.A., M.A. (*McMaster*), B.L.S. (*Toronto*)/Applied Systems & Instructional Services Librarian

Perkovic, Olga, B.A. (*McMaster*), M.L.S. (*Toronto*)/Librarian, Processing Services

Pottier, Anne, B.A. (*Principia College*), M.L.S. (*Toronto*)/Interlibrary Loan Librarian

Racheter, Carol, B.A., B.L.S., M.L.S. (*Toronto*)/Director of Processing Services

Siroonian, Harold A., M.Sc. (*McMaster*), M.S. in L.S. (*Columbia*)/Associate University Librarian, Science & Engineering

Spadoni, Carl, B.A. (*Wilfrid Laurier*), M.A. (*McMaster*), Ph.D. (*Waterloo*), M.L.S. (*Toronto*)/Librarian, Research Collections

Spence, Tafila A., M.A. (*Glasgow*), B.L.S. (*Toronto*)/Serials Librarian

Stewart-Murphy, Charlotte A., B.A. (*Toronto*), M.A. (*McMaster*), M.L.S. (*Western*)/Director of Archives and Research Collections

Thomson, Donna K., B.A. (*York*), M.L.S. (*Toronto*)/Database Development Librarian Services

Tooke, Elaine M., B.A., M.L.S. (*Western*), M.Sc. (*Dalhousie*)/Reference Librarian, Science & Engineering

Trainor, Mary Anne, B.A. (*McMaster*), M.L.S. (*Toronto*)/Acquisitions and Serials Librarian, Health Sciences

Winch, John/Library Preservation Specialist

COMPUTING AND INFORMATION SERVICES: C.I.S.

Drake, John, M.A., M.Sc., Ph.D./*Assistant Vice-President, C.I.S.*
 Gowland, Doug, C.A., C.M.C./*Director, Computing & Information Services*

Operations

O'Day, Pat, B.A., *Associate Director*

Communications and Networks

Bryce, Jim, B.Sc./*Assistant Director*

Client Services-Research

Griffin, Robin, B.Sc., Ph.D./*Assistant Director*

Data Services

Masterson, John, B.Sc., M.B.A./*Assistant Director*

Client Services

Grigg, Heather, *Manager*

Administration

Campbell, Barb, B.A./*Manager, Departmental, C.I.S.*

C.I.S. provides computing services in support of both academic (instruction and research) and administrative activities. The facilities available for *academic* use include a VAX 6420, and a Multiflow Trace 14/300 (Unix-based) as well as several microcomputer laboratories. C.I.S. manages a campus-wide Ethernet and ROLM data service as well as a number of associated communication services such as Datapac access. The campus Ethernet is linked to CA NET, allowing access to resources across North America, including the CRAY in Toronto. *Administrative* computing is run on an IBM MVS system and a VAX 4000.

Student workstation areas are located in the Burke Sciences Building, Rooms 240-245, the John Hodgins Engineering Building, Rooms 234, the Arthur Bourns Building, Room 166 and the 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 C.I.S. office located in Arthur Bourns Building, Room 132. Each Faculty has a Service Co-ordinator, who is familiar with that Faculty's particular requirements, to assist faculty and student members and to undertake projects of interest to the Faculty. C.I.S. 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.

C.I.S. services for the University community include a computer conference service (VAX notes), an electronic mail system and access to Netnorth, a worldwide University Network as well as to CA NET through ONet the Ontario Research Network (tcp/ip).

C.I.S. also administers a number of University site licences for software such as SAS, SPSS, and some Borland programmes.

In addition to the facilities operated by C.I.S., there are numerous minicomputers and micro processors located in Departments to support academic programmes.

UNIVERSITY ART GALLERY

K.G. Ness, B.A., M.Litt., MMST/*Director and Curator*

G. Loveys, B.A./*Registrar*

J. Petteplace, B.A./*Gallery Technician*

Opened in 1967, the University Art Gallery is located in Togo Salmon Hall, Room 114. With one gallery of over 2,000 square feet, it has all the professional facilities for a year-round programme of exhibitions, either organized by McMaster or loaned to the University by such organizations as the National Gallery of Canada and the Art Gallery of Ontario.

The Permanent Collection consists of more than 4,000 Canadian, American, oriental and European art works with a specialized collection of over 220 German Expressionist prints.

The Gallery is open daily except Saturdays. Call extension 3081 for further information.

THE INSTRUCTIONAL DEVELOPMENT CENTRE.

A.C. Blizzard, B.Sc., M.Sc., Ph.D./*Director*

D.E. Roy, B.A., M.A./*Educational Consultant*

P.A. Lockhart, B.A./*Educational Consultant*

S. Riselay, *Secretary*

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 M.S.U. 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 program.

Programmes for Teaching Assistants: The Centre plans and organizes TA-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 is 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 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 program 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, in General Sciences, Room 217, telephone ext. 4540.

AUDIO VISUAL SERVICES

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, 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, computer graphics - B/W laser prints/high resolution 35 mm 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.

For further information, please refer to the A/V Services located in the Health Sciences Complex, Room 1G1, telephone ext. 2301, or Burke Sciences Bldg., Room B231, telephone extension. 2761.

Research Facilities**ONTARIO CENTRES OF EXCELLENCE**

In June 1987, seven *Centres of Excellence* were designated by the Ontario provincial government. Each Centre acts as a network to promote a cooperative research environment between the Ontario university com-

ACADEMIC AND RESEARCH FACILITIES

munity and the business/labour community. McMaster is participating in three of these Centres, based on existing research strengths.

Centre for Materials Research

The research programme of this Centre will focus on biomaterials, microstructures, polymers and composites, optoelectronics, and the microscopic study of the interface between materials surfaces.

Manufacturing Research Corporation of Ontario

The MRCO will provide a basic research centre for the development of pre-competitive generic manufacturing technology, with special emphasis on Computer Integrated Manufacturing.

Telecommunications Research Institute of Ontario

In response to the growth in demand for transmission of voice, data and pictorial information, the work of this Centre will concentrate on multi-service digital networks, radar systems, mobile and satellite systems, photonic networks and systems, and electromagnetic compatibility.

CENTRE FOR ARTHRITIC DISEASES

Dr. John Cairns/*Acting Director*

Arthritic disease and musculoskeletal disorders are the leading causes of disability in Canada today. These diseases affect people of all age groups and from all walks of life. The burden of functional disability and pain resulting from arthritic diseases extends beyond individual patients to families, employers and the Canadian economy in general. Despite the severe burden of these illnesses, preventive strategies and curative treatments are not known. Specialized treatment units are needed to manage the complex problems of arthritic patients and their families; research into the causes, diagnoses, efficient management including prevention of arthritic diseases must be mounted; and training of future health care professionals should emphasize an interdisciplinary approach.

To meet these identified needs, McMaster University, Chedoke-McMaster and St. Joseph's Hospitals in collaboration with the Regional Rheumatology and Community Programme has established an exemplary centre designed specifically to address the combined approach of clinical care, research and training needs specific to arthritic diseases. This is the first centre of this kind in Canada and it will provide a model for the advancement of knowledge in clinical care, research and training of health professionals. The Centre is based on a strong Rheumatic Disease program with (i) three Rheumatic Disease Units (RDUs) designated and partially funded by The Arthritis Society, which includes a multidisciplinary day hospital, (ii) large out-patient's program at all three RDUs, (iii) extensive community service provided by The Arthritis Society and Home Care; (iv) a major Rheumatic Disease research team with expertise in clinical trials, health economics, and policy analysis; (v) a strong Immunology group which has existed at McMaster since the Host Resistance Academic Research Program was established in 1969. Currently the appointment of new faculty has capitalized on the expertise of key members of the program; (vi) a newly developed Pharmacology program supported by the University to study disease mechanisms; (vii) a Royal College approved Residency Training program as well as a clinical and Basic Science Postgraduate program for physicians and health professionals, with strong emphasis on International Health. The above program will (i) provide leadership in research into the prevention, diagnosis and treatment of rheumatic diseases; (ii) link research to current clinical care and training of health professionals; (iii) promote links between hospital and community; hospital and hospital; treatment, research and training; across disciplines (Medicine, Nursing, Physiotherapy, Occupational Therapy, Social Work); wet lab and dry lab; and cultures (both nationally and internationally).

CENTRE FOR ELECTROPHOTONIC MATERIALS AND DEVICES

Dr. D.A. Thompson, BSc., Ph.D./*Director*

The Centre for Electrophotonic Materials and Devices (CEMD) has been established in order to enhance research into new semiconductor devices and device structures associated with optical data transmission and processing. Materials research problems associated with all technologies required to develop suitable integrated optical systems are being studied.

Devices, both high speed electronic and optoelectronic are being designed and characterized. The objectives are to attain improved performance of communications systems as a result of integrating semiconductor light sources, modulators, detectors, waveguides and optical switches on the same substrate along with active electronic components. This so-called third phase of semiconductor development requires specialized equipment, trained manpower and an understanding of the basic sciences governing the performance of the elements involved. Within the CEMD we have in place, the state-of-the-art equipment necessary for such research. A central focus for our programme will be a unique Molecular Beam Epitaxy (MBE) System. This MBE system itself is designed for the $\text{In}_{1-x}\text{Ga}_x\text{As}_y\text{P}_{1-y}/\text{InP}$ group of materials that are of major interest for optical communications systems. Many other facilities are available and work is being carried out on ion implantation, ohmic and Schottky contacts, optical waveguides, device failure processes, reactive ion etching, plasma deposition, and laser processing.

Current CEMD manpower include 14 faculty from various departments, 3 Industrial Affiliates, and 8 research scientists and technicians. There are about 35 graduate students from various departments carrying out their research within the Centre.

CENTRE FOR FLEXIBLE MANUFACTURING RESEARCH AND DEVELOPMENT

Dr. Hoda A. ElMaraghy, B.Eng., M.Eng., Ph.D., P.Eng./*Director*

Flexible automation is a key factor in improving manufacturing productivity, competitiveness and product quality and reducing production cost. It increases the flexibility and ability of companies to respond to changing market demands and product design. The Centre for Flexible Manufacturing Research and Development was established at McMaster University in recognition of the strategic importance of flexible automation to the Canadian discrete parts manufacturing sector. A contribution of \$500,000 was granted in August 1984 by the Canadian Federal Government, as part of the Centres of Specialization Fund, to launch the project.

The activities of the Centre are multi-disciplinary which combine mechanical and electrical engineering, computing, and management expertise. The mandate of the Centre is to conduct basic and applied research in flexible manufacturing, develop human resources through graduate and undergraduate education and cooperate with industry for effective technology transfer.

The Centre contains a flexible assembly cell with two robotic workstations (an Adept 1 and a Puma 560), a Bosch palletized computerized conveyor, IRI D-256 grey scale vision system, force and tactile sensors, and a network of SUN computer workstations. Researchers at the Centre are involved in various industry and government supported projects for basic and applied research in areas related to flexible manufacturing systems and product and systems design, and their implementation and justification. Studies focus on feature-based modelling of products, sensor-based robotics and automated assembly, computer aided process planning, intelligent robotics, design tolerance analysis, expert systems and artificial intelligence, control and off-line simulation and programming of robots, automated inspection and design automation. Work underway includes intelligent automation, the application of artificial intelligence and expert systems to robots, computer simulations, knowledge-based modelling of flexible manufacturing systems with graphic animation, robotic vision and assembly, flexible manufacturing, feature-based design, expert task planning and intelligent design. As a research and educational unit of the Faculty of Engineering at McMaster University, the Centre employs eight full-time research professionals, an administrative assistant and, on the average, ten Masters and Doctoral students pursue their studies at the Centre. Research funding in 1990/91 exceeded 1 million dollars. The director, Dr. Hoda A. ElMaraghy, is a Professor of Mechanical Engineering and a Principal Investigator in the Manufacturing Research Corporation of Ontario - a Centre for Research Excellence. She is also a principal investigator in IRIS, the Institute for Robotics and Intelligent Systems, a node of the National Network of Centres of Excellence. Dr. ElMaraghy is an active member of CIRP, the International College for Production Engineering Research; she is the only female member, and one of very few active members in Canada. She is also an associate member of the Canadian Institute of Advanced Research (CIAR).

CENTRE FOR HEALTH ECONOMICS AND POLICY ANALYSIS

Professor J. Lomas/*Co-ordinator*
Dr. S. Birch/*Associate Co-ordinator*

CHEPA is a multidisciplinary, university-wide Centre, located in the Faculty of Health Sciences, created primarily to stimulate and conduct research in health economics and health policy analysis, but also to provide training opportunities in these fields and to improve the exchange between researchers and policymakers. The Centre's research, education and service activities bring together on a project basis faculty and staff from several departments and faculties on campus including Clinical Epidemiology and Biostatistics, Family Medicine, Economics, Geography and Business. Specific research objectives of the Centre include the development and application of methods to evaluate the costs, risks, benefits and utility of specific health services; the design and evaluation of different systems of organization and financing for the delivery of health and health care services; and the study of the behaviours of consumers, providers and other decision-makers in the health and health care systems. The Centre organizes and sponsors a variety of academic activities including research seminars, policy seminars, continuing education workshops, working paper and health policy commentary series and an annual health policy conference.

CENTRE FOR INTERNATIONAL HEALTH

Dr. Victor R. Neufeld/*Director*

The Centre for International Health (CIH) was approved by the McMaster University Senate in March, 1989, and by the Board of Governors in April, 1989. The staff for the CIH office includes Dr Victor R. Neufeld, *Director*; Mr. Dan Pugliese, *Management and Resource Development*; Ms. Helena Collins, *Administrative Assistant*; Mrs. Shirley Ferguson, *Project/Financial Assistant*; and Miss Kim Vine, *Secretary*. Mailing Address: Room 3N44B, Health Sciences Centre. Telephone: (416) 525-9140, Ext. 2899.

The primary focus of activities within the CIH will be on developing areas and countries. Priority will be given to activities that explore local or global health issues that are defined as important by the target community. Together with McMaster International (MI), the CIH will promote and facilitate international health activities within the Faculty of Health Sciences, through education and research; support human resource development in the field of international health through education, and critical analysis of the principles and practices of development; initiate, facilitate, prioritize and review international health projects with a special emphasis on multidisciplinary collaboration; and establish linkages with universities, organizations and funding agencies working in international health and development.

CENTRE FOR PEACE STUDIES

Dr. Graeme MacQueen, Ph.D./*Director*
Dr. Paul R. Dekar, Ph.D./*Acting Director (1991-92)*

The Centre for Peace Studies was established in June 1989 to further education and research in peace and conflict studies.

Twenty undergraduate and two graduate courses are listed under Peace Studies in this Calendar. Students enrolled in degree programmes may take unofficial concentrations in the area. B.A. and M.A. programmes in Peace Studies are being developed.

The Centre organizes lectures and seminars, including the annual Bertrand Russell Peace Lectures, for students, faculty and the wider community. The Centre's first international conference, on "Nonviolence in Violent Contexts," was hosted in June 1989. Members of the Centre regularly give lectures and workshops off campus.

Several research projects have been initiated by members of the Centre. An interdisciplinary project on unarmed peacekeeping is underway, as is research for a profile of local peace organizations. Research and publication is ongoing on social movements, religious and philosophical approaches to peace and conflict, alternative security, and public attitudes to conflict and related issues.

The Centre's office is housed in Divinity College, Room 237, and is open during regular office hours. It offers a small holding of books,

periodicals, audio and video tapes that are available on loan. The Centre is linked by computer to Peace Studies institutions and conferences around the world.

COMMUNICATIONS RESEARCH LABORATORY

Simon Haykin, B.Sc., P.H.D., D.Sc., F.R.S.C., F.I.E.E.E./*Director*

The Communications Research Laboratory (CRL) operates in the Faculty of Engineering. It has a membership of 14 faculty, 18 full-time research staff, 3 technical staff, 7 managerial/administrative/clerical staff and a graduate student population of over 50 students, and several visiting scientists/scholars.

The research programme of the CRL is devoted to signal processing, technologies and devices applied in the areas of microwaves and antennas, radar, computer software and high speed networks, neural networks and expert systems. The CRL has pioneered many new theoretical concepts and system designs with practical applications. Indeed, the CRL is one of the leading centres of research in signal processing, for which it is recognized both nationally and internationally. In late 1987, the CRL became a founding member of the Telecommunications Research Institute of Ontario (TRIO), a provincial Centre of Excellence. The CRL is also a participant in the Canadian Institute for Telecommunications Research (CITR).

The CRL has established invaluable links with many government research laboratories and companies. It derives its funding from research grants awarded by the Natural Sciences and Engineering Research Council, and contracts with government, TRIO and industries. CRL's total research funding is in excess of 3 million dollars per annum. The CRL building was recently expanded to 20,000 square feet.

In the formulation of its research programmes and activities, the CRL regularly consults with industrial and government organizations.

GERONTOLOGICAL STUDIES

There are four components of Gerontological Studies at McMaster: the Office of Gerontological Studies; the Educational Centre for Aging and Health; the R. Samuel McLaughlin Centre for Gerontological Health Research; and the Undergraduate Degree Studies in Gerontology.

Office of Gerontological Studies

Dr. Ellen B. Ryan, B.A., M.A., Ph.D./*Director*
Professor Karl Kinanen, Dipl.S.W., B.A., M.S.W./*Associate Director*

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 section *Faculty of Social Sciences, 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 quarterly newsletter *Gerontology Update*, the annual *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 University and the Hamilton/Wentworth region.

ACADEMIC AND RESEARCH FACILITIES

Educational Centre for Aging and Health

Dr. A. (Sandy) Macpherson, M.D., M.Sc./*Director*

The Educational Centre for Aging and Health was established in the Faculty of Health Sciences at McMaster University in April 1987 with funding from the Ontario Ministry of Colleges and Universities. It has five components:

- Educational Programmes
- The Geriatric Educational Development Unit
- The Clinical Teaching Units
- The Health Priorities Analysis Unit
- The Provincial Network which encompasses:

The Ontario University Coalition for Health Care of the Elderly and The annual Conference on Education in Aging and Health.

The Mission Statement

The Educational Centre for Aging and Health seeks through professional education to enhance the quality of life, self-determination and well-being of older persons living in the community and in institutional settings in Ontario by:

- increasing the number and proportion of skilled health professionals who are committed to promoting health and providing excellent care for aging individuals;
- developing collaborative interdisciplinary and interprofessional educational approaches and models concerning aging and health and evaluating their effectiveness.

R. Samuel McLaughlin Centre for Gerontological Health Research

Larry W. Chambers, Ph.D./*Director*

The objectives of The R. Samuel McLaughlin Centre for Gerontological Health Research are as follows:

1. support research training of persons with expertise in caring for seniors and recruit research faculty for the Faculty of Health Sciences;
2. promote research aimed at improving health care and preventive care for the elderly;
3. sponsor educational conferences and workshops for university faculty, health care managers, service providers and government officials;
4. publish periodical reports on the Centre's activities, and distribute these to supporters of the Centre, health care agencies, and government divisions with a gerontological health care interest;
5. disseminate new knowledge about gerontological health care through publications, professional conferences, workshops and other forms of continuing education.

The R. Samuel McLaughlin Centre for Gerontological Health Research consists of an Executive Committee that oversees the activities of the Centre, a Fellowship Committee that selects research fellows, and a Career Scholar Committee that makes recommendations for the appointment of new faculty researchers to the Faculty of Health Sciences.

McMASTER INSTITUTE FOR ENERGY STUDIES

Dr. M.L. Kliman/*Director*

The Institute was established in 1980 by a group of engineers, scientists and social scientists at McMaster who recognized the inter-disciplinary nature of the problems involved in producing and using energy. Its purpose is to coordinate, promote and support energy research and energy education. The MIES office provides aid in the organization and finance of research projects, organizes seminars and conferences and publishes *Energy Studies Review* three times yearly.

McMASTER INSTITUTE FOR MATERIALS RESEARCH

A.J. Berlinsky, M.Sc., Ph.D./*Director*

The Institute for Materials Research (IMR) is responsible for promoting interdisciplinary materials research in the Faculties of Science and Engineering at McMaster. The Institute has about 50 members, mainly from Physics, Chemistry, Engineering Physics, Materials Science and Engineering and Chemical Engineering.

The IMR supports facilities in high temperature crystal growth, metallography, x-ray diffraction and electron microscopy. It also maintains the helium liquifier and operates the Science and Engineering

Electronics Shop. Each year the IMR Seminar and Distinguished Lecturer Series sponsor lectures on the latest and most interesting developments in materials science.

The main areas of research within the IMR are: high temperature crystal growth, high temperature superconductors, neutron, x-ray and electron diffraction, surface science, optoelectronic materials, (particularly GaAs grown by molecular beam epitaxy), ion beam methods such as Rutherford backscattering and channeling, physical metallurgy, ceramics, metal matrix composites, corrosion research and polymer science and engineering.

The IMR is responsible for administering the McMaster programs of the Ontario Centre for Materials Research (OCMR) which is one of the Province of Ontario's Centres of Excellence. The OCMR began operating in January of 1988 with a five year budget of \$43 M. About one third of the research activities of the OCMR take place at McMaster. The OCMR also sponsors lecture programs and graduate scholarship programs, as well as a competitive program for seed funding of new projects.

McMASTER INSTITUTE FOR MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Dr. J.A. Hassell, B.Sc., Ph.D./*Director*

The purpose of the Institute is to promote and strengthen research and teaching in molecular biology at the University, and to develop links with industry so that research ideas can be exploited commercially. Research in molecular biology is an active focus for faculty members in departments within the Faculties of Science, and Health Sciences and includes studies of: gene expression; development and differentiation; membrane and organelle biogenesis; viral and cellular oncogenes; virus replication; and applied topics such as development of monoclonal antibodies and recombinant DNA techniques for diagnostic purposes. The Institute brings faculty members in these research areas together to exchange ideas and techniques. It also allows the development of new areas of research and serves to foster the research of biologists not at present using the techniques of molecular biology. As a part of these roles, the Institute operates a central laboratory facility and serves as a teaching resource for graduate and senior undergraduate courses in molecular biology and biotechnology.

McMASTER INSTITUTE FOR POLYMER PRODUCTION TECHNOLOGY

Dr. A.E. Hamielec/*Director*

Dr. J.F. MacGregor/*Associate Director*

Polymers are found in products which affect every aspect of our lives: synthetic fibres; latex in paints and adhesives; specialty polymer coatings; synthetic rubbers; contact lenses; bio-medical implants; baby diapers.

The McMaster Institute for Polymer Production Technology (MIPPT) is a research institute that places a major emphasis on reaction engineering and computer process control of industrial polymer production processes. This has resulted in a current roster of industrial members which includes 13 of the world's leading polymer companies: Akzo Chemie (Netherlands); DSM (Netherlands); Esso Chemical Canada; Gates Rubber & Tire Co. (USA); GenCorp (formerly General Tire) (USA); Goodyear (USA); ICI (Great Britain); S.C. Johnson & Son (USA); Nalco Chemical (USA); Neste Oy (Finland); Polysar Ltd. (Canada); Rohm & Haas (USA); Union Carbide (USA).

Seven faculty members from the Departments of Chemical Engineering, Chemistry, Mechanical Engineering and the Faculty of Business are associated with the Institute as well as 21 graduate students, 5 post doctoral fellows, 4 visiting scientists, 2 research associates, and 9 support staff.

The Institute facilities include: a fully instrumented, computer controlled pilot plant with 9 stainless-steel reactor vessels including a 35 gallon, semi-batch reactor rated to 1500 psig; a 30mm twin seven extruder; two reaction injection molding (RIM) machines; local control computers and access to a VAX for computer control and computer simulation studies; advanced analytical facilities that allow the complete characterization of polymer samples; an ampoule laboratory in which small-scale studies are performed. The Institute has recently expanded

into new large scale pilot plant facilities in the new wing of the John Hodgins Engineering Building.

There are currently 30 research projects underway in the areas of: mathematical modelling for the purpose of predicting the behaviour of industrial processes and thereby developing improved or completely new processes; industrial control of polymer plants; studies of water soluble polymers (for example, for fines retention in the pulp and paper industry); research on a novel high temperature process for the production of specialty copolymers used in the coatings industry; development of polymer reactor models for safety calculations; an investigation of reaction injection moulding (RIM) of thermoplastics as an alternative to the traditional methods of producing molded polymer parts (such as for the automobile industry); polymer modification in extruders; methods development for the characterization of polymers.

MCMASTER INTERNATIONAL

Dr. Gary Warner/*Director*

Mr. Bill Radford, *Project Officer*

Ms. Laurine Mollinga, *Administrative Assistant*

In recent years, McMaster University has become increasingly involved around the world in exchange agreements, institutional linkages and externally-funded international programmes concerned with collaborative research, with the training of professional people and with improving the delivery of services in such sectors as business, environmental protection, community health and engineering. At the same time, the university has been receiving a growing number of requests for collaboration from post-secondary institutions and governments in many countries. McMaster International was created in 1988 in response to the need for a co-ordinated approach to the international activities of the university. 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. Encourage and co-ordinate multidisciplinary initiatives in international education and scholarship across all academic units of the University;
2. Facilitate the involvement and support of faculty, staff and students from all parts of the University in international activities;
3. Foster partnerships between the University and external groups, including industry and non-governmental organizations, in undertaking international activities;
4. Serve as the communication centre concerning international activities at McMaster;
5. Maintain and disseminate information within the University about international programmes and opportunities.

MCMASTER MANAGEMENT OF TECHNOLOGY AND INNOVATION INSTITUTE

Walter F. Petryschuk, P.Eng., Ph.D./*Director*

The McMaster Management of Technology and Innovation Institute is a co-operative industry/university centre focusing on the management of technology. The Institute has been created as a resource centre of expertise in response to the technology challenge that Canadian industry faces in the years ahead. Funded through the federal government and industry contributors, the Institute has been designed with the close co-operation of industry. A Board of Directors, composed of senior managers from leading Canadian firms and representatives from McMaster and other institutions now guides the centre.

Since its inception, the Management of Technology and Innovation Institute's unique mission has been to promote the competitiveness of Canadian firms - through more effective management of technology and through the creation of an environment in which innovation flourishes.

In addressing this mission, the leadership of MTI has recognized a need to segment "Management of Technology" into smaller, more understandable components. This thought process has led MTI to identify three broad areas of subject matter:

POLICY

Issues dealing with the strategic direction of an enterprise.

PROCESS

Issues dealing with methods or practices within an enterprise.

PEOPLE

Issues dealing with how the human element impacts on the success of an enterprise.

These areas provide a structure for specific subjects which themselves form the basis for a comprehensive program of management seminars, in-house programs, consulting and research.

All these are designed to help plan, assess, modify and chart the innovation process from idea generation through the major strategic advantage.

Public seminars pave the way for consulting in each of the subject areas by emphasizing the rationale...the "Why"... of each issue.

In-house seminars introduce the consulting process by tailoring generalized instructional material to the specific needs of a client.

MTI can then move on to consulting on the "How" implementation of these ideas in the context of the client's own enterprise.

MTI is committed to provide a balance between practical experience and academic theory.

The academics who participate in our program are all respected leaders in specialized areas of knowledge, and have growing or high-profile reputations as effective seminar leaders.

The seasoned manufacturing and marketing professionals have all had extensive hands-on experience in industry, and have successfully solved a wide range of practical problems.

Canada faces unprecedented foreign competition for international and domestic markets. To win in these arenas, we must learn to innovate effectively at unprecedented speeds, to manufacture more competitively, to achieve higher standards of quality and to market with entrepreneurial energy and imagination.

MTI's ultimate aim is to assist Canadians to achieve these objectives by sharing the knowhow of those who already have.

MCMASTER NUCLEAR REACTOR (MNR)

Collins, Malcolm F., M.A., Ph.D./*Director, MNR, and Professor of Physics*

Butler, Michael Paul, B.Eng., M.Eng., P.Eng./*Chief Reactor Supervisor*

Ernst, Peter C., B.Eng., M.Sc./*Reactor Manager*

Harvey, John W., B.Sc., Ph.D./*Senior Health Physicist*

Pidruzny, Alice E., B.Sc./*Manager, Centre for Neutron Activation Analysis*

The McMaster Nuclear Reactor (MNR), which has been operating on the McMaster campus since 1959, is the sole medium power research reactor in Canada. MNR is also the only reactor at a Canadian university with adequate power to enable scientists and engineers to explore many types of research requiring neutron or gamma radiation: nuclear science, applications of nuclear methods, neutron scattering, neutron radiography, high flux activation analysis, isotope production, applications of radioisotopes, and many other areas.

MNR is an MTR open pool-type research reactor producing neutron fluxes up to 1×10^{14} neutrons/cm²/second when operating at a power output of 5 megawatts (thermal). It utilizes plate-type enriched uranium fuel elements and is moderated and cooled with light water. The open pool concept provides easy access to the reactor core and its experimental facilities, making it a very flexible research reactor. Special facilities are continually being developed to accommodate new research requirements.

The reactor building is located on the main campus and is available to all departments for both educational and research activities, and in the establishment of new fields of investigation. The reactor is also used in commercial, industrial and health applications and by researchers from other universities and from industry and government laboratories.

MCMASTER TANDEM ACCELERATOR LABORATORY

Dr. J.A. Davies M.A., Ph.D./*Director*

The McMaster Accelerator Laboratory is a large facility used for research in materials research, atomic and molecular spectroscopy, and solid state physics. There are two principal accelerators: an 11 million volt Tandem Van de Graaff accelerator and a smaller single-ended 3 million volt Van de Graaff.

ACADEMIC AND RESEARCH FACILITIES

In the Tandem accelerator, singly charged negative ions are accelerated to the positive terminal of the machine. In passing through the terminal, those ions are stripped in flight of two or more electrons and are then repelled from the same terminal. In this manner, energetic beams of most elements can be produced with energies up to 20-100 MeV. These beams are directed to one of many experimental target locations. The experimental facilities of the Tandem accelerator include two beam lines for ion implantation studies, a hydrogen-profiling location, a large heavy-particle spectrograph, a cryogenic target for molecular spectroscopy studies, a gamma-ray spectrometer and a molecular beam epitaxy unit. In addition, both accelerators have general purpose materials science chambers which are equipped for ion beam analysis such as Rutherford backscattering and channeling. Although the laboratory is used primarily by research scientists and graduate students, several undergraduate students assist with some of the experiments.

PROGRAMME FOR QUANTITATIVE STUDIES IN ECONOMICS AND POPULATION

Mr. Frank T. Denton, B.A., M.A., F.R.S.C./*Director*

The Programme for Quantitative Studies in Economics and Population is an interdisciplinary programme based in the Faculty of Social Sciences. Its purpose is to encourage and facilitate faculty research in economics and other areas of the social sciences, with special emphasis on the analysis of population and the relationships between population change and changes in the economy and the society. The Programme's Research Associates number about forty faculty members from various departments of the University and interdisciplinary cooperation is encouraged. The Programme issues a series of reports known as *QSEP Research Reports* and authored by individual Research Associates; these reports, or abstracts of them, are distributed widely, both in North America and in other parts of the world. The Programme is also responsible for a continuing series of seminars with invited speakers from other universities or non-university research centres, as well as from within McMaster. The Programme has been in existence since 1981.

Student Services and Organizations

Dean of Student Affairs

Rudy Heinzl/Dean

The Dean of Student Affairs heads a variety of specialized student service offices. These offices include the Counselling and Career Services, International Students' Advisor, Student Health Service and Student Financial Aid and Scholarships.

The Dean 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 Dean's Office is located in Hamilton Hall, Room 312, telephone extension 4649.

COUNSELLING AND CAREER SERVICES

Counselling Service

Dr. W. Wilkinson/Director

L. Barlow-Cash/Career Counsellor

Dr. A. Eisen/Counsellor

R. Hedelius/Career Counsellor

D. Lawson/Career Counsellor

Dr. D. Nifakis/Counselling Psychologist

Dr. D. Palmer/Academic Skills Counsellor

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.

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.

Many students seek help in defining their interests 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 programs, workshops and presentations about such topics as educational and career planning, the employment search process, applying to professional and graduate programs, 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 study-abroad information for use by all members of the University community and general public.

It is an administrative centre for the Graduate Record Examinations, the Law School Admission Test, the Medical College Admission Test, and the Miller Analogies Test.

All discussions between students and counsellors are voluntary, private and confidential. Whenever required, students are given assistance in locating other specialized helping sources both on and off campus.

Students are invited to visit the office in Hamilton Hall, Room 302, Monday through Friday, 9:00 a.m. to 5:00 p.m. to arrange to talk with a counsellor, to inquire about current programs, or to use the Resource Centre. The telephone number is 525-9140, extension 4711.

Placement Service

The Placement Service assists undergraduate and graduate students, and recent alumni of all faculties in finding permanent, temporary and part-time employment.

On-Campus Recruitment Program

Major national employers visit McMaster to present information about their companies and to conduct employment interviews in order to hire permanent and summer employees. The Placement Service:

- *posts announcements on a computerized Student Placement System Network and on Bulletin boards in appropriate locations

- *provides standardized employment application forms to students

- *forwards completed application forms to employers for consideration
- *maintains related job and employer reference materials to allow students to research potential employers

- *schedules employment interviews for students from all faculties

Students who wish to participate in the on-campus recruitment program should visit the Placement Service in early September.

Job Postings

Immediate vacancies for permanent, summer and part-time positions are advertised year round by employers who do not visit the campus. Job notices for these positions are posted on the Bulletin boards outside the Placement Service and at other appropriate locations on campus.

Presentations and Workshops

The staff work in conjunction with career counsellors throughout the year to provide workshops and presentations on resume development, preparing standardized application forms for on-campus recruitment, conducting an effective job search, and preparing for employment interviews.

The Placement Service maintains a collection of reference material on a large number of private and public sector employers.

The Placement Service, located in Hamilton Hall, Room 409, is open from 8:30 A.M. to 4:30 P.M. Monday to Friday, telephone (525-9140, extn. 4253) or fax (529-8972).

INTERNATIONAL STUDENTS' ADVISOR

Patrick J. Fernando/Advisor

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 Divinity College, Room 146, telephone ext. 4748.

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 Patrick J. Fernando, Divinity College, Room 145, (416) 525-9140 or 529-7070, Extn. 4748.

STUDENT HEALTH SERVICE

Dr. M. Skinnarland/Director

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 9:00 A.M. to 7:30 P.M.; Thursday from 9:00 A.M. to 4:30 P.M.; and Friday from 10:00 A.M. to 4:30 P.M. Appointments can be made by calling 529-7070, extension 7700.

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 emotional problems; allergy injections; immunization; wart treatment; on-site laboratory; pregnancy tests; and information or counselling for any personal health concerns.

STUDENT SERV. AND ORGS.

Birth control pills are dispensed at a reduced cost of \$9.00 per package to Student Health Service patients who have a current prescription for oral contraceptives from a SHS staff physician.

Computerized health status/risk assessment programs can be viewed by students at several PC's located in carrels in the Health Service waiting room. These programs 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 these computer programs.

A health educator is 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 6 weeks during both the fall and winter terms. Further information can be obtained by calling the Student Health Service office at 529-7070, extension 4718.

STUDENT FINANCIAL AID AND SCHOLARSHIPS

Mr. J. Edwards/*Director*;

Mrs. D. Ellis/*Coordinator*

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 and Grant Programs, Canada Student Loan Programs, Undergraduate Scholarships Programme, Ontario Work Study Program, Ontario Special Bursary Program, University Bursary and Emergency Loan Programmes, and Canada Scholarships Programme. In addition, the office provides administrative support to outside agencies providing scholarships and bursaries to students attending McMaster.

The office offers financial and budget counselling, assessment and information service to current and potential students designed to help identify and address post-secondary education expenses. All discussions with students are voluntary, private and confidential. Appointments and drop-in style counselling is available. The office is located in Hamilton Hall, Room 403, telephone extension 4319.

For more detailed profiles of programme offerings, please refer to sections *Undergraduate Academic Awards* and *Student Financial Aid*.

Housing and Food Services

Mr. Ron Coyne/*Director of Housing and Food Services*

Leanne Piper/*Manager, Residence Admissions*

RESIDENCES

The University owns and operates ten on-campus residences accommodating a total of 2765 students. The nine traditional-style residences consist of three women's residences (762), one men's residence (102), four co-educational residences (1153), and Matthews Hall consisting of a co-educational International House (107) and a co-educational Quiet House (141). These residences are for single undergraduate students and are provided with staple articles of furniture including desks, chairs, beds, mattresses, pillows, bedding and lamps. Linen supply is optional, students provide their own towels, and are responsible for the cleanliness of their individual rooms.

Residence Admissions

Sixty per cent of the traditional spaces are reserved for incoming first year students and admission is based on admission average. All students in these nine residences are required to take the minimum food plan which provides for 12 meals per week, Monday to Sunday, with a choice of breakfasts, lunches, and dinners in any combination for the full academic year (Christmas holidays excluded). Optional 14-meal and 19-meal plans are also available.

In addition, an apartment-style residence (Bates Residence) accommodates 498 male and female students. The apartments are unfurnished (except for a stove, refrigerator, carpeting and drapes) and are set aside for students above Level I, including a limited number of graduate and transfer students and special cases. The food plan is optional.

The University is unable to provide any on-campus facilities for married students at present. Students in this category may wish to use the services of the Off-Campus Housing Office, located in Room 118, Wentworth House.

The responsibility for the overall administration of the University residence system lies with the Director of Housing and Food Services. The Director determines policies, budgets and appoints a Hallmaster from the University community to serve as a mentor and leadership figure in each residence. The Director, along with the Manager, Residence Life, works with the residence government and Hallmasters to fashion a mature residence community in which self-discipline is maximized. The Hallmasters work with the student government and students on collective projects and individual personal concerns. The office of the Director of Housing and Food Services is located in Room 101, Commons Building, telephone extension 2909.

The Manager, Residence Admissions is responsible for admission systems, withdrawals, medical and grade appeals and waiting lists. The Manager reports to the Director of Housing and Food Services. Enquiries for residence information should be directed to the Manager, Residence Admissions, Department of Housing and Food Services, Room 101, Commons Building, telephone extension 4223.

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 date. If a residence space has been assigned, but is not required, the student must cancel, in writing, to the Department of Housing and Food Services by the specified deadline date. Failure to do so will result in forfeiture of the full amount of the deposit.

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. For conference information, contact the co-ordinator at extension 4783.

The Front Desk, located in the Commons Building, is open for housing registration 7:00 a.m. to 12:00 midnight daily, early May to late August. Telephone extension 7144.

FOOD SERVICES

The University provides many dining areas on campus offering a wide variety of nutritious food at reasonable prices.

Students living in residence (except Bates apartment-style building) are required to purchase a meal plan. Off-campus students and other members of the University community may purchase a meal plan at the Food Services main office located in the Commons Building, Room B101B.

McMaster has a self-operated food service that includes three full-service cash cafeterias with dining rooms located strategically around campus on the lower levels of Togo Salmon Hall, Kenneth Taylor Hall, and A.N. Bourns Building. Students living in residence have an additional option of having their meals at the Refectory or Commons dining halls.

Coffee shops are located on the second floor of the Burke Science Building as well as in the Rathskeller (in the Refectory basement). Vending machines at many locations around campus supplement these facilities. Inquiries are welcome by Food Services at extension 4410.

OFF-CAMPUS HOUSING

The Off-Campus Housing office is a free listing service provided by the University. This office maintains updated lists of available accommodation in Hamilton and the surrounding area. Also, it provides area maps, transit maps, free telephones for local calling and personal assistance to help in the housing search. The Off-Campus Housing office is operated on a year-round basis and is located in Room 118, Wentworth House.

This office operates in conjunction with the McMaster Students Union and together they make an attempt to handle all possible problems and needs that a student renter may encounter.

The Off-Campus Housing office is a unique part of the Housing and Food Services office and can be contacted at extension 4086.

Services to Students

OMBUDS OFFICE

The McMaster Students Union, in cooperation with the McMaster University Staff Association, McMaster Association of Part-Time Students, and Graduate Students' Association, employs the Ombudsman. The Ombudsman provides information and advice relating to complaints, disputes and appeals involving members of the McMaster community, including academic and admission inquiries, financial aid; academic and non-academic disciplinary matters, disputes involving the provision of services such as financial, retail, parking and security services, as well as employment related matters and human rights concerns including sexual harassment. The office is in Hamilton Hall, Room 212, telephone extension 2003.

UNIVERSITY CHAPLAINS

Catholic and Protestant chaplains on campus provide a wide range of student services in worship, discussion groups, pastoral counselling, and social action. At least one of the chaplains is available during the day in the office, and students can always call the chaplains' residences for appointments at other times. The chaplains support many student activities as well as caring for personal, family and religious needs. Their office is in Wentworth House, Room 108; telephone extension 4207.

Chapel Services:

The Chaplaincy Centre sponsors a variety of Chapel services on campus, including mid-day ecumenical chapel services and Roman Catholic Masses during the week, and a Sunday mass. Times for these services are posted on the sign board outside the chapel across from Mills Library. In addition, there are special services of celebration or remembrance at different times of the year.

PARKING

CAMPUS PARKING FACILITIES ARE LIMITED AND THE AVAILABILITY OF SPACE CANNOT BE ASSURED.

Travel to and from the University on foot, by public transportation and in car pools is encouraged.

Parking regulations are in effect at all times and University parking permits are required for all private motor vehicles. These permits are valid only when purchased at an entrance kiosk (daily permit), or from the Parking Office in the E.T. Clarke Centre upon presentation of a current University Identification Card, vehicle registration and payment of the prevailing parking fee. Special arrangements may be made for disabled parking privileges.

Drivers operating motor vehicles on campus are responsible for becoming familiar with the McMaster University Traffic & Parking Regulations. Violations are subject to fines and/or towaway. Disregard of violation charges may result in suspension of parking privileges, towaway at owner's expense, sanction of transcripts and/or prosecution under the general law, the Trespass to Property Act and the City of Hamilton Private Parking Bylaw No. 89-75.

BOOKSTORE

The University Bookstore, owned and operated by the University. Second and third year textbooks are located in the auxiliary store located in Togo Salmon Hall, Room B203. First, fourth 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. The Bookstore also operates a sports shop in the Phys. Ed. complex.

POST OFFICE

The McMaster University Sub Post Office is located in the Bookstore. The Post Office offers full postal service, from 8:30 a.m. to 4:30 p.m., Monday to Friday. Post Office Boxes may be rented by faculty, staff, and students for the duration of their stay at McMaster.

McMaster University Alumni Association

The mission of the Association is to support the University, to have a committed and active association membership, and to have an efficient and effective organization. Alumni support the University in a variety of ways and the Association strives to serve its members. This relationship benefits the University and is more important in these days of limited resources.

Alumni continue their relationship with McMaster by becoming involved with branches, travel programmes, special events and committee work. Alumni branches have traditionally been geographic but have recently grown to include academic disciplines such as engineering, nursing, business, geography, and social work and affinity based branches such as the Choir Alumni, the Lettermen's Association, the Women's Athletic Alumnae, and the Student Alumni Association to name a few.

The affairs of the Association are managed by the Alumni Board which is made up of elected officers, members with portfolio, and the alumni representatives to the University Board of Governors and Senate. The Board meets quarterly with its Executive who is responsible for carrying out alumni business between Board meetings.

The link between the Alumni Association and the University is through the Director and staff of the Office of Alumni Advancement. This office is located in Chester New Hall. It maintains address information on all graduates, provides the Association, branches and committees with support services and organizes a variety of alumni programming.

Together the Association and the Office of Alumni Advancement are responsive to the diverse interests of alumni. Events such as Alumni Weekend and Homecoming, and services such as travel programmes, continuing education courses, and group life insurance are only a few of the many ways the Association serves its alumni.

A very important aspect of the Association's mission will always be to benefit McMaster. Alumni who maintain a relationship with the University provide valuable energy, skills, resources, and expertise which contribute to the welfare of the University. These graduates of McMaster, through a life-long link with the University, contribute to and benefit from the existence of a fine university.

Athletics

Thérèse Quigley/Director of Athletics and Recreation

The Department of Athletics and Recreation offers a variety of programmes so that all students have the opportunity to keep fit, compete in active pursuits at their own level, and enjoy sports of their choosing.

For those who wish to relax and enjoy their leisure time, a wide recreational programme is offered, including everything from sauna baths and swimming to squash and weight training. Most of the traditional club activities are offered and instruction is provided to assist beginners with the skills involved.

For those with a more competitive outlook, a highly developed and very popular intramural programme is in full swing from early fall until late spring.

For those students who possess still higher skills, the intercollegiate programme provides an exciting challenge to both men and women. The fine performances of student athletes and the social involvement of student spectators are focal points of student life on campus.

Student Government and Activities

The McMaster Students Union's purpose is to represent the concerns and service the needs of over 11,000 full-time students. Every undergraduate student who is registered in 18 units or more is a member of the McMaster Students Union (MSU), and as such is entitled to all its benefits and services.

The MSU is governed by the Student Representative Assembly (SRA), a council of up to 35 of its full-time members. All but two are elected in March by their fellow students in various faculties; each has a proportionate number of seats relating directly to the size of the faculty. The

STUDENT SERV. AND ORGS.

President and Treasurer are the remaining two members of the SRA. The President is elected in February by the entire student body and the Treasurer is elected in April by the SRA from the general student body. Students who have questions about student government, or wish to bring a matter before the SRA, should contact their representative, the President, or visit Hamilton Hall, Room 217.

The duties of the SRA are: to set policy for the MSU; to approve annual budgets; and to make decisions on capital purchases.

Under the direction of the SRA, committees have been established in the areas of academics, teaching awards, student services, finances, external affairs, special events and alcohol awareness. The committees are composed of assembly members and interested MSU members-at-large. Undergraduate student involvement is encouraged at the committee level. Vacancies are announced in the student newspaper, *The Silhouette*.

The McMaster Students Union Inc. operates a variety of services for students including a grocery store, Day Care Centre, Games Room, two full-time pubs, Emergency First Response Team, Off Campus Housing Office and Sexual Education Centre. The MSU staffs an Ombudsman Office to help students with problems either internal or external to the University. The Programming Department organizes Orientation, Homecoming, Winter Carnival and major concerts. *The Silhouette* and the campus radio station CFMU, 93.3, are both owned and operated by the McMaster Students Union Inc. The MSU funds over 110 clubs and societies which encompass a kaleidoscope of areas/topics including academic, political, religious, cultural and general interest.

Information about the MSU and its services can be found in the student handbook (the *Mac Almanac*), the MSU Info Office (room 226, Hamilton Hall) and at the MSU General Offices (room 217, Hamilton Hall, 525-9140, ext. 2003).

Full-time undergraduates are urged to visit Hamilton Hall and to participate in the many student organizations and services.

(Through their membership in the MSU, full-time undergraduate students are also affiliated with the Canadian Federation of Students, and the Ontario Federation of Students (CFS/OFS). For information about both of these organizations, contact the MSU)

Fraternities and Sororities are not recognized by McMaster University and are not permitted to associate with the University in any way. The University is not responsible for any acts by these groups.

McMaster Association of Part-time Students (MAPS)

MAPS exists to look after the special interests of part-time degree or 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 from 10:00 a.m. to 8:55 p.m. Monday to Thursday, 10:00 a.m. to 2:00 p.m. Friday, when classes are in session. MAPS Executive Director, Mr. Bruce Misch, is available to help students. If you have a question pertaining to university procedure or a problem of any kind, Bruce 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 and tuition fees.

MAPS is also pleased to offer two awards, the Centennial Award and the Martin W. Johns Award. MAPS has also established a bursary 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, telephone 525-9140, ext 2021.

Undergraduate Academic Awards

The University Senate, acting on behalf of generous benefactors and donors to the University, bestows academic awards on entering, in-course and graduating students in order 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 conditions attached to individual academic awards. These general conditions are outlined below and at the beginning of each section which describes the various types of award. The general conditions have been established in order to ensure both equity in competition and an adequate overall academic standing. Any interpretation of the conditions attaching to academic awards is solely the prerogative of the Undergraduate Council.

TERMINOLOGY

(A complete explanation of the terminology used to describe Academic Awards is provided in the sections of the Calendar described below.)

The *Winter Session* is the period from September to April as defined in the *Sessional Dates* at the beginning of the Calendar.

Baccalaureate degrees are those listed under *Degrees and Programmes*, the abbreviations of which start with the letter 'B'.

Continuing, Occasional, and Post-degree Students are defined under *Admission Requirements* and are students not registered in degree programmes.

University Average (UA), Cumulative Area Average (CAA), Graduation Average (GA), Level, and Reviewing Period are defined under *Academic Regulations*.

The *Sessional Average* is the weighted average of the grades in all courses (excluding any designated 'Extra') taken during the Winter Session immediately prior to the May review.

A *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) or, if the Calendar does not specify the programme work by individual levels, the average number of units per level.

For information contact:

Student Financial Aid and Scholarships Office
Hamilton Hall, Room 403
McMaster University
Hamilton, Ontario L8S 4K1
Telephone: (416) 525-9140, extension 4789
John Edwards, *Director*
Denise Ellis, *Co-ordinator*

1. General Conditions Relating to All Academic Award Recipients

- 1.1 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, Occasional Students, Post-degree Students, students who obtained a baccalaureate degree from an institution other than McMaster University, and students registering in the McMaster Medical programme, are not eligible for these awards.
- 1.2 A student may be named the winner of an unlimited number of University Academic Awards but may retain the monetary benefits of:
 - a. travel scholarships and awards such as books and medals; *and*
 - b. awards continued from a previous year (including entrance scholarships), except as provided by the particular terms of an award; *and*
 - c. *either* one award greater than or equal to the value of a Senate Scholarship 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 the monetary benefits because of the conditions listed above, the next

student eligible to receive both the award and its monetary benefits will be named the winner of the award.

- 1.3 All awards for which a student is named the winner and receives the monetary benefits will be shown on the student's official record; all awards for which a student is named the winner but does not retain the monetary benefits will be shown on the student's official record *honoris causa*.
- 1.4 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.
- 1.5 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 Winter Session after the award was earned and will be allocated in the following manner:
 - a. 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.
 - b. 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 (eg. 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.

- 1.6 Awards credited to the student's academic fees account are not refundable in cash under any circumstances.
- 1.7 Awards credited to the student's academic fees account may be used only to defray academic fees for baccalaureate degree courses taken during the 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.
- 1.8 Students holding four-year full-fees scholarships who choose to accelerate their programme and to complete their degree earlier than normal by completing 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.
- 1.9 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.
- 1.10 The particular terms for University Academic Awards are listed below in the following sections:

SECTION 2. AWARDS FOR ENTERING STUDENTS (p.228-229)

The McMaster Scholars Programme
Other Scholarships Open to Canadian Students
Scholarships Open to Ontario Students
Merit Awards Open to Ontario Students

SECTION 3. AWARDS FOR FULL-TIME IN-COURSE STUDENTS (p.229-238)

Medal
General Scholarships and Prizes
Senate Scholarships
Residence Scholarships
Travel Scholarships

SECTION 4. AWARDS FOR PART-TIME IN-COURSE STUDENTS (p.238)

SECTION 5. SINGLE ACHIEVEMENT AWARDS FOR FULL-TIME AND PART-TIME STUDENTS (p.238)

UNDERGRADUATE ACADEMIC AWARDS

SECTION 6. AWARDS FOR GRADUATING STUDENTS (p.240)

Medals
Ring
Scholarships and Prizes

INDEX OF ACADEMIC AWARDS (p.249-251)

In order to find a specific award, use the *Index for Academic Awards*.

2. Academic Awards for Entering Students

- 2.1 These awards are provided exclusively for students qualifying for admission to Level I of a first baccalaureate degree programme.
- 2.2 In order to be considered for an entrance scholarship, 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 within not more than two years of completion of their secondary school studies will automatically be considered as applicants for entrance scholarships, unless a separate application is explicitly required by the particular terms of the award.
- 2.3 Where explicitly required by the particular terms of an award, recipients must register and remain registered in the Level I programme specified. Registration in, or transfer to, another programme of study at any time will result in forfeiture of the award.
- 2.4 In addition to meeting the *General Conditions* listed in Section 1, entrance scholarship recipients will begin their studies in the next 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.
- 2.5 Unless otherwise specified, recipients may retain an entrance scholarship 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 scholarships, students must complete during each successive 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 University Average of at least 9.5 and obtain no F grades.

THE McMASTER SCHOLARS PROGRAMME

Each year up to five students who are Canadians or landed immigrants and entering from a secondary school may be awarded the title *McMaster Scholar*. At any time there may be no more than 16 McMaster Scholars registered in undergraduate programmes. Applications are required and must be submitted not later than March 13. Applicants will be asked to provide a resume, an essay and letters of recommendation. Details may be obtained from the Director, Student Financial Aid and Scholarships. Value: \$13,000 each (\$4,000 in the first year).

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 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. 20037

OTHER SCHOLARSHIPS OPEN TO CANADIAN STUDENTS

Open to Canadian students from any province or territory of Canada.

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: Up to four years' academic fees each.

20005

THE CANADA SCHOLARSHIPS

Established in 1988 by the federal government to reward academic excellence and encourage more male and female students to choose careers in science and engineering. A variable number of scholarships to be awarded to students entering a full-time programme of study in Arts & Science, Engineering and Natural Science. Each year, an equal number of awards is to be awarded to male and female students. (Eighty-six awards were awarded in 1991-92).

Value: \$8,000 (\$2,000 per year for up to four years).

20036

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: Up to four years' academic fees.

20012

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: Up to four years' academic fees.

20003 296

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.

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: One year's academic fees each.

20018

THE HELEN M. CURREY SCHOLARSHIP

Established in 1941 by bequest of Helen Maud Currey of Drumbo, Ontario. To be awarded every four years, the thirteenth award to be made in 1992.

Value: Up to four years' academic fees.

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 and is entering Engineering I.

Value: \$8,600 (\$2,150 a 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: One year's academic fees each.

20019

THE FORTINOS SCHOLARSHIP

Established in 1990 by John Fortino. To be awarded to an outstanding full-time student entering the School of Business.

Value: One year's academic fees.

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: One year's academic fees.

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 Department of 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: Up to four years' academic fees.

20007

THE HAMILTON SPECTATOR SCHOLARSHIP

Established in 1955 by the Hamilton Spectator. To be awarded to a student from Hamilton and district.

Value: \$8,600 (\$2,150 a year for up to four years). 20002 074

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: One year's academic fees. 20021

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: Up to four years' academic fees each. 20014

THE DR. HARRY LYMAN HOOKER ENTRANCE SCHOLARSHIPS

Established in 1981, and resulting from the bequest of Dr. H.L. Hooker. Sixteen scholarships to be awarded to students with the highest standing in OAC subjects entering a full-time programme of study.

Value: \$8,600 each (\$2,150 a year for up to four years). 20001

THE AMELIA MORDEN, PAARDEBURG CHAPTER, I.O.D.E., SCHOLARSHIP

Established in 1968 by the Paardeburch Chapter, I.O.D.E. To be awarded to a student from a secondary school in Hamilton who attains an average of at least 70.0% 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: Up to four years' academic fees. 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: Up to four years' academic fees. 20015

THE ALBERT MATTHEWS SCHOLARSHIP

Established in 1920. OAC subjects to be included are Latin and a language other than English.

Value: Up to four years' academic fees. 20004

THE HAROLD MATTHEWS MEMORIAL SCHOLARSHIP

Established in 1917. OAC subjects to be included are French and either German or Spanish.

Value: Up to four years' academic fees. 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: Up to four years' academic fees. 20010

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: Up to four years' academic fees. 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: One year's academic fees each. 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: One year's academic fees. 20040 231

JOHN CHARLES STRADWICK SCHOLARSHIP

Established in 1988 by the Simcoe Erie Group to honour its founder, John Charles Stradwick. To be awarded to an outstanding student from the greater Hamilton area or southwestern Ontario who is entering Business I.

Value: Up to four years' academic fees. 20011 167

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: Up to four years' academic fees. 20006

THE FRANK THOROLFFSON 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 Department, have attained high scholastic achievement and musical proficiency.

Value: \$750 each. 20028

THE UNDERGRADUATE COUNCIL SCHOLARSHIPS

Established in 1981 by the Undergraduate Council Awards Committee. A variable number of scholarships to be awarded to students entering a full-time programme of study in the Faculty of Humanities or Social Sciences.

Value: \$800. 20033

THE WHEELER SCHOLARSHIP

Established in 1915. OAC subjects to be included are: History, English and a language other than English.

Value: Up to four years' academic fees. 20016

MERIT AWARDS OPEN TO ONTARIO STUDENTS

Unless specific conditions are described below, Merit Awards are granted on the basis of academic standing and contribution to school and community life in extracurricular activities and work. Applicants must be in Grade 13 (completing OACs) in the current school year.

THE MURRAY BALL ENTRANCE SCHOLARSHIP IN EARTH SCIENCES

Established in 1990 by Mae Ball in memory of her brother Murray Ball. To be awarded to the outstanding student entering the Faculty of Science who, in the judgement of the Department of Geology, has demonstrated interest in the study of Earth Sciences.

Value: \$800. 20037 236

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: \$800 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 judgement of the Department of Geography, has demonstrated interest in addressing environmental matters.

Value: \$800. 20038 237

THE CATHRYN E. KAAKE MERIT AWARD

Established in 1988 in memory of Cathryn E. Kaake ('78) by family and friends.

Value: \$800. 20022

THE RAYMOND C. LABARGE MERIT AWARDS

Established in 1990 in memory of Raymond C. Labarge ('36) of Ottawa.

Value: \$800. 20035 212

THE McMASTER MERIT AWARDS

Made available from time to time by authorization of the Board of Governors of the University.

Value: Fifty awards of \$800 each. 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: \$800 each. 20024 139

3. Academic 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.

3.1 These awards, which are granted in June or November, are provided exclusively for 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 their graduating session. Students choosing to graduate at the subsequent Fall Convocation forfeit any awards they have been named to receive.

3.2 In addition to meeting the *General Conditions* listed in Section 1,

UNDERGRADUATE ACADEMIC AWARDS

a student must complete during the 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* must obtain a University Average of 8.0 and no F grades.
- 3.3 For students who complete a full load of work in the Winter Session as described above a Sessional Average will be computed, which is the weighted average of the grades in all courses (excluding any designated *Extra*) taken during that Session. The Sessional Average will be used to determine academic standing for the awards listed below, unless otherwise stated in the terms of a particular award.
- 3.4 The Sessional Average will be used to break any tie in the competition for 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 Level I and 60-80 units of any four or five-level programme 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 Area Average. Value: \$25. 30004 003

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 judgement of the Department of Geology, has demonstrated the greatest aptitude in such relevant areas as stratigraphy, sedimentology, structural geology, exploration geophysics, paleontology and geologically oriented computer applications. Value: \$1,500. 30181 230

THE ASM INTERNATIONAL (ONTARIO CHAPTER) SCHOLARSHIP

Established in 1971 by the local Chapter of the American Society for Metals. To be awarded to the student who has completed Level I and 30-85 units of the Ceramic Engineering, Honours Materials Science, Materials Engineering or Metallurgical Engineering programme and who attains the highest Sessional Average (at least 9.5). Value: \$1,400. 30003 002

THE ASSOCIATION OF PROFESSIONAL ENGINEERS UNDERGRADUATE SCHOLARSHIPS

Established in 1961 by the Ontario Professional Engineers Foundation for Education. Four scholarships: one to be awarded to a male student and one to a female student with the highest Sessional Average after completion of Engineering I, and one to a male student and one to a female student with the highest Sessional Average in Engineering programmes after completion of Engineering I and 35-90 units. Value: \$600 each. 30006 232

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 Civil Engineering 3G04 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 judgement 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 236

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 Sessional Average and who in that Session achieves a grade of at least B in Statistics 3D06. Value: \$400. 30076

THE SCOTT BARTLETT MEMORIAL PRIZE

Established in 1985 in memory of Scott N. Bartlett by his family and friends. To be awarded to a student who has completed Level I and 60-75 units of the Honours Commerce Programme and who, in the judgment of the Faculty of Business, has achieved high standing in Commerce 3FA3 and 3FB3, taken in one Session. Value: \$100. 30134 012

THE 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 Sessional Average. Value: \$350. 30102 257

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 Sessional 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 Department of 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 12 units in any two of chemistry, geology, physics in Level I and a Sessional Average of at least 9.5. A scholarship is tenable for three years provided the recipient maintains a Cumulative Area Average or Cumulative Engineering 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 Sessional Average on completion of Level I and 60-75 units of an Honours programme in Classical Studies or Classics, Drama, English, French, German, Hispanic Studies, Italian, or Russian. Students in all programmes except Drama must have taken at some point Linguistics 1A06 or Anthropology 1B06 and achieved in it a grade of at least B- Value: \$600. 30013 018

THE BRAMPTON BRICK LIMITED CERAMIC SCHOLARSHIP

Established in 1980. To be awarded to the student who has completed Level I and 35-90 units of the Ceramic Engineering programme with the highest Sessional Average (at least 9.5). Value: \$1,000. 30012 054

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 30-45 units of an Honours programme in Philosophy and who attains the highest Cumulative Area 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 30-45 units of an Honours programme in Mathematical Sciences who attains the highest Cumulative Area 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 30-75 units of an Honours Programme in Philosophy who, in the judgement of the Department of Philosophy, has demonstrated outstanding academic achievement.

Value: \$1,100. 30195

THE CRISPIN CALVO PRIZE

Established in 1978 in memory of Professor C. Calvo by his family and friends. To be awarded to a student who has completed Level I and at least 60 units of an Honours programme in Chemistry and who, in the judgment of the Department of Chemistry, shows particular promise in thermodynamics.

Value: \$200. 30031

THE 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 Music 1E04, 2E04, 3E04 or 4E04 who is outstanding in the judgment of the Department of Music.

Value: \$200. 30048 023

THE CANADA BRICK SCHOLARSHIPS

Established in 1988. Two scholarships to be awarded to students in the Ceramic Engineering and Management programme who, in the judgement of the Department of Materials Science and Engineering, have achieved high academic standing and have demonstrated interest in heavy clay technology: (a) one to a student entering Level III and (b) one to a student entering Level IV.

Value: \$500 each. 30019 238

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 CANADIAN REFRACTORIES SCHOLARSHIPS

Established in 1975 by the Canadian Refractories Division, Dresser Industries Canada, Limited. Two scholarships to be awarded to students who have completed Level I and at least 35 units of the Ceramic Engineering programme and who, in the judgement of the Department of Materials Science and Engineering, show particular promise in the field of ceramic engineering or materials science.

Value: \$500 each. 30015 253

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 70-85 units of a programme in Chemical Engineering and who attains the highest Cumulative Engineering 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 60-80 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 30-75 units of an Honours programme in Music and who, in the judgment of the Department of 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 30-45 units of a programme in Commerce and who, in the judgment of the School of Business, has attained an outstanding Sessional 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 30-50 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 36-90 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 60-75 units of an Honours programme in Social Sciences and attains the highest Sessional 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 30-45 units of an Honours programme in Humanities and of an Honours programme in Science, and who has attained an outstanding Sessional Average.

Value: \$750. 30026 037

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 30-45 units of an Honours programme in Economics, and who, in the judgment of the Department of Economics, has attained a high Sessional Average and has demonstrated leadership in undergraduate extracurricular activities.

Value: \$450 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 30-45 units of an Honours programme in Classical Studies or 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 IV of a programme in Engineering who, in the judgement 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

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 71-73 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: \$700. 30041 240

THE DANTE ALIGHIERI CENTRE OF HAMILTON SCHOLARSHIP

Established in 1987 by the Directors of the Dante Alighieri Centre of Hamilton on behalf of the Italian community. To be awarded to a student who has completed Level I and 30-45 units of an Honours programme in Italian and who, in the judgment of the Department of Modern Languages, attains notable academic achievement and an average of at least 10.0 in at least 12 units of required courses in Italian, taken in one Session.

Value: \$500. 30033 045

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: \$250. 30032 047

UNDERGRADUATE ACADEMIC AWARDS

THE DELOITTE & TOUCHE SCHOLARSHIP

Established in 1962. To be awarded to the student who has completed Level I and 60-75 units of a programme in Commerce and who attains a high Sessional Average and in that Session attains an average of at least 10.0 in Commerce 3AA3 and 3AB3.

Value: \$500. 30148 177

THE DIGITAL EQUIPMENT OF CANADA LIMITED AWARD OF MERIT

Established in 1984. To be awarded to a student who has completed Level I and 35-50 units of a programme in Computer Engineering with a high Cumulative Engineering Average.

Value: \$250 and certificate. 30036 048

THE ROSEMARY DOUGLAS-MERCER MEMORIAL PRIZE

Established in 1989. To be awarded to a student who has completed Level I and 30-45 units of an Honours programme in French and who has attained the highest average in French 2A03 and one of 2J03 or 2J13 and one of 2W03 or 2WW3.

Value: \$225. 30124

THE DOW CHEMICAL CANADA INC. SCHOLARSHIP

Established in 1976. To be awarded to the student who has completed Level I and 70-85 units of the Chemical Engineering programme who attains notable academic standing, and who has demonstrated leadership in extracurricular activities. The recipient may not be a holder of another scholarship.

Value: \$900. 30038 051

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 60-75 units of an Honours programme in Philosophy and who, in the judgment of the Department of Philosophy, has attained the most notable standing.

Value: \$200. 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 Sessional Average of 9.5 or greater.

Value: \$1,400 each. 30184 237

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 30-45 units of a programme in Commerce and who attains the highest Sessional 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 Electrical Engineering 3NA3 and 3SA3, taken in one Session.

Value: \$200. 30098 057

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 061

THE HAROLD AND GERTRUDE FREEMAN SCHOLARSHIP IN FRENCH

Established in 1981 by members of the Class of '43 as a grateful tribute to Professor Harold A. Freeman, long-time teacher of French at the University and honorary president of the Class in its junior year, and his wife, Gertrude. To be awarded to the student returned from completing Level III abroad as part of the Third Year Elsewhere 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 University Average of at least 8.0 and no F grades in the review at the end of the Winter Session immediately prior to entering the Third Year Elsewhere Programme.

Value: \$1000. 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 30-45 units of the three-level Chemistry programme with the highest Cumulative Area 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 30-75 units of an Honours programme in Music and who, in the judgment of the Department of Music, has demonstrated excellence in performance on a keyboard or orchestral instrument.

Value: \$500. 30110

THE GEOLOGY BOOK PRIZE

Established in 1955 by an anonymous graduate of Year '47 in memory of Dean C.E. Burke. To be awarded to a student who has completed Level I and 30-45 units of an Honours programme in Geology and who, in the judgment of the Department of Geology, attains high standing in geology.

Value: \$50, for books. 30056 065

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 Area Averages to students who have completed Level I and 60-75 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 60-75 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 30-45 units of an Honours programme in Music and who, in the judgment of the Department of Music, has demonstrated excellence in music.

Value: \$150, 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 60-75 units of an Honours or Major programme in Computer Science, or Level I and 70-90 units of a programme in Computer Engineering, and who attains the highest Cumulative Area Average or Cumulative Engineering Average.

Value: \$200. 30131 071

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 30-45 units of an Honours programme in Chemistry and who attains the highest Cumulative Area Average.

Value: \$200. 30063

THE HAMILTON ECONOMIC DEVELOPMENT COMMISSION SCHOLARSHIPS

Established in 1976. (a) Two scholarships to be awarded on the basis of Sessional Average to students entering Level II of a Commerce programme; (b) Four scholarships to be awarded on the basis of the Cumulative Commerce Average: two to students who have completed Level I and 30-45 units, and two to students who have completed Level I and 60-75 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 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 30-45 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: \$400.

30037 075

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 32-45 units of the Physical Education programme and who, in the judgment of the School, 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: \$800.

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 Sessional 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 (Sessional 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 Sessional Average of 9.5 or greater. Eighty-five awards were made in 1990.

Value: \$1,400 each.

30043

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (HAMILTON SECTION) PRIZES

Established in 1961. Two prizes to be awarded to the students who have completed Level I and 70-90 units of a programme in Electrical Engineering who attain the highest and second highest Cumulative Engineering Averages.

Value: \$150 and plaque; and \$100.

30071 083

THE INTERMETCO LIMITED SCHOLARSHIP

Established in 1977. To be awarded to the student who has completed Level I and 70-90 units of a programme in Mechanical Engineering and who, in the judgment of the Department of Mechanical Engineering, has attained notable standing.

Value: \$600.

30072 084

THE ITALIAN MINISTER OF EDUCATION SCHOLARSHIP

Established in 1987 by the Italian Minister of Education through the office of the Director of the Italian Cultural Institute in Toronto. To be awarded to the student who has completed Level I and 30-75 units of an Honours programme in Italian and who has attained the highest Cumulative Area Average in the Italian component of the programme.

Value: \$500.

30073 085

THE ITCA COMMUNITY INVOLVEMENT PRIZE

Established in 1982 by Italian Canadian Community Involvement Incorporated. To be awarded to the student who has attained the highest Sessional Average on completion of Level I and 60-75 units of an Honours programme in Italian. The recipient must have graduated from a secondary school in the Hamilton area.

Value: \$150.

30070 086

THE IVEY SCHOLARSHIP

Established in 1971 by Professor and Mrs. G.S. French in memory of Mr. and Mrs. I.E. Ivey, the parents of Mrs. French. To be awarded to the student who has completed Level I and 60-75 units of an Honours programme in Music and who, in the judgment of the Department of 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 110-130 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: \$650 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 30-45 units of an Honours programme in Religious Studies and who attains the highest Cumulative Area 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 Cumulative Area 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 60-75 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 30-75 units of the Computer Science programme; (b) one to a student who has completed Level I and 60-75 units of a programme in Mathematics; and (c) one to a student who has completed Level I and 60-75 units of a programme in Statistics.

Value: \$400 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 60-75 units of an Honours programme in English on the basis of Cumulative Area Average.

Value: \$200.

30095 092

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 68-85 units of the Physical Education programme and who, in the judgment of the School of Physical Education and Athletics, demonstrates excellence in scholarship, leadership and participation in sport, dance and fitness.

Value: \$700.

30109 097

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 Cumulative Engineering Averages in an Engineering and Management programme: (a) one to a student who has completed Level I and 70-90 units, and (b) one to a student who has completed Level I and at least 110 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 60-75 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 60-75 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 70-85 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: \$500.

30127 106

UNDERGRADUATE ACADEMIC AWARDS

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 60-75 units of the Honours English and History programme and who has the highest Sessional Average.

Value: \$450.

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 thirty-three years of service at McMaster University. To be awarded to a student who has completed Level I and 60-75 units of an Honours Classical Studies or Classics programme and who, in the judgement of the Department of Classics, has attained high academic standing. Preference will be given to students from the Regional Municipality of Hamilton-Wentworth.

Value: \$375.

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 30-45 units of an Honours or Major programme in Physics and who, in the judgement of the Department of Physics and Astronomy, has attained notable standing.

Value: \$400.

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 60-75 units of an Honours or Major programme in Physics with a high Sessional Average.

Value: \$400.

30011 109

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 70-85 units of the Nursing programme and who, in the judgment of the School of Nursing, has demonstrated leadership while participating in undergraduate activities.

Value: \$150 and book.

30107 111

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 Sessional Average. The student must enrol in a programme in Gerontology in the subsequent Winter Session.

Value: \$300.

30187 271

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 60-75 units of an Honours programme in Chemistry who, in the judgement 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: \$1,300.

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 35-50 units of a programme in Civil Engineering. Awards are based on scholarship and evidence of practical engineering experience and background.

Value: \$650 each.

30139 113

THE PETER McPATER MEMORIAL SCHOLARSHIP

Established in 1988 by Peter McPater's friends in recognition of his art, craftsmanship and humanitarianism. To be awarded to a student who has completed Level I and 60-75 units of a programme in Honours Art or Honours Art History and who, in the judgment of the Department of Art and Art History, 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 Cumulative Area Average and a grade of at least A- in Biology 3E03 in Level III.

Value: \$300.

30077 115

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 60-75 units in an Honours or Major 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 Sessional Average.

Value: \$500.

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 Sessional Averages: (a) one after completion of Level I and 30-45 units, and (b) one after completion of Level I and 60-75 units.

Value: \$900 each.

30112 117

THE MURATA ERIE NORTH AMERICA, LTD. SCHOLARSHIPS IN CERAMICS AND ELECTRONICS

Established in 1982. Two scholarships to be awarded on the basis of scholarship, general technical awareness and participation in university and community activities: (a) one to a student who attains the highest Sessional Average on completion of Level I and 70-85 units of the Ceramic Engineering programme and who in that Session attains a grade of at least A- in Materials 3B04, and (b) one to a student who attains the highest Sessional Average on completion of Level I and 70-85 units of the Electrical Engineering programme and who in that Session attains an average of at least 10.0 in Electrical Engineering 3DB3 and 3FB3.

Value: \$600 each.

30113 118

THE ANNE MURRAY SCHOLARSHIP

Established in 1985 in memory of Anne M. Murray ('82) by her family. To be awarded to the student who has completed Level I and 60-75 units of an Honours programme in German with the highest Sessional Average.

Value: \$300.

30005 119

THE THOMAS NEILSON SCHOLARSHIP

Established in 1986 in memory of Professor T. Neilson by his family, friends, colleagues and students. To be awarded to a student entering Level IV of a programme in Honours Biochemistry who, in the judgment of the Department of Biochemistry, shows particular promise as an experimental scientist.

Value: \$800.

30184 261

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 Cumulative Area Average at the completion of Level I and 38-55 units of the Nursing programme.

Value: \$500.

30114 244

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 60-75 units of an Honours or Major 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 35-55 units of a programme in Electrical Engineering and who, in the judgment of the Department of Electrical and Computer Engineering, has achieved notable standing (Sessional Average of at least 9.5), displayed strong communication skills, and demonstrated leadership ability and involvement in extracurricular activities.

Value: \$1,700.

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 60-75 units of the Honours History programme and who attains the highest Cumulative Area 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 Classical Studies or 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 70-85 units of the Civil Engineering programme, or Level I and 110-130 units of the Civil Engineering and Management programme. Award is based on scholarship (Sessional Average of at least 9.5) and evidence of leadership, self-motivation, and practical aptitude appropriate for a future in the construction industry.

Value: \$1,100. 30052 134

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 60-75 units of a programme in Commerce. Preference will be given to students who plan to continue their studies after graduation with a practicing 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 60-75 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 Gerontology 1A06) and who, demonstrates leadership in the field of Gerontology.

Value: \$300. 30121 137

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 60-75 units of a programme in Commerce. Preference will be given to students who plan to continue their studies after graduation with a practicing 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 60-75 units with the highest Cumulative Area 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 30-45 units of an Honours programme in History with the highest Sessional 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 Department of 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 30-75 units of the Honours English or the Honours English and History programmes with a Sessional Average of at least 9.5. The recipients must not be holders of another scholarship.

Value: \$1,250 each. 30044 144

THE HERBERT A. RICKER SCHOLARSHIPS

Established in 1982 by bequest of Mrs. Edna Elizabeth Ross Reeves of Hamilton in memory of her husband, Herbert A. Ricker. Four scholarships to be awarded on the basis of scholarship (Sessional Average of at least 9.5) and character to: (a) two to students who have completed Engineering I, or Level I and 35-90 units of a programme in Engineering, and (b) two to students who have completed Natural Sciences I, or Level I and 30-75 units of a programme in Science. The recipients must not be holders of another scholarship.

Value: \$1,250 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 60-75 units of an Honours programme in Geography and who, in the judgment of the Department of Geography, has attained high academic standing.

Value: \$350. 30129 146

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 60-75 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 BEN SAUDER SCHOLARSHIP

Established in 1984 by Mr. Ben Sauder. To be awarded to a student entering Level II of a programme in Commerce on completion of Business I with an outstanding Sessional Average. The recipient must not be a holder of another scholarship.

Value: \$700. 30009 148

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 60-75 units of the Honours English programme, and who attains the highest Cumulative Area Average.

Value: \$400. 30136 150

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 70-85 units of the Nursing programme and who, in the judgement 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 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 a student who has completed Level I and 60-75 units of an Honours programme in Russian and who, in the judgement of the Department of Modern Languages, has achieved notable academic standing. Preference will be given to students in Russian programmes, but students in Comparative Literature and Linguistics who, in the judgement of the Department of Modern Languages, have achieved notable academic standing in at least 18 units of Russian courses shall also be eligible.

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: \$700 each. 30137 154

THE SHELL CANADA SERIES SCHOLARSHIPS

Established in 1990 at various universities and community colleges across Canada to support and encourage post-secondary education in Engineering and Commerce and interest in a career in the Petroleum industry. Two scholarships to be awarded to students entering Level III or IV of a programme in Commerce or Engineering who have demonstrated outstanding achievement and involvement in extra-curricular activities. For one of the awards, the student must also have demonstrated interest in Women's Studies, Native Studies and/or the studies of one of Canada's other disadvantaged groups.

Value: \$2,000. 30196 247

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 30-45 units of the Honours Physics or the Honours Chemistry and Physics programme with a high Cumulative Area Average.

Value: \$300. 30059 156

UNDERGRADUATE ACADEMIC AWARDS

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 30-45 units and who attain the highest Sessional 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 60-75 units of a programme in Commerce and who obtains the highest Sessional 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 the student who has completed Level I and 30-45 units and who, in the judgment of the Department of Modern Languages, has attained notable standing in an Honours programme in Italian. 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 60-75 units of the Honours Geography programme and who elect Geography 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 SALVATORE SPITALE MEMORIAL PRIZE

Established in 1984 by the Spitale family. To be awarded to the student who has completed Level I and 30-75 units of an Honours programme in Italian and who, in the judgment of the Department of Modern Languages, has demonstrated academic excellence and an active involvement in community life. Value: \$100. 30133 162

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 Mathematics 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 in the University of Toronto, and an honorary alumnus of McMaster University (LL.D. 1922). To be awarded to the student who has completed Nursing I and who attains the highest Sessional Average. Value: \$150. 30025

THE MABEL STOAKLEY SCHOLARSHIP

Established in 1956 by the Young Women's Canadian Club of Toronto (now the Career Women's Canadian Club of Toronto). To be awarded to a woman student who has completed Level I and 30-45 units of any programme and who gives evidence of outstanding academic achievement and leadership. Value: \$400. 30103 165

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 60-75 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 TOBENA SWEET MEMORIAL PRIZE

Established in 1988 by the National Council of Jewish Women of Canada, Hamilton Section, from the bequest of Tobena Sweet of Hamilton. To be awarded to the student who has completed Level I and 70-85 units of a Nursing programme with the highest Sessional Average. Value: \$100. 30147 168

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 Cumulative Area 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 Area Average in Canadian Studies after completion of Level I and 60-

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 30-45 units of the Honours Geography or the Honours Geography and Geology programme with the highest Sessional Average.

Value: \$200.

30069 174

THE DR. R.A. THOMPSON PRIZE IN MATHEMATICS

Established in 1954 by bequest of Dr. William Bethune, in memory of R.A. Thompson, B.A., LL.D., Principal of Central Collegiate Institute, Hamilton, from 1897-1919, in recognition of his contribution to education in Hamilton. To be awarded to the student who has completed Level I and 60-75 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 high Cumulative Area Average.

Value: \$200.

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 judgement 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 35-50 units and who attain a high Sessional Average: (a) one in the Ceramic Engineering programme and (b) one in the Chemical Engineering programme.

Value: \$500 each.

30145 178

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 60-75 units of an Honours programme in History and who, in the judgement of the Department of History, has achieved notable academic standing in medieval history and a high Sessional Average.

Value: \$600.

30081 179

THE UNIVERSITY WOMEN'S CLUB OF HAMILTON SCHOLARSHIP

Established in 1945 by the University Women's Club of Hamilton. To be awarded to the woman student who attains the highest Sessional Average in the penultimate level of any programme.

Value: \$750.

30150 180

THE UWC PAST PRESIDENTS' PRIZE

Established in 1976 by the Past Presidents of the University Women's Club of Hamilton on the occasion of the Club's 50th anniversary. To be awarded to the woman student who has completed Level I and 70-90 units of a programme in Engineering with the highest Cumulative Engineering Average.

Value: \$100.

30149 020

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: \$250.

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 1935-1959. To be awarded to the student entering Level IV of the Honours Programme in Philosophy who, in the judgement 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 60-75 units of the Honours Commerce programme and who attains the highest Sessional 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 judgement of the Department of Religious Studies, has attained notable academic standing in courses in Christian thought.

Value: \$375.

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 30-45 units of an Honours programme in Physics with the highest Cumulative Area 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 30-45 units of the Honours History programme and who attains the highest Cumulative Area Average. Value: \$50. 30080 183

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 30-45 units of a programme in Honours Art or Honours Art History with the highest Sessional Average. The recipients must be from the Hamilton-Wentworth Region. Value: \$200 each. 30153 186

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 60-75 units of the Physical Education programme and has demonstrated outstanding achievement in the programme. Value: \$200. 30075 189

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 70-85 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: \$600. 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 Sessional Average of 9.5 in addition to meeting the conditions noted in Section 3, above.

In 1992, the value of a Senate Scholarship is \$700.

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 1989, 220 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 136

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

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 Section 3 (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 Sessional Average (at least 9.5) in an undergraduate programme, with the exception of those in their graduating Session:

Sheila Scott Scholarships for Brandon Hall (2 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 1992, the value of each scholarship is \$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 60-75 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 Winter Session. Value: \$5,000 each. 30174

THE CLASS OF '37 TRAVEL SCHOLARSHIP IN ARTS AND SCIENCE

Established in 1989 by the Graduating Class of 1937 in celebration of their fiftieth anniversary and augmented by friends of the Arts and Science Programme. To be awarded to a student who has completed Level I and 30-72 units of an Honours programme in the Arts and Science Programme. Applicants should have demonstrated a lively interest in developing countries. The purpose of this award is to enable the winner to spend the summer, immediately following its receipt, working and/or studying in a developing country. Value: \$1500. 30175 037

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 Chinese language, history or culture. The purpose of the scholarship is to enable the recipient to study in China or South East Asia. The first award to be granted in 1992-93. 30193 273

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 60-75 units of an Honours

UNDERGRADUATE ACADEMIC AWARDS

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 Winter Session.

Value: \$4,000. 30177 053

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 judgement 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.

Value: \$400. 30188 274

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: \$550. 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 60-75 units of an Honours or Major 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 Winter Session in travel and study outside Canada.

Value \$5,000. 30178

4. Academic 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.

- 4.1 These awards, which are granted in November, are provided exclusively for part-time students regularly registered in fewer than 24 units in any session and qualifying on the basis of work included at the most recent review in other than their graduating session.
- 4.2 In addition to meeting the *General Conditions* listed in Section 1, a student must obtain at the most recent review a University Average of at least 8.0 and no F grades.
- 4.3 The University Average will be used to break any tie in the competition for these 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

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 University Average at the most recent review.

Value: \$350 each. 60000

THE AUDREY DIEMERT MEMORIAL BOOK PRIZE

Established in 1991 by family, friends and colleagues in memory of Audrey Diemert. To be awarded to a part-time student who attains the highest standing in English 2G06 or English 2I06.

Value: \$100, 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 Depart-

ment of Mathematical Sciences during 41 years of service. To be awarded to part-time students who have attained the highest University Average at the most recent review.

Value: \$250 each. 60004

THE ANNE STEIN MEMORIAL PRIZE

Established in 1981. To be awarded to the part-time student who successfully completes Social Work 3DD3 and attains the highest grade in Social 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 University Average at the most recent review.

Value: \$250 each. 60003

5. Single Achievement Awards for Full-time and Part-time Students

The following awards are based on competition across the University or within a faculty or programme.

- 5.1 These awards, which are granted in June or November, are provided for either full-time or part-time students qualifying on the basis of achievement during the Summer or Winter Sessions immediately preceding the May review (or deferred examinations resulting therefrom).
- 5.2 In addition to meeting the General Conditions listed in Section 1, a student must obtain at the most recent review a University Average of at least 8.0 and no F grades.
- 5.3 The University 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 Geography 2E03 (Geography of Canada).

Value: \$150. 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 Social 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 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 judgement of the Department of Geology attained notable standing in (a) Geology 1A03 and (b) Geology 1C03 respectively.

Value: \$200 each. 40057 236

THE RUBY BROWN PRIZE IN ENGLISH

Established in 1974 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 CLUB OF HAMILTON SCHOLARSHIP

Established in 1956 by the Canadian Club of Hamilton. To be awarded to the student who, in the judgment of the Department of History, attains notable standing in a Level III course in Canadian history.

Value: \$150. 40005

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: \$250. 40025 032

THE CITIZEN ACTION GROUP PRIZE

Established in 1984 by the Citizen Action Group, Hamilton, to honour Professor Harry L. Penny, founding Director of the School of Social Work and Board Member of Citizen Action Group. To be awarded to the student in a programme in Social Work who submits an essay or report based on the student's field work experience that best addresses the need for innovative or non-traditional social work practice.

Value: \$250. 40006 031

THE COMPARATIVE LITERATURE PRIZE

Established in 1988. To be awarded to a student in an Honours programme in Comparative Literature who, in the judgment of the Department of Modern Languages, has achieved notable standing in the Level II courses in Comparative Literature.

Value: \$150. 40008

THE CONSUL GENERAL OF ITALY BOOK PRIZE

Established in 1982. To be awarded to in-course students for excellence in Italian studies.

40010 041

THE BEATRICE CORRIGAN MEMORIAL BOOK PRIZE

Established in 1980 in memory of Professor Beatrice Corrigan by her friends and colleagues. To be awarded alternately to the student who achieves the highest standing in Italian 3P03 and to the student who achieves the highest standing in Italian 4R03.

Value: \$75. 40004 044

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

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 judgement of the Department, has demonstrated exceptional achievement in historical-cultural geography.

Value: \$250. 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 Religious Studies 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 Engineering 1C04.

Value: \$100. 40023 073

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: \$100. for books. 40039 080

THE MUNICIPAL CHAPTER OF HAMILTON, I.O.D.E., 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 INTER NATIONES (BONN) BOOK PRIZE

To be awarded from time to time to in-course students for proficiency in German studies.

40024

THE H.L. JACKSON MEMORIAL SCHOLARSHIP

Established in 1989 in memory of Professor H.L. Jackson by his friends and colleagues. To be awarded to the student who has completed Level I and at least 60 units of an Honours or Major Programme in the Department of Mathematics and Statistics, who in the judgement of the department has demonstrated achievement in Mathematics 3A06 or 3O06.

Value: \$400. 40021

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 judgement of the Arts and Science Programme Awards and Review Committee, best reflects scholarship and the spirit of inquiry.

Value: \$175. 30185 249

THE JEAN JONES PRIZE

Established in 1989 in recognition of the distinguished service of Professor Jones to the School of Social Work. To be awarded to the student who attains the highest grade in Social Work 2B06.

Value: \$50. 40026 098

THE DR. S.P. KLIMASKO PRIZE

Established in 1973. To be awarded to the student who attains the highest standing in Ukrainian 2A06.

Value: \$50. 40013 094

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: \$175. 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: \$100. 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 Economics 3J06 (Economic Development) or, in exceptional circumstances, for work in a related area.

Value: \$200. 40053

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 History 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 2C03.

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 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 Geography 4F03; and (b) the student who attains the highest grade in Geography 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 Metallurgy 4C04.

Value: \$100. 40061 264

UNDERGRADUATE ACADEMIC AWARDS

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 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 30-60 units who, in the judgement of the Selection Committee for Part-Time Awards, has made a significant contribution to the University life of part-time students.

Value: \$300. 40009 265

THE PHYSICAL EDUCATION PRIZES

Established in 1982. Two prizes to be awarded to students who have completed the courses in Level III of the Physical Education programme: (a) one to a student who, in the judgment of the School of Physical Education and Athletics, has submitted an outstanding paper or project, and (b) one to the student who, in the judgment of the School of Physical Education and Athletics, has demonstrated outstanding improvement in academic standing throughout the programme.

Value: \$50 each. 40041

THE PIONEER GROUP LTD. PRIZE

Established in 1990. To be awarded to a student in a Gerontology programme who, in the judgement 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: \$350. 40058 270

THE PROCOR LIMITED SCHOLARSHIP

Established in 1962. To be awarded to the student in a programme with a concentration in Russian studies who attains the highest standing in Russian 2A06.

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 60-75 units and who, in the judgment of the Department of English, has made the most notable original contribution to student publications.

Value: \$250. 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 Sociology 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 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 judgement 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 entering Level III of a programme in Labour Studies as a full-time student; (d) one to student entering Level III of a programme in Labour Studies as a part-time student; (e) one to a student entering Level IV of an Honours programme in Labour Studies.

Value: \$300 each. 30099 151

THE SERBO-CROATIAN BOOK PRIZES

Established in 1982. Three prizes to be awarded to the in-course students who achieve the highest standing in Serbo-Croatian 1Z06. 40099 153

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 Social 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 Social Work 3DD3 and attains the highest average in Social 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 Gerontology 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 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 WIDMAIER PRIZES FOR PROFICIENCY IN GERMAN

Established in 1990 by Dr. and Mrs. F. Widmaier. Four prizes to be awarded to students of German 1Z06 who, in the judgement 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

6. Academic Awards for Graduating Students

The following awards are based on competition across the University or within a faculty or programme.

- 6.1 These awards, which are granted in May, are provided exclusively for graduating students qualifying on the basis of achievement in their baccalaureate degree programme.
- 6.2 In addition to meeting the *General Conditions* listed in Section 1, a student must obtain:

UNDERGRADUATE ACADEMIC AWARDS

- a. a Graduation Average of at least 8.0;
- b. at the most recent review a University Average of at least 8.0;
- c. no F grades 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 had achieved 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 Graduation Average. 50005 008

THE BASU MEDAL

Established in 1984 in memory of Professor Sanjōy 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 Committee of Instruction for Drama, 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 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. Value: \$50, for books. 50009 267

THE AMBASSADOR OF SPAIN BOOK PRIZE

Established in 1982. To be awarded to a graduating student in an Honours Hispanic Studies Programme who, in the judgment of the Department of Modern Languages, has achieved notable academic standing. 50002 005

THE ANTHROPOLOGY PRIZE

Established in 1982. To be awarded to the graduating student who has completed a programme in Anthropology primarily on a part-time basis and who, in the judgment of the Department of Anthropology, has demonstrated outstanding academic achievement. Value: \$50. 50004

THE WILLIAM AND LIDA BARNES MEMORIAL PRIZE IN HISTORY

Established in 1969 by their son, William D. Barnes, of Morgantown, West Virginia. To be awarded to the graduand who, in the judgment of the Department of History, has attained notable standing in the Honours History programme. Value: \$200. 50050 010

THE MARION BATES BOOK PRIZE

Established in 1967, Centennial Year, by the Alumnae members of the McMaster Alumni Association in honour of Marion Bates, Dean of Women from 1947 to 1965. To be awarded to a student graduating from an Honours programme in History who, in the judgment of the Department of History, has displayed outstanding achievement in Canadian history courses consistently throughout the degree programme. Value: \$100, for books. 50034

THE ABE BLACK MEMORIAL PRIZES

Established in 1982 by friends and colleagues of Dr. A.H. Black in memory of a distinguished member of the Department of Psychology from 1958 to 1978. Four prizes to be awarded: (a) one to the student who attains the highest Graduation Average in an Honours B.A. programme in Psychology; (b) one to the student who attains the highest Graduation Average in the Honours B.Sc. programme in Psychology; (c) one to the student who attains the highest Graduation Average in the Honours Biology and Psychology (Life Sciences) programme; (d) one to the student who, in the judgment of the Department of Psychology, has demonstrated outstanding achievement in Psychology 4D06 (Honours thesis). Value: (a) \$75; (b) \$75; (c) \$75; (d) \$100. 50000 017

THE RUTH BURKE MEMORIAL PRIZE

Established in 1963 by Dr. and Mrs. Herbert S. Armstrong in memory of Mrs. Charles E. Burke. To be awarded to the student in the Nursing programme who attains the highest Graduation Average. The Prize is a set of engraved sterling silver coffee spoons. 50047 268

THE CANADIAN ASSOCIATION OF OCCUPATIONAL THERAPISTS BOOK PRIZE

Established in 1985. To be awarded to the student who has attained the highest Graduation Average in the Occupational Therapy programme. Value: \$75, for books. 50010 024

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 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 Materials 4K04. Value: \$300. 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: \$150. 50053 237

UNDERGRADUATE ACADEMIC AWARDS

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 058

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 HERITAGE HAMILTON FOUNDATION SCHOLARSHIP

Established in 1987 by the Heritage Hamilton Foundation. To be awarded to a graduand who, in the judgment of a selection committee, submits the outstanding thesis or major project on a subject related to conservation of heritage aspects of the built environment.

Value: \$400. 50025 076

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 Graduation 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: \$350. 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 Graduation Average in an Honours programme in Sociology.

Value: \$50. 50020

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: \$300. 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 PILAR MARTINEZ PRIZE

Established in 1983 by Dr. Pilar Martinez. To be awarded to the student who has attained the highest Graduation Average in a programme in Hispanic Studies. The Prize is a handcrafted object.

50041 105

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 Graduation Average in an Honours programme in Biology.

Value: \$200. 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: \$800. 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 Classical Studies who, in the judgement 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 Graduation 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 judgement 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 Materials 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 Graduation 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 Social 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 Graduation Average in the Physiotherapy programme.

Value: \$100, for books. 50038 128

THE ONTARIO SOCIETY OF OCCUPATIONAL THERAPISTS PRIZE

Established in 1987. To be awarded to the graduand of the Occupational Therapy programme who attains the highest grade in Health Sciences 4D03.

Value: Plaque. 50055 130

THE ONTARIO SOCIETY OF OCCUPATIONAL THERAPISTS NEUROLOGY PRIZE

Established in 1989 by the OSOT Neurology Interest Group (Toronto Branch). To be awarded to a student graduating from an Occupational Therapy programme

who, in the judgement of the Department, attains an outstanding average in Health Sciences 4C03 and Health Sciences 4D03 (Neurosciences).
Value: \$75 in books. 50039 130

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 Graduation Average in the Social Work programme.
Value: \$50. 50023

THE PHYSICAL EDUCATION PRIZE

Established in 1982. To be awarded to the graduating student who, in the judgment of the School of Physical Education and Athletics, has submitted an outstanding paper or project.
Value: \$50. 50058

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 judgement 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 137

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: \$50. 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 Political Science 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 Graduation Average in an Honours B.A. programme in Geography; (b) one to the student who attains the highest Graduation Average in an Honours B.Sc. programme in Geography; (c) one to the student who attains the highest Graduation 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 Geography 4C06.
Value: \$50 each. 50033

THE RELIGIOUS STUDIES PRIZES

Established in 1982. Two prizes to be awarded to students who attain the highest Graduation 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 Religious Studies 4GG3.
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 SOCIOLOGY PRIZES

Established in 1982. Two prizes to be awarded to students with the highest Graduation Average: (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 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 Graduation Average (at least 9.5) and have completed the programme in the normal number of years. 50060

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. 50035 183

Student Financial Aid

For information on any of the programmes which follow contact:

Student Financial Aid and Scholarships Office
Hamilton Hall, Room 403
McMaster University
Hamilton, Ontario L8S 4K1
Telephone: (416) 525-9140, extension 4789
John Edwards, *Director*
Denise Ellis, *Coordinator*

Ontario Student Assistance Program

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 five plans.

Ontario Study Grant Plan
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 30th to ensure that their applications are processed by September. It currently takes 8-10 weeks to process a regular OSAP application.

All of the government programs described in this text are modified and restructured annually to reflect the changing needs of students from the Province of Ontario. It is therefore recommended that you discuss your specific financial requirements with a counsellor in the Student Financial Aid Office as early as possible.

ONTARIO STUDY GRANT PLAN

A plan which primarily helps students from less affluent families complete undergraduate work and not incur significant debt. Grants under this plan are not contingent upon a student taking a government loan and are limited to a student's first eight academic terms of post-secondary study. After that, generally at professional or graduate levels of study, students are expected to assume more responsibility for educational costs or to turn for assistance to student loans plans outlined below.

Grants are available to both full-time and part-time students, who are resident in Ontario, and enrolled at recognized post-secondary institutions anywhere in Canada.

CANADA STUDENT LOANS PLAN

A federal government plan, administered by the provincial government, which provides loans to needy students for completion of any level of study. Maximum assistance under this plan is about 60% 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 recently expanded its Canada Student Loans Plan to include 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

A plan which 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.

Loans are available to students enrolled at recognized post-secondary institutions in Ontario only.

ONTARIO SPECIAL BURSARY PLAN

A plan which helps exceptionally needy students who are unable to attend school full-time but need post-secondary training to improve their job prospects. A student participating in this plan will not receive assistance through the Ontario Study Grant Plan.

Bursaries are available to such part-time students enrolled at recognized post-secondary institutions in Ontario only.

Work-Study Program

A recent addition to the OSAP package which is intended to complement the original four plans. 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 grant/loan maximums or, who do not wish to borrow further due to high debt load.

Costs of this plan are shared equally 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 403, from November 1st to November 30th 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. Value: \$700.00 90500 282

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 fifty 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. Value: \$700.00 90504 199

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 Years III or IV of the Bachelors of Arts/Social Work Programme or Year II of the Bachelors of Social Work Programme. 90506 286

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 fiftieth class reunion. To be awarded to a student in good academic standing who is a Canadian citizen or permanent resident. 90507 180

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 EDITH GRACE COOMBS MEMORIAL BURSARY

Established in 1989 by Lois Taylor Brown in memory of Edith Grace Coombs who, for many years, taught at the Ontario College of Art. To be awarded to a student enrolled in an Art or Art History Programme who demonstrates financial need. Preference will be given to a full-time student enrolled in the second year of the Programme. 90554 294

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 DICICCIO 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 EDITH E. FERRIE BURSARIES

Established in 1965 by the late Edith E. Ferrie. To be awarded to students in any programme. 90511 286

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

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 of the Co-ordinator for the Disabled. 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 \$1,000.00. 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 235

THE HAWKRIGG FOUNDATION BURSARIES

Established in 1988. To be awarded to an outstanding student in Business I or Physical Education I. 90514 288

THE JACK AND THELMA HEATH MEMORIAL BURSARIES

Established in 1985 by Norton Canada Inc. in memory of Jack and Thelma Heath, former employees of the Company, who were tragically killed in a boating accident. The fund provides up to four awards to assist students, with demonstrated financial need, in Level III or IV of the B.Sc.N. Programme (basic and/or post-diploma stream). 90519

THE 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 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

3M CANADA INC. BURSARY

Established in 1980, two bursaries to be awarded annually; one to an MBA student and one to a student in Business or Science. 90525 220

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 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

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, R.N., 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 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

STUDENT FINANCIAL AID

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 Semeniyuk 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

UNIVERSITY WOMEN'S CLUB OF BURLINGTON MATURE WOMEN'S 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 UNIVERSITY WOMEN'S CLUB OF HAMILTON BURSARIES

Established in 1960 by the University Women's Club of Hamilton. To be awarded to female students in any programme. 90546

BURSARIES FOR IN-COURSE VISA STUDENTS

Established in 1982 by the University to assist visa students in any programme. 90547

THE WALLINGFORD HALL BURSARIES

Established through anonymous donations to assist needy students in any programme. 90548

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

Short-Term Emergency Loans

Assistance in the form of a short-term loan 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 alumnae 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.

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